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PATTERNS OF POLLUTION:

A LEGAL GEOGRAPHY OF AMERICA'S TOXIC HISTORY AND THE ROAD TO REMEDIATION AT THE TAR CREEK SUPERFUND SITE

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PATTERNS OF POLLUTION:

A LEGAL GEOGRAPHY OF AMERICA'S TOXIC HISTORY AND THE ROAD TO REMEDIATION AT THE TAR CREEK SUPERFUND SITE

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ABSTRACT

Toxic sites across the United States have been sacrificed for progress and prosperity somewhere else. Far and wide, the communities that inhabit sacrifice zones and experience slow violence–or harm that happens over long periods–have little influence on regulatory structures that determine the remediation of their homes and homelands. This research answers two questions: how do the legal and regulatory structures of remediation perpetuate injustice and how effective is community activism at influencing these systems? Using legal geography and environmental justice frameworks, this research broadly analyzes the history and governance of toxicity in the United States, as well as coupling these findings with analysis of a community archive at the Tar Creek Superfund site in northeastern Oklahoma using reflexive thematic analysis. I argue that the lack of focus, as well as the lack of enforced procedures, on environmental justice within legal and regulatory frameworks reproduces injustice without acknowledging what community perspectives of justice are. Additionally, I assert that community activism is the primary driver of justice at polluted sites and that community involvement in the remediation process is necessary to move toward justice.

Keywords: legal geography, environmental justice, community activism, archival research, pollution

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INTRODUCTION

People are harmed by contaminated, or toxic, sites across the United States. The Environmental Protection Agency (EPA) describes contaminated sites as places where waste is dumped, abandoned, or "improperly managed" (US EPA 2017). As of April 2023, the EPA recognized 1,336 sites on the National Priorities List, which the EPA established to determine which sites require the most attention based on the severity of threat to the surrounding environment and population (EPA 2023). Many of these toxic places are a result of the same larger political economic system that structures uneven development in the U.S. and globally: capitalism. Under capitalism, private owners are motivated to turn a profit from surplus value driven by the commodification of nature. The benefits of profits from the extraction of natural resources are distributed unequally (Pearce and Tomb 2019). When places are extracted beyond ideal profitability, production moves elsewhere and leaves places abandoned with often toxic consequences.

Recent research attributes the socio-environmental consequences of extractive industries to the linked forces of global capitalism, imperialism, and inequality (Peša and Ross 2021). Mezzadra and Neilson (2017) contend that to understand 'extractivism' it is necessary to identify the economic, political, and social characteristics of its processes. As a result of capitalistic motivations, the environment and communities surrounding extractive industries are often harmed in the process. Broadly, toxic places across the United States have been "sacrificed" for the economic prosperity of private owners and those who hold power in the capitalistic system. In what has been dubbed 'sacrifice zones,' "the physical and mental health and the quality of life of human beings are compromised in the name of 'economic development' or 'progress' – but ultimately for the sake of capitalist interests" (de Souza 2021, 220). In short, there are places

across the country that have been designated, either explicitly or implicitly, as sites whose environmental degradation is accepted in the name of prosperity somewhere else. Hop Hopkins (2020) says that "you can't have sacrifice zones without disposable people, and you can't have disposable people without racism." Toxicity is rationalized for these places and the people who inhabit them for the sake of capital gain.

Toxic sites in the United States are also tied together by the legal and regulatory frameworks that govern them. Historically and systemically, the United States government has been an enabler of injustice through racism, sexism, classism, and other systems that reproduce disadvantages for vulnerable communities. The same legal system that has failed these communities broadly has also specifically facilitated the sacrifice of their homes and homelands, through a sort of 'slow violence.' Rob Nixon coined the term slow violence to describe these types of injustices, stating:

> The insidious workings of slow violence derive largely from the unequal attention given to spectacular and unspectacular time. In an age that venerates instant spectacle, slow violence is deficient in the recognizable special effects that fill movie theatres and boost ratings on TV. Chemical and radiological violence, for example, is driven inward, somatized into cellular dramas of mutation that–particularly in the bodies of the poor–remain largely unobserved, undiagnosed, and untreated. (Nixon 2011, 6)

Nixon argues that instances of slow violence lack the explosive and instant excitement that typically captures the public's attention. There is no trainwreck to watch without looking away. Instead, communities and ecosystems are slowly poisoned by toxic waste. Advocates with little power negotiate a legal system that has failed to hold their best interests as a priority. Further, the structural injustice faced by communities experiencing perpetual pollution is not easily eradicated even when communities draw attention to their unjust experiences. Davies (2019) reflects that contemporary slow violences are not invisible to those who experience them and that the persistence of pollution continues not as a result of communities' lack of action, but "because

those stories do not *count*, this rendering certain populations and landscapes vulnerable to sacrifice." In reference to Nixon's (2011) definition of slow violence as something that "occurs gradually and out of sight," Davies (2019) poses the question: 'Out of sight to whom?' focusing the narrative of slow violence scholarship on communities and individuals with extensive personal relationships with toxic violence. By shifting this perspective in environmental justice research and analyses of slow violence, it is possible to better examine and understand power dynamics and potential solutions. To address the long list of environmental injustices in the United States, it is essential to pinpoint the flaws in the legal and regulatory framework that either passively or intentionally open the door for these injustices. The next step is to empower communities with the ability to self-determine their futures through an amended legal and regulatory framework that prioritizes the perspectives of impacted communities.

The same system of governance that fails communities in sacrifice zones during the creation of toxic sites continues to fail them throughout the attempted remediation of these sites. Far too often, environmental clean-up is approached as a "bureaucratic spectacle" (Balayannis 2020, 785). The current bureaucratic spectacle of environmental clean-up in the United States magnifies injustice and is a function of colonialism. Liboiron (2021) asserts that pollution is the direct result of violent and ongoing colonial land relations. Therefore, if the same systems that permit pollution are responsible for its attempted remediation, these processes are defined by colonial land relations. Using a legal geographies perspective, the goals of my research are to expose the history of injustice at the Tar Creek Superfund site and offer proposals to improve insufficient remediation practices through increasing community empowerment during the clean-up process and beyond. This research will illuminate specific legal and regulatory frameworks that need to be amended by broadly examining toxic sites in the U.S. and examining

how community activism at Tar Creek in northeastern Oklahoma has impacted environmental justice throughout the remediation process.

THEORETICAL FRAMEWORKS

My research is situated in legal geographies and environmental justice literatures to better understand the impact legal and regulatory frameworks have on pollution and remediation as well as highlighting the disparities and injustices that stem from these governing structures. Additionally, these fields of thought provide foundational perspectives to understanding the extent that community activism influences the remediation process and investigating if increasing community activism creates more efficient and effective practices.

Legal Geographies

Legal geographies spatially analyze the reciprocal influences between sociocultural systems and legal systems. These methodologies consider *how* and *why* laws materialize as well as *how* and *where* they influence and mold particular places. Legal geographies investigate who is influenced by, who benefits from, and what determines the location of specific legal frameworks. Braverman et al. (2014, 11) assert that law and location cannot and do not exist separately. Laws are intended to regulate particular spaces, just as they are intended to regulate particular functions and physical materials. In early foundational texts in the field of legal geography, Blomley and Bakan (1992, 668) suggest the historical lack of collaboration between law and geography "foreshortens the critical reach and intellectual potential" of both fields. Laws, regulations, statutes, and even the concept of legality all exist spatially. They gain their

inspiration from specific spaces. Philippopoulos-Mihalopoulos (2021, 622) describes that the law "permeates every single iteration of geographical phenomena, reinforcing them, modifying them or annulling them." Although laws and places mutually constitute one another, the details of their influences are complicated and must be investigated further. Delaney (2016, 268) argues that conventional spatial approaches, or those without critical analysis, tend to erase injustice and eclipse its sources, while the interdisciplinary approach of legal geography provides a means to analyze injustice as a spatial matter. In this sense, legal geography offers a window into the spatial implications of laws with specific attention to their effects on equity and environmental justice, which is critical to this investigation.

Legal geography has mainly held a legal and spatial focus that centers human subjects (Buffery 2016, 17). For example, Simon (1996) investigates the formation of the Los Angeles Bus Riders Union and their lawsuit against the Los Angeles Metropolitan Transportation Authority for racial discrimination, Teresa (2015) examines the politics of rent regulation and corporate investment in New York City, and Collins and Kearns (2001) discuss the consequences of instating legal curfews on young people in public places. Current research in legal geography focuses on poverty, immigration, gentrification, and even human uses of outer space (Zhou and Liu 2022, Hynes 2023, Ramirez 2019, Marino and Cheney 2023). The literature on legal geographies offers a critical analysis of the legal system's influence on place and how places shift and change with legal and regulatory systems. Hogg (2002, 7) explains the importance of the examination of the law and its intended relationship with space. This pragmatic approach provides a well-founded strategy to examine the patterns that exist between where polluted places exist, why they exist, and what legal and regulatory frameworks influence their past, present, and future. Currently, there is a large body of quantitative and empirical research

examining the environmental impacts of toxic sites on ecology and water sources, but there is a void of information investigating the legal – and the lack thereof – that defines the ongoing socio-environmental effects of extraction, capitalism, and colonialism and perpetuates the legal mechanisms of slow violence and sacrifice zones. On its own, quantitative data, such as scientific studies produced on water and air pollution from specific polluted places, help determine the extent of harm, but such studies fail to examine the legal mechanisms that may have permitted pollution and potential legal remedies. Legal geographies address a weakness of scientific studies whose methods are primarily quantitative by examining the laws that allow for such places to exist and shape their journey to remediation. This perspective is essential in creating solutions to the ongoing circumstances for those human and non-human living in toxicity. Braverman (2011, 174) explores how law is often hidden within landscapes, making it difficult to understand the legal context of a place without digging deeper into its historical context as well. Methods of analysis in legal geography bring often-invisible legal frameworks into the light.

A central question in legal geography asks: how individuals affect the law based on where they are and vice versa.? Legal geographies including justice as a focal point are not new or foreign to this field, but an environmental justice focus remains rare. But, recent progress in the field has pointed researchers toward more environmentally focused topics. Orzeck and Hae (2019) argue that legal geographies can and should be used to produce holistic knowledge of legal structures. Turton (2015) highlights the importance of examining human-environment relationships in rural areas in legal geography literature. Delaney (2017, 668) explains the necessary expansion of topics and places explored within legal geography, which emphasizes the importance of its application in my research examining the environment, and more specifically

polluted environments, with this perspective. This invitation to explore the environment through the lens of legal geography opens the door to analyzing legal geographies from an environmental justice perspective. An environmental justice perspective offers legal geography a more complex analysis of power, vulnerability, and the consequences of environmental harm as it relates to U.S. laws and regulations on remediation.

My research attempts to forge a new path in the field of legal geography by critically analyzing the legal structures that enable extractive and polluting industries to exist and continue operating while degrading the natural environment and the realities of slow violence inflicted on people whose homelands are impacted by toxicity. Contextualizing law's influence on place drives my study of how polluted places relate to one another as well as how they are each uniquely situated for specific methods of becoming remediated. Producing well-rounded, comprehensive research on the patterns of pollution requires exploration of not only legal and spatial data, but also the relationship between them, while also considering other influences such as disparities of race, class, gender, and other measures of injustice.

Environmental Justice

Activist-related work and research advocating for environmental justice (EJ) have taken root during the last sixty years. Rachel Carson's 1962 book *Silent Spring* drew attention to the harm caused by the reckless use of toxic pesticides and the effects they have on ecosystems and human health; it is widely considered to have sparked the beginning of an explicit environmental movement. In 1987, the United Church of Christ published a report titled *Toxic Wastes and Race in the United States*, which was the first comprehensive research document focusing on the existence of hazardous waste and its proximity to racial and ethnic communities. The report was

inspired by Pastor Benjamin Chavis and it exposed the PCB disposal landfill in Warren County, North Carolina. In the following decade, Lois Gibbs, a mother, housewife, and subsequent activist led her neighbors in the Love Canal neighborhood in Niagara Falls, New York to organize against Hooker Chemical Company and the toxic waste left behind and hidden in the canal. While these examples became well-known in the public eye, the United States government passed landmark legislation and regulation on the environment. Even before these well-known and well-taught moments in environmental justice history occurred, less publicized efforts of community activism created positive strides for human health and community. For example, in the 1970s and 1980s groups of Navajo activists organized against uranium mining companies who desecrated the land; after tireless efforts, the Radiation Exposure Compensation Act was passed in 1990 (Voyles 2015). A pattern exists throughout the history of environmental law that demonstrates community activism is the key catalyst for positive strides towards environmental justice, human health, and remediation.

The body of research on legal geographies on its own is not enough to explain the complexities of injustice that exist in polluted landscapes, which is why my research also relies on environmental justice frameworks. According to the U.S. EPA, environmental justice is defined as "the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies" (Burda and Harding 2014, 380). More concisely, environmental justice by this definition refers to the equitable distribution of environmental burdens and benefits across all groups (McGregor 2018). Environmental justice in academia is an umbrella topic that houses many different bodies of literature and subfields in a variety of disciplines, such as political ecology, ecofeminism, environmental racism, indigenous studies,

spatial inequality, and many more foundational and emerging works. In her book *Intersectional Environmentalism*, a term she coined, Leah Thomas explains:

> I define intersectional environmentalism (IE) as an inclusive approach to environmentalism that advocates for the protection of both people and planet. IE argues that social and environmental justice are intertwined and that environmental advocacy that disregards this connection is harmful and incomplete. IE focuses on achieving climate justice, amplifying historically excluded voices, and approaching environmental education, policy, and activism with equity, inclusion, and restorative justice in mind. (Thomas 2022, 31)

This sentiment is reflected throughout most environmental justice scholarships as well.

Kohl et al. (2021, 646) examine environmental justice governance and state that it is "not undertaken by a monolith governmental agency; it is enacted by individuals and the decisions they make." With this type of environmental justice, the lack of enforced structure then relies on individual activists to influence the system from within. Environmental justice work has been carried out by individuals while government agencies have failed to adequately create a top-down approach to implementing and enforcing justice.

The Comprehensive Environmental Response, Compensation, and Liability Act, or CERCLA, established the Superfund process (42 USC Ch. 103). While not written into CERCLA, community activism and involvement are essential parts of the remediation process. In many cases, community activists are instrumental in alerting government agencies of the existence of pollution and the extent of its harm as well as advocating for remediation. The EPA claims that it "relies on community comments to understand local priorities and concerns during cleanup decision-making" and has suggestions and toolkits for communities available on their website as well as people to contact with questions and comments (US EPA 2015d). Contrarily, the official Superfund Cleanup Process is listed as "preliminary assessment/site inspection, National Priorities List site listing process, remedial investigation/feasibility study, records of

decision, remedial design/remedial action, construction completion, post construction completion, National Priorities List deletion, and site reuse/redevelopment" (US EPA 2015b). The only portion of this process that incorporates community involvement is a 60-day period when the EPA proposes a new site for the National Priorities List and allows the community to submit public comments for the Agency to consider (US EPA 2015e). It is important to note that none of these steps in the Superfund process mention or formalize comprehensive community involvement that allow communities to take part in the process beyond sending in a letter.

