

U.S. Department of Energy

PROGRAM UPDATE



October-December 2020



LM Investigates Cell
Cover Conversion from
Rock to Vegetation

**Resiliency and
Adaptability in 2020**

Collaboration with
Colorado County Ensures
Safe Water Supply

Director's Corner



As we close out what has been the most remarkable and challenging year in recent memory, with a pandemic, economic turmoil, and natural disasters, I keep coming back to one word: *resilience*.

That buzzword is everywhere these days, from corporate boardrooms to psychology and ecology. Resilience means to recoil or rebound, to recover quickly from difficulties, to adapt in the face of adversity.

I recently read Richard Sutton's "The Stress Code," in which he points to resilience, and explains that stress, which is ubiquitous, can be both good and bad.

Many of us live under relentless, ongoing stress. Often, this is not caused by a single identifiable element, but by the weight of collective life demands and seemingly endless challenges. Essentially, our personal and/or professional lives present one demanding and challenging circumstance after another. This is no longer the exception; it's the norm. Under a resilience practice, reframing stress as a positive experience and adopting positive attitudes and behaviors toward ourselves and others needs to be continuously emphasized and worked on throughout our stress resilience journey.

For LM, 2020 was the year that resilience moved from theory to practice. I'm proud to report that we've shown ourselves more than capable of learning to recoil, recover, and adapt. We've continued to deliver on LM's mission, all the while protecting our families and communities from the global pandemic.

On page 4, you'll find a summary of different ways in which we have demonstrated resilience this year. Our field crews displayed tremendous teamwork and ingenuity in continuing to conduct inspections and critical site activities throughout the summer while adhering to stringent health and safety protocols. When travel was not possible, we found workarounds, such as hiring local contractors to perform maintenance activities. Major fieldwork and construction projects continued at the Rocky Flats, Colorado, and Weldon Spring, Missouri, sites. The Defense-Related Uranium Mines (DRUM) program achieved a significant milestone with its 1,000th verification and validation report on abandoned uranium mines.

Our resilience was on display in the office, too. Our Safety and Health Team has been dauntless and proficient in keeping us safe, whether that means we're working from home or phasing in and out of the office. With help from our tireless IT staff, we've become fluent in performing our daily duties remotely and holding effective meetings by Skype.

While it's been challenging to maintain our ties with agency and community partners outside LM in a time of social distancing and remote work, we've worked diligently to not just sustain but even strengthen these collaborations. Our ongoing relationship with the U.S. Army Corps of Engineers remains as resilient as ever, as we work to transition more sites to LM. We're also forming new partnerships with DOE's National Laboratory Network. And we've maintained connections with stakeholders through new and expanded approaches to digital outreach on the part of our Communications, Education, and Outreach Team.

Last March, when we invoked our Continuity of Operations Plan, I don't think many of us expected these changes to last through the end of the year and into 2021. But we've adapted — sometimes literally overnight — to challenging work-life realities, balancing our jobs with helping children adjust to online school and caring for the vulnerable among us. I'm hopeful that, with reports of substantial progress being made on a COVID-19 vaccine, we're now seeing the light at the end of the tunnel.

I wish you and your families the best this holiday season. We are all celebrating the holidays differently this year, but it is my hope that our resilience in the face of adversity will allow you to enjoy this year's holiday season as much as ever in these trying times. And may the new year bring better circumstances for us all. Be safe, take care of each other, and execute the mission.

Warm Regards,

A handwritten signature in black ink that reads "Carmelo". The signature is fluid and cursive.

Carmelo Melendez



Inside this Update :

LM Goals



Goal 1
Protect human health and the environment.



Goal 2
Preserve, protect, and share records and information.



Goal 3
Safeguard former contractor workers' retirement benefits.



Goal 4
Sustainably manage and optimize the use of land and assets.



Goal 5
Sustain management excellence.



Goal 6
Engage the public, governments, and interested parties.

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Cover: NNSA staff pose beside aircraft outfitted with radiation sensor systems at the radiometric calibration pads LM manages at the Grand Junction Regional Airport in Colorado.



Resiliency and Adaptability in 2020

According to the British Standards Institution, organizational resilience is defined as “the ability of an organization to anticipate, prepare for, respond, and adapt to incremental change and sudden disruptions in order to survive and prosper.”

The resiliency of the U.S. Department of Energy Office of Legacy Management (LM) was highlighted throughout the past year, but perhaps most of all in the early days of the pandemic when the organization adapted its overall emergency operations plan to the pandemic, maximized telework, and coordinated with regulators and stakeholders to ensure the continuing protection of human health and the environment at LM sites.

The shift to telework status came quickly in March, and IT staff worked diligently to ease the technological transition for hundreds of staff to shift to working from home.

“This was a huge undertaking,” said Archives and Information Management Team Lead Edwin “Doc” Parks. “But it was eased by a pre-pandemic drill LM performed, requiring everyone to work from home for a day.”

IT staff identified and resolved problems in the system and assisted employees who had trouble logging in remotely. Coincidentally, the first wave of the worldwide pandemic resulted in nearly everyone in the organization shifting to a telework schedule and working from home.

Despite the shift to telework for many employees, field crews continued to conduct field inspections and important site maintenance and operations tasks, even while adhering to new, stringent health and safety protocols.

On June 22, representatives from LM and the National Nuclear Security Administration (NNSA) worked together to not only further the continued protection of human health and the environment, but also U.S. national security interests. NNSA aircraft used the radiometric calibration pads at the Grand Junction, Colorado, airport to standardize aircraft-mounted radiation survey equipment, which is used to conduct radiation assessments at events, such as the Super Bowl and presidential inauguration in Washington, D.C.

“I’m really grateful for the nuances of the many mission areas we have in the LM portfolio and our ever-expanding ability to support missions greater than our own. This event was a fantastic example of how we support national security with the calibration pads,” said Paul Kerl, Uranium Mill Tailings Radiation Control Act and Nevada Offsites supervisor for LM and office manager for the Grand Junction Field Support Center. “We’re currently having dialogue with the National Oceanic and Atmospheric Administration for future calibration support of equipment on their aircraft at our Grand Junction airport site as well.”

In August, LM completed one of the largest projects in its history — stabilization of a landfill at the Rocky Flats Site in Colorado. LM installed 267 ground anchors and more than 4,400 feet of subsurface drains to alleviate downhill slumping of the steep slopes of the Original Landfill. The project began in August 2019.

“The team did a great job keeping the project on schedule and within budget,” said LM Rocky Flats Site Manager Andy Keim. “This is especially noteworthy because the team had to change how it worked by implementing additional health and safety measures in response to the COVID-19 pandemic.”

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At the Original Landfill stabilization project at the Rocky Flats Site in Colorado, LM subcontractors drill into bedrock through the center of a concrete block placed on the landfill’s west side, preparing to install a stabilization anchor (spring 2020).





At the Weldon Spring site in Missouri, U.S. Army Corps of Engineers contractors have completed exterior wall structures and began siding installation (spring 2020).

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Resiliency and Adaptability in 2020

LM has continued to build on relationships with partners, including the collaboration with the U.S. Army Corps of Engineers (USACE) on site transfers for the Formerly Utilized Sites Remedial Action Program, and for a new project with DOE's National Laboratory Network (NLN) to evaluate, develop, and deploy recommendations to reduce risks at LM sites.

"The spirit of teamwork and collaboration was instantaneous," said LM Program Manager Mark Kautsky. "I anticipate many positive actions that will benefit both LM and NLN for years to come."

LM continues to focus on the future, with construction of a new interpretive center at the Weldon Spring Site in Missouri. The design of the new facility promotes energy optimization, improved water conservation, enhanced use of natural daylight, and compliance with many other eco-conscious standards. The new interpretive center will also have larger meeting room spaces to accommodate more student groups, allowing for increased STEM programming. The work, which is being done in collaboration with USACE, is on schedule for completion in 2021.

The LM Defense-Related Uranium Mines (DRUM) Program passed a significant milestone with the release of the 1,000th verification and validation report on abandoned uranium mines. The reports, which contain data on abandoned mines that provided uranium ore to the federal government, provide LM's

partner agencies with information to help them make decisions about how to address mines that pose a risk.

According to Kristen Holmes, supervisor of the Communications, Education, and Outreach (CEO) Team, LM also adapted to the "new abnormal" by shifting from an emphasis on face-to-face outreach to digital communications. LM added new social media platforms for outreach and launched a new digital e-newsletter, *Elements*. LM also launched the STEM with LM program and published the website in time for the 50th anniversary of Earth Day.

"We remain steadfast in the Office's number-one priority — protecting human health and the safety of our staff, partners, and stakeholders," Holmes said. "And that focus will not only help LM survive the stressful period we are still navigating, but also help the organization learn, progress, and grow with the experience."

LM Director Carmelo Melendez said that achievements over the past year have shown LM's resilience, but also an ability to grow and move beyond simply surviving challenges the organization faced.

"Returning to normal is no longer an option," Melendez said. "And we are confident LM will emerge from this year a stronger and more adaptable organization, ready to face the challenges of the coming decade." ❖



LM Investigates Cell Cover Conversion from Rock to Vegetation



Workers operate a GeoProbe at the Grand Junction, Colorado, Disposal Site to extract multiple core samples through the cell cover.

The U.S. Department of Energy Office of Legacy Management (LM) is in the preliminary stages of a pilot study on the feasibility of converting select disposal cell covers from rock riprap to an alternative type of cover referred to as an evapotranspiration cover.

Unlike the rock covers, evapotranspiration covers feature vegetation. Because plants remove water from the soil, allowing vegetation to grow on a cell cover could potentially limit precipitation from leaking into the cell below, where contaminated materials are stored. This could, in turn, help prevent groundwater contamination.

“It’s wonderful to see nature in action and how these natural processes align with our mission,” said LM Site Manager Bill Frazier. “The study is very important in showing us this alignment and how we can better manage our sites and keep our disposal cells protective into the future.”

At LM’s Grand Junction, Colorado, Disposal Site, Frazier and colleagues from LM’s Applied Studies and Technology group are testing the concept in a series of test plots. In March, the team mobilized a GeoProbe — a piece of machinery used to take core samples of soil from various depths — to extract multiple core samples through the cell cover and bedding material, down to the bottom of the radon barrier that limits

radon gas from the contaminated materials from reaching the atmosphere. The data from these core samples will provide baseline measurements on current cell cover properties, before vegetation is established.

Once the team installs monitoring instruments into the cell, it will begin establishing vegetation in the test plots. After a lengthy monitoring period, ideally a decade or more, the team will once again extract core samples, this time to determine how the vegetation has impacted the cell — specifically, its ability to prevent groundwater contamination and limit radon release into the atmosphere.

“Some of the questions that we hope to answer are: If you establish plants on the cell, will this limit percolation of precipitation through the cover into the groundwater? And will the establishment of vegetation on the cover negatively impact the cover in any way?” said Aaron Tigar, a research assistant with the LM Strategic Partner contractor.

The researchers hope to glean information on how to best establish vegetation on a rock-armored cell, as well as how to most effectively monitor vegetation growth and water balance on the cell. ❖

GOAL 6



Collaboration with Colorado County Ensures Safe Water Supply

The U.S. Department of Energy (DOE) Office of Legacy Management (LM) is collaborating with Gunnison County, Colorado, to connect more domestic residences with private water wells to a municipal water supply. The residences are located within the groundwater contamination boundary at the former uranium mill at LM's Gunnison, Colorado, Disposal/Processing Site.

