

ARTICLE

Tar Creek Super Fund Site Ottawa County Oklahoma

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"Feel free to tell everybody I'm the monster in your story but do not forget to mention in which chapter you created me." – Unknown

"It's the truth I'm after, and the truth never harmed anyone. What harms us is to persist in self-deceit and ignorance." - Marcus Aurelius

Ottawa County Oklahoma or Northeast Oklahoma is the location of possibly the most polluted land and water source in the world. The area was affected by Lead and Zinc mining from the 1930s-1960s, which left the towns of Quapaw, Picher, Commerce and Miami Oklahoma with a terrible legacy of suffering. Northeast Oklahoma also has 8 federally recognized tribes (Modoc, Miami, Wyandotte, Peoria, Shawnee, Eastern Shawnee, Quapaw and Ottawa). This is one of the highest concentrations of Indigenous communities in the world.

For more than 70 years, our communities have endured high levels of Lead contamination in our soil and water. Many attempts have been made, many academics have visited our

communities and there was an Off-Broadway play about Tar Creek or Picher (the center of mining during this period). So far, millions of dollars have been spent on cleaning up and researching the problem. A tribe or tribes have gained a lot of wealth from the effort and their lawsuits over the issue. The EPA has expended tens of millions on research and remediation. Many academics have examined the issue in depth. The state and federal wildlife departments have invested millions in research and restoration. But even now, we still have very high cancer rates and contamination levels in our waterways that damage the ecosystems that we depend on.

Arise Veteran Foundation had one of its volunteers write a grant for the

USDA to study the healing power of agriculture from a Native Ways of Knowing perspective. This resulted in: WAAR (We Are All Related) being submitted to the USDA/NIFA program. (The award Program: Enhancing Agricultural Opportunities for Military Veterans (Ag-Vets) Competitive Grants Program, Proposal Number: 2020-08047, Project Director: George S Briscoe, Proposal Title: The We Are All Related (WAAR)) was a 3-year project that aimed to train and certify Native Veterans, Veterans and their family members in agricultural science and remediation from a Native Ways of Knowing approach. This grant also covered the research of Industrial Hemp as a phytoremediation tool to improve agriculture, clean the soil and create jobs.

Arise uses a distinctive method to help the combat veteran recover and reconnect with their families and communities. The indigenous method is more comprehensive and more lasting. However, what happens when Arise Veteran Foundation achieves their aim of helping and healing the individual, but sends that veteran back to a damaging environment? How does the natural world around us impact our mental and physical health? In brief, most people would agree that the answer to this question is that the impact is significantly impactful.

Arise Veteran Foundation started this journey with this vision. Remediation is a complicated issue with many factors and political implications

and Northeast Oklahoma has a lot of politics: eight tribal governments, six city governments, one federal agency (GRDA) and one county government along with one watchdog community service organization. Arise aimed to recruit veterans and their family members to join a learning environment. The goal: teach participants about traditional methods of farming. Focus on ecosystems and not just gardening. Focus on soil health and not just fertilizer. Learn how to heal and restore soil for the benefit of the family unit.

- Issue #1: Connectivity to rural communities for online learning.
- Issue #2: Tribal Colleges and Colleges
- Issue #3: Issues trusting the federal and state governments.
- Issue #4: Access to correct information and information sources
- Issue #5: Peer-to-Peer outreach
- Issue #6: Peer-to-Peer instruction

Six distinct hurdles stood firmly in the face of our project. The Arise team decided to focus on the issues that we could manage. Issues 4-6. On our team we have experts that could provide valuable and correct information to our participants. We had Peer to Peer outreach and we offered Peer to Peer instruction.

Our project proved that to be sustainable, a project must have outreach. The American Veteran shies away from the traditional collegiate path for many reasons, political influence, being an aging student, being more

mature than other members of their cohort, etc. Veterans do gravitate towards peer-to-peer interaction and collaboration.