Arguably, the most well-known toxic sites in the U.S. and related EJ stories originate from grassroots activism. This pattern existed at Love Canal, Warren County, the Memphis Sanitation Strike, and many more (O'Brien 2022, Taylor 2014, US EPA 2015a). Unfortunately, the current structure of environmental law fails to allow citizens to formally participate in the remediation process of toxic places. CERCLA limits the ability of residents directly affected by Superfund sites to participate through rigid EPA agendas and timelines that fail to accommodate or acknowledge the unique contributions of spatial knowledge and experiences residents have to share (Graves 2015). Residents who live near pollution often have a much different perspective on pollution and the effects it has on their lives and their space than decision-makers who might not even live in the same state. Atari et al. (2011) conducted a study on local perceptions of pollution and harm near an environmental area of concern and state their findings suggest there is a need for "local health policies that incorporate local concerns and perceptions of how environmental pollution affects people's experiences and well-being. There is a necessity to involve community members as central participants in the process of policy-making." To fully understand the harm pollution poses to a community, it is necessary to understand the community's relationship with pollution and allow them a voice to share their experiences.

Further, it is even more necessary to include communities in the remediation process to incorporate their unique perspectives and lived experiences.

Most importantly, it is necessary to define and understand who the community activists are in polluted places. Masterson-Allen and Brown (1990) discuss how the toxic waste movement compares to larger social movements by distinguishing the participants in this movement from others. They write, "The movement against toxic waste is not composed primarily of highly educated, upper-middle-class people who are motivated by global concerns. Toxic waste activists are typically working-class and lower-class people, politicized initially by perceptions of danger to the health of their families" (p. 485). This contrast between participants in social movements more visible to the public eye such as the mainstream environmental movement or women's suffrage movement distinguishes the EJ movement from others. Born out of necessity, the environmental justice movement originates from grassroots activism in the 1980s in reaction to the growing number of environmental injustices across the country. Bullard and Johnson (2000, p. 560) write:

> The impetus behind the environmental justice movement did not come from within government, academia, or largely White, middle-class, nationally based environmental and conservation groups. The impetus for change came from people of color, grassroots activists, and their "bottom-up" leadership approach. Grassroots groups organized themselves, educated themselves, and empowered themselves to make fundamental change in the way environmental protection is administered in their communities.

Yet, even within academia, definitions of environmental justice and the goals of the movement are widely debated. Menton et al. (2020) argue that environmental justice work needs to move beyond mainstream frameworks towards approaches that incorporate more intersectional decolonial perspectives. Mainstream EJ frameworks in the U.S., whose definitions emphasize justice as it is understood in the context of the U.S. legal system, have been criticized

by Indigenous scholars for not accommodating the unique legal-political status of tribes in the United States (McGregor 2018b). Due to the limitations of mainstream environmental justice, there are barriers to its application in tribal contexts – which separate tribes from otherwise similarly vulnerable communities. McGregor also (2018a) argues that while existing EJ scholarship and activism has been pivotal to bringing awareness to systemic injustice, these frameworks can be strengthened by the significant contributions of Indigenous knowledge and paradigms of justice. Voyles (2015) explains the close relationship between Native Americans and environmental justice and highlights that the Native environmental justice movement began in 1492. McGregor et al. (2020) question the legitimacy of global and national legal mechanisms due to the continued harm faced by Indigenous communities and cite Indigenous environmental justice as the solution.

Similarly, Pulido et al. (2016) take the stance that while the environmental justice movement has halted new injustices from occurring or expanding, the EJ movement has failed to improve the current and ongoing injustices faced by vulnerable populations – citing that activists rely too heavily on regulatory frameworks to execute their goals. The researchers recommend radical change within EJ research and activism. They argue,

> What is needed on the part of the EJ movement is a fundamental rethinking of its attitude towards the state. Instead of seeing the state as a helpmate or partner, it needs to see the state as an adversary and directly challenge it. While the early EJ movement did this, over the decades it has been increasingly co-opted by the state and lost much of its oppositional content. It can regain its radical position by not only challenging the state, but refusing to participate in regulatory charades. The EJ movement should take a page from Black Lives Matter. *It's not about being respectable, acknowledged, and included. It's about raising hell for both polluters and the agencies that protect them.* Given the planetary crisis we are facing, we need a radicalized EJ movement more than ever.(2016, 17)

Unfortunately, many communities burdened by the injustices of toxicity will not find success in the current frameworks of remediation or justice. As stated earlier, the EPA has a priority list of 1,336 toxic sites, many of which have remained on this list for decades, and whose names will likely never be widely shared outside of local meetings and media sources. Despite the National Priorities List being available to the public (US EPAc), most contaminated sites will never become public knowledge for communities outside of those directly and indirectly impacted by the harm. Reviving the momentum of the early EJ movement and applying its methods to contemporary instances of injustice in polluted places is a clear path forward for effective EJ practice. Pulido et al. (2016) argue for regaining an oppositional stance to the state by denying involvement in the regulatory process. With an understanding that many community activists often come from small communities and do not wish to burn unnecessary bridges, my research argues that steps can also be made toward the radical EJ discussed by Pulido et al. (2016) by demanding a place for community influence and control in a structure that has historically been allowed to ignore it. My research contributes to the larger conversations in environmental justice scholarship by synthesizing radical EJ efforts of past decades with quieter efforts of community activists who work without widespread or long-lasting media attention and oftentimes no immediate results. Much of EJ's scholarship highlights the largest and loudest examples in its history, but there is power and purpose to be discovered through the voices of those who continue to exist with perpetual toxicity with no happy ending in sight.

Many of the most polluted places in the United States, including the Tar Creek Superfund site, have seen very little progress toward remediation in recent history. Despite this, community activism has played a crucial role in the progress that has occurred and offers glimmers of hope throughout more lengthy and ongoing attempts of remediation. My research argues that because

remediation frameworks do not guarantee just outcomes–and often do not focus on them at all–much of the efforts that result in more just outcomes owe more to community activism rather than governmental implementation of the law. My research highlights the resiliency of those who suffer environmental injustices. The contributions of this research include an analysis of the most influential activist efforts in unremediated sites and ultimately make a recommendation to amend the regulatory frameworks of toxicity to support the desires of impacted communities.

CONTEXT

Shortcomings of United States Environmental Law for Native Communities and Environmental Protection

> "Native people are certainly the ghost writers for the event and story of America" (Howe 1999, 123).

It is not difficult to imagine how every piece of United States law stems from colonialism. Howe (1999) asserts that even the U.S. Constitution was inspired by the oral storytelling of the Haudenosaunee, commonly known as the Iroquois Confederacy, and their stories of unification, peace, and togetherness. This historical account means that even the foundational texts of the United States are influenced by how colonizers perceived Native identity, and in this case Native governance. The United States government uses the law to disenfranchise the same cultures that inspired its existence.

Historically and contemporarily, United States law sought to categorize the subjects it governs, including other-than-human subjects. In environmental law, for example, ecosystems are not regulated. There are different laws, acts, regulations, policies, etc. that address each component of an ecosystem. The Clean Air Act for air, the Clean Water Act for water (and don't forget the Safe Drinking Water Act, too!), and soil is primarily covered by the Surface Mining

Control and Reclamation Act and the Comprehensive Environmental Response, Compensation, and Liability Act. In addition, there is a laundry list of relevant legislation that covers toxic substances, waste management, wildlife, and habitat conservation, endangered species, and much more. As if the siloing of these categories were not enough, even water quality and water quantity issues are covered by completely different bodies of law that seldom intersect. Rather than creating a legal and regulatory structure that holistically views human interaction and impact on the environment as a whole, United States law forces the analysis to be on smaller subsections of the environment without addressing the bigger picture and connectivity of the earth system as a whole.

Additionally, the structure of environmental governance in the United States creates convoluted systems that are oftentimes difficult to enforce. To clarify, federal laws, which are also called acts, are pieces of legislation that have been passed by both chambers of Congress and signed into law by the president, while regulations are rules developed by federal agencies (U.S. Senate n.d.). While regulations carry the full force of the law, they are easier to change than the laws which require amendment through the same process the law was originally passed. Federal laws are often enforced through federal agencies, such as the EPA enforcing the Clean Water Act and Clean Air Act, which are federal laws passed by Congress. In this sense, "legal frameworks" refer to the structure of written laws and regulations and how topics are addressed within federal code. "Regulatory frameworks" refer to the governmental structure that enforces law and regulates the processes of the law. The lines between the legal and regulatory frameworks often become blurry when federal law is amended over time. A major example of this is CERCLA and the Superfund process. At its conception, CERCLA established the Hazardous Substance Response Trust Fund, which is where the name Superfund came from, that

supplied funding to address polluted sites through taxes on petroleum, chemical feedstocks, and later, imported chemical substances as well as corporate environmental income (US EPA 2015f). Over the years, the funding structure of Superfund took many forms and it was amended, expanded, renewed, and expired. Ultimately, the tax revenues for Superfund expired and were not renewed by Congress in 1995. This means that instead of the Superfund trust being funded through polluting industries and appropriated through tax revenues by Congress, the burden shifted to Superfund appropriations coming from general revenues which are funded by taxpayers. The Superfund chemical tax was reinstated July 1, 2022 after 27 years of expiration (26 CFR § 52). Without a clear funding source year-to-year from 1995 to 2022, Superfund funding was left to the championing of U.S. Congresspeople to make sure revenues were appropriated, rather than there being dedicated funds to Superfund through specific taxes. Situations like this create a gray area between distinct legal and regulatory frameworks when legal structures change frequently and require regulatory agencies to shift their structures. These ever-shifting, convoluted systems of funding also take focus away from other aspects of environmental protection and Superfund.

Another shortcoming of environmental law is how pollution is addressed. In their book *Pollution is Colonialism*, Max Liboiron introduces the concept of the threshold theory of pollution which is based on a mathematical model created by two scientists named H. W. Streeter and Earle B. Phelps in 1925. Liboiron highlights that the Streeter-Phelps equation became the leading ideology for water pollution regulation as the scientists asserted that the self-purification of water sources is a:

> "measurable phenomenon governed by definite laws and proceeding according to certain fundamental physical and biochemical reactions. Because of the fundamental character of these reactions and laws, it is fairly evident that the principles underlying the phenomenon [of self-purification] as a whole are applicable to virtually all polluted

streams" (2021, 4)

The ideology that pollution below a certain threshold is safe, and that water sources can heal themselves of a small, yet measurable, quantity of pollution, is widely implemented in modern environmental law. Threshold theory is the foundation for the widespread phrase "the solution to pollution is dilution" which has been applied widely to environmental management practices and research (Floehr et al. 2013, Smith 2007, Walker 1982, Hull 2002, Hayworth and Clement 2011, Hasan 2019). Liboiron says the threshold theory approach is based on colonial land relations (2021, 5). In colonial land relations, the environment can be, and often is, collateral damage to profit and convenience.

This exact concept of the threshold theory of pollution exists in United States law within the Clean Water Act of 1972 which establishes the National Pollution Discharge Elimination System (NPDES). On the very first page of the Clean Water Act, it states its goal is to eliminate all pollution discharges into United States waters by 1985 (US EPA 1972, 1). Contrarily, the NPDES essentially legalizes water pollution through the Clean Water Act. The structure of the Clean Water Act passes authority onto state governments to manage the NPDES within their respective states and the states' agencies. Rather than preventing pollution from happening, the NPDES simply requires that the state government receive notice of the intent to pollute. In the end, the NPDES doesn't stop the occurrence of pollution; it simply allows state agencies to have records of pollution's existence. This concerning system only becomes more questionable in states with officials who take a more flexible approach to environmental issues.

For air quality, the Clean Air Act is the most important law in the United States. Under this Act, the U.S. Environmental Protection Agency sets the minimum air quality standards and requires state agencies to enforce those standards or require even higher standards if they choose. According to Rowell and Zeben (2021, 106), the Clean Air Act is often viewed as one of the

greatest achievements in the history of U.S. environmental law and the EPA predicts the Act prevents 230,000 early deaths annually. The Clean Air Act establishes the National Ambient Air Quality Standards. The NAAQS are a vital portion of air pollution regulation as they are to be set only by reference to health without consideration of cost (Rowell and Zeben 2021, 107). This essentially bars the EPA from conducting any cost-benefit analysis when setting these air quality standards. Unfortunately, the EPA only regulates a total of six pollutants under the NAAQS: ground-level ozone, particulate matter, carbon monoxide, lead, sulfur dioxide, and nitrogen dioxide. No other pollutant is relevant to the NAAQS other than those six. It is easy to assume that many more than six pollutants are impacting human and environmental health in the United States. The EPA officially recognizes 188 hazardous air pollutants (EPA 2015). This means that the EPA is authorized to use a cost-benefit approach with the other 96.81% of the toxic air pollutants recognized. Additionally, polluters who existed before the Act was enacted in 1970 were grandfathered into the regulatory framework and didn't need to comply unless they ever *increased* their air pollution. Many of these polluters maintained their functional lifetimes well beyond what was expected, even into the current decade, still polluting up to the same amount they were over fifty years ago.

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), also known as Superfund, is the federal act that addresses clean-up processes of hazardous sites. With all of its amendments, CERCLA is one of the most complex pieces of environmental legislation in the United States. As a rule of thumb, complex environmental laws only become more complicated in Indian Country. In 1984, the EPA, aware of this complexity, published the Policy for the Administration of Environmental Programs on Indian Reservations and set forth nine objectives for the Agency to consider regarding Tribal governments in

regulatory activities. For example, Item 4 states "The Agency will take appropriate steps to remove existing legal and procedural impediments to working directly and effectively with tribal governments on reservation programs" (Royster et al. 2018, 284). This is an infinitely important objective in consideration of the shockingly complex legal structure surrounding U.S. environmental law on reservation lands and with Tribal governments.

For example, the McCarran Amendment of 1952 changed the way suits related to water rights ownership and management functioned and waived the federal government's sovereign immunity (Royster et al. 2018, 566). Later on, in 1971, the Supreme Court heard a case that established that state courts have the authority to question and confirm any federally reserved water rights. Additionally, after another five years, the Supreme Court issued a ruling that clarified its previous holding and determined state courts can also inquire about the validity of Tribal reserved water rights. Because all reservations are federal lands held in trust by the United States government on behalf of individual Tribal nations, the McCarran Amendment gave states more authority and opportunity to question the rights that Tribal nations have to water resources. The Amendment also does not set an expectation of state cooperation in recognizing federally reserved water rights and therefore makes it much easier for state governments to be inhospitable to Tribal nations' use of natural resources. Without receiving prior confirmation of their federally reserved right to water on their nation's reservation, Tribal nations' rights to water resources may only be as strong as the state government believes them to be.

Another example of federal policy that impedes Tribal governments from participating fully in environmental regulation and remediation is what is known as the 2005 Midnight Rider. Dealing specifically with Tribal nations in Oklahoma, this Rider was tacked onto page 795 of an 800-page federal transportation bill sponsored by one of Oklahoma's U.S. Senators, James

Inhofe. The last-minute Rider limits the ability of Tribal nations in Oklahoma to receive treatment-as-state on environmental issues while expanding the authority of the state government to make environmental decisions that directly impact Oklahoma Indian County (Royster et al. 2018, 295). The Rider establishes a power dynamic between the state government and Oklahoma's 39 federally recognized tribes–who would otherwise qualify to receive treatment-as-state–which requires a "cooperative agreement" to be made any time a Tribal nation wants to make a decision related to any environmental statute. The Midnight Rider essentially requires Tribes to obtain permission from the State of Oklahoma to participate in environmental regulation. Historically, the state government is not known for its collaboration with Tribal nations or its environmental activism, so this leaves Oklahoma Indian Country at the mercy of the Oklahoma state government. Tribal environmental sovereignty does not exist in instances where the cooperation of another governing body is required to gain authority.