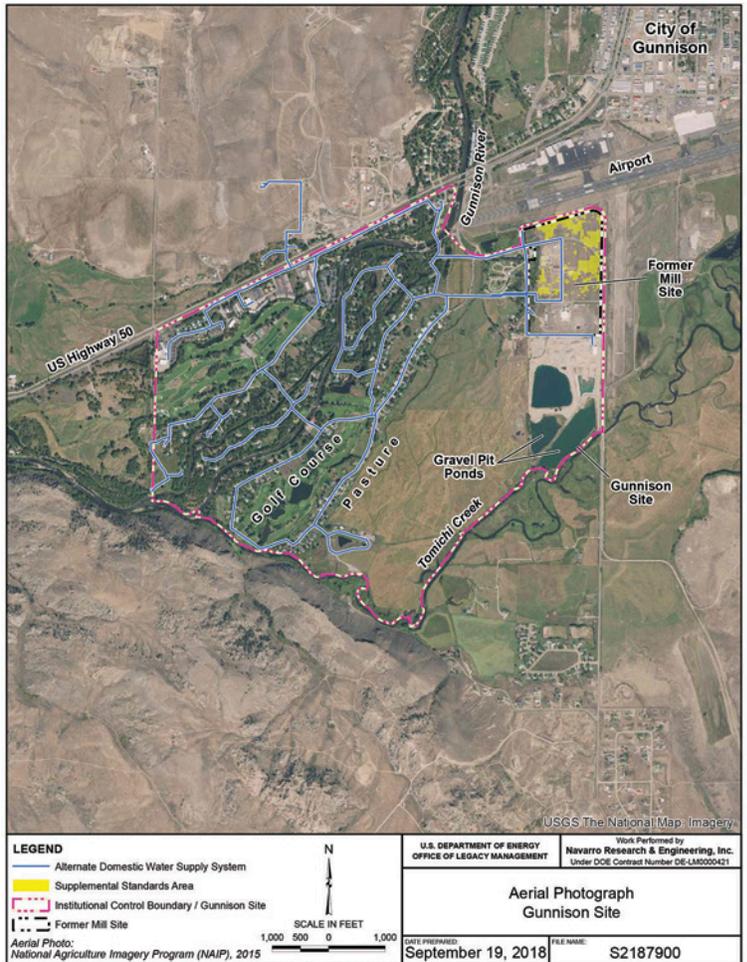
"This is a major milestone that reflects LM's mission of protecting human health and the environment," said Jalena Dayvault, site manager for the Gunnison site. "Gunnison County Public Works Director Marlene Crosby worked diligently to get remaining domestic well users on board so this project could move forward."

The Gunnison site is a former uranium ore processing site located about a half-mile southwest of the city of Gunnison. The mill processed approximately 540,000 tons of uranium ore between 1958 and 1962, providing uranium for national defense programs. These ore processing activities resulted in contaminated groundwater beneath and near the site.

In 1994, a water treatment plant, storage tank, and distribution system were partially funded by DOE and installed to supply municipal drinking water to all residences within the contaminated groundwater boundary. This project was part of the remedial action plan at the former uranium mill site and is considered a protective measure in case the contaminated groundwater plume was ever to affect domestic well users within this boundary.

A small handful of homeowners with domestic wells in use before the cleanup continue to use those wells for drinking water. As part of LM's long-term stewardship activities at the site, the office has monitored these wells annually to verify that mill-related contaminants have remained below U.S. Environmental Protection Agency maximum concentration limits for groundwater.

Working closely with Gunnison County Public Works, LM made funds available in September 2020 to support Gunnison County Public Works in connecting more residences with domestic wells to the municipal water supply. Excavation work began in November to connect the first residence to the alternate water supply.

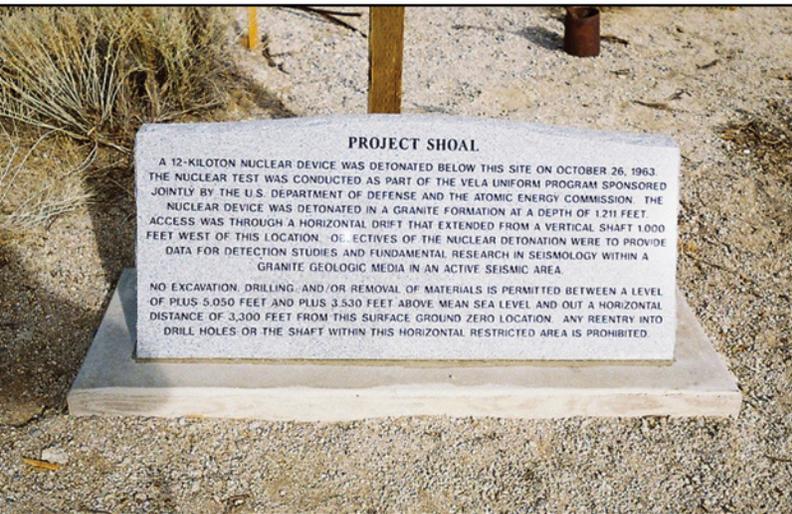


This map shows the municipal water system that provides clean water to residents near the former uranium processing site.

"We started putting a game plan together back in early January of this year, reaching out to homeowners to get their buy-in and preparing a scope of work and budget for the project," said Joe Lobato, site lead for the Legacy Management Strategic Partner (LMSP). "The LM and LMSP team has a great working relationship with Gunnison County." ❖



LM Marks Closure of the Shoal Site



A monument near Surface Ground Zero identifies restrictions associated with the subsurface of the Shoal site.

Mid-morning Oct. 26, 1963, dozens of reporters, scientists, and staff from the U.S. Department of Defense and the U.S. Atomic Energy Commission gathered on an overlook to witness the underground test of a nuclear bomb in the Sand Spring Range of north-central Nevada, 30 miles from the town of Fallon. The ground rumbled and dust rose from the desert floor with the detonation of a 12-kiloton nuclear bomb (about 80% of the energy of the bomb that was dropped on Hiroshima, Japan) at a depth of 1,211 feet underground.

The Shoal detonation was part of the Vela Uniform project, which aimed to develop methods to monitor compliance with the 1963 Partial Test Ban Treaty. The Shoal test was designed to determine the effect of a nuclear detonation in a granite rock formation and to compare the seismic activity of natural earthquakes with activity from an underground nuclear explosion. The test would help with detection of seismic signatures indicating banned underground nuclear weapons tests by countries violating the test ban. The Shoal site was selected because it was a seismically active area that would allow comparisons between the test and other natural seismic signals.

No radiation escaped to the surface during the underground test, but subsurface contamination remained at the detonation depth, providing the potential for off-site migration with groundwater. Decades of difficult restoration work, hydrological investigations, and monitoring ensued to check for any potential migration.

To help mitigate potential contamination, the U.S. Department of Energy (DOE) Office of Environmental Management (EM) originally developed a numerical model for groundwater flow at the site to help determine the contaminant boundary around the detonation. The contaminant boundary represents the estimate of how far contaminated groundwater is likely to travel in 1,000 years.

EM installed monitoring wells to confirm the direction and rate of groundwater movement. However, monitoring data from the wells did not support the groundwater flow directions indicated by the numerical model.



Drill rig used to install monitoring wells in 2014. The wells were completed at depths ranging from 1,570 to 1,750 feet.

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LM Marks Closure of the Shoal Site

The DOE Office of Legacy Management (LM) assumed responsibility for the site from EM in 2006 and started investigating alternative site regulatory strategies. LM implemented a new approach by enhancing the monitoring well network, updating the site conceptual model, and revising the site contaminant and compliance boundaries. This work was hampered by the fact that groundwater occurs at a depth of about 1,000 feet and drilling new wells in the granite formation was no small undertaking. LM implemented enhancements to the monitoring well network through a drilling program in 2014 that required a round-the-clock schedule for eight weeks to complete because of drilling depths and difficult drilling conditions.

“We knew we needed to drill additional monitoring wells, but we wanted to make sure we put them in an area that made sense,” LM Site Manager Mark Kautsky said. “We developed alternative site conceptual models that we used to guide where we thought contamination would be detected if groundwater was flowing away from the nuclear test site. We deepened one of the existing wells and drilled two new wells in different locations.”

The new wells were dually completed with a well and piezometer to assess horizontal and vertical gradients.

Monitoring has shown that all contamination has remained within the site contaminant boundary. To accommodate uncertainties associated with the transient nature of the groundwater flow system, the compliance boundary was expanded to encircle the contaminant boundary. These boundaries represent threshold areas that would trigger certain actions if contaminants were detected. Kautsky said that if that were to occur, it could require a revision to the site conceptual model and potential drilling of new wells to further understand the complex groundwater flow system.

After analyzing five years of monitoring results from the well network, the site manager was confident the new site conceptual model allowed LM to move into a long-term stewardship approach. On Oct. 12, 2020, LM issued a closure report for the subsurface corrective actions at the Shoal site. The report signified that LM was closing the corrective action phase and moving into long-term stewardship of the site.

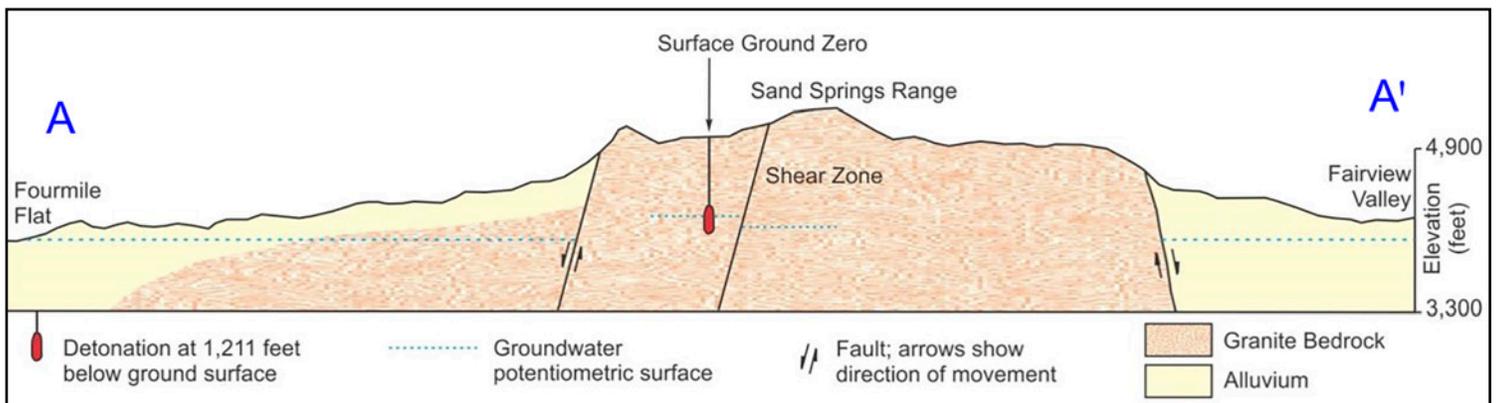
“In the context of legacy management, this is a significant event,” Kautsky said. “We’re always looking to have all of our sites in long-term stewardship status.”

Kautsky said several LM Strategic Partner (LMSP) team members should be recognized for their work at Shoal, including Rex Hodges, who “understands subsurface conditions at the site better than anybody,” and Rick Findlay, who was “the best manager we could have at the site in terms of unlocking the regulatory framework.”

“We also worked closely and collaboratively with the Nevada Division of Environmental Protection [NDEP] to develop our alternative compliance strategy. Absent the collegial relationship we developed with NDEP, none of this would have been possible,” Kautsky said.

For the time being, the team is confident in the site conceptual model and LM’s ability to monitor the site long-term to ensure that contamination does not migrate outside the site contaminant or compliance boundary. Annual site inspections will continue to monitor groundwater elevations and ensure the monitoring wells remain in good condition, but the sampling frequency will be reduced.

“We understand where the contamination is and we’ve been able to show through the passage of time that it hasn’t spread beyond that area. So, rather than sampling every year, we’ve changed the sampling frequency to every three years,” Kautsky said. ❖



Schematic geologic cross section of the Shoal site area.



Launching a Career: DOE Scientist Shares Her Journey



Darina Castillo's love of learning and passion for the environment led her to a career as an LM site manager.

When Darina Castillo's love of learning and passion for the environment led her to a career as a site manager at the U.S. Department of Energy (DOE) Office of Legacy Management (LM), she never dreamed she would learn so much about history.