Arise, has focused on building a new army. An army of Eco-Warriors that are equipped with knowledge to create sustainable food sources within contaminated areas. The Native American population is largely located in areas within North American that have high levels of contamination from mining, oil production, gas production or heavy industrial waste. The WAAR project has provided Arise with tools to teach sustainable farming from a Native Ways of Knowing aspect, and it can be applied to any area of the United States.

Remediation is undoubtedly a complicated problem. It has many stakeholders, and the situation is always changing. "Going Green" is not a modern idea and it did not originate in an academic environment. Instead, the native people of North America "Lived Green" for generations and are the original ecological stewards of their traditional homelands. Industrialization and the short-sighted implementation of harmful practices have been contributors to the present situation of environmental degradation. Is this Progress? We are now at a point in time where we MUST change. Here at Arise, our WAAR program prepares our Eco-Warriors to rise and meet the challenges with a combination of native knowledge partnered with scientific innovation.

Arise has become the "Monster"

in the story. Our approach is the path towards healing not towards financial gain. This approach puts Arise at odds with many. Healing and caring for one another is the sustainable approach, the indigenous approach but it also the most difficult approach in our world today. Arise Veteran Foundation in partnership with Tseena Enterprises, L.L.C. (Native Owned, Hubzone Certified company) and Phoenix Harvest, (Veteran Owned Remediation company) are working to provide a safe and effective alternative to remediation. The companies tested the Tar Creek area for lead and harsh metals, they have applied their remediation techniques to the contaminated samples with great success. We have tried to share our work with EPA region 6 officials to little effect. Table 1 presents the test results from the Tar Creek area. Our position is: We believe that we offer a clear path to remediation in many areas of the country and we desire a path to fund our efforts.

This succession project was developed by Tseena Enterprises, a Native-owned company and Phoenix Harvest, a veteran owned company that specializes in environmental remediation and sustainable development. Utilizing Arise Veteran Foundation's WAAR initiative, the mission is to restore the lands and waters that have been damaged by mining and drilling activities.

Table 1. Test samples from Tar Creek Superfund site 16 Oct 2023

F.A.S.T. Laboratories/Research

Samples were analyzed as total solids using ICP/MS technology EPA 200.8 method.

SAMPLES	ARSENIC (ppm)	CADMIUM (ppm)	Lead (ppm)
Water before treatment	0.0129	0.324	2.27
Water after treatment	ND	0.00416	
% decrease	100% decrease	98.72% decrease	
Chat before treatment	0.0268	0.70	
Chat after treatment	ND		
% decrease	100% decrease		
Sludge before treatment	0		
Sludge after treatment			

The WAAR project was instrumental in forging new ways to look at community sustainability. Our project is a combination of traditional living methods with agriculture to ensure sustainability in remote locations. Utilizing industrial hemp, soil bean binders and clever engineering, the team devised a notable model worth of further discussion.

The model homes are designed from the Dine’ Tribes traditional Hogan. This model is resilient to harsh weather conditions and is easily constructed utilizing our products. We believe this model to be the future for sustainability in the world.

By combining traditional living with innovative technology and sustainable building materials, our model will bring families and communities together to work in harmony while maintaining food sovereignty and a healthy environment.

The models demonstrate the potential for restoration in areas of high pollution. The upper models depict areas of intensive mining such as Tar Creek. After our Bio-agent effectively cleans up the soil and water systems, we would use industrial hemp as a phytoremediation tool, collect the materials and use them for housing. The final model shows the steps of the process. Each community will have a micro grid system for sustainability. We are confident that our model will meet the needs and expectations of the Dine’ Tribe and other indigenous communities around the world. Our model is not only a solution for housing, but also a way of restoring the land and honoring the ancestral wisdom of the people.

We invite you to visit our websites and contact us for more information about our products and services. We would love to hear your feedback and answer any questions you may have. We hope to

collaborate with you soon and make our vision a reality.