Reflecting on Item 4 of the EPA Policy for the Administration of Environmental Programs on Indian Reservations, between 1986 and 1990 the EPA amended all of the major environmental statutes at the time to include treatment-as-state for qualifying Tribal nations. While the Agency did follow through with its 1984 objective, it is not as simple as providing the opportunity for Tribal Implementation Plans when many barriers in U.S. law allow state governments to call into question a Tribe's resource rights and limit their ability to perform environmental regulation. This is far from a comprehensive list of all of the ways U.S. environmental law limits sovereignty, but it does showcase the colonial ideologies that run rampant within the law. Even in the 21st century, policies that strip Tribes of their sovereignty are still alive and well in U.S. and State legislation – the Midnight Rider and the McCarran Amendment are still the law of the land. Not only are the foundations of U.S. law based on

colonialism, but every effort to categorize, limit sovereignty, and capitalize on the environment are functions of colonialism that exist within the U.S. legal framework.

Vickory and Hunter (2016, 3) argue that environmental justice research has left much to be explored relating to Native American environmental inequities. For example, resource extraction and exploitation, climate change resilience, environmental health, and land use have drastically different implications when viewed through Native American environmental justice perspectives versus mainstream environmental justice research. By acknowledging this disparity that exists within environmental justice activism and research, it becomes increasingly possible to create solutions that benefit affected communities. In the case of polluted places, such work must center on whose land is polluted and what are the power dynamics that control the relationship with the land as well as the social, legal, and economic systems that motivate polluting industries. Todd (2016, 11) critiques mainstream academia's treatment of Native scholars and Native-focused research and the pressure to conform to colonial standards, stating "the revolution will be mediated." In this explanation of the current state of conformist standards, Todd (2016) signals that colonial thinkers and structures monitor Native perspectives to fit a colonial narrative they want presented. To go beyond the status quo of mediated justice, academic research must incorporate decolonizing methods, center Native thinkers in conversations, and work to dismantle oppressive and self-serving systems and goals that motivate the majority of research done within the walls of academia.

The Road to Remediation

The remediation of the United States' hazardous sites will not happen unless the radical environmental justice as discussed by Pulido (2016) is the focal point of the efforts and there is a massive consolidation of the legal and regulatory frameworks that currently complicate the

process. Some reforms reflect government awareness of the disparities that exist in the hazardous waste clean-up process under CERCLA. In 1994, former President Bill Clinton signed Executive Order 12898 which required the EPA and other agencies to implement environmental justice policies to increase the representation of and attention given to vulnerable populations experiencing harm (O'Neil 2007, 1087). On the twentieth anniversary of EO 12898, President Obama gave a speech renewing the federal government's commitment to environmental justice:

> Two decades ago, President William J. Clinton directed the Federal Government to tackle a long-overlooked problem. Low-income neighborhoods, communities of color, and tribal areas disproportionately bore environmental burdens like contamination from industrial plants or landfills and indoor air pollution from poor housing conditions. These hazards worsen health disparities and reduce opportunity for residents—children who miss school due to complications of asthma, adults who struggle with medical bills. Executive Order 12898 affirmed every American's right to breathe freely, drink clean water, and live on uncontaminated land. Today, as America marks 20 years of action, we renew our commitment to environmental justice for all. Because we all deserve the chance to live, learn, and work in healthy communities, my Administration is fighting to restore environments in our country's hardest-hit places. (Obama 2014)

When the 'right to live on uncontaminated land' becomes primarily a political issue rather than a well-founded legal precedent, it leaves a significant opportunity for individuals in power to dictate the future of polluted places and the people that live in them. For example, under the Trump Administration, the EPA became much more hostile towards environmental justice work. Kohl et al. (2021) investigate the environmental justice efforts of individual EPA employees during an Administration that was entirely unreceptive to justice-related work with no accountability. Without strong top-down organization and authority of environmental justice efforts, there will simply not be enough momentum to create positive and lasting change. Buckhoy (2015) states, "Executive Order 12898's effectiveness has been hampered by the absence of statutory authority, funding, and consistent implementation." This leaves the two options for improvement as either creating a more sustainable structure within the EPA that is

less swayed by political winds or moving beyond a twenty-eight-year-old executive order to dictate environmental justice efforts. By this point, there should have been proposed legislation and well-founded laws addressing environmental justice. The Executive Branch has not been consistent enough in its focus and motivation to address environmental justice throughout the five administrations since EO 12898 was authored.

Charles Lee, the primary author of the United Church of Christ's Toxic Wastes and Race report and current Senior Policy Advisor of the EPA, explains that after EO 12898 directed federal agencies to adopt environmental justice policies they failed or fell short in using key phrases like "disproportionate impacts" and synonymous definitions (Lee 2021, 2). Because of this, the agencies' actions fail to fully encompass environmental justice work. Lee goes on to explain the current state of environmental justice policy and action in the United States by referencing Jill Harrison's 2019 book titled *From the Inside Out: The Fight for Environmental Justice Within Government Agencies.* He expresses the reasons that bureaucratic culture obstructs environmental justice implementation in decision-making processes:

> Harrison describes how managers and staff resist, undermine, and disparage EJ integration. This resistance is based on premises such as: (1) environmental protection is colorblind, (2) bettering the environment overall means that the environment is improved for everyone, (3) EPA is a science agency while EJ deals with social issues, and (4) other "standard narratives" rooted generally in American normative societal values or in long-held premises that have shaped the environmental protection field for decades. (Lee 2021, 3)

This type of backlash is what is known as systemic injustice. In this case, the system itself that is supposed to be working towards justice is refusing to adopt measures to do so. Sarathy et al. (2020) state, "Toxic environments are often invisible or appear innocuous, and such spaces are more prevalent in our day-to-day lives than we either know or care to admit." When the reality is that polluted places exist right under most people's noses, and it has been public and government

knowledge that vulnerable communities experience the majority of harm and still nothing is being done, it becomes obvious there have not been effective solutions enacted.

Additionally, it is important to note that environmental justice covers more than the polluted sites that have already been identified or have yet to exist. Vulnerable communities are also targets of exploitative and extractive industries that have not yet happened. While the legal and regulatory approach currently addresses increased justice in the clean-up process, there are not many, if any, measures taken in the legal or regulatory systems that protect vulnerable communities from private industries polluting their communities at a much higher rate than less vulnerable communities. Change is necessary for environmental justice to become a reality in the United States. The current legal and regulatory framework does not make it possible due to back-and-forth pushback and lack of continuity in the approach. The constant failure of leadership to assert or appoint authority to oversee the implementation of justice within environmental clean-up *and* proactive methods of preventing future pollution leaves vulnerable communities at increased risk.

OVERVIEW

In Part 1, I showcase the findings of the archival analysis I conducted on a community archive hosted by an activist organization near the Tar Creek Superfund site. Throughout my analysis of Tar Creek's history, I explain the significance of each era of its journey to remediation. Part 1 is designed to illustrate the complexities and nuances of polluted places and their histories as well as explore the obstacles faced by community members who have to deal with toxicity and its consequences, mainly, the lack of justice present in the process. In this chapter I argue that the regulatory structures of remediation perpetuate injustice by failing to promote environmental justice. Building on the first chapter, Part 2 examines the role of

community activism throughout each phase of Tar Creek's history. In this chapter, I demonstrate the kind of actions that have promoted the most effective positive change and the role that activism informally plays in the remediation process. I contend that the creative efforts of community activists encourage justice by building strong community networks, developing equitable methods of information dissemination, and by being innovative with seeking out and using resources. In my conclusions, I argue that the formalization of community involvement in the remediation process is one effective method of improving remediation practices.

PART 1: REVEALING THE HISTORY OF INJUSTICE AT TAR CREEK

In early 2023, Rebecca Jim, the Tar Creekkeeper and Executive Director of Local Environmental Action Demanded, or LEAD Agency, wrote in the LEAD's weekly blog post:

> You have the right to pretty things. Nice things and long lives -- and deep sleep when rains come. We should know that the gauges are out there and the decision makers will keep you safe through the night. You have a right to the dignity of living your one precious life. You deserve to have nice things. Simple things like picnic tables in your beloved park. Finding frogs along Tar Creek. Dipping your toes in our creek and wondering if the fish will kiss them. You deserve fresh air in the morning –walking your dog and lingering to smell the fresh breeze. Agencies and corporations and farms and commissions and authorities have used all their authority against you. Your lives don't matter to any of them but YOU matter to me. And I want you to load yourself and your friends, get yourselves up on your feet. We have a fight to go to. A fight for your life. A fight for the life of this town. (Jim 2023)

Tar Creek is an 11-mile-long stretch of creek that runs from southeastern Kansas into Ottawa County, Oklahoma. The Tar Creek Superfund Site (TCSS) is one of the most polluted places in the United States (Lohan 2021). Located in northeastern Oklahoma, the history of mining for heavy metals in the region has contaminated the air, water, and soil. For generations, people who live near the polluted site have felt and seen the impacts of the pollution with no adequate solutions. Tar Creek is not an exception to the pattern of unjust burdens, toxicity, and frustration felt at polluted sites across the United States. Through its complex history of extraction, colonialism, corruption, attempted remediation, and activism, Tar Creek is an illuminating case study that showcases structural issues of injustice through many methods of the regulatory framework. By thoroughly analyzing Tar Creek's complicated past, present, and future, this research highlights the weakness of environmental regulation in promoting justice. This chapter details my careful analysis of LEAD Agency's Toxic Library. This chapter argues that the shortcomings of legal and regulatory frameworks at Tar Creek are the result of a lack of

organized focus on justice throughout the remediation process and its subsequent results. Through all of the EPA's Superfund plans, as well as the stated goal to "protect human health and the environment by cleaning up contaminated sites," there is not a top-down approach to implementing, ensuring, or achieving justice in these efforts. In this critical analysis of the EPA's involvement with Tar Creek, it is clear that justice was never implemented as a primary goal.

BACKGROUND

This region of the country is known as the Tri-State Mining District, named after the ore mined in northeastern Oklahoma, southeast Kansas, and southwest Missouri. According to a 1978 report by the United States Geological Survey (USGS), lead and zinc ore were first discovered in 1901. USGS Scientists state that at the start of mining endeavors in the region, most mines were shallow and ranged from 50 to 130 feet in depth. As years went on and mining became a more serious industry in the region, mines increased in depth to 385 feet (Playton et al. 1978, 4). At one point, the mines in this region produced 55% of the total zinc in the United States and were a crucial natural resource for the country throughout both World Wars. Through 1964, the mines produced 7 million tons of zinc and nearly 2 million tons of lead (1978, 6). By the end of 1964, all major mining operations were drastically reduced due to the depletion of remaining ore, and the majority of mines had already been abandoned.

Hydrologically, the ore that was mined in this region existed in the Boone Formation, known as the Boone Aquifer (1978, 8). Much deeper below the Boone Formation is the Roubidoux Formation, which is the principal water source used by residents of the region. Scientists established in 1978 that the Boone Aquifer had been highly contaminated by acid mine water that was no longer being pumped out of abandoned mines. They noted that any movement

of the contaminated water from the mines into streams or movement between the Boone and Roubidoux Aquifers would be “deleterious for water quality” (p. 29). The mine shafts and wells were predicted to overflow into Tar Creek, which runs directly through the mining district, in 1985 at the latest.

In March 1980, the Oklahoma Water Resources Board (OWRB) conducted a study on the water filling the mine shafts. The report states that “as predicted, abandoned mines began discharging highly mineralized waters into Tar Creek in late November 1979” (Adams 1980). This day is remembered by many who lived in Picher, Oklahoma, and surrounding towns at the time. Rebecca Jim, Executive Director of LEAD Agency, moved back to the area in 1978, one year before “the creek turned bad” and said she remembers the day it happened: “One of my students had been fishing the day before it happened. The next day all the fish were dead. It was a shock to see it ruined” (Meadows, n.d.). The OWRB notes that the mine water discharges stain Tar Creek due to ferric oxide which can be detrimental to all aquatic life but due to the mixing of these contaminated waters with Tar Creek, they have “no immediately apparent impact” (Adams 1980, 9). Oklahoma is known for its red dirt, which is where the state’s southern border, the Red River, gets its name. Oklahoma’s red dirt is only present in the central and southern regions of the state. Tar Creek’s red stain comes only from contamination of toxic metals (see Figure 1).

Figure 1: Photo capturing Tar Creek's visibly orange-red color. Photo taken October 2021 by Jenna Randall.

Tar Creek is not an isolated water source with no connectivity to other bodies of water. Tar Creek flows into the Neosho River (also known as the Grand River), which is dammed three times creating Grand Lake O' the Cherokees, Lake Hudson, and Lake Fort Gibson. The Neosho River is a tributary to the Arkansas River which connects east of Tulsa, Oklahoma. The Arkansas River is dammed in Oklahoma creating the Robert S. Kerr Reservoir before flowing through the state of Arkansas (see Figure 2). The Arkansas River joins with the Mississippi River before flowing into the Gulf of Mexico.

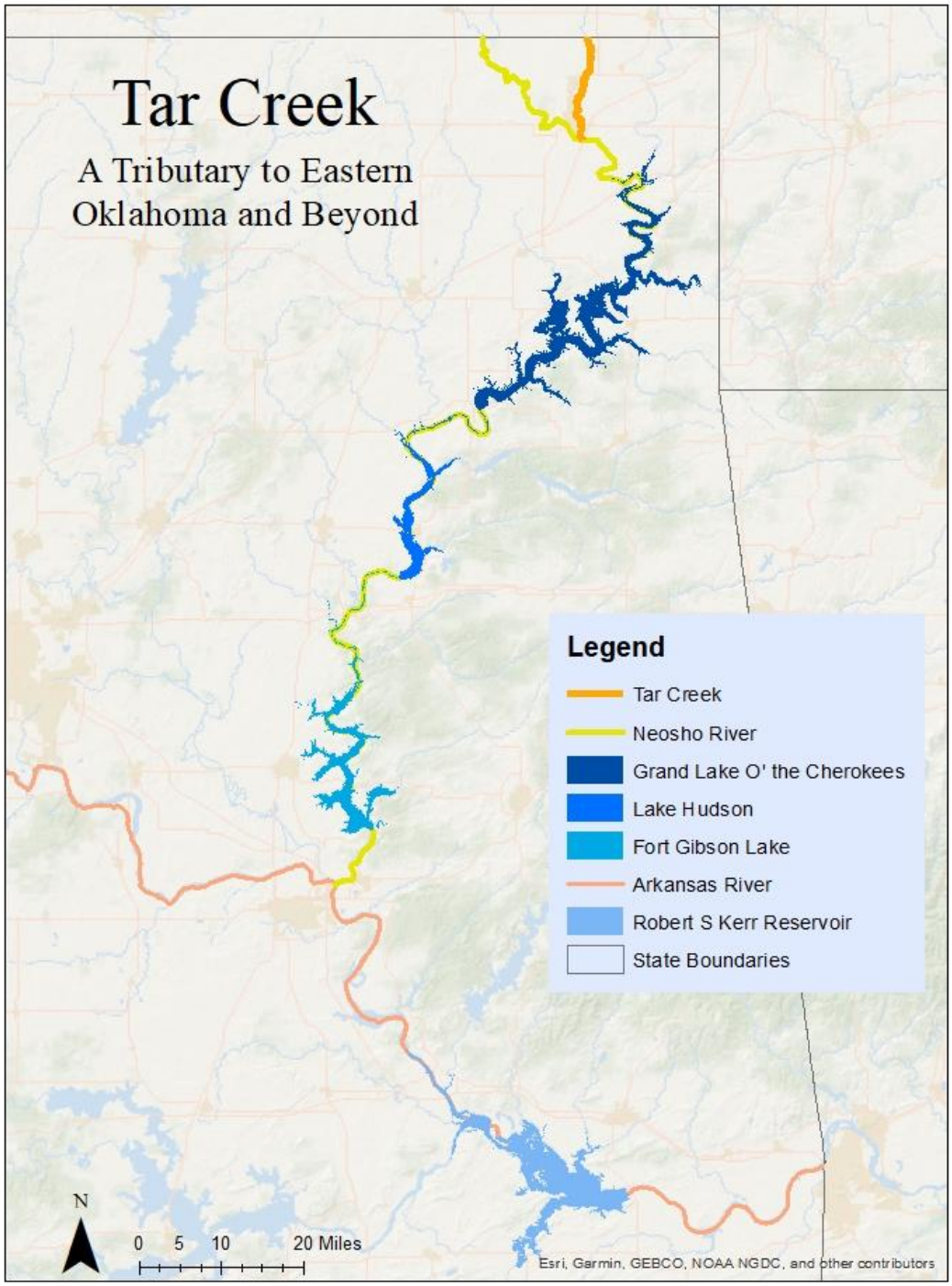

Figure 2: Map depicting hydro-connectivity of surface waters in northeastern Oklahoma. Titled Tar Creek: A Tributary to Eastern Oklahoma and Beyond. Map made in 2022 by Jenna Randall.