"The eye-opening experience for me was that I did not quite appreciate the magnitude of the Manhattan Project and Cold War, and all the effort to get those first bombs built," Castillo said. "The fact that there are facilities and properties all over the country that contributed to the effort is inspiring and amazing."

DOE traces its origins to the World War II project led by the U.S. Army Corps of Engineers (USACE) to develop and build the atomic bomb. Today, DOE continues to oversee the long-term stewardship of properties at many Manhattan Project and Cold War sites around the country. Castillo is the manager for five current and future LM sites, located in Maryland, New Jersey, New Mexico, and New York.

"The sites that LM manages played an important role in the history of the United States," she said. "Our long-term

stewardship activities, such as ensuring that groundwater remains protective of human health and the environment, are a continuation of that important role and a way to honor our history."

Plucked from a competitive pool of elite advanced-degree applicants, Castillo was selected to be a Presidential Management Fellow in 2014. This federal leadership development program grooms fellows for careers in public service at the highest levels. Castillo, who has a doctorate in environmental engineering sciences, landed at DOE.

"It was exciting, because it was my first full-time position after my doctorate," Castillo said. "The work at LM was a great fit with my education and previous professional experiences."

As part of the fellowship, she also completed a five-month detail with DOE Office of Environmental Management and a one-month stint with the DOE Under Secretary for Science.

"These experiences were very valuable as they gave me a wider breadth of understanding of the workings of the Department," she said.

Castillo describes herself as a multidisciplinary environmental engineer with experience in hydrology, environmental policy, remote sensing, and geographic information system mapping. She was pleasantly surprised to discover that her role overseeing the management of legacy sites encompassed all that learning and more. She says it was evident from the start that all her strengths honed through science, technology, engineering, and mathematics (STEM) would be called upon.

"I'm able to leverage every aspect of my STEM education at my job, because we have to be multifaceted to perform this work," she said. "We look at the history of a site to develop solutions for the unique needs of each site, and we need to understand groundwater science, contracting, real estate laws, and environmental regulatory policy as well."

In fact, according to Castillo, it's that intersection of science and history that even six years into her "first job" sustains her interest on sites requiring periodic monitoring, as well as those that require only minimal attention.

The day-to-day role of LM site managers includes project and contract management, site inspections, groundwater sampling, and meeting with community leaders, such as elected officials and staff from various regulatory agencies.

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Launching a Career: DOE Scientist Shares Her Journey

“During site inspections, we ensure that any remaining contamination at a site remains in a safe configuration,” Castillo said. “For example, we ensure there is no digging in the soil, no one is living in restricted areas, and there are no signs of damage to buildings or disposal cells.”

Among the LM portfolio that Castillo manages is the Colonie site, located just outside Albany in upstate New York. This site is part of the Formerly Utilized Sites Remedial Action Program (FUSRAP), a subset of DOE sites where work was performed under contract to the Manhattan Engineer District or U.S. Atomic Energy Commission. These sites are selected based on cleanup conditions and become part of LM’s long-term stewardship portfolio once remediation is complete. The Colonie site transferred from USACE to LM in September 2019, six months ahead of schedule.

“The Colonie site is the Office of Legacy Management’s 100th site, so it’s a significant milestone for us, and it also has a rich history,” Castillo said.

Castillo is leading the effort to make two LM sites available for redevelopment: the Colonie site and Middlesex South, New Jersey, Site. The Middlesex South site, which is scheduled to transfer to LM in 2026 under FUSRAP, is slated to become

the future home of the local community’s public works department. This effort will open the doors to millions of dollars of additional redevelopment and hundreds of new jobs. The Colonie site will utilize the U.S. General Services Administration to make the site available for redevelopment. To ensure the success of these projects, Castillo has been coordinating with local redevelopers, elected officials, and regulators and partner agencies on state and federal levels.

“Seeing the direct benefit these redevelopment projects will have on the community is gratifying,” she said.

As a Black woman in a traditionally male-dominated industry, the weight of her own history is not lost on Castillo. In fact, she hopes it shows other young women of color that they, too, can make a difference.

“I occasionally get the opportunity to mentor students of color on choosing the pathway of federal government careers, which isn’t the easiest avenue to navigate,” said Castillo, who makes a point to note to students how gratifying the work can be.

“My work at LM is empowering, because I know that the work we do has a direct impact on the health and safety of the communities where LM’s sites are located,” Castillo said. ❖



Castillo visits LM’s Bayo Canyon, New Mexico, Site with colleagues from DOE Office of Environmental Management, LM Strategic Partner, and local officials.



An Unmistakable Calling: DOE Employee Reflects on His Heritage

As a young child, Bill Frazier didn't know what he wanted to be when he grew up, but he knew it would involve working with Mother Earth. Feeling the cool moist soil run through his fingers felt like the most natural thing in the world.

"The projects that interested me when I was growing up always involved digging in the dirt. And now I see how my heritage, and what my grandfather and elders taught me, tied me to the land," said Frazier, a site manager for the U.S. Department of Energy (DOE) Office of Legacy Management (LM).

"The land is sacred," Frazier said. "You've got to treat it with respect."

That deference to nature is heavily influenced by Frazier's background. His family lived on the Navajo Nation, the largest American Indian reservation in the United States. November was Native American Heritage Month and, for Frazier, having a whole month that acknowledges his ethnicity is significant.

"As a Navajo, it does resonate with me," Frazier said.

In 1990, President George H.W. Bush signed a joint resolution of Congress designating November as a month dedicated to honoring and celebrating the contributions of the first Americans.

"It's nice to have that recognition," Frazier said. "It just shows that we're included and part of the fabric of the United States of America — it's nice to be part of the community."

For many American Indians, the importance of community cannot be overstated. Neither can the connection to the land,

said Frazier, who was raised where his ancestors lived and taught that the sanctity of nature was a way of life, as taught through the Navajo concept of Hózhó. The philosophical principle of Hózhó — loosely defined as "walking with nature" in Navajo — embodies the time-honored tradition of maintaining a balance between harmony, beauty, and order.

"It's in all things — what you do, not just the environment, but how you live your life and your behavior," Frazier said, noting it's fitting that today he works for LM, the federal office tasked with a mandate to monitor and maintain cleaned up areas where the Manhattan Project and other Cold War efforts left behind hazardous materials, such as chemical and radioactive waste.

But when he was first approached with the job offer, he was taken aback.

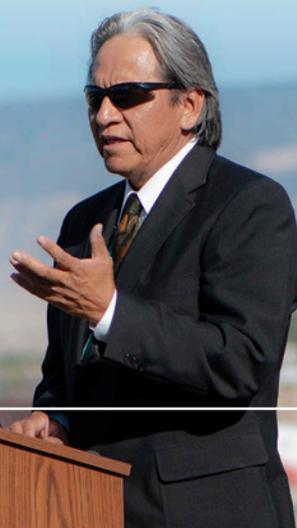
"It's not something that I ever pictured myself doing," Frazier said. "I worked in design and construction, and now I'm a site manager."

He and his brother followed in his father's footsteps by becoming civil engineers. When LM offered him a job and he learned that some of the sites LM manages are on native lands, he knew he was exactly where the universe wanted him to be.

Frazier sees his role as a site manager as not just a job but a calling.

"Being a Native American and working for the Office of Legacy Management, where we have the responsibility of environmental stewardship, is restoring that balance with nature," he said. ❖

LM Site Manager Bill Frazier speaks at the 2019 groundbreaking of the River Park at Las Colonias.





Your Zip Code Should Not Mean Your Destiny

The following article was written by DOE Environmental Justice (EJ) Program Manager **Melinda Downing** for *The Environmental Forum* (<https://www.eli.org/the-environmental-forum/november-december-2020>) (Vol. 37, Issue 6). The article is reprinted here with permission from the editor.

Experiences as a youth can shape one's life. Try to imagine waking up one morning to find one's home full of a foul smell with no explainable source. In my case, our family was troubled whenever we tried to eat or even breathe. As this continued and the years passed, there were losses in my town's home values, increased unemployment, unexplained illnesses, and increased early death rates. Many of the young, including myself, moved away. Others stayed and watched the town descend.

All this happened without our knowledge or consent. As our town became ill and started dying, we were not prepared to save it. For my part, I became compelled to eradicate such environmental injustice.

Decades later, in communities of color, history continuously repeats itself. EJ communities know that everything bad associated with the environment disproportionately affects their neighborhoods. Without any knowledge of, or say in, the decisions to build industrial plants, discard hazardous waste, or generally destroy the local environment, communities across America are continually faced with environmental problems beyond their ability to understand or to address. Studies prove that we are in an ever-evolving revolution of disparities.

The living conditions in today's environment for Black and Brown communities — associated with systemic racism and violence, COVID-19, pollution, unemployment, poverty, and lack of health insurance — will linger where we live forever until we take action ourselves. We cannot, we must not, and we will not allow the historical legacies of our ancestors to be no more than our past, but rather, the foundation of our future — to achieve equality for all people. Every day matters; Black and Brown lives matter; all lives matter; and each life lost to racism and injustice is a cost none of us should warrant.

To address the impacts of these issues and to correct this imbalance is not an easy task. This journey can begin by promoting enforcement of all health and environmental statutes in areas with minority populations, low-income populations, American Indian tribes, Alaska Natives, Latin

American populations, and Asian populations. Thus, the need for greater public participation and improved research and data collection related to health among minority populations, and increased collaboration among federal, state, and local governments to strengthen existing laws and regulations.

Experience has shown that meaningful and informed participation by all elements of the community, all concerned parties of interest, tends to produce resolutions that are accepted by all parties, easier to implement, sustainable, and more economically beneficial than contested resolutions conceived by a select few stakeholders. Existing legislation can be the tool that provides the source and support that leads to resolution of these ongoing issues that need to be addressed immediately. To achieve our goal of equality, however, we need better federal policies implementing those laws.

There is no one environmental law that can resolve the discrimination targeting people of color where they live and work. However, collaborative problem-solving means that all stakeholders agree to work together with the intent of resolving a particular issue or to solve a particular problem affecting a community.

Marginalized communities are likely to be impacted more severely by climate change, by a poorer location and ability to recover from shocks, and less opportunity for mitigation. For example, higher electricity rates in Black and Brown neighborhoods cannot be countered by better insulation or other efficiency measures or installing solar units because these same communities have a preponderance of homes that are rented rather than owned.

The measures to aid EJ communities and equip them with the tools and resources to experience the quality of life that every American citizen has the right to enjoy today are simple: empowerment; education; information sharing; and capacity building through technology, workshops, partnerships, and collaboration.

There are a number of other steps that make sense. This includes investing in science and workforce training at historically Black colleges and universities, educational institutions that serve the Latinx community, and tribal colleges and universities. We need to believe in and invest in our young leaders of the next generation.

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Your Zip Code Should Not Mean Your Destiny

Communities can also participate in the National Environmental Justice Conference and Training Program and the National Conference on Health Disparities, opportunities for organizing, learning, and networking.

In the 21st century, we must recognize the unique relationship between the quality of our environment, the health of our citizens,

and the economic well-being of our nation. We must recognize EJ as a concept central to our national environmental policy.

Your zip code should not dictate your environment. Inequality matters. Our actions to eradicate it matter. All our lives matter. ❖

GOAL 6



Environmental Justice Activities

Fall 2020 TREAT Workshop Marks 25th Anniversary of Community Collaboration

The fall 2020 Teaching Radiation, Energy, and Technology (TREAT) Workshop was hosted by the city of Aiken, South Carolina, at the Lessie B. Price Aiken Senior & Youth Center, Oct. 7-9, 2020. U.S. Department of Energy (DOE) Environmental Justice Program Manager Melinda Downing provided opening remarks virtually for the workshop.

This year's workshop marked the 25th anniversary of this important collaboration with the local communities located near the Savannah River Site (SRS). TREAT workshops continue to be one of DOE's most successful long-term community partnerships.

The workshop was held in person with attendance in compliance with the Centers for Disease Control and Prevention, as well as local COVID-19 guidelines.