In addition to the ecological concerns of Tar Creek, there are equally worrisome land relations. Tar Creek runs through Ottawa County, Oklahoma, which is also the location of nine

federally recognized Native American tribes and their reservations. The entirety of the Tar Creek Superfund site exists on the Quapaw Tribe's reservation (see Figure 3). The colonial land relations of pollution discussed by Liboiron (2021) define this region's past and the current reality they face due to the mining industry considering the harmful environmental effects of mining as collateral damage and leaving a severely polluted landscape behind. The legacy of Tar Creek can be compared to the slow violences and sacrifice zones in other regions of the country, such as the Navajo Nation's relationship with uranium mining. The pattern of "wastelanding" mentioned previously exists here as well. Voyles (2015) discusses how places can be rendered "marginal, worthless, and pollutable" and how oftentimes wastelands are polluted because that environment and the people who live there are deemed pollutable. Repeating Hopkins (2020), "You can't have sacrifice zones without disposable people." Regions such as the Tar Creek Superfund site in the Quapaw Tribe's land and uranium mining sites in Navajo Nation are sacrificial lands whose extractions are rationalized for the sake of profit.

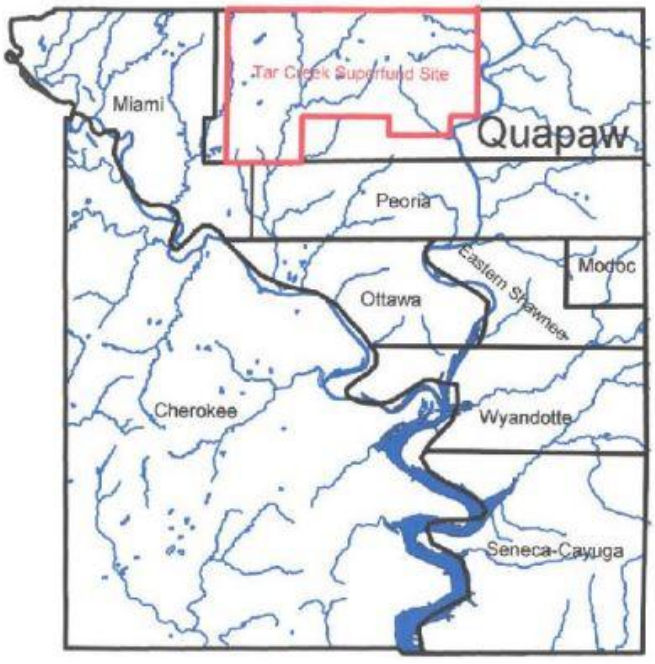

Figure 3. Map of reservations in Ottawa County and the boundaries of the Tar Creek Superfund site. Map from Tim Kent of the Quapaw Tribe's 2018 presentation at the Environmental Justice Forum in Dallas.

METHODS

To pinpoint the portions of remediation's regulatory frameworks that need to be improved and understand the role of community activism in the remediation process, I made it a central aspect of my research to work directly with those working towards remediation and environmental justice at the Tar Creek Superfund Site. I had the privilege of working with LEAD Agency, based in Miami, Oklahoma which has been on the frontlines of the remediation process for decades. Even more, I have the privilege of calling the people at LEAD my friends.

The primary data source for this research comes from LEAD Agency and its dedication to preserving the legacy of Tar Creek. Rebecca Jim, with the help of volunteers and other LEAD team members, has spent decades cutting newspaper articles, government reports, poems, photos, artwork, and every other form of media it seems, and collecting it in what they call the Toxic Library. The Toxic Library is a community-based archive held at the LEAD Agency headquarters (see Figure 4). Exploring the Toxic Library gave me the information necessary to conduct an archival analysis.

Figure 4: LEAD Agency headquarters. Photo taken in February 2023 by Jenna Randall.

Community-based archives, sometimes referred to as DIY archives, are valuable assets of knowledge and history within their communities. Gilliland and Flinn (2013) state that community archives are distinct in their importance and share that,

> "[Community archives] are driven by complexes of considerations such as social justice, a focus on common identities and experiences, and a desire to document communities historically underrepresented in mainstream archives. Certainly, community archives are more likely explicitly to foreground issues of power and politics in their archival endeavors than are mainstream archives."

This characterization identifies that community archives offer unique perspectives and research opportunities relating to justice, power, and harm. Zavala et al. (2017) argue that community archives allow their creators to autonomously maintain their collections which promotes the inclusion of marginalized communities and nurtures more diverse records. Community archives are grassroots efforts of knowledge preservation often motivated by a desire to record local histories and identities (Flinn et al. 2009). My experience with the Toxic Library affirmed these perspectives. The Toxic Library was full of profound lived experiences and stories shared in numerous ways. It is personal. LEAD Agency's community archive is home to sacred accounts of hope, sorrow, frustration, anger, praise, and longing. These records tell the story of Tar Creek that I would not be able to find elsewhere. They are paramount in understanding the uneven dynamics of power and perpetual injustice of the Tar Creek Superfund site.

My perception of the Toxic Library is that it does not have a clear beginning or end. It seemed to go on forever. It is mostly centered in one office of a home LEAD Agency rents as their headquarters, but there were bookshelves, filing cabinets, art hung on the walls, flyers pinned to the backs of doors, desks with different books, and so much more throughout the house. The entire place is full of treasures that told the story of Tar Creek in a million different ways. It would take years to explore all of the information contained at LEAD Agency. For my

research, I narrowed my focus to the filing cabinets that contained newspaper clippings, government reports, and LEAD Agency flyers going back to the 1970s (see Figures 5 and 6). My goal with this selection was to gain a comprehensive understanding of Tar Creek's history, interactions between government agencies and residents, and community advocacy through the years.

Figure 5: Toxic Library's filing cabinets of newspaper articles and other documents. Photo taken by Jenna Randall in March 2023.

Figure 6: One of the bookshelves in the Toxic Library. This one holds binders of government documents and reports. Photo taken by Jenna Randall in March 2023.

LEAD Agency welcomed me to come to explore the Toxic Library whenever I wanted to and could make the three-hour drive from my current home Norman, Oklahoma. Throughout the data collection phase of my research, I would drive to Miami during the day and then sleep at my parents' house in my hometown which is about 50 minutes away from Miami. Over several weekends in Miami and 35 hours exploring the Toxic Library, I estimate that I examined

between 10,000 and 12,000 documents and identified approximately 3,500 documents that may be relevant to my research questions. For the sake of time and resources, I gathered the data by taking photos with my iPhone camera of each document with caution to make sure I had the author, date, and publication whenever it was available. After collecting the data, I uploaded the photos to a secure Google Photos account and sorted the documents by year to aid in my analysis.

Following Braun and Clarke (2021), I conducted a reflexive thematic analysis. Reflexive thematic analysis acknowledges the subjectivity of the researcher as the guide to the research. The purpose of this framework is to view subjectivity as "valuable, not problematic" (2021, 12). Braun and Clarke describe a reflexive researcher as "thoughtful and (self)questioning, identifying and then interrogating their positions, values, choices, and practices within the research process, and the influence of these on knowledge generated; someone seeking awareness and new possibilities" (2021, 15). To accomplish this, I kept an ongoing reflexivity journal throughout my research process to highlight my thoughts and ideas.

Braun and Clarke (2021) give a six-step method for analyzing qualitative data. The series of steps includes familiarization through immersion, coding, generating initial themes, developing and reviewing themes, refining themes, and writing. For step one, I made sure to spend careful time in the Toxic Library doing my initial analyses of each document to determine if it would be valuable to my research. I was extremely generous in my initial browsing in determining value, and if there was even the slightest chance of value, I included it for further analysis. I immersed myself even deeper into my data when I sorted and organized it, which allowed me to gain a preliminary understanding of the timeline of major events and general themes.

For the coding portion of the analysis process, I planned on using NVivo, which Braun and Clarke (2021) mention as a good software to use for coding. NVivo is a qualitative analysis software that can be used for coding and many other qualitative analysis methods. Before this research, I had no experience using NVivo. After using the University of Oklahoma's license to download and gain access to NVivo, I began learning how to use the software. I watched approximately five videos and read countless articles to address the problems I was facing. Because I used my iPhone to take photos of my data sources, the photos were saved as .heic files which were incompatible with NVivo's software. To use NVivo to code my data, I would have to convert all 3,500 images of documents from .heic files to .jpeg files. At this point, I decided to move on from NVivo.

Braun and Clarke (2021) discuss that the coding process is supposed to be a helpful tool for the researcher in organizing data and gaining meaning from the themes developed in the process. They also elaborate on the many forms of technology that can be used to code data – from handwriting codes using sticky notes, uploading documents to Microsoft to use the comment feature, using PDF sticky notes, and more (2021, 65). I decided to pivot my coding process to using Google Spreadsheets. I created a new sheet for every year I gathered data for, so each Google Photos album has a corresponding sheet. Each sheet is partitioned into three columns: document name, codes, and important notes. The important notes section became a crucial tool for me throughout the process to keep significant quotes, make connections, and write notes to myself. Using a spreadsheet also made it possible that I could utilize the Control+F feature to quickly find and locate specific codes and easily search through my data.

It's important to note that LEAD Agency is focused on a myriad of environmental issues that impact the region – not just Tar Creek. Throughout my data collection, I came across

thousands of documents that were not related to Tar Creek at all. This means that in some years there is more data than others. The Toxic Library is also not a complete archive, rather, it is a living scrapbook of sorts made up of pieces of a story the LEAD Agency team thought were special. For the most part, I kept the scope of my research into the history of Tar Creek and its remediation on what I could find in the Toxic Library. I chose to do this so I could attempt to view Tar Creek from the perspective of a community activism organization watching pollution remediation take place over decades.

I also want to note that although this research is framed as a Master's thesis, as I was conducting this research it didn't feel like it to me. This research feels far less rigid and technical than I expect a Master's thesis typically does. There were many times throughout my analysis that I was brought to tears by the reality faced by the Tar Creek community. I felt their hope, and also their lack of hope, their anger, sorrow, confusion, bitterness, acceptance, and every range of emotions that exists. I want to recognize the humanity of the people included in this research. Their lives go beyond the small portions featured here in my research.

RESULTS

The Making of a Superfund

Many decades of mining heavy metals left a significant amount of mining waste, known as chat, remaining. The mining waste was formed into large mounds known as chat piles and many of the piles are around the former mining towns of Picher and Cardin, Oklahoma (See Figure 7) (OWRB 1983c).

Figure 7. Scene of chat piles alongside a road in Picher, Oklahoma. Photo taken by Randy Peppler in November 2018.

There aren't words to describe how the chat piles loom over the landscape without seeing it for yourself, but the chat piles can legitimately be seen from space (See Figure 8). Some of the chat piles are 100 acres wide at the base and stretch 200 feet into the sky. The toxic skyline of Picher serves as a constant reminder of the region's past industry.

Figure 8. Screenshot of Apple Maps satellite of northeastern Oklahoma and southeastern Kansas. The thick white line shows the state border. The white abstract shapes depicted are chat piles. There was no GIS technology such as remote sensing to obtain this image. This is satellite imagery accessible to anyone with a phone.

Beneath the surface of the earth, under the weight of the chat piles, abandoned mine shafts are full of approximately 100,000 acre-feet of contaminated acid water, which calculates to around 26 billion gallons of contaminated water (Adams 1980, Lyons 1994c). Before the mines closed, water was continuously pumped from the mine shafts to allow mining work to go forward (See Figure 9). Some literature indicates that mines in Oklahoma pumped an average of 9,000 gallons of water per minute out of the mine shafts, which is about 13 million gallons per day (OWRB 1983b).

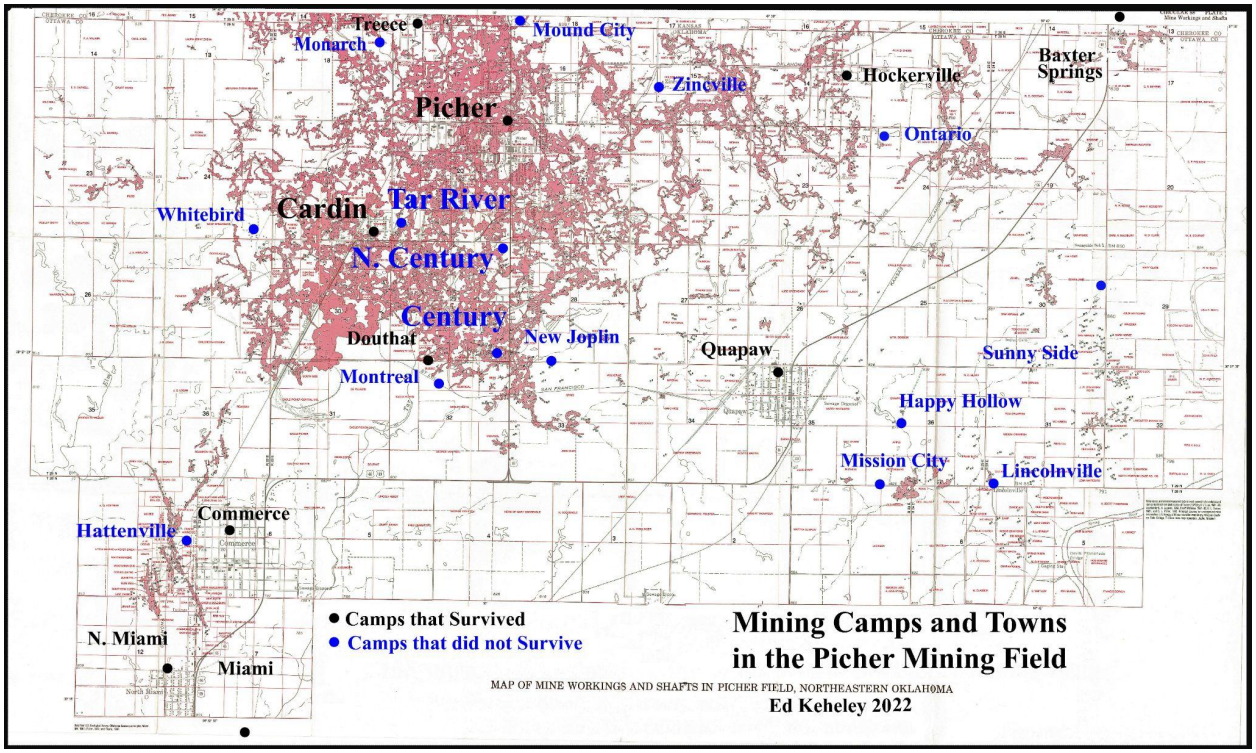

Figure 9. Map titled Mining Camps and Towns in the Picher Mining Field. Made by Ed Keheley in 2022. Everything depicted in red is an underground mine shaft.

In June 1980, Oklahoma Governor George Nigh formed the Tar Creek Task Force to investigate concerns regarding surface and groundwater contamination related to abandoned mines (OWRB 1983a). As early as 1983, scientists in the state of Oklahoma had concerns that the Roubidoux Aquifer, which is between 900-1000 feet below the surface and used as the

primary drinking water source, was being contaminated by acid mine water found in the Boone Aquifer, which is positioned in the same formation as the ore that was mined around 300 feet below the surface (OWRB 1983a). In the Executive Summary of the Task Force's work, they note that the State of Oklahoma entered into a cooperative agreement with the EPA in 1984 to clean and plug abandoned wells into the Boone and Roubidoux Aquifers and mention this work was completed the following year in 1985 (OWRB n.d.). After this was completed, remediation at the Tar Creek Superfund Site was radio silent. Once the wells involved in this project were sealed, the remediation was thought to have been complete.

A Legacy Called into Question

As the years went on, the reputation of Tar Creek became more nuanced. The history of mining in the region was a source of pride for former miners and their families. Jim Armstrong, a local expert on the mining district wrote, "The years of mining in the once great Tri-State Field were delightful. One had a job to do. He could get something to eat, have a little money to spend, and most of all, have a sense of accomplishment. How good it was!" (Armstrong 1988). Even so, miners and locals alike were aware of the threats that came with mining and its waste. Armstrong (1988) goes on to discuss how the finest particles of a chat can behave almost as gas particles in the air, and how when these particles are breathed in they can result in an illness known as "silicosis". Silicosis is a disease common among miners, but in 1988 there was talk of silicosis in people who had never been down to the mines. Physicians even reported that a twelve-year-old child had a case of silicosis.

In 1993, the State of Oklahoma opened a new state agency called the Department of Environmental Quality (ODEQ) to consolidate the environmental functions of the State into one

agency (Ford 1993). At the same time, residents just south of the Superfund boundaries in Commerce, Oklahoma experienced questionable water quality standards. The City of Commerce's water is reported to taste and smell bad, as well as stained laundry yellow, but the Mayor says it is completely safe (Stewart 1993a). There was a high-pressure pump installed recently at a nearby municipal well that stopped working for two months that summer. One week later in Miami, Oklahoma, four miles south of Commerce, Rural Water District No. 4 ignored a boil order issued by ODEQ resulting from bacterial contamination from fecal coliform in the water samples (Garton 1993a). The president of the water board cited that he had "72 hours, by law, before we have to make that boil order public" and that he wanted to have more tests run before they announced the order to users of the water district. A mother of two boys who had been sick with flu-like symptoms in the middle of summer remarked, "That's why they're sick" when she heard the news of the notice (McCarthy 1993). On Friday morning that week, the water district announced the boil notice because the second round of tests wouldn't be back until after the weekend, exceeding the 72-hour window (Garton 1993b). Later that summer, recommendations came out from ODEQ that anyone using wells that have been affected by flooding need to disinfect and test their wells before use to prevent the spread of fecal coliform bacteria contaminating the water source (Stewart 1993b). While this case of water contamination was independent of the Superfund site's toxicity, this foundation of bureaucratic scapegoating of responsibility foreshadows what the future holds for residents near the Tar Creek Superfund Site.

At the beginning of 1994, residents in northern Ottawa County still had concerns with the water quality–but this time from a different source. A concerned group of 25 residents from Picher, Quapaw, and Commerce met together and formed the Tar Creek Steering Committee. This group of residents raised their concerns that heavy metals from the abandoned mines were

contaminating their drinking water with toxic minerals (Lyons 1994a). County Commissioner James Graves, who was elected as Vice Chairman of the Steering Committee, stated in frustration that federal and state officials were not doing enough to ensure clean drinking water for residents and that they would simply "let Mother Nature take care of it" ("They would" 1994). The following week, officials from the EPA and ODEQ met with residents to discuss the recent Five Year Report of the Tar Creek Superfund Site. At this meeting, residents were reassured that drinking water was tested within safe ranges despite the color, odor, and taste. There was a consensus of concern among government officials and residents regarding what would happen if the contaminated Boone Aquifer seeped into the Roubidoux Aquifer through drilling holes (Lyons 1994b).

At the end of April 1994, it became public knowledge that Donald Ackerman, a field sanitarian at the Indian Health Center wrote to the EPA in January earlier that year alerting them that an alarming 34% of children tested under the WIC food program had tested for elevated blood lead levels. In addition to the statistic of unacceptably high blood lead levels, Ackerman mentioned that the leftover chat from past mining endeavors could be the culprit for what was contaminating the children in such high numbers (Lyons 1994c). Up until then, there was not much research done on chat to understand any potential threat, but after Ackerman's letter, the Agency for Toxic Substances and Disease Registry (ATSDR) began investigating toxicity in Ottawa County.

The potential threat of the chat was not approached universally across the mining district. The Tri-State Mining District is split between two different EPA Regions. The Oklahoma portion belongs to Region 6 and the Kansas and Missouri portions belong to Region 7. Monty Elder of ODEQ stated, "Due to different districting, different policies and studies have been undertaken.

While we didn't feel that chat piles were causing a significant problem, Region 7 was taking a different approach" (Lyons 1994d). This is in reference to Region 7's studies that determined waste rock and chat piles were the source of water contamination and began working to remediate the toxic site. Meaning, two different EPA Region Offices experienced the same problem in the same geographic region, yet had no communication or collaboration and were not accountable for approaching the same issues or sharing the same techniques.

EPA Region 7 and the Missouri Health Department released results from their study indicating that blood lead levels were higher in children located near mining sites–which are of the same mining field as the Oklahoma portions. While the report was not conclusive on the cause of high lead levels in children, it was widely suspected mining waste was the cause (Lyons 1994c). Later that summer, Gary Moore of the EPA said he would begin a project that would test the soil for lead in areas where children were most likely to congregate, such as daycares, playgrounds, parks, etc. At the same meeting, Monte Elder of the DEQ reported they received a petition from 190 residents from Miami concerned about their water source, but assured the samples meet primary drinking water standards despite looking and tasting bad ("EPA to check" 1994).

In late August 1994, EPA began gathering samples of soil around areas with heavy traffic of children. Gary Moore of the EPA said that the results of this study would determine the EPA's next steps. If the tests came back with high lead levels, the next step was said to be digging up the top two to six inches of contaminated soil, refilling it with new fill, and planting new grass seed. Moore also mentioned that even if the soil did test positive for lead, there was no way of being certain the soil was the cause of high blood lead levels in children because lead was everywhere ("EPA begins testing" 1994).

This era of Tar Creek's history is framed by questions, doubts, and dismissiveness from government agencies and officials. From the beginning, it was clear that officials in Ottawa County and the State did not make the health and well-being of residents their highest priority. The mid-1990s brought about a marked change in sentiment towards the mines. Pride for the region's past heritage remained, but at this point, the actual practice of mining was a generation or two away and memories were clouded by concern. By the time residents organized the Steering Committee and voiced concern on the potential threats of Tar Creek, the Superfund site had existed for almost fifteen years but the EPA had been inactive on remediating the site aside from conducting Five Year Reports. Even though the structure of governance was fully established for Tar Creek, it was not this regulatory framework that identified or tested for elevated blood lead levels in the children around the site or consistently questioned the drinking water quality. It was the residents who did these things.

Yard Remediation: Laying the Ground(work) of a Failed Cleanup

By the time summer 1996 rolled around, the EPA had completed thorough testing of soil in the area and announced a plan to remediate over 2,000 yards in Ottawa County that tested high for lead (Holmes 1996). The EPA cited federal standards for lead exposure and says lead poisoning in children can cause a variety of health and developmental issues that can affect brain and central nervous system development as well as lowered IQs. There is no safe level of exposure for children to lead and the effects of lead exposure can harm adults in many ways as well, such as reproductive issues in men and women, difficulties during pregnancy, high blood pressure, digestive problems, nerve disorders, memory problems, and muscle and joint problems (Jernigan 1997i). The Oklahoma State Department of Health informed people that prevention is important and gave parents a list of ways to prevent lead exposure in children.

During the same summer that yard remediation began, samples of well water in Picher continued to be monitored and tested to ensure that water from the Boone Aquifer is not mixing with water from the Roubidoux Aquifer (Hylton 1996). A few months later, residents noticed an improvement in their water supply after ODEQ hired contractors to install new fortifications on municipal wells (Garton 1996). Several residents reported that they were able to do laundry at home for the first time in years, as opposed to driving to Miami for laundromats. One resident excitedly declared, "I can wash clothes without having them come out covered with rust spots, and take a bath again without coming out feeling worse than when I got in" (Garton 1996). Workers on the project said the project was heading in the right direction, but "to say that the Roubidoux isn't contaminated is premature" (Hylton and Holmes 1996).

At the beginning of 1997, the EPA's yard remediation program was moving right along. During the first phase, EPA focused on 300 yards identified as having lead levels that exceeded 1500 parts per million. Moving forward, EPA expressed its hope to expand the project to include yards that tested for lead levels exceeding 500 parts per million, which would add another 1,330 yards to the project (Garton 1997b). Gary Moore stated that they were about halfway done with the first 300 yards, but that the remaining yards were Indian land, meaning land held in trust for reservations by the Department of the Interior. This complicated the remediation process because of the additional legal barriers related to land rights. When non-native people lived on land held in trust by the federal government as reservation lands, the land was leased to the resident.

Concerns with the yard remediation project went beyond legal consent. Commerce Mayor Jack Young expressed his concerns with the remediation project by sharing that the new dirt brought in is sinking, especially when it rains. Gary Moore assured residents that the EPA would be there to monitor and fix any problems and said "We're not going to leave you

stranded" (Garton 1997b). A resident shared her frustrations that she's been trying to get EPA and their contractors to fix her yard for five months and said they had never gotten the slope of her yard correct which causes drainage issues. She also mentioned she wonders how positive this project will be since her neighbors didn't have their yard remediated. This was about the EPA policy that yard remediation was voluntary and could only remediate yards with the property owner's explicit consent (Garton 1997b).

The same week as the proposed expansion of the yard remediation project, the EPA officials acknowledged that the federal and state agencies had "given up" on remediating the Creek itself, citing that Tar Creek is classified as a dead creek that can hopefully "clean itself up" (Garton 1997a). Officials referenced the well-plugging project from the mid-1980s that failed to stop the contaminated water from flowing from the mines into Tar Creek. Miami Mayor Mathias expressed frustration by stating: "That same water they were so concerned about in the mid-80s is still there, but suddenly it's not important anymore. It's still going right now into the Neosho River and Grand Lake. Why has it suddenly become invisible to the protectors of the environment?"

Moving forward with the expanded yard remediation project that would cost an additional $26 million, the EPA assured residents at their public meeting that the agency didn't have any significant concerns about recontamination of remediated yards from chat dust or runoff from the piles, stating that if there was a concern it would be dealt with on a case-by-case basis (Hylton 1997). Quapaw tribal members expressed hesitation to participate in the yard remediation project in fear that the government would come back and charge them for the work later; they feared that if they chose not to participate, they would be penalized in some way. Kent Curtis, site assessment manager for Cherokee Nation Office of Environmental Quality followed

up by saying, “If I were a tribal member and I lived here and my relationship with the federal government was based on prior experience and you felt like you had not been treated well, you might be skeptical of the EPA” (Hylton 1997). There are nuanced colonial land relations in this region that are often overlooked by state and federal government officials. Later in the meeting, a Picher City Council member asked, “Do you ever think of moving us all out of here? Wouldn’t it be cheaper?” to which an EPA representative responded: “No, it wouldn’t. We want to restore this area…we can’t just leave the land contaminated and walk away” (Hylton 1997).

In fall 1997, the EPA announced that in just a few months work would begin on the next phase of yard remediation that would excavate 65% of the yards in northern Ottawa County (Jernigan 1997c). In the project, contaminated soil would be removed to a maximum depth of 18 inches, which differs from the original statement made in 1994 that the top two to six inches would be removed (Jernigan 1997c, “EPA begins testing” 1994). The EPA also noted that it hoped to keep air contamination and dust to a minimum by watering down contaminated soil. At this point, yard remediation was expected to take about three years.

For the $26 million project to continue, the State of Oklahoma needed to match 10% of the bill for the federal funds to be released. According to Earl Hatley at LEAD, the only reason any remediation was happening at this point was because the EPA Emergency Response branch provided funding for the yards with 1,500 parts per million of lead or more (Jernigan 1997a). The Oklahoma Legislature failed to even address the issue while deciding the annual budget that year, which meant the process was delayed until the next legislative session.

From the start, the EPA’s remediation plans held severe contradictions. At the same time they announced remediation of a majority of the yards in the region, they also announced they had given up on remediating Tar Creek, and subsequently, the sources of its toxicity. Note that

when asked about the potential recontamination of yards, EPA officials stated it wasn't a concern and that it would be addressed on an individual basis if it were to occur. The EPA could not ensure that the yards that cost millions of dollars to remediate would not become recontaminated – the reason being that they weren't going to do anything to address the contamination's source. This lack of action to address the mines, creek, and chat piles also contributed to great uncertainty about the purity of the Roubidoux Aquifer and its viability as a primary water source. Frankly, there was not enough attention paid to critical aspects of human life and environmental health.

Learning and Responding to the Dangers of Chat

In Ottawa County, chat was used in a variety of ways, such as resurfacing alleys, driveways, fill in asphalt, and many more. Chat was viewed as an economic resource to residents who owned property with chat on it and sold it for a profit (Garton 1997d). The EPA released study results that showed that chat piles tested between 5,000 and 7,000 parts per million for lead, confirming it as a potential source of contamination in the elevated blood lead levels of local children. A few months before these chat samples, a project called TEAL, which stands for Tribal Efforts Against Lead, was launched to monitor blood lead levels in young children ("TEAL Project" 1997). At the time of this study in 1997, the national average for the population of children with elevated blood lead levels was 4.4%, the Oklahoma average was 2.4%, and the highest known average was in Boston which averaged 13%. The average for children in the Tar Creek area was 35% – with chat as one of many suspects (Garton 1997d).

Government officials stated that they couldn't restrict the use of chat because it was not recognized on federal lists of contaminated materials. In light of these findings, the EPA started

passing out pamphlets educating people on measures that could be taken to protect children from lead, such as washing hands before eating, not playing in bare soils with unknown remediation status, washing toys regularly, cleaning homes thoroughly to remove lead dust, etc. (Jernigan 1997e). The EPA noted in this pamphlet that lead is only harmful if it is consumed, which makes the lead contamination at Tar Creek more threatening than in other places since it exists in so many forms. Even still, the chat was being found in places it was previously unknown. A Miami family discovered that when their home was built 20 years prior, the chat was used to fill around the heating and air conditioning located on the floor before the foundation was poured around the ductwork. As it turns out, chat was previously a common material used to construct new homes (Jernigan 1997h).

Just as more sources of lead were discovered, so were ways of testing for lead's impacts. In December 1997, LEAD Agency announced a partnership with the Harvard University Medical School's Channing Laboratory in Boston to test the teeth of residents from the Tar Creek area for lead. Rebecca Jim stated the reason for wanting to test teeth is that "lead is stored in bone, so you have to test the levels in peoples' bones to determine what their long-term exposure to environmental lead may be," because lead found in blood will be absorbed into the body approximately two weeks after exposure (Garton 1997e, Garton 1997f). If an adult was exposed to lead as a child, it wouldn't show up in a blood lead level test but it would be stored in their teeth (Jernigan 1997g). This study opened the door to understanding long-term lead exposure in the Tar Creek community.