Local community speaker representatives included: Michael Budney, DOE manager of SRS; Dr. Kenneth Sajwan, project director, Savannah State University; Dr. Sandra Jordan, chancellor, University of South Carolina-Aiken; Rick Osbon, mayor of Aiken; Lessie Price, councilwoman, for Aiken; and Dr. Linda Bell, South Carolina state epidemiologist.

Also included were representatives from the Superfund and Emergency Management Division, U.S. Environmental Protection Agency; South Carolina Department of Health and Environmental Control; Nuclear Workforce Initiative Program-SRS Community Reuse Organization; Savannah River Nuclear Solutions: Radiological Protection, Emergency Response, Education Outreach, Environmental Compliance & Area Completion Projects; and the Imani Group, Inc.

Meaningful engagement with communities connected to DOE and Office of Legacy Management sites during the pandemic has been critical in keeping communities informed and actively involved in the federal decision-making process that has the potential to disproportionately impact low-income and minority communities.

Planning for the 2021 TREAT workshops is underway, with plans to add more sites, as appropriate, in the future.



Left: Dr. Sajwan and Rev. Brendolyn Jenkins Boseman, of the Imani Group, speak to workshop participants. Right: Rev. Brendolyn Jenkins Boseman presents a certificate of completion to workshop participant Mason Cumming.

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Environmental Justice Activities

Virtual NEJC Engages Environmental Justice Community

The 14th National Environmental Justice Conference and Training (NEJC) Program was conducted virtually on Oct. 20-21, 2020, due to the COVID-19 pandemic. Environmental leaders came together for this annual national gathering to engage communities as full partners in collaborative solutions to the many issues and challenges affecting the nation today.



Left: Melinda Downing, DOE EJ program manager, provides opening remarks for the 2020 NEJC. Right: Benjamin F. Wilson, Beveridge & Diamond, 2020 NEJC sponsor, provides opening remarks for the conference.



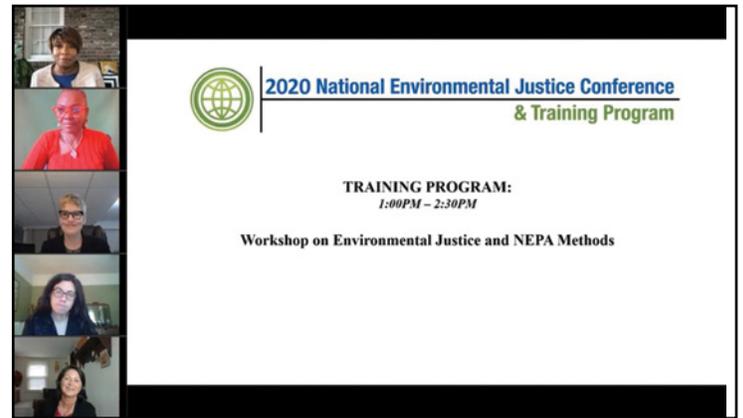
Participants on the Educate, Motivate, Innovate Panel included (from top to bottom): (Olivia Harbison, Tennessee State University student; Joanna Mounce Stancil, U.S. Forest Service; and Marsha Minter, U.S. Environmental Protection Agency).

The promise of new EJ legislation in the form of the Environmental Justice Act of 2019, the Environmental Justice Act for All of 2020, and the Climate Equity Act of 2020 excited participants about the outlook for the future.

This was the first ever virtual conference held by the NEJC. There were more than 150 participants in attendance, including representatives from federal, state, and local government agencies; public and private sector organizations; non profits; and academic institutions.

This year's conference theme was "Enhancing Communities Through Capacity Building and Technical Assistance, Addressing Environmental Justice in Uncertain Times," recognizing the rapidly changing and diversifying landscape in which we live. The conference agenda was filled with two days of thought-provoking panels and workshops, and numerous opportunities to hear from young people, activists, and others from all over the country who are engaged and committed to the principles of EJ.

Conference presentations are posted on the conference website: www.thenejc.org. Plans are underway for the 2021 NEJC conference. Abstracts are due on Dec. 15, 2020.



The National Environmental Policy Act Committee of the Federal Interagency Working Group on Environmental Justice Panel featured (from top to bottom): Carolyn Sawyer, 2020 NEJC moderator; Denise Freeman, DOE; Suzi Ruhl, Yale School of Medicine; Elizabeth Poole, U.S. Environmental Protection Agency Region V; and Jacque Annarino, Ohio Department of Transportation.

MES Program Launches Online Environmental Justice Academy

Undergraduate students, Sierra Generette and Justice Wright, and graduate student Ki'ana Speights, spent their fall semesters interning with the Mentorship for Environmental Scholars (MES) Program. Their 10-week internships focused on creating virtual environmental justice trainings for middle and high school students. Each student developed individual trainings, and as a group they built the foundation for the Environmental Justice Academy.

Pre-College University, the organization that manages the MES Program, launched an online training platform for interns to

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Environmental Justice Activities

participate in professional development workshops this past summer. The recently developed environmental justice trainings (and others still under development) will consist of an online curriculum that anyone can complete from their desktop.

The interns met weekly with the MES program manager to discuss their proposed courses and receive feedback. The students also had the opportunity to meet virtually with Melinda Downing, the U.S. Department of Energy (DOE) Environmental Justice program manager, and Denise Freeman, communications liaison with the DOE Office of Legacy Management. As the internship progressed, the students' vision expanded to include development of a suite of online trainings. The interns also decided to form a Virtual Environmental Justice Club, to provide peer mentorship for other interested individuals, and a social media user group, where they encourage student participants to get involved in the

environmental justice community.

The first training course for the newly launched Environmental Justice Academy — Environmental Justice 101 — will debut Feb. 1, 2021. The course is a collaboration between all three student interns. The curriculum introduces the field of environmental justice, explores various environmental justice issues, and helps build skills in using social media to address environmental injustice in the community. Additionally, training participants will gain an understanding of the correlation between environmental justice, climate justice, sustainability, and ethnic and racial relations. The goal is to have six training courses available by summer 2021. ❖



MES Program Director Clarence Brown mentors MES scholars during a professional development workshop.



DRUM Program Hits Two Major Milestones Toward Safeguarding Mines



This before-and-after photo shows safeguarding at the Peggy Mine in Colorado, part of the Long Park pilot project. Rocks collected near the mine are mortared together at the mine portal to prevent access to the interior of the mine.

The U.S. Department of Energy (DOE) Office of Legacy Management (LM) Defense-Related Uranium Mines (DRUM) Program passed two major milestones in October, when DRUM completed its 1,000th final verification and validation (V&V) report and DRUM data was used to safeguard mine hazards.

The DRUM Program is a partnership between DOE, federal land management agencies, and state abandoned mine lands programs to assess the locations and conditions of abandoned mines that provided uranium ore to the federal government for defense-related activities between 1947 and 1970.

“The DRUM Program completed a major milestone in publishing its 1,000th mine-specific V&V report,” said Jay Glascock, who manages LM’s uranium-related programs. “The honor goes to the Blue Ribbon 3 mine, which is appropriately named in this instance.”

The Blue Ribbon 3 mine is located in Colorado’s Gateway Mining District on land managed by the U.S. Bureau of Land Management (BLM) Grand Junction Field Office.

In another milestone, V&V reports proved their worth in October with completion of the first DRUM safeguarding project in the state of Colorado. Applying V&V data, the BLM’s Uncompahgre Field Office worked with the Colorado Division of Reclamation,

Mining and Safety to safeguard 26 hazardous mine entries. As part of the Long Park pilot project, each safeguarded mine entry was tagged with a small monument with an identification number that can be traced back to the DRUM database.

The V&V evaluation process was launched in 2017. Verification involves the comprehensive research of historical records to identify DRUM sites and to pin down their locations. Once verification is complete, validation begins. Field teams document the features and condition of each mine through photographs, gamma surveys, soil and water sampling, and ecologic assessments. Technical writers compile the data and develop reports that provide rankings of physical safety hazards and potential risks to human health

and the environment. The information is presented in the final V&V reports, which provide LM’s partner agencies with valuable information for addressing risks posed by abandoned mines on the public lands they manage.

“Our goal is to provide our partner agencies with information that they can use to advance mine safeguarding, in order to protect people and the environment from features that present potential risks to the general public,” said John Zutman, who manages DRUM reports for the LM Strategic Partner contractor. “The V&V process serves as a general inventory of mines to determine which mines can be removed from further consideration and which mine features need to be safeguarded.”

Mine-specific V&V reports are key for developing safeguarding projects to address hazardous mine features.

“We work with our partner agencies as one team to accomplish these projects,” said Chuck Denton, who manages the DRUM safeguarding program. “It is truly a team effort with one partner funding the project, another preparing the environmental documentation, and another executing the design and construction.” ❖



Gueretta and Rogers Share Employee of the Year Recognition

For the second year in a row, two staff members were recognized as U.S. Department of Energy Office of Legacy Management (LM) Employee of the Year.

Both Rich Rogers and Jeanie Gueretta were honored for their hard work and dedication during a virtual town hall held Sept. 30, in place of LM's annual All-Hands Awards Banquet, due to the response to the COVID-19 pandemic.

Rogers said he was multitasking when he learned he'd received the award.

"I was listening but also watching my 18-month-old son, who gets into everything. Then I hear my name, and I'm like, 'Whoa, wow!' said Rogers. "Stop everything. I can't believe this."



Rich Rogers led LM through an audit by the U.S. Government Accountability Office.

Gueretta was also completely surprised by the announcement.

"They did a great job of keeping it a secret," Gueretta said. "It was very humbling and a nice feeling to be honored in that way. I feel very blessed."

The Philip C. Leahy Award recognizes LM employees who demonstrate the qualities of a team player, as described by John C. Maxwell's *The 17 Essential Qualities of a Team Player*. The book lists qualities such as: dependable, enthusiastic, prepared, self-improving, selfless, and tenacious.

Nominations for this award come from both peers and supervisors and are judged by the LM deputy director and two office deputies. The Leahy winner (or winners in this case) with the most noteworthy contributions are also selected as LM Employee of the Year.

In 2020, seven staff members received the Philip C. Leahy Award out of 20 nominations. The 2020 award winners included Jonathan Damiano, Bill Frazier, Jeanie Gueretta, Josh Linard, Tashina Jasso, Rich Rogers, and Sue Smiley. After a thorough review, the award committee determined that both Rogers and Gueretta had earned the Employee of the Year award.

Rogers, a member of the Financial Audits and Contracts Services (FACS) Team, led LM through an audit by the U.S. Government Accountability Office (GAO) and prepared LM's budget briefings for Congress. Rogers was described in his nomination as highly mission conscious, competent, communicative, disciplined, and dependable — necessary traits to guide an organization through a successful GAO audit.

Rogers said the key to his success is collaboration.

"I understand that I don't know everything, but I want to know everything," Rogers said. "That allows me to humble myself and lead when I need to lead, and to reach out for support from my colleagues when I need it. And to return that support when they call on me."

Gueretta is also a member of the FACS Team. Serving as the contracting officer's representative, she coordinates with all members of the LM organization to manage LM's multimillion-dollar support services contract. This year has been especially challenging as LM is closing out the current contract and working

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Gueretta and Rogers Share Employee of the Year Recognition

toward transition to a new one. Gueretta led the LM team as it managed delays and changes to work scope due to the pandemic, and navigated challenges associated with a contract change. She did all of this while remaining, according to her nomination, adaptable, collaborative, dependable, and communicative.

"I enjoy the interaction with the staff, both on the federal side and the contractor side," Gueretta said. "And, I enjoy doing work that is meaningful, supporting the LM mission through the long-term stewardship that's performed on this contract. It's very rewarding knowing that I'm making a difference in what I'm doing."

Ingrid Colbert, the supervisor for the FACS Team, said that it's a privilege to have Gueretta and Rogers as part the FACS Team.

"Jeanie and Rich are dedicated employees," Colbert said. "They demonstrate an extraordinary level of experience. Both are strong, trusted, and self-reliant leaders. They inspire with confidence and respect and are highly valued by managers and staff."

Both award winners said the real satisfaction is knowing that their coworkers nominated and selected them for the award.

"It's just a complete honor and definitely a pleasant surprise, especially to share this award with Jeanie and the other people who were under consideration — all of my colleagues work really hard and do great work," Rogers said.

"I feel that LM is a great organization to be a part of," Gueretta said. "I feel very honored to be a part of this group and be recognized in this way. And I'm grateful to be working with such great people on such important work."



Jeanie Gueretta coordinates with all members of the LM organization to manage LM's multimillion-dollar support services contract.

LM established the Philip C. Leahy Award in 2017 to recognize employees who are outstanding team players. Leahy set up what is now LM's Grand Junction office in Colorado as part of the Manhattan Project, and later served as the site's first manager under the U.S. Atomic Energy Commission. ❖

Be Environmentally Conscious

LM is continually seeking opportunities to protect the environment and conserve natural resources. One simple step we can take toward improving environmental consciousness is to distribute the *Program Update* newsletter by email instead of sending a printed copy.

Please send your email address and your first and last names to LM-ProgramUpdate@lm.doe.gov so that we can update our database.

Thank you for your assistance.





LM Celebrates Site Manager Scott Surovchak's Contributions to DOE

These days, if you strike up a conversation with Scott Surovchak, he may take a moment to brag about his two-year-old grandson and how he remembers every detail he sees and hears. That apple didn't fall far from the family tree — Surovchak also has impressive recollection, especially when it comes to his 29-year career with the U.S. Department of Energy (DOE). Although he retired in September as site manager for multiple DOE Office of Legacy Management (LM) sites, his impact on DOE will carry on for decades to come.



Surovchak at his September virtual retirement party.

Surovchak developed his hard work ethic in the Texas oil and gas industry back in the early 1980s. He fondly remembers his first jobs, where he worked 12 to 18 hours a day in drilling, both offshore and onshore.

After a few years, he was laid off as part of the 1980s oil bust. So, he loaded everything he owned into his diesel pickup truck and moved to Florida.

"I had grandiose plans of attending the University of South Florida because they had a really good groundwater program," said Surovchak. "But I needed a job. I couldn't just be a student."

His professor hooked him up with a job right away, and he pursued a degree in hydrogeology while working as an environmental consultant.



Surovchak performs environmental fieldwork with a coworker in Florida in the late 1980s.

After working 10 years for private companies, Surovchak accepted his first DOE position with the Office of Environmental Management (EM) in 1991, working in environmental reclamation at the Savannah River Site (SRS) in South Carolina.

"This was near the start of EM, and they didn't really have anyone who knew about groundwater remediation except me. I started working with a few sites, and I ended up with about 75% of the sites managing environmental restoration waste," said Surovchak.

While Surovchak loved working at SRS, he became interested in the former Rocky Flats Plant near Denver, Colorado, after learning about it from a colleague. That colleague offered him a job at Rocky Flats, which he accepted. He made the move to work at the plant in 1992, sight unseen.

When he arrived, the former Rocky Flats Plant was in the process of resuming operations following a 1989 plantwide safety shutdown. Surovchak's first assignment was a daunting one — reviewing costs used to calculate a fine issued to Rockwell International

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LM Celebrates Site Manager Scott Surovchak's Contributions to DOE

Corporation, the DOE contractor at the time, for violating federal hazardous waste law and the federal Clean Water Act. The resulting fine was \$18.5 million. This assignment didn't make him the most popular person on-site. (One deputy director wouldn't even let him enter his office). But he understood the reason for getting cold shoulders from coworkers, and he wasn't bothered by it.

After President George H. W. Bush canceled the W-88 Trident Warhead Program in 1992, the plant shifted from operations to closure. Surovchak eventually moved back into environmental restoration, continuing his work at the plant into 2003. When an impending layoff was on the horizon, he again planned to pack up everything he owned, this time with his sights set on The Last Frontier state.

"I knew I didn't have seniority, and I was cool with that. I came from consulting, where you're always working yourself out of a job," said Surovchak. "I knew I was on the layoff list, and I was ready to pack up my fifth wheel and head to Alaska."

This time, fate took a different turn, and Surovchak was offered a position with the newly created DOE Office of Legacy Management (LM). In early 2004, he became the LM representative at the former plant, now known as the Rocky Flats Environmental Technology Site, eventually becoming LM's lead to transition the site from EM. The Rocky Flats Site transferred to LM in 2005.

In 2006, in addition to becoming the Rocky Flats site manager, he inherited all the LM Uranium Mill Tailings Radiation Control Act of 1978 Title I and II Disposal and Processing Sites in Wyoming, which were transferring from EM to LM.

Surovchak also took over as site manager for the Pinellas County, Florida, Site in 2010. In 2016, portions of the site were given a conditional Site Rehabilitation Completion Order (SRCO). In 2018, LM received an unconditional SRCO (clean closure) for the 4.5 Acre Site, an adjacent property that was sold to a private owner in 1972. The closure order specified that DOE no longer had any responsibilities for the property, and the landowner had full and unrestricted use of the property. It was the first unconditional closure for an LM site.

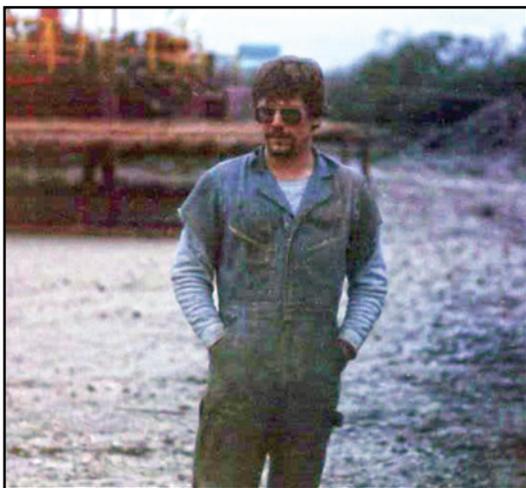
Surovchak admitted he will miss his Pinellas site work the most.

"It's a different site because the [federal] government doesn't own anything there," said Surovchak. "The county owns the property, and we operate in partnership with the county and all the affected property owners. It really works well."

Now that he's embracing retirement life, he's ready to give his full attention to home projects, hunting, traveling in his RV, and family activities.

"I haven't quite figured out what I want to do when I grow up," said Surovchak. "But I most look forward to having the time to do the things I want to do, versus trying to fit it into my work schedule."

With a long list of interests to explore and projects to work on, plus two young grandchildren and the expectation of more to come, Surovchak has a great path forward. ❖



Left: Scott shown in a picture taken in the early 1980s after he finished performing the dirty duty of "tripping pipe," or pulling drill string out of a wellbore to replace worn drill bits and then running it back in. Right: Environmental Team Supervisor Gwen Hooten presents Surovchak with a DOE Distinguished Service Award on Sept. 30, 2020.



Defense-Related Uranium Mines Program Is Key Addition to Navajo Nation 10-Year Plan

The U.S. Department of Energy (DOE) Office of Legacy Management (LM) [Defense-Related Uranium Mines](#) (DRUM) Program is joining a multiagency planning team to address uranium contamination on the Navajo Nation. The new 10-Year Plan is scheduled for completion by the end of 2020, and it identifies the next steps in addressing health and environmental risks associated with the legacy of uranium mining and milling on the Navajo Nation.

That legacy includes an estimated 523 abandoned uranium mines, four former mill sites, and numerous homes and water sources with radiation levels above natural background levels. Potential health effects include lung cancer from inhalation of radioactive gases and small particles, as well as bone cancer and impaired kidney function from exposure to radionuclides in drinking water.

The new 10-Year Plan builds upon two previous Five-Year Plans that covered 2008-2012 and 2014-2018. The plans trace their origins back to 2008, when Congress issued a directive for six federal agencies and various Navajo tribal agencies to create a Five-Year Plan to address uranium contamination on the Navajo Nation.

The federal agencies involved in this effort, in addition to DOE, included the U.S. Environmental Protection Agency (EPA), U.S. Nuclear Regulatory Commission, U.S. Department of Health and Human Services, and U.S. Department of the Interior. Tribal entities included the Office of the Navajo Nation President and Vice President, Navajo Abandoned Mine Lands/Uranium Mill Tailings Remedial Action (AML/UMTRA) Department, Navajo Nation Department of Health, Navajo Nation Environmental Protection Agency (NNEPA), and Navajo Nation Department of Justice. DOE also works closely with the Hopi Tribe.

As the newest 10-Year Plan team member, the DRUM Team brings expertise on abandoned uranium mines. DRUM is a partnership among DOE, federal land management agencies, state abandoned mine lands programs, and tribal governments to assess the condition of mines that provided uranium ore

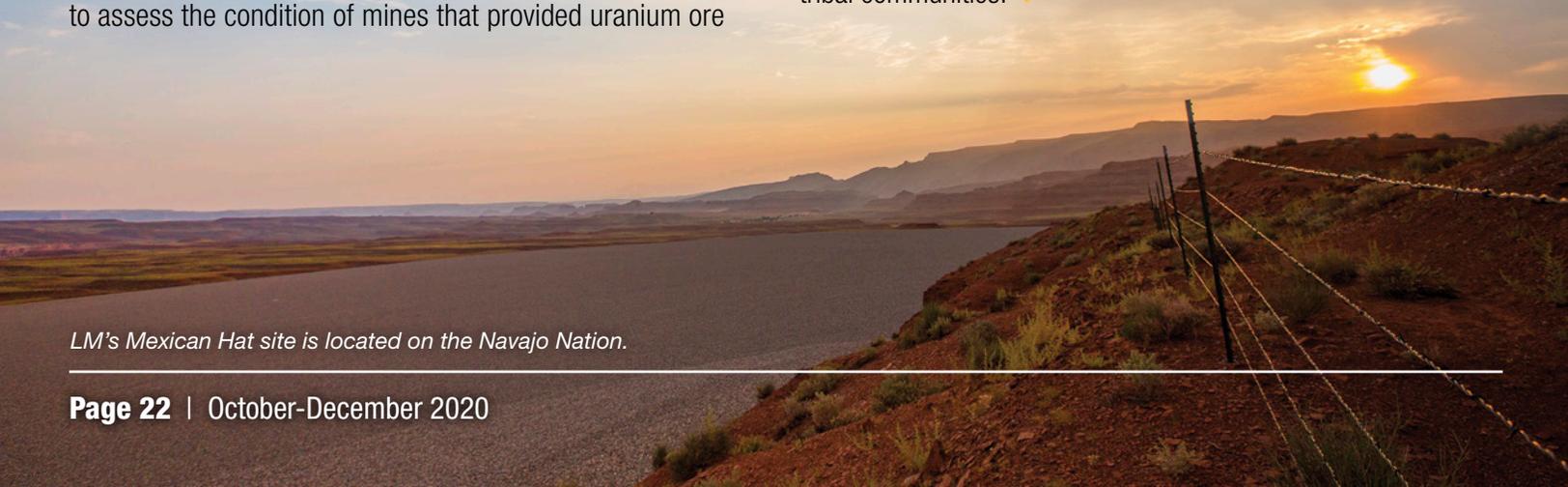
to the federal government. As of November 2020, the DRUM Team has identified and located nearly 1,700 abandoned uranium mines, conducted verification and validation (V&V) field visits to more than 1,200 mines on public lands. They have completed more than 1,000 final V&V reports that document site conditions, and developed more than 20 risk-screening reports on groups of mines throughout the United States.

As part of the 10-Year Plan, the DRUM Team will continue V&V activities, as well as safeguard hazardous mine openings for approximately 293 abandoned uranium mine sites located on the Navajo Nation. EPA and NNEPA have already entered into enforcement agreements and settlements for 230 uranium mines, including the Tronox settlement. DRUM will work closely with EPA, Navajo Nation AML/UMTRA, and NNEPA toward completing a new DRUM V&V work plan and risk-screening process based on risk scenarios and assumptions that are appropriate for the Navajo Nation. The team will also work collaboratively with Navajo Nation agencies to bolster their capacity to perform V&V, safeguard mining-related hazards, and provide long-term monitoring and maintenance of abandoned uranium mine sites.