At the start of 1998, the EPA began to seek out residents who potentially have chat in the ductwork of their homes (Jernigan 1998b). News surfaced across Ottawa County that chat was prevalent in homes built in the 1970s and 1980s around the Superfund site. A local contractor in

the heating and air business said, “As far as I know, there’s nothing that can be put in the duct system to coat the chat and encapsulate it” (Jernigan 1998a). After running tests, it was determined that the first home to report lead in the ductwork had lead levels nearly ten times the recommended healthy limit in their carpets and floors. The EPA and ODEQ began examining homes with similar problems and identified one after another. Officials stated they were unsure how extensive the problem is, and the only solution they had to offer was to completely block off air vents, which would also render heating and cooling systems completely useless (Jernigan 1998c). The EPA went on to state that they will likely not be able to address this issue due to prioritizing children via their ongoing yard remediation project.

Amidst ongoing efforts to remediate lead from the community, TEAL worked tirelessly to educate residents on an entirely preventable disease, but their efforts were not without friction. After visiting over 5,500 homes in the area, TEAL found that people in this community were slow to accept the reality of the threat posed to children because it was an invisible threat (Jernigan 1998d). It was easy for people to grow up here, raise children here, and not ever address the issues of lead contaminating the landscape. TEAL noted that high school students who were exposed to lead when they were children are “seven times less likely to graduate, six times more likely to be absent more often, have a lower class ranking, exhibit a learning disability, and have problems with fine motor skills” (Jernigan 1998d).

Meanwhile, the EPA discussed the option of a series of wetlands that would filter mine water. Before any work could begin, the EPA noted that the first step would be to conduct a feasibility study to get a grasp on the cost and potential scope of what a wetlands project would be like at Tar Creek. Earl Hatley remarked, “In my heart of hearts, I believe we may have begun to find a solution within budget realm” (Jernigan 1998e). Tar Creek hosted many state and

federal officials visiting to see the environmental harm firsthand around this time. When the Oklahoma Secretary of the Environment visited the site for the first time he remarked, “You still don’t realize the extent of the problem until you’re here on the ground” (Garton 1998). After the same visit, State Senator Rick Littlefield proclaimed, “I believe that the Tar Creek area is the number one health-related environmental problem” (“State officials" 1998). A professor visiting from Columbia University questioned, “Why hasn’t ‘60 Minutes’ been here?” (Jernigan 1998j). At this point, it started to feel like Tar Creek was receiving the recognition needed for change to happen.

Locally, chat use was still questioned. Chat continued to be sold without any kind of use restrictions, and there also wasn’t any kind of tracking that provided officials with the knowledge of how much chat was being sold and where its final destination was (Kurt 1998c). Reports began to surface of a rock quarry in Arkansas that started selling chat several years prior labeled as “commercial grit” with no mention of contamination. This caused subdivision developers to purchase what they thought was ordinary gravel to use in burying water and sewage lines because they were unaware of the EPA’s warning against residential use. The EPA began recommending a safe use of chat would be in road development when it could be fully encased in asphalt or used as a base layer under concrete, but EPA project manager Nicole Bennett said, “No doubt some of this material is still continuing to fall through the cracks and is getting used inappropriately” (Kurt 1998a). Residents had varied opinions on chat. A chat owner who had recently stopped selling chat expressed frustration that the concerns were blown out of proportion and said, “Why don’t you go up there and see if those people have 12 toes or 12 ears” of the widespread use of chat in northern Ottawa County (Kurt 1998c). For others, chat served a different purpose. There were more and more sightings of recreational off-roading vehicles on

the chat piles, despite the contaminated dust that was kicked up in the process (Coach 1998). Around the same time, LEAD Agency sent the first round of teeth in what was called the Tooth Fairy Project to Harvard. The first donation of a tooth was from a 19-year-old resident who was concerned about her long-term lead exposure because when she was a child, her father wanted to do something special for her and built a sandbox using finely sifted chat as the sand (Jernigan 1998f). There needed to be a more holistic approach to chat use and education on the potential harms of chat use.

Again, many contradictions were happening in Ottawa County. Even as scientific findings about elevated lead exposure in children became more and more solidified, it was difficult to connect that chat was likely the biggest culprit within the community. Chat was part of the landscape of these people's homelands. It was a part of their existence. As the tooth donor's story reveals, parents even used it in their children's sandboxes. People also used the piles as off-roading opportunities! Instead of being viewed as a toxic contaminant, chat was viewed as an economic endeavor for some, and others, it was viewed as a recreational opportunity. The cultural shift of recognizing the harm caused by the chat did not come easy for portions of the population. There is also nuance to the situation. For example, if a family is struggling to keep food on the table to feed their children, the risk of lead poisoning was not always a primary concern in day-to-day life (Lindley 1999a). Additionally, the EPA shared its recommended uses for safe chat use in full encased road paving but did not have a structure for enforcing these recommendations as guidelines or even a system for keeping track of the chat once it was moved. At this moment in time, there was no real oversight on what chat was used for, despite the advances in research and education efforts. Protecting the community from the threat of lead was a nearly impossible task given that chat was being discovered in new places all

the time, even in homes. Even with the prospect of a wetlands study, at this point, new concerns of contamination were discovered faster than solutions could be offered.

Constricted Restrictions

While testing continued for lead levels in residents, chat use was still in question. Especially in light of the Bureau of Indian Affairs' new moratorium on the sale of chat, residents questioned the fairness of the situation. The BIA released a moratorium that prohibited chat on native land be sold, which meant that Quapaw tribal members had to continue living with the chat while white chat owners were able to reduce their amount of chat and make money off of it in the process (Robertson 1999c). Tribal members called this an injustice ("Indians fight" 1999). Lindley (1999b) highlighted the injustice of the moratorium stating it allowed white chat owners a monopoly on selling chat while tribal members were left out of the opportunity to make money. At this point, the moratorium was the only restriction on chat use or sales to exist. The mayor of Miami called for a countywide ban on the use of chat in open areas such as driveways, alleys, and gravel roads to limit further contamination and exposure (Lindley 1999d). The county commissioner's office responded by delaying a decision due to difficulties in drafting a ban since there was no kind of state or federal precedence for a use restriction on chat (Petersen 1999). LEAD Agency called for the county commission and city councils to adopt ordinances that would ban using chat in surface paving and new buildings, but all parties declined based on a lack of ordinances that could authorize a chat ban. Rebecca Jim responded by saying she was grateful that they gave the request serious thought, and that nothing was going to happen unless someone takes the first step. It seemed as though the only reason there wasn't a ban on chat uses was that there never had been one.

Longing for Greener Pastures

Despite the EPA's ongoing yard remediation project, residents were frustrated that more wasn't being done and that Tar Creek needed to be cleaned quickly. An editorial in the Miami News-Record questioned, "One year after the completion of the Love Canal Superfund cleanup site, we can't help but wonder when the government is finally going to take a substantial interest in the Tar Creek Superfund Site" ("Tar Creek" 1998). This sentiment was shared by many. Rebecca Jim shared the story of a man named George Mayer who is credited as being the first person to raise alarm over contamination in Tar Creek in late 1979 when his prized white Arabian horses were stained orange from contamination (Robertson 1998). Jim went on to say that George Mayer passed away earlier in 1998, but he thought the water and air would be cleaned in his lifetime. "We all believed they would fix it," Jim said. In the Kansas portion of the Tri-State mining district, which is EPA Region 7, efforts were made to grade, contour, and cover over 900 acres of chat piles which stops hazardous erosion and hides the chat piles beneath the surface of the earth (Robertson 1998). The bill for this project was $12.5 million. No efforts beyond selling the chat had been made in Region 6 to remove the chat piles that tower over the towns.

Expectations for Remediation Falling Short

The EPA's yard remediation project came to a halt at the end of 1998 when workers joined forces in a work stoppage in protest of unfair conditions. The workers said they were not being paid nearly what their contracts promised and were not receiving vacation benefits, either (Bluhm 1998a). After presenting the Army Corps of Engineers and their company

Morrison-Knudson with terms and conditions of their return to work, the workers voted to unionize and every single one signed on with the chosen union except three employees (Bluhm 1998b). The workers agreed to never organize a work stoppage again.

Even with a group of employees with a newfound dedication to the project, turmoil defined that yard remediation project in 1999. Residents reported that new issues arose on their properties after their yards were remediated. Picher and Commerce residents reported their yards flooded with any precipitation, standing water remained long after rain, homes were severely flooded, and anything they planted in the new soil died (Vance 1999j). Elderly residents were even trying to dig channels through their yards to keep flooding from entering their homes. Residents who experienced these issues could not get the attention of the necessary parties to return and fix the problems. One resident was even told by contractors that they weren't landscapers (Vance 1999j). After being contacted by residents, U.S. Representative Tom Coburn said this project was "one of the worst examples of government mismanagement and incompetence" that he'd ever seen and that millions of tax dollars had been wasted while health had been at risk the entire time (Lindley 1999c). As a result of this criticism, the EPA launched internal and external audits of the project. Yard remediation in Region 7 averaged approximately $9,900 per property, but so far in Region 6 the cost averaged $23,000 per property and used more workers, equipment, and vehicles (Jernigan 1999c). It also came to light that the government's contractor Morrison-Knudsen (M-K) subcontracted to a trucking company that falsified safety certificates to haul off contaminated materials, and M-K continued using that trucking company for more than a year after the certificate scheme came to light.

To keep costs down, the EPA announced they would be tighter on the work being done during yard remediation and that "home improvements" would not be included anymore

(Jernigan 1999d). Residents participating in the yard remediation received information sheets describing the specific role of the cleanup and what services they should expect. Phillip Allen, the project manager, said, “We’re getting hammered because we’re spending too much money. We’re spending too much money because we’re trying to make everybody absolutely happy. We've got to draw the line somewhere” (Jernigan 1999d). Allen shared that residents had been calling the Corps of Engineers and M-K with what he described as unreasonable requests.

Residents continued reporting issues following their yards being remediated to Rep. Coburn. They shared that they continued to have poor drainage, mold, and mildew inside their homes, and warped floors due to flooding. Rafael Casanova said that many of these frustrations were caused by the lack of communication options available to residents (“Tar Creek” 1999). Up until this point, there was not a point of contact for residents to share concerns with, but the EPA appointed someone to oversee this. A few weeks after this, residents shared new problems they faced. One resident shared mushrooms were growing in her son’s room caused by the new presence of moisture. She had an engineer come to inspect her home and said he was shocked by the amount of moisture and moss underneath the house, but when she later requested a copy of the report, she was told she would have to file a Federal Open Records request to gain access to the information on her property (Vance 1999a). This mother said, “For us, the mold and mildew are worse than the lead would have been” (Jernigan 1999a). Her homeowner's insurance was canceled by her provider due to all the recent problems. In the time since Rep. Coburn’s original complaint, his office received 70-80 complaints from residents, none of which had been addressed by the project. One resident attended a meeting with Rep. Coburn with a portable oxygen tank after being released from the hospital by physicians who said her condition was likely caused by the mildew covering the rugs and walls of her home (Vance 1999a). The mildew

was not there before her yard was remediated and her hospital bill was $50,000. She waded through ankle-deep water in her yard to get to her car to attend the meeting in hopes of receiving help.

Rep. Coburn met with residents to discuss their situation. He notified residents that he started gathering evidence for a federal investigation of the remediation progress so far. While residents wanted their yards remediated properly, some were apprehensive of the idea of a federal investigation. The Ottawa County Commissioner expressed that he didn't want to run off the remediation plans but wanted the focus to remain solely on protecting the children by cleaning up the lead (Jernigan 1999a). Rep. Coburn remarked that the threat of an investigation should make remediation officials more responsive to addressing concerns. The sentiment among residents ranged from anger to sorrow. One resident said, "They promise this and promise that, but they're liars." Another resident shared, "We've lived in it for nine months. We've called and called. Nobody seems to care. Nobody called us back. It's inhumane to hurt people in such a way" (Jernigan 1999a). The final question at the meeting with Rep. Coburn was 'Do we sue?' to which Coburn responded he wasn't sure yet.

In response to Rep. Coburn's stance, an official from the EPA Region 6 office, Gregg Cooke, defended the yard remediation by saying the goal was to decrease lead exposure in children and that Coburn had not mentioned their success so far in accomplishing that goal (Jernigan 1999b). Cooke also described that the cost difference between the Region 6 and Region 7 remediation projects was caused by Region 6 excavating much deeper than in Joplin and said "The Joplin and Picher sites are only similar in that they are removing lead-contaminated soil from residential yards" and noted that each region has different standards and specifications. Rep. Coburn alleged that clay used in the fill of new soil was the culprit for a lot of issues faced

by residents, but Cooke says that clay had been used since 1997 as backfill except in the top six inches of soil as a method of preventing uneven settling.

In September 1999, the Picher City Council met to discuss ongoing concerns over the yard remediation project. They shared their concern that the government's contractor M-K was not responding to inquiries in a timeline fashion and that there was not a specific contact person accountable for communicating with residents or local governments (Vance 1999e). Based on resident reports, none of the major repairs on remediated properties had been addressed even though they were promised to be completed. The Council meeting also included photos of the damage done to sidewalks, roads, and ditches across town caused by trucks hauling materials. Picher Mayor Sam Freeman proclaimed, "I don't think any of us should stand idly back and watch them destroy what we have" (Vance 1999e). There were approximately 1,000 yards that still needed to be remediated at this time.

Up until September 1999, three officials were serving as project managers with rotating duties at the Superfund site. These three officials would rotate weekly on whose turn it was to manage the remediation project (Garton 1999b). This caused a lack of continuity in the management team as no one was ever fully up to date on what was going on in the project. The managers decided to split the duties amongst themselves to be more available to the project. Additionally, the managers confessed that the project's presence has "undoubtedly" altered some streets and other infrastructure around the Superfund site (Garton 1999b). Picher Mayor Sam Freeman said, "They're creating a problem somewhere today. I'll guarantee you," regarding the ongoing yard remediation (Vance 1999g).

In Fall 1999, the EPA and Army Corps of Engineers announced that the yard remediation project would halt for the winter and that the workers would be laid off during the holiday season

(Vance 1999h). Officials stated that the layoffs were planned to keep costs down and stay within the original $28.5 million budget. The project was expected to restart in the spring but with far fewer workers. The officials also announced that the interpretation of "yard" was changing to mean 80 feet in the front and back of the home as well as 30 feet to the sides of the home. This meant that if a resident's yard was larger than those dimensions, it would not be remediated past the guidelines. Before the holidays rolled around, the EPA settled with several residents who experienced major property damages caused by remediation efforts, but many were left hanging (Vance 1999i). The EPA also agreed to pay for road repairs needed after trucks ruined them, to which County Commissioner Crawford requested to be paid in a lump sum for the county to handle repairs themselves rather than having the EPA contract the workout. EPA project manager Phillip Allen said, "This is not a well you can draw from. When you settle and run out of money, don't come whining to me" in response to paying in full to the county (Vance 1999i).

Lindley (1999c) described the ongoing tensions in Ottawa County. He wrote about how state and federal officials gathered in celebration thirteen years before commemorating the completion of work at the Tar Creek Superfund Site when the original wells were sealed in the mid-1980s. The priorities of progress on Tar Creek had shifted away from health and safety and were wrapped up in money and politics–and children will be the ones who suffer for it. The population of people surrounding the Superfund site fits the mold for what is happening at other Superfund sites across the country, which are typically poor and minority communities. The Ottawa County Commissioner said, "I didn't use to feel this way, but now I believe we should have given them $35,000 per family and moved them to a safer area," to which an EPA official responded, "There were some internal discussions about whether it was possible to buy everybody out. It was not a viable option and it would have left a huge unaddressed problem."