DRUM participation in the 10-Year Plan is not LM's first involvement with uranium contamination on the Navajo Nation. LM has been involved since the first Five-Year Plan, due to its long-term surveillance and maintenance responsibilities for the four former uranium mill sites on the Nation: the Mexican Hat, Utah, Disposal Site; Shiprock, New Mexico, Disposal Site; Monument Valley, Arizona, Processing Site; and Tuba City, Arizona, Disposal Site.

While the past decade has witnessed significant progress toward addressing the legacy of the uranium industry on the Navajo Nation, there is still a lot of work to do. Together with all the 10-Year Plan partners, LM remains steadfast in its commitment to protecting health and the environment in tribal communities. ✨

LM's Mexican Hat site is located on the Navajo Nation.





Atomic Legacy Cabin Celebrates Nuclear Science Week Virtually



LM Public Participation Specialist Shawn Montgomery (left) and LM Strategic Partner Radiation Control Manager Michael McDonald record a video teaching students about radiation.

The U.S. Department of Energy Office of Legacy Management (LM) Atomic Legacy Cabin (ALC) in Grand Junction, Colorado, celebrated Nuclear Science Week on Oct. 19-23, 2020. Nuclear Science Week is an international, weeklong celebration of local, regional, and international innovations and careers in nuclear science. Communities from across the nation are encouraged to get involved by hosting local events. Nuclear Science Week went virtual this year, posting daily episodes themed around the five pillars of nuclear science: carbon-free energy, global leadership, transformative health care, innovation and technology, and space exploration.

ALC staff reached out to local middle school science teachers to take part in the online Radiation – Energy in Motion program. Included in the program were an educational packet and video designed to educate students about radiation, featuring LM Public Participation Specialist Shawn Montgomery and LM Strategic Partner Radiation Control Manager Michael McDonald.

ALC staff also provided printed packets and custom giveaway bags to seven middle schools in the Grand Valley, including private and nontraditional schools. Through this nontraditional outreach, LM virtually reached nearly 450 middle school students in their science classrooms.

“Given the pandemic this year, it’s certainly created some difficulty teaching STEM topics in both an in-person and online format,” said Maria Deuel, the coordinator of innovative programs for

Mesa County Valley School District 51. “We really appreciate LM creating and offering a virtual STEM program for all our middle school learners.”

The week kicked off with a public proclamation presented by the Mesa County Board of Commissioners. This is the second year LM has received proclamations from the city of Grand Junction and Mesa County officially declaring Nuclear Science Week.

“I’m always so impressed with the support we receive from our Mesa County Commissioners and the city of Grand Junction for this event,” Montgomery said. “This year has taught us all to be flexible, adaptable, and, most importantly, patient. This was a team effort, and we were glad we could still celebrate Nuclear Science Week this year and have the opportunity to virtually connect with STEM-minded students in the community.”

In a time of social distancing and virtual learning, LM is committed to continue its support of educators and students around the country who focus on STEM education. As communities continue to adapt, LM is committed to adapting with them. Now, more than ever, LM is committed to educating the next generation of STEM professionals. ❖



LM Public Participation Specialist Greg Kuntz receives the official proclamation of Nuclear Science Week in Mesa County, presented on behalf of the Mesa County Board of County Commissioners.



DOE, NNSA Celebrate Transfer of Nevada Sites for Long-Term Stewardship



In Sep. 2020, the EM Nevada Program transferred more than 7,200 documents and records to LM for long-term stewardship of 70 sites on the Nevada Test and Training Range, including the Tonopah Test Range. This photo, taken earlier this year prior to the COVID-19 pandemic, shows members of the team with the EM Nevada Program and lead environmental program services contractor, Navarro Research and Engineering, Inc., who shipped records to LM. (L-R) Marla Libidinsky, EM Nevada Program; Alicia Tauber and Mary Page, Navarro; Pamela Bailey, EM Nevada Program; Scott Kranker, Katharine Wickham, and Patrick Matthews, Navarro; and Tiffany Gamero, EM Nevada Program.



DOE and NNSA officials commemorate the successful transfer of 70 remediated sites on and around Nevada's historic Tonopah Test Range (TTR) from the DOE Office of Environmental Management (EM) to LM for long-term stewardship. (L-R) Dave Taylor, program manager, Navarro Research and Engineering, Inc.; Rob Boehlecke, program manager, EM Nevada Program; Under Secretary for Science Paul Dabbar; Dr. David Bowman, acting manager, NNSA Nevada Field Office; Ken Kreie, site manager, LM; and David Feather, vice president, Mission Support and Test Services.

This article was adapted from a previous article published in the DOE Office of Environmental Management Nevada Program News Brief (www.nnss.gov/pages/News/news.html).

Under Secretary for Science Paul Dabbar joined other officials with the U.S. Department of Energy (DOE) and the National Nuclear Security Administration (NNSA) on Oct. 20 to celebrate the transfer of 70 sites on and around Nevada's historic Tonopah Test Range (TTR) from the DOE Office of Environmental Management (EM) to the Office of Legacy Management (LM).

Representatives from the EM Nevada Program, LM, and the NNSA Nevada Field Office (NFO) took part in marking the occasion.

"The successful transfer of these TTR sites, well ahead of schedule, represents the fulfillment of a key strategic vision priority for the Department," Dabbar said. "It also demonstrates our continued commitment to bringing projects to end states quickly and efficiently, while maintaining safety and security."

Prior to the transfer, EM Nevada completed cleanup activities at sites on and around TTR where contamination had resulted from historic nuclear weapons testing and support activities.

The U.S. Atomic Energy Commission, a predecessor to DOE, began testing weapons systems, research rockets, and artillery on the TTR in 1956. These tests included transportation experiments to determine if nuclear weapons could be accidentally set off and produce a nuclear yield.

As part of the remediation process, contaminated soil and debris from these sites were transported to the Nevada National Security Site (NNSS) for permanent disposal. Upon completion of the cleanup, the remediated sites were identified for transfer to LM for long-term maintenance in perpetuity.

"In partnership with the Office of Legacy Management and our lead environmental program services contractor, Navarro Research and Engineering, Inc., the EM Nevada Program is proud to have completed the transfer of these sites for safe and secure long-term stewardship," EM Nevada Program Manager Rob Boehlecke said. "Completed in a matter of months instead of years, this major milestone supports our federal cleanup mission and shows firsthand what can be accomplished when a dedicated team works together to accomplish a goal."

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DOE, NNSA Celebrate Transfer of Nevada Sites for Long-Term Stewardship

Transitioning the sites from EM to LM involved more than 100 unique actions across 10 key focus areas, including the coordination of stakeholder commitments, the transmission of more than 7,200 documents and records, and the identification and transfer of existing infrastructure, such as fences and monuments.

“We commend the EM Nevada Program for its outstanding work, and we are excited to add TTR to our portfolio of legacy sites that played a critical role in America’s nuclear history. LM is committed to the protection of human health and the environment and to transparent communication with our communities,” LM Site Manager Ken Kreie said. “We look forward to carrying on the great work at this site to ensure public and environmental safety for generations to come.”

The transfer was officially executed on Sept. 30. Navarro Research and Engineering, Inc. supported EM Nevada and LM in administering the transfer process, with additional coordination from NNSA NFO and Mission Support and Test Services, the management and operations contractor at NNSA. ❖



Revegetation activities at the Tonopah Test Range.



The U.S. Atomic Energy Commission, predecessor to DOE, began testing weapon systems, research rockets, and artillery on the Tonopah Test Range in 1956.



Marie Curie: The Pioneering Physicist's Connection to LM

By 1920, French-Polish physicist Marie Curie had made an indelible mark on the sciences, but when an unexpected challenge led her to the United States, one of the places she specifically asked to visit was what is today the Canonsburg, Pennsylvania, Disposal Site, which is managed by the U.S. Department of Energy Office of Legacy Management (LM). This is the story of that unlikely path.

Curie's pioneering work on the theory of radioactivity and subsequent discovery of radium won her many accolades, but the financial cost of continuing her research on an element that had quickly become popular for its therapeutic properties was a formidable obstacle. At a cost of about \$120 per milligram (approximately 1/20th the size of a grain of salt), radium in 1920 was expensive, even by today's standards. As Curie's supply of the costly element began to dwindle, it threatened to leave her research hanging in the balance.



Marie Curie was the first woman to win a Nobel Prize.

Curie was a two-time Nobel Prize winner and the only person to receive the honor in two separate scientific disciplines — the latter a distinction she still holds today. In 1903, Curie, alongside her husband and another scientist, was awarded the Nobel Prize in Physics for the discovery of radioactivity, a term Curie coined herself. In 1911, she received the Nobel Prize in Chemistry for her discovery of polonium and radium.

Curie stood to profit from her achievements if she patented her findings, but she insisted instead that they be shared widely. As a result, she found herself without the financial means to buy more radium to continue her research.

"Marie Curie had always worked in very humble, very modest conditions," said Cliff Carpenter, site manager for LM's Canonsburg site. "She was very unselfish with her discoveries, refusing to have any type of intellectual property claim over them, so she really opened up her findings to the world. She did it for science, not for profit."

To continue her life's work, Curie set out on an international mission. Her path to radium procurement ultimately led her to a chemical plant 18 miles south of Pittsburgh at the current location of LM's Canonsburg site.

Curie's Visit to Canonsburg

American journalist Marie Mattingly Meloney, a trailblazer in her own right, had met Curie and was aware of the financial challenges of continuing her important work. Meloney was keen to raise funds for Curie, who she had come to admire. Leveraging her network from decades of reporting and as a prominent fixture in New York high society, she turned to her connections, where pockets were deep and fundraising potential was promising. In exchange, Meloney asked the renowned Curie to embark on a speaking tour in the United States.

Just as adverse to publicity as she was to profit, Curie reluctantly agreed to participate in the tour under several conditions, one of them being a guaranteed visit to the Pittsburgh-based Standard Chemical plant. It was one of the world's largest producers of radium at the time, taking Curie's lab production of radium to an industrial scale.

Curie arrived in the United States in May 1921 to embark on the speaking tour. With funding secured, she set off for her visit to the Standard Chemical plant, where she toured the facility and spoke with company leaders about their progress in the field of radium production. But while Curie had succeeded in sustaining her work, the Standard Chemical plant was destined for a different fate.



Marie Curie (second from right) toured the United States with Marie Mattingly Meloney (left) and Curie's daughters.

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Marie Curie: The Pioneering Physicist's Connection to LM



Marie Curie (center) tours the Standard Chemical plant in Canonsburg, Pennsylvania, with plant manager Louis F. Vogt (left) and company president James C. Gray (right).

Standard Chemical Plant Becomes LM's Canonsburg Site

As the only producer of radium on the East Coast, Standard Chemical Company transported its materials from Colorado's Paradox Valley to Canonsburg. However, in the early 1920s, Belgium identified sources of radium production materials that were far richer than those found in the United States, and Standard Chemical Company couldn't compete, so it shut down just one year after Curie's visit.

Canonsburg's Standard Chemical plant remained shuttered until it was purchased by Vitro Corporation of America. The new owners acquired the area for the radium and uranium salts left on the site from Standard Chemical Company's activities. Vito Corporation became a uranium supplier for the federal government from 1942 to 1957 during the Cold War effort. DOE held responsible for cleaning up the Canonsburg site in 1978, securely storing

its radioactive materials in a disposal cell. LM took ownership of the Canonsburg site when the office was established in 2003 and has since conducted regular monitoring and maintenance efforts to ensure the site remains protective of human health and the environment.

While Canonsburg is the only LM site that Marie Curie ever set foot on, her connection to the office and its mission extends far beyond the few hours she spent in the area.