Many of the issues faced throughout the yard remediation project were caused by the lack of a well-established, streamlined organizational approach. For the first several years of the project, the EPA didn't have a contact person for residents to reach out to, the Corp of Engineers and their subcontractor were close to impossible for residents or local officials to contact, and there wasn't even a single project manager who was working on the project consistently week to week. Whether explicit or not, these issues were barriers to residents' participation in the remediation process. Not only was there no opportunity for residents to be involved in designing this project, there was not even a structure in place for residents to ask questions or give any kind of feedback. Throughout the process of the yard remediation, residents and local officials alike shared frustration that their community seemed to be getting worse in many ways. Assumedly, the feat of taking on one of the most polluted sites in the country was pushed to the back burner for many residents whose focus was on the condition of their properties and local officials who wanted to hold the federal agencies accountable for the damage done to their communities. Overall, the yard remediation project added layers of complexity to the big-picture problems at Tar Creek and in many ways contributed negatively to clean-up progress.

Wetlands: Designing a Hopeful Future

Progress toward remediation remained hopeful outside of the government's remediation plans, though. A Harvard professor collaborating with LEAD Agency discussed the possibility of plants drawing heavy metals out of an ecosystem at a meeting with residents (Taft 1999b). The process is called phytoremediation and the professor cited a study done in New Jersey where plants were able to drop the lead level from 1,200 parts per million to 400 parts per million in two harvest cycles (Garton 1999a). Later in the summer of 1999, a Harvard graduate student

spent time studying the potential for phytoremediation at Tar Creek. Markley Bavinger explained that cattails would be planted and harvested each year to keep them from recontaminating the soil when they die and break down (Vance 1999c). Bavinger said, “The roots of plants can reach many places that humans can't extract lead” and added that this would be an alternative option to tearing up lawns across the county.

Similarly, a University of Oklahoma environmental engineering professor, Dr. Robert Nairn, discussed how a wetlands system can purify the contaminated water through a process called passive water treatment (Taft 1999e). Nairn estimated the wetlands projected would cost an initial $345,000 up front followed by an annual maintenance cost of $1,200–by far the cheapest remediation option so far (Vance 2000m). The team of researchers from the University of Oklahoma pursued a patent for the many technologies developed in their planning. The Army Corps of Engineers remarked that a wetlands system would also be a long-term investment for the area and provide a benefit by drawing hunters and bird watchers to the area (Vance 2000w). Community involvement and support were said to be vital for these projects to move forward.

Turn of the Century Brings Potential Turn in Trajectory

At the very start of the new century, Oklahoma Governor Frank Keating decided to form a task force for Tar Creek to find solutions once and for all. The task force’s goal was to take a comprehensive approach to solving the issues faced at Tar Creek (Lindley 2000). After forming the 8-person task force in January, members formed committees to explore the variety of issues that impacted life at Tar Creek. Their results were expected to be made public in the fall of the same year (Vance 2000c, Vance 2000d). Right out of the gate, the task force was eager to get involved with community members impacted by the Superfund site and set their first community

meeting for the beginning of February (Vance 2000e). For some members of the task force, the Tar Creek Superfund Site was a mystery and they had never visited the site before. One member of the task force reflected that he, "remained stunned by the damage to the environment that remains untouched and unremediated" upon seeing the expansive toxicity for the first time (Jernigan 2000a). Widely, the task force was viewed with hope. Residents hoped the task force would expand the remediation to include more of the problems they faced and had great optimism for the task force's future influence (Brewer et al. 2000). Gov. Keating demonstrated ambition for addressing the harm to people and the environment from the Superfund site. Gov. Keating shared his stance on Tar Creek by stating, "For us to be labeled with the moniker of the worst Superfund site in the United States is a black mark on our whole state," and continued to say, "You cannot be associated with Love Canal and not have that diminish what you do" about Oklahoma's reputation (Petersen 2000b, Jernigan 2000b).

Despite yard remediation efforts for several years, lead remained a threat to children in the area. Prevention became the best tool. The Ottawa County Health Department partnered with educators from the school district to create a curriculum to teach students age-appropriate protection measures and the science behind lead poisoning (Vance 2000b). The reality for Tar Creek activists was that they were trying to educate a community that faced a constant hazard whose harm they'd grown desensitized to. In 2000, the health department made it a goal to test every child ages one to six for elevated blood lead levels (Joseph 2000). Protecting and monitoring children's health remained the primary goal for many residents of the Superfund area.

Despite years of activism efforts, chat use seemed to only be getting worse. According to John Sparkman, director of the Picher Housing Authority, the number of dune buggies and other recreational vehicles on the chat piles got so bad he referred to it as a battle (Vance 2000g).

Numerous times families with children of all ages were spotted riding around the chat piles–sometimes even with the kids dragging behind on sleds. The Ottawa County Sheriff's Department had to intervene and patrol the area to shut down any attempts at recreational use of the chat piles (Vance 2000h). Residents caught on quickly, but law enforcement said often it was people coming from out of town and out of state to recreate on the piles.

In addition to using chat for recreational purposes, there was also a problem with residents using the chat for personal uses like filling in their driveways. As a result, ODEQ pursued state regulations that would prohibit chat use in home construction or as gravel on roads and driveways (Vance 2000j). ODEQ shared that someone who recently had their yard remediated used chat to refill their driveway. Scott Thompson of ODEQ said, "We're not going to stand for spending all this money to fix their yard and have them screw it back up." The regulation went into effect on June 1, 2000, and stated that anyone who used chat in a prohibited manner was to be fined $10,000 a day (Vance 2000r). Speculation arose regarding the BIA's chat moratorium in light of the new restrictions. Quapaw Tribe Chairman Ed Rodgers said they hoped the moratorium would lift soon and were eager for tribal members to be able to participate in the selling of chat like everyone who has continued profiting for years (Vance 2000t).

For the most part, the turbulence felt at this point in Tar Creek's journey seemed to at least be heading in a good direction. At last, there were clear regulations on how chat could be used and Gov. Keating's task force brought on a new wave of momentum.

A Sinking Feeling

Reports of sinkholes also became more and more common as the years went by. For example, In 1998 in Granby, a 30-foot wide and 20-foot deep sinkhole appeared in what is

known as the oldest mining town in southern Missouri (Browning 1998). Across the street, a second sinkhole appeared at the same time that was 8 feet wide and 6 feet deep. Residents shared they were “afraid the house would fall in.” As sinkholes became more common, residents began fearing the lack of options they would have if their houses did get swallowed up by sinkholes. In an overwhelming majority of cases, residents' homeowner's insurance did not cover damage caused by subsidence (Browning 1998). Other residents in Granby were upset that they were not made aware of the threat of lead before purchasing their homes in the area. They stated they weren’t even aware of potential contamination in the area until the EPA arrived to inform them that their well was contaminated and began temporarily supplying bottled water to families in the area (Robinson 1998). These particular residents also shared they had to sell all eight of their horses due to the water contamination.

The turn of the century unfortunately brought a hefty amount of uncertainty when it came to the stability of the mines. Ottawa County is home to over 1,000 open mine shafts, some of which are up to 300 feet deep, and the county commenced efforts to seal them. One of the property owners with a mine shaft on the list to be sealed recollected that he had lost several cattle to the opening and shared his gratitude that he would be able to use the land for grazing again (Vance 2000a). As work continued to seal a handful of mines across the county, a dangerously unstable mine shaft was discovered underneath Stateline Road. Officials reported that it is impossible to say when the shaft would collapse, but that it certainly would collapse someday (Petersen 2000a). Because of the high risk, county officials began seeking funding from ODEQ to seal the open mines. The project would prioritize mine shafts closest to schools, neighborhoods, and parks (Vance 2000i). Officials showed determination to make progress by

recognizing that while there wasn't enough money to tackle it all at once, they planned to approach the problem one acre at a time.

Before the work capping the mines even began, the county delayed the project in concern that they would be held liable for any mine collapses or injuries that might happen on sites included in the project (Vance 2000l). County Commissioner Joe Crawford said, "We're going to do this, but we are going to do it right. We don't want to hurry through and make a mistake" (Vance 2000l). Two weeks later, Ottawa County was notified that ODEQ would not be funding the project that year (Vance 2000o). In the meantime, residents with mine shaft openings on their properties were left to deal with their circumstances alone. One woman tried tirelessly for someone to help her clear the open mine shaft in her yard and seal it off–she even offered to use her own heavy equipment. She reported that when she contacted the Superfund office in Picher and ODEQ, they told her it was her problem. She said, "Well we didn't create this problem. It was created for us," and declared that she felt as though she was being discriminated against for having a mine shaft, because the EPA wouldn't include her yard in the remediation project, either (Vance 2000p).

Throughout the year, residents reflected on subsidence in the area throughout its history. In 1967, there was a sinkhole caused by mine collapses that swallowed five homes in a two-block radius overnight (Jernigan 2000k). Reports released in 2000 confirmed that the mines were heavily compromised, and the Corps of Engineers voiced that subsidence of the ground in Ottawa County was a certainty, but when and where were not known. A list of the twenty locations around the county most vulnerable to collapse was produced and disseminated in a bullet point list (Jernigan 2000j). Residents were able to see how close their homes, schools, jobs, favorite backroad, and more were to the locations most susceptible to collapse.

Even with the threat of imminent collapse, government officials locally and from the state failed to take accountability or address the issue either due to funding dilemmas or fear of potential liability. Residents were aware of the history of ground collapse in the area and had to live with the fear that their homes could be next. This situation illustrates that even if the regulatory structure produces research calling for immediate action, that does not mean the governing agency will take action. The regulatory framework rarely requires the enforcement of recommendations for the sole benefit and safety of those impacted by environmental hazards.

Corruption and Chaos: Derailing Remediation

The year 2000 was even more tumultuous for the EPA's yard remediation than it was for mine shafts. As a result of an Inspector General investigation request made by Rep. Coburn, in February 2000, twenty FBI agents arrived with a search warrant to seize data from the yard cleanup contractor Morrison-Knudsen (Myers and Walton 2000, Vance 2000f). The structure of the yard remediation project was that the EPA enlisted the Corps of Engineers to oversee all work done on-site. The Corps of Engineers hired M-K to do the actual remediation. Neither federal agency received advanced notice of the raid or the investigation. Less than three months after the data was seized, and before any news from investigators came out, the Corps of Engineers ended their contract with the EPA early with approximately 800 properties left on the list of sites to remediate. A spokesperson for the Corps stated, "We've pretty much fulfilled our part and gotten kudos for the cleanup work" (Vance 2000k). By cutting their contract with the EPA, they also broke M-K's contract as well. Under the soon-to-be-broken contract, Ottawa County residents could have soil from their yards tested for free. LEAD Agency encouraged

everyone to have their samples tested before the service no longer existed by the end of summer (Jernigan 2000a).

In fear that complaints may go unanswered, Picher Mayor Freeman recommended that residents write down their complaints and deliver them to city hall. With six weeks left of the contract with M-K, there were many complaints left unanswered and residents were afraid their properties would never be fixed (Ray 2000). At the same time, updates on the federal investigation began to circulate. In an FBI raid, over 400 boxes of project documents were collected as part of the federal government's investigation on if M-K overbilled the government, cut corners, and covered up safety concerns (Grunwald 2000). The trucking company subcontracted to haul materials pleaded guilty to falsifying safety certificates and M-K failed to report on-the-job injuries to the Corps and instead kept employees on the payroll even when they were receiving surgery related to workplace injuries. As part of their payment agreement with the federal government, M-K was paid by the total volume of soil removed and remediated and calculated the amount by truckload. Whistleblowers in the investigation reported that it was common practice at M-K to send off "light loads" and even "ghost loads" of contaminated soil (Grunwald 2000). Additionally, the Quapaw Tribe produced soil samples from their sacred powwow grounds that indicated the lead levels may be higher than before the remediation even took place.

Locally, EPA officials, county officials, homeowners, investigators, whistleblowers, and congressmen all accused the Corps of negligent indifference to the project. Under the expectations of their contract with the EPA, the Corps was responsible for making sure the work was done on time, that they stayed within the budget, and that residents were satisfied with the work–none of which happened. County Commissioner Crawford exclaimed, "The Corps and the

contractor are making out of here like bandits, but we're worse off than ever" (Grunwald 2000). Across the country, the Corps was experiencing the same criticism. Their response from spokesman David Hewitt was, "If we weren't good, EPA wouldn't keep hiring us." Back in Picher, lifelong resident Hoppy Ray said the Corps "screwed up everything they touched, and they figured we were too dumb to notice. We're not that dumb."

By this point, the EPA lost all of its contractors and subcontractors working on the project, and couldn't release federal funds allocated to push the remediation forward until the State of Oklahoma matched 10% of the total amount. At the end of the 2000 legislative session, state congress failed to approve the $2.75 million necessary to access the federal cleanup money (Vance 2000q). Gov. Keating could apply state money from a rainy day fund known as a 'slush fund' towards the cleanup but denied this option stating he wanted to see the results of his task force formed at the start of the year before making any decisions. Gov. Keating expressed his frustration that EPA dollars are not easily attained and was committed to finding a final solution for Tar Creek and proclaiming, "How in the world can the public accept this generation after generation?" Two weeks later, the Oklahoma Secretary of the Environment announced that they freed up $200,000 which would allow the state to access $2,000,000 in federal money (Vance and Petersen 2000). The $200,000 is a mere 7% of what the state promised it would match to receive funds for cleanup.

While waiting for the funding to kick in, the EPA hosted a meeting with residents to assure the community that their project was not leaving town forever. During this meeting, they also introduced the new contractor that would begin work in the next phase: CH2MHILL (Vance 2000u). Summer 2000 marked one year from the initial complaint meetings with Rep. Coburn and many residents said their problems still existed. One resident said, "At first when I

complained to everyone I could, we finally had people around realizing there was a problem, but we still don't know when and if they'll do it." Largely, residents were dissatisfied with very few options ahead of them. Later in the summer, the EPA hosted a meeting for residents to discuss problems with yard remediation. The meeting was attended by 60 residents who shared their frustration with the severe flooding (Vance 2000x). One resident shared that when it rained, their yard flooded up to eight inches deep. Another resident exclaimed, "The clay that you people have put in these yards is a no-no, the people here are telling the truth." After more than a year of shouting their concerns with no one ready to respond with action, something must have broken through to EPA project manager Phillip Allen. Allen said he was not aware that M-K had filled many yards with clay soil without adding a layer of topsoil on top. He explained that M-K was paid to put six inches of topsoil on every remediated yard and said, "I didn't realize there was that big of a problem." Practically since the beginning of the yard remediation project, residents had raised concerns about flooding issues resulting from the work done on their yards and Allen blamed them saying their requests were unreasonable (Jernigan 1999d). In actuality, there was no agency overseeing the work M-K was doing, there were no checks and balances in the process, and no government officials were willing to listen and act on the concerns of residents.

This entire experience was full of frustration. Residents were taking on government agencies and their contractors just to make sure their homes remained livable. The corruption and negligence of these governing structures made it so residents were trapped in situations much worse than they started. Not only did the regulatory framework of remediation fail to involve residents in imagining a fully remediated future, but it also added greed, carelessness, and misconduct to the process. Based on these events, it doesn't seem like a stretch to speculate that not a single one of the organizations involved in the yard remediation project truly

prioritized residents safety, health, or satisfaction or even cared to receive community feedback. Time and time again, the structure proves it wasn't built with community interaction or reparation in mind. If regulatory structures of remediation aren't built for the satisfaction of those living with toxicity, are they built against them?