"Our mission at LM is to support the legacy of the nation's nuclear activities. So, in a way, we're at the end of the cycle that Curie began. It's coming full circle — from radioactivity's discovery, to the management of its effects," Carpenter said. "Curie's research was conducted for the public good, and it's that inherent sense of public service that also connects Curie to LM. As a federal office, we're tasked with serving U.S. taxpayers, so we operate with a similar mindset, ensuring our sites are secure for the public and the environment." ❖



LM Fellows from Florida International University Visit Colorado

Two students from Florida International University (FIU) visited Colorado in October 2020 to learn more about long-term stewardship activities at sites managed by the U.S. Department of Energy (DOE) Office of Legacy Management (LM).

Olivia Bustillo and Eduardo Rojas, who are LM Fellows in the [DOE Fellows Program](#), were able to visit safely after FIU lifted its COVID-19 travel restriction ban.

“This trip was a great opportunity for the fellows to learn more about how their research will benefit long-term surveillance and maintenance in the future,” said Jalena Dayvault, program manager for the LM Fellows and FIU collaboration. “I am pleased that LM, our LM Strategic Partner, and FIU were able to make this happen for the students.”

As part of her fellowship, Bustillo, an environmental engineering student, is studying the reliability of apatite, a naturally occurring mineral in soils, to sequester uranium in groundwater. Rojas, a mechanical engineering student, is studying how different remote sensing technologies can benefit long-term surveillance and monitoring at LM sites.

The two started their Colorado visit by meeting with Brian Stewart, LM’s Safety & Health program manager, who provided them with a comprehensive overview of LM’s safety program as well as more detailed briefings.

“Like any visitors to our LM sites, we wanted to make sure that the FIU students could perform their site visits in a safe manner, especially in light of COVID-19,” Stewart said. “I had the pleasure of sitting down with them to discuss general site safety and, in particular, our field and office job safety procedures specific to the pandemic.”

Afterwards, the fellows visited several LM sites where they got a firsthand look at LM’s operations and maintenance activities in Colorado. They visited the Rocky Flats site, Rifle Disposal/Processing site, Grand Junction site, and the Grand Junction Disposal/Processing site.

One highlight of the visit was meeting with Ken Williams of the Lawrence Berkeley National Laboratory at the Old Rifle Processing site. Williams has been collaborating with LM to study how apatite can uptake uranium contamination from groundwater.

“The Rifle site has a rich history of providing research opportunities for graduate and undergraduate students,” said Tashina Jasso, site manager for LM’s Rifle site. “I’m excited that the apatite study we’ve been conducting in partnership with the DOE National Labs Network continues to provide enriching learning opportunities.”

Learn more about the LM Fellows program with FIU: [EM-University STEM Alliance Opens to DOE’s Legacy Management](#). ❖



Bustillo and Rojas tour LM’s Rifle site with Tashina Jasso (LM), Brackett Mays (LM Strategic Partner), and Ken Williams (Lawrence Berkeley National Laboratory).



Intern Profiles



Dejah Carlock

Dejah Demetrice Carlock is former U.S. Department of Energy (DOE) Office of Legacy Management (LM) intern. Carlock is a junior at the University of Arkansas at Pine Bluff, majoring in agriculture with a concentration in animal science. After graduation she plans to continue her education at the Tuskegee University College of Veterinary Medicine.

What did you learn during your LM internship?

My internship with LM taught me that DOE does more than set energy policy and handle nuclear material. They fulfill post-closure responsibilities for places that used to be waste management or uranium processing facilities. I like that LM is working toward making its sites eco-friendly and good for the environment.

Tell us about your internship project.

I wanted to focus my project on wildlife and environmental conservation. I built a STEM project activity to be used by students and educators inside and outside of the classroom. I created a three-panel display and an interactive slide show that demonstrates the importance of the environmental conservation work LM does at both the Monticello and Weldon Spring sites. The Weldon Spring site manages invasive plant species and has a large garden that exemplifies Missouri's native plants. The Monticello site in Utah is currently using motion-activated trail cameras to detect the federally protected Gunnison sage-grouse and to inventory wildlife species on the site. My objective was to use information from both sites to create a STEM activity that educates students on the roles plants, animals, and people play in a healthy environment.

What were the highlights of your internship?

The biggest highlight was making my presentations to LM senior management. They all seemed to truly enjoy what I put together, and that made me feel like my work really meant something. During my internship, I had to step out of my comfort zone and learn to ask more questions. I learned how important professional communication and networking are to my future career goals. I am very thankful for this opportunity. It was nice to be a part of something bigger than myself this summer.



Sierra Generette

Sierra Generette is a former U.S. Department of Energy Office (DOE) of Legacy Management (LM) summer intern. Sierra is a student at North Carolina Agricultural and Technical State University, majoring in environmental studies and working on a certificate in waste management.

Did your internship with LM change your outlook on your studies and future career path?

I learned so much about DOE from my internship experience. My project allowed me the opportunity to learn about the Nevada Offsites [NVOS]. In the beginning, when I received the overview of the project, I was not aware of the NVOS or LM at all. After meeting with my mentors Ken Kreie and Jackie Petrello, I discovered that the project was related to waste management.

What were the challenges of completing a virtual internship?

Working remotely can make it hard to build deeper connections, so I had to do my best to work around that. I'm a very bubbly person and love meeting new people, so I wish I could have met more people during my experience. This summer made everyone embark on a new "normal" and adapt to change. I was apprehensive about switching from an in-person experience to being online, but I made the most out of this opportunity. In the future, this will help me face change head-on and not let it deter me.

What were the highlights of your internship?

One of my highlights was connecting with the other interns and my partner, Dejah Demetrice Carlock. Although the internship was virtual, I didn't know I would have a great connection and a friend along the way. I loved being able to work with my mentors and Angelita Denny because they pushed me and helped me so much through this process. Lastly, I usually do not like presenting, but this experience made me more confident in that aspect. I enjoyed being able to inform people about my project and I brushed up on my presentation skills. Overall, I want to thank everyone that helped me during this internship. I felt so supported, and if I needed anything, there was always someone to help me. This internship helped me grow, advocate for myself, become more responsible, and gain new knowledge. ❖



LM Prepares to Shutter Last Government-run Disposal Site for Cold War Nuclear Material

At the height of the Cold War, Grand Junction, Colorado, was home to a uranium mill that processed the element for use in nuclear weapons and the nuclear industry. In 19 years of operation, the Climax Uranium Mill produced 2.2 million tons of radioactive mill tailings, a sand-like material left over from crushing ore to extract uranium. The mill tailings were considered ideal for construction materials at the time, and local citizens and contractors used them in construction, mixing the tailings with concrete or compacting them with other materials for structural fill in projects across town.

At the time, no one thought the tailings could be harmful to human health.

For nearly two decades, the U.S. Department of Energy (DOE) helped clean up the pockets of contamination in Grand Junction, storing collected material at the Grand Junction, Colorado, Disposal Site, which is now managed by the DOE Office of Legacy Management (LM).

“It seems crazy to consider today, but most people — even scientists — didn’t understand the dangers of this radioactive material,” said Gary Baur, a construction manager who oversaw the placement of the material in the Grand Junction disposal site, and later went on to serve as the site’s lead until his retirement in October 2018.

Located about 18 miles southeast of the city, the disposal site contains a cell designed to encapsulate and isolate contaminated materials. DOE completed cleanup in the community in 1998, and LM now oversees the site, which is the only government-owned, noncommercial disposal facility in the country still open to accept uranium mill tailings.

Now, due to expiring authorization, the facility must be permanently shut down no later than 2023 but will need to cease receiving material in Sept. 30, 2021, to prepare for permanent closure. The facility has sufficient capacity to stay in operation until 2048 based on annual averages. If additional service life is authorized, the facility could continue to provide a permanent resting place for any contamination yet to be discovered in Grand Junction or surrounding areas on the Colorado Plateau. After the facility is permanently closed, disposal of future material must be transported to a licensed, privately run commercial disposal facility more than 400 miles away, where disposal would come with a fee.

“There is still residual radioactive material in the Grand Valley community that is part of the nation’s nuclear legacy, but how much is left, we don’t really know,” said Bill Frazier, site manager of the Grand Junction disposal site. “While DOE no longer has the authorization to clean the material up, the LM team can protectively dispose of it at the Grand Junction disposal site at no direct cost to the community.”

DOE was ultimately successful in cleaning up over 4,000 properties in the Grand Junction and Mesa County region, despite obstacles in finding the contamination, as the radioactive tailings used in construction were often applied underground. It is both ubiquitous and invisible, which is why it continues to be discovered across Grand Junction today. In some cases, private landowners declined the DOE cleanup opportunity offered decades earlier, leaving current landowners to deal with the consequences. In other cases, city and county workers find the material when repairing roads, sidewalks, or other utilities.

Overall, in past years approximately 1,000 cubic yards of low-level radioactive material are identified and collected across Grand Junction, or enough to fill about 5,000 bathtubs. The material was temporarily stored with the Grand Junction Utility Department until the local government transports it to the Grand Junction disposal site for permanent storage.

Prepping for closure

Engineers estimated that all the radioactive material left over from Cold War activities in the Colorado Plateau region would be removed by 1998. [Legislation](#) was created to align with this timeline, authorizing DOE to support community clean up until then, and requiring the site to close when it was expected cleanup would be complete. But the radioactive material remained for various reasons, including the hidden nature of the material and residents’ resistance to clean up. In response, Congress extended the site’s original 1998 closure date three times, most recently deciding that the site would remain open until it fills to capacity, or September 2023, whichever comes first. Today, the site’s cell is approximately 95% full.

LM has already begun preparations for the site’s potential closure, notifying local stakeholders of the upcoming developments. A change in law would be required to prevent closure, and there is currently

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LM Prepares to Shutter Last Government-run Disposal Site for Cold War Nuclear Material

a bill in the U.S. Senate ([S. Rept. 116-98](#)) that would keep the site open until 2031.

However, no matter the outcome, LM is committed to continuing its stewardship of the site.

“At the very least, LM will submit a long-term plan for monitoring and maintaining the closed Grand Junction disposal site,” said Frazier. “So that in the long run, the site remains protective of human health and the environment.” ❖



The Grand Junction disposal site is the only government-owned disposal site available to receive radioactive uranium mill tailings, but expiring authorization could close the site as early as September 2021.



The Other 1%: How Bernadette Tsosie Amplifies Critical Voices at LM

Bernadette Tsosie won't readily admit she's a trailblazer, but there's no doubt that she forged a new path for Native American women.

"Throughout my life, I've always been under 1% of the population. I was often the only minority and woman in my classes, and when I graduated from New Mexico Institute of Mining and Technology in 1991, I was the first American Indian to receive a geology degree," said Tsosie, a site manager for the U.S. Department of Energy Office of Legacy Management (LM).

"We have a high dropout rate among Native students in college, even at New Mexico Tech. There would be maybe 15 of us there initially in the fall, and then by the spring, there would only be eight of us. Over 50% or more left school," said Tsosie.

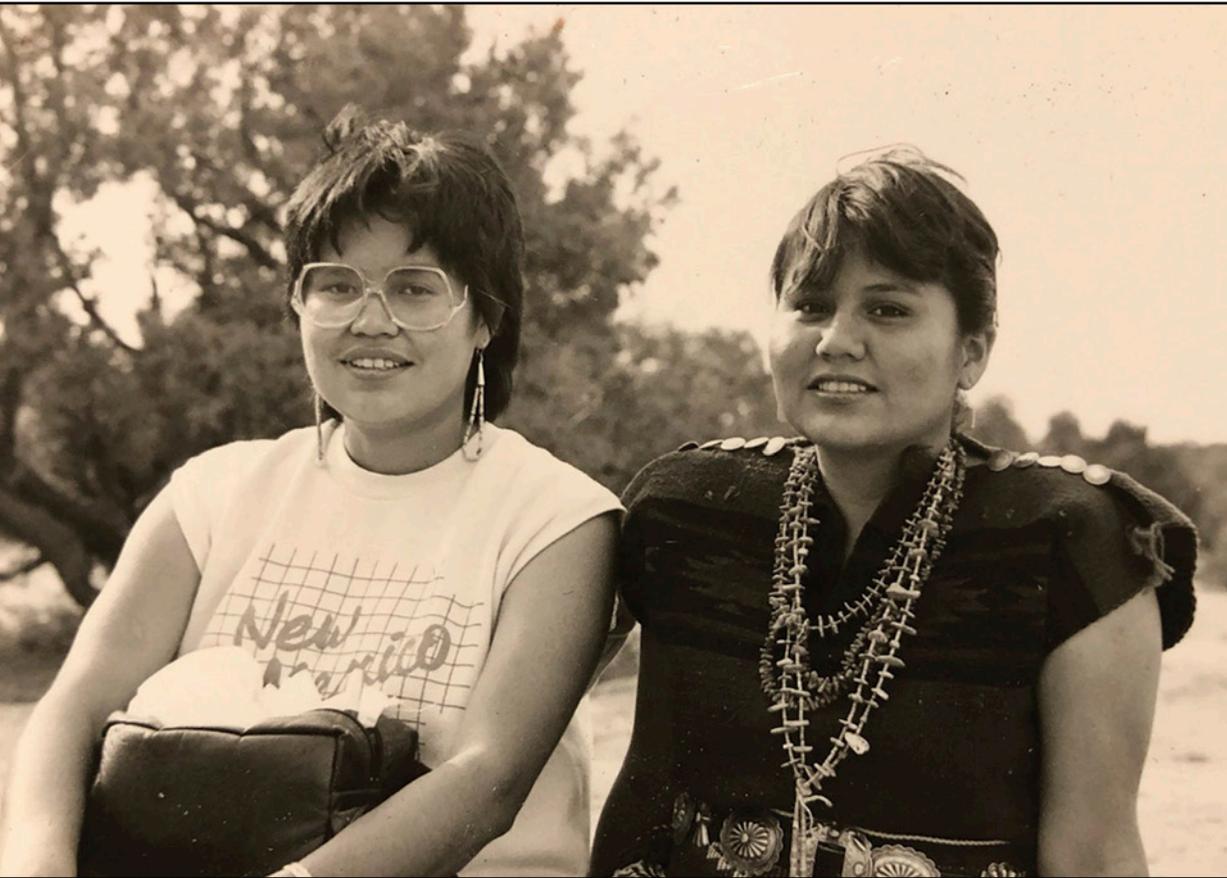
The disparities in science, technology, engineering, and mathematics (STEM) education resources and their impact on socioeconomically challenged minorities is accounted for in study after study. But among Native Americans, it's not just the access to educational resources that's difficult. There's another barrier to completing or even attending college — homesickness.

"They have a hard time adjusting to the lifestyle of being away from home because their focus has really been on family, and so a lot of them get homesick," said Tsosie.

She says she was able to overcome that obstacle because she had a strong role model — her mother — who had made the same adjustment when she attended college away from home.

"I felt homesick, too, but my mom kept telling me, 'You need to stay there,'" said Tsosie. "In fact, during our breaks, she would come down to see my sister and me so that

we didn't have to go back home. But she encouraged us by saying, 'This is a short time in your life. Once you're done, no one can take your degree away from you.'"



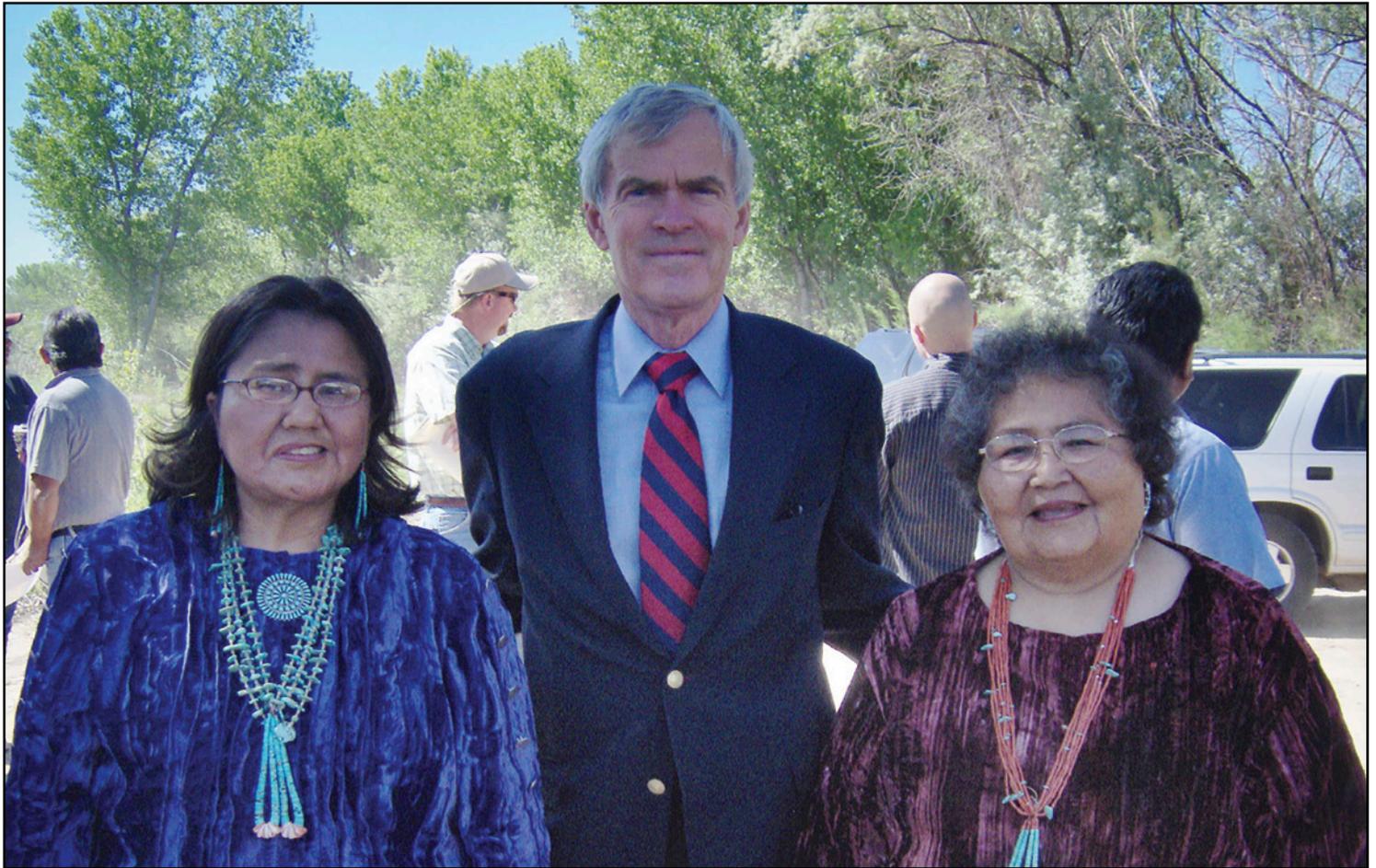
Bernadette Tsosie (right) and her sister, Bonita (left), grew up on the Navajo Nation.

After her undergraduate studies, she achieved another milestone by becoming the first Native American to complete her graduate studies at New Mexico Tech, earning a master's degree in geology. But those achievements meant overcoming challenges that many Native Americans still face.

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The Other 1%: How Bernadette Tsosie Amplifies Critical Voices at LM



Bernadette Tsosie (left) attended the 2009 Navajo and New Mexico San Juan Basin Water Rights Settlement celebration with Sen. Jeff Bingaman (D-NM) (center) and her mother (right).

Tsosie took those wise words to heart. She was raised on the Navajo Nation, near areas where uranium mining and processing once occurred. She soon became an authority on uranium contamination, developing a conceptual groundwater model at LM's uranium tailings site in Shiprock for her master's thesis. Today, Tsosie is the site manager of LM's Bluewater, New Mexico, Disposal Site, which is located 150 miles south of where she grew up. She has devoted her life's work to creating a cultural fluency among natural resource professionals about the complex history (such as treaties and policy challenges) that influence tribal land management both on and off tribal lands.

"I've worked with tribes my entire career as a federal employee and what I hope to do is make sure that the tribal governments

are engaged as we're implementing some of these ideas or remedies at the project level," said Tsosie.

As an LM employee, Tsosie is just one of a handful of Native Americans on staff that comprise 4% of the team, but their voices are highly valued in the office's nuanced work. Tsosie and all her colleagues are relentless in their pursuit of the organization's mission to protect human health and the environment.

To the younger, college-bound generation who may feel like the other "1%," Tsosie offers some wise words of her own: "It's hard now but it gets easier. A lot of times you're going to be that one minority in the room, and that's okay. But the experiences you're having now will prepare you for that and help you create a better future for yourself and your family." ❖



New Employee Bios



Giancarlo Deguia

Giancarlo Deguia has joined the U.S. Department of Energy Office of Legacy Management with the Archives and Information Management Team.

A veteran with 17 years of service, Deguia enlisted in the U.S. Army from his hometown of San Diego, California. He decided seven years of crawling in and out of foxholes was enough, so he transitioned to the U.S. Air Force part-time and spent the last 13 years in financial management and accounting on the weekends and working as a full-time corrections officer at a maximum-security prison in Pennsylvania.

He started his federal employment with the U.S. Department of Defense in January 2016 as a finance technician in the Pennsylvania Air National Guard.

He earned his associate degree in finance and accounting from Maxwell Air Force Base in Alabama, his bachelor's degree in communications from Robert Morris University, and was enrolled in an MBA program since 2018-19, until the COVID-19 pandemic halted progression in early 2020.



Ian Shafer

Ian Michael Shafer has joined the U.S. Department of Energy (DOE) Office of Legacy Management (LM) Uranium Mine Team. He grew up in Palisade, Colorado, and graduated from Colorado Mesa University with Bachelor of Science degrees in geoscience and environmental geology.

After graduation, Shafer interned with the LM Strategic Partner contractor, Navarro Research and Engineering, Inc., and assisted in developing the Defense-Related Uranium Mines (DRUM) Program. After his summer internship, Shafer was hired full-time as a field geologist in the DRUM Program and successfully executed validation and verification procedures while assisting with a variety of program directives.

Shafer was eventually offered a field team lead position under the same program. Continuing to develop his professional skills in leadership, he transferred to DOE and is serving as program manager, overseeing quality assurance for the DRUM Program.

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New Employee Bios



Kate Whysner

Kate Whysner has joined the U.S. Department of Energy Office of Legacy Management (LM) Environment 2 Team as a site manager. She grew up in the New York City area, but her extended family is based in northern New Mexico.

Whysner graduated from the McGill University School of Environment in Montreal, Quebec, where she focused her undergraduate research on the environmental effects of open pit mining. She then headed west to complete a master's degree in environmental science and engineering at the Colorado School of Mines.

She worked as a project engineer and then a project manager on remediation and civil construction sites across the country, including former industrial and mining sites, coal ash pond closures, and municipal projects. Her work included technical construction oversight, field engineering, project controls, proposal and estimate development, and client communications. Prior to joining LM, Kate was a site lead for the LM Strategic Partner contractor, supporting the Shiprock, New Mexico, Disposal Site. She loves music and mountain biking and is on a mission to visit and explore all 50 states.



Sara Woods

Sara Woods has joined the U.S. Department of Energy Office of Legacy Management (LM) Site Operations Team as a site manager.

She was born in Bossier City, Louisiana, at Barksdale Air Force Base, where her dad was stationed at the time. From there, she was raised in Grand Junction, Colorado, where she now lives with her husband and two daughters.

Woods graduated from Mesa State College (now Colorado Mesa University) with a Bachelor of Science in biological sciences in 2010. She began her career as an intern with the LM Strategic Partner contractor in 2008 and earned a full-time position in environmental compliance after graduation from Mesa State.

Her 12-year career in environmental compliance gained her knowledge and skills in environmental regulations, sustainability, project management, waste management, and, most importantly, collaboration and teamwork. She begins her federal career in LM with high hopes of making a positive impact and leaving the world a better place for her daughters and the generations to come. ❖

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