A Grassroots Approach to Government Buyout

Exhausted by the remediation efforts, residents of Picher organized to propose that instead of moving forward with the yard remediation, the government buy them out of their properties and move the town (Garton 2000). Residents thought that the pause on yard remediation that winter due to funding issues was their last chance to change the course of the remediation plan. Rafael Casanova, an EPA site manager, said that a buyout was discussed early on in the plan but ultimately tossed because it would be so expensive. John Sparkman, director of the Picher Housing Authority, questioned why the threat of a cave-in was not being taken more seriously in the remediation plan and stated that sinkholes and cave-ins were a threat that would be with the community forever. The following week, over 300 residents of Picher gathered to discuss exploring a buyout amongst themselves (Jernigan 2000c). Based on a show of hands, residents agreed by a large majority the best option was to pursue the option of a buyout. At this point, the hazards of the Superfund site had caused the value of homes in affected areas to plummet and residents couldn't move. One resident shared, "We love Picher, but we are living on quicksand waiting for our homes to sink." This meeting solidified their plans to discuss a buyout with the government agencies. Two days after the meeting in Picher, approximately 75 residents of Cardin gathered and unanimously voted against the idea of a buyout. Regardless, the idea of a buyout spread like wildfire and many believed that relocating the towns' populations of

2000 people total was the best way to reduce harm given the slow speed of remediation so far ("Moving Picher" 2000).

In late September 2000, just weeks after the Picher and Cardin communities met to discuss the possibility of a buyout, Gov. Keating's Tar Creek task force released their final report. After task force members spent thousands of hours conducting and reviewing research, they collectively agreed that a buyout was the only way to comprehensively approach all of the problems in the area while also keeping costs in mind (Jernigan 2000e). At the beginning of October and after a thorough review of the task force report, Gov. Keating accepted the task force's recommendation that buying out the towns and creating a series of wetlands was the best possible option to remediate the land and protect the people (Jernigan 2000g). The task force estimated the buyout and wetlands plan would cost $250 million whereas other options were expected to cost anywhere from $540 million to $20 billion.

Rep. Coburn was outspoken in his stance against a buyout, stating the legacy of Tar Creek would be two ghost towns (Jernigan 2000f). Coburn hosted a private meeting with local and state officials to stop any plans of a buyout from moving forward. Nevertheless, the plans to explore relocation of the towns became public when the Tar Creek Steering Committee hosted an engineer from the Corps of Engineers to discuss the potential for wetlands and relocation (Jernigan 2000i).

Overwhelmingly, residents hoped for the chance of a buyout. Picher Mayor Freeman said that 80% of people voted in a local poll that exploring a buyout is the best option moving forward (Jernigan 2001a). In this particular survey, 563 residents had voted at this point in a town with a population of around 1,200. 450 of the votes were in favor of a potential buyout. Many residents started to feel like a buyout was their only opportunity to ever get away from the

area because the bad publicity made their homes worthless saying, “If we could sell and leave, we would” (Edens 2001). One resident reflected on the fact that Ottawa County residents worked tirelessly to provide resources to the government through times of war by working in the mines and that people all over the country should have been rallying around the current generations at Tar Creek to be able to pursue their inalienable rights just the same (Warford-Perry 2001d).

The Tar Creek Steering Committee, led by John Sparkman, called for the EPA to move residents out immediately. Frustrated with the indefinite testing that results in little action, Sparkman said, “First our kids were chat rats, not they’re going to be lab rats and it just isn’t fair” (Warford Perry n.d.-b). The Steering Committee agreed that further testing of the area was necessary but their view was to “get us the hell out of here first.” None of the government officials responded when the Steering Committee asked if they would raise their children at Tar Creek knowing what they know now about the site. In 2001, residents also took action against the mining companies who created the issues in the first place. A first-of-its-kind lawsuit was filed by a Picher family who claimed that the companies intentionally concealed their awareness to the extent of hazards that existed and their liability to the situation. The family’s attorney affirmed, “I don’t really know how anyone could argue that these lead companies aren’t responsible for leaving behind lead that is poisoning the children in Ottawa County” (Warford-Perry 2001l). The family sought $6 million in damages from eight companies listed in the suit.

Alternatively, some residents didn’t favor a buyout and were frustrated with the constant influence of outsiders on the town. One lifelong resident said there were four generations of her family living in town and said the town then wasn’t any worse than it ever was. She said that only classy people from out of town wouldn’t let Picher just be how it was and compared the

outsourced decision-making she perceived as being "under the rule of Dictator Hitler" (Jones 2001). Another resident questioned how her neighbors who voted yes to exploring a buyout were so willing to abandon everything they'd worked their whole lives for and described the idea of leaving as giving up (Lake 2001). A group of former ex-miners met to discuss that the threats of the ground collapsing and the health effects of lead were all getting blown out of proportion. One former miner said, "Cigarettes, whiskey, and chasing women killed more miners than lead ever did" (Warford-Perry 2001b).

Clearly, these were nuanced topics in Ottawa County. But overwhelmingly, people wanted out. Residents were fed up with the glacial pace and seemingly fruitless results of the remediation project up to then and knew comprehensive solutions weren't going to come quickly enough to protect them from hazards. It is admirable to me that residents began organizing themselves to petition for a buyout before any agency ever formally validated the idea as plausible. The task force report that included the recommendation for a buyout did not include an analysis of the towns' feelings towards a buyout, but residents made sure their thoughts were known anyway.

Government Intervention

Government plans started pointing in the direction of a buyout option with the final goal of creating a wetland on the Superfund site. The EPA announced plans to conduct a feasibility study on the potential of the buyout and wetland with a price tag of $2-$6 million and a timeline longer than two years (Lindley 2001b). The feasibility study was not expected to interfere with the yard remediation project (Lindley 2001a). In the meantime, government officials on every level started gearing up for relocation. More and more meetings between state and local officials

were scheduled to converse about the reality of a potential buyout ("Mayors meet" 2001). Despite the ongoing progress, Oklahoma Secretary of the Environment Brian Griffin said that the results from the feasibility study wouldn't be available for several years which meant the actual relocation wouldn't likely happen for another five to ten years (Warford-Perry 2001c). With the unofficial news that a buyout could take much longer than they hoped, the Picher City Council voted unanimously to send a resolution to Gov. Keating to explore all options and alternatives for a buyout. Picher Mayor Freeman expressed that given the health and safety threats facing residents in the area, they could not wait another decade (Warford-Perry 2001f). Later in the year, Mayor Freeman shared that with the city's current revenue, their town's infrastructure would only be able to survive another three to five years (Warford-Perry 2001m).

With only a year and a half left in this second term, Governor Keating was determined to secure a more positive future for the people around Tar Creek. Previously, Gov. Keating stated he was not going to provide money from the state's rainy day fund to provide the state's 10% match of federal funds to continue the yard remediation project until he saw the results of the task force report (Vance 2000t). At the start of summer 2001, Gov. Keating authorized $4.3 million of state funds to be allocated towards continuing the yard remediation project but made it clear he still favored a buyout and wetland as the long-term solution (Petersen 2001a). Keating also said that elected officials from Oklahoma needed to be noisier about this issue in Congress and said there was a major problem with legislators not viewing Tar Creek as an issue that affected the entire state.

Back in Ottawa County, the mayors across the affected region gathered in support of their neighbors in Picher and Cardin and pledged to assist them if buyout plans became a reality (Warford-Perry 2001h). Picher Mayor Freeman shared the decaying financial security of the

town. In the five years prior, Picher only had five new homes built and their tax revenues and property values tanked (Garton 2001b). Freeman validated residents that there had been far too many studies conducted on them and their town that resulted in too little action before he pleaded with residents to open their hearts to the wetlands feasibility study to discover the potential of relocating. Gov. Keating began advocating for Tar Creek more actively by writing letters to the director of the EPA. Keating wrote,

> You simply cannot fathom the devastation and peril faced by my fellow Oklahomans without viewing with your own eyes the mountains of lead-contaminated tailings, the rust-colored streams devoid of life, and the children with obvious learning disabilities from environmental exposures … The people of Tar Creek cannot wait for another generation of children to grow up with learning disabilities and impairments due to elevated levels of contaminants in their environment. (Warford-Perry 2001j)

Following his letter, Keating met with the Tar Creek Steering Committee. He shared he felt like all hope was gone to attract any kind of industry, business, or residents to the area and committed to matching 50% of the funds needed for the federal feasibility study (Warford-Perry 2001k).

Keating also sent his Secretary of Environment Brian Griffin, to Washington D.C. to meet with federal leaders. The goal of this meeting was to discuss better ways to help the region than spending another $30 million on yard remediation and encourage the Corps to shorten the feasibility report timeline from two years to 3-6 months (“Tar Creek discussion” 2001). Griffin lobbied for the wetlands option that included a full buyout of residents citing that it would potentially save the government billions of dollars (Myers 2001). One week after Griffin’s trip to Washington, Keating flew out for other state business at the Capitol. During his trip, he made sure to meet with EPA Director Christie Whitman personally to invite her to visit the Superfund site herself (“Keating invites” 2001). While she expressed her sympathy for the situation, the EPA Director made no commitments to visit. Fortunately, following this series of meetings, President Bush signed the Water Energy bill into law which allocated $300,000 towards the Tar

Creek wetlands feasibility study (Warford-Perry 2001c). To release the funds and start the project, Oklahoma needed to match the funds by 50%.

This moment in Tar Creek history felt unique because it was the first time there seemed to be a clear, comprehensive path forward. Now, all of the pieces just needed to fall into place to make these plans a reality. While solutions were finally on the table that benefited residents directly, it is important to note that residents were not formally involved in this process. They used what seemed like every opportunity they could to be involved, such as writing to the Governor and hosting meetings with public officials, but these opportunities were not a formal piece of the remediation or buyout process. Conversations continued happening about residents without centering, or even including, residents.

Chat: For Better and For Worse

As a result of Gov. Keating matching the federal funds for the yard remediation project, the second phase began (Petersen 2001a). The state and federal government had spent $91.7 million on cleaning up the area since Tar Creek was declared a Superfund site two decades prior (Warford-Perry 2001m). Despite the money being spent to remediate toxicity in the area, hazards took shape in many forms. Chat sales became more rampant in the area after the BIA lifted its moratorium on tribal members selling chat after a four-year ban (Warford-Perry n.d.-a). Residents complained that recent influxes in hauling off chat caused an overwhelming amount of dust in the air and their homes. Some residents attributed their new health problems to the presence of more chat dust (Warford-Perry 2001g). Researchers wanted to investigate the impacts of lead from chat dust inside residents' homes, and a team from the University of Oklahoma announced their plans to test household dust (Warford-Perry 2001i). By now, yards

were identified as having lead content higher than the healthy limit faster than they were being remediated and chat seemed to be spreading across the county faster than ever. The parks and sports fields in Miami were tested in the yard remediation project and 65 of the 92 samples taken showed results that exceeded the EPA's action level of 500 parts per million of lead – one of the parks had a result of 2,532 parts per million ("Officials: Miami parks" 2001). These test results were made in the middle of baseball season when the fields were frequently used. With a baseball and softball tournament planned for the weekend following these results, parents from out of town were afraid to let their children participate given the risk of lead exposure (Petersen 2001b). Miami Mayor Harrell Post expressed his concern that this news was giving Miami an "unneeded label" and directed the city's park and street departments to cover the exposed chat on the sports fields with asphalt chips ahead of the tournament.

Yet, despite all of the opportunities for exposure, blood lead levels in children were going down. TEAL found that 11.9% of children had an elevated blood level – less than half the results from the same study four years prior (Walton 2001). When TEAL presented their 2001 results, many residents at the meeting had questions. The primary question on residents' minds was if the yard remediation was actually helping reduce the children's blood lead levels (Jernigan 2001b). Far and wide, residents believed education efforts were going a lot further to protect the children than the EPA's yard cleanup.

Feasibility Study: Financially Feasible?

At the start of 2002, a team of experts from the President's Council on Environmental Quality toured the Superfund site as the first step in conducting the wetlands feasibility study (Duhon 2002). The amount of chat was shocking to the scientists who remarked that the photos they viewed in D.C. don't do the site justice. Oklahoma Secretary of the Environment Griffin

informed them there was enough chat to pave a four-lane highway that could circumnavigate the Earth twice. Tar Creek Steering Committee chairman Sparkman had the chance to meet with the Council and implored them to act on what they witnessed,

> "You are at ground zero – the epicenter of the mines. As we sit here, we can talk about these issues and we can meet and meet and meet. But, while we sit here and meet, the chat dust is still blowing, the ground is falling in and acid mine water is spilling into Tar Creek so we need to get on with things." (Duhon 2002)

Residents also met with the team of researchers before they left town and urged them to help the children of Tar Creek. One woman rhetorically asked the scientists what her potential could have been if she hadn't spent her whole life being exposed to lead (Petersen 2002b).

The problem that residents faced now was that the 50% match on funding the study promised by the governor was uncertain. Gov. Keating wrote a letter to the EPA requesting that the feasibility study move forward even if it means the yard remediation funding is paused in the meantime (Warford-Perry 2002). This request was controversial with residents who were concerned about the current exposure children had to soil contamination. With few funding options left, EPA project manager Casanova attempted negotiations with the mining companies who used to extract resources from the area to pay for the feasibility study (Petersen 2002f). The negotiations failed. While they waited for government agencies to work out funding plans to help them, residents around the Superfund site continued struggling in more and more ways. The Miami city manager indicated that Tar Creek was a problem for local development as well as an environmental issue (Sturgeon III 2002a). For the fifteen years before this, Ottawa County had some of the highest unemployment rates across the state and the Superfund site wasn't making growth any easier.

In May 2002, the team leader of the President's Council on Environmental Quality Joann Griffith announced that the federal report on the feasibility of a buyout and wetlands would be

released within a few weeks despite their intentions of having it released in April (Petersen 2002j). Frustrated with waiting for action, Gov. Keating said he was going to sue the federal government. Then suddenly, President George W. Bush's administration announced a plan to drastically reduce government spending on toxic waste sites across the country – a plan that would cut funding to 33 sites across the nation including Tar Creek ("Feds plan" 2002). State officials in Oklahoma weren't sure if the plan impacted the current fiscal year or would go into effect the following year. For a moment, everyone was unsure if they would receive the money they were already promised.

Once funds were assured for the current year, officials still worried for future funding (Petersen 2002l). The future of the wetlands idea was also unknown. Team leader Joann Griffith stopped communicating with local officials and journalists but in late August, a spokesperson of the Council said the federal report was still in the writing phase and would likely be made public in September (Petersen 2002a). So much of the future was undetermined for the residents of Ottawa County and Tar Creek at this moment. The Sierra Club profiled Ottawa County as a top community that was left at risk by the environmental policies at the time (Hale 2002). Rebecca Jim shared, "It's taken 20 years to find some hope of being on track for the right solutions. It feels like we've been derailed" (Kennedy 2002).

Since the federal funding that was previously promised was unaffected by Bush's funding cuts, the yard remediation project continued. The EPA's new contractor responsible for the yard remediation project, CH2MHILL, started the year by taking soil samples of Miami parks and school playgrounds (Petersen 2002c). The test results came back at the beginning of May and indicated that several school playgrounds around Miami were contaminated and required remediation. The expected cost to be $100,000, which required the state to match $10,000 for the

clean-up to commence (Petersen 2002g). At this point, the state legislature had not finalized the state budget and the $4.3 million that Keating approved for yard remediation hung in the balance, including the funds needed to decontaminate Miami schoolyards (Petersen 2002d). Understanding the urgency of the situation, Miami Mayor Post said that if the state fails to provide the funding match, the city would find a way to source $10,000 locally, and voiced, "We're going to face the problem. We can't ignore this" (Petersen 2002i).

Fortunately, the state legislature passed the budget including a $4 million match to the EPA's funds, which was less than planned but a relief nonetheless (Petersen 2002k). The unlocked funding commenced the next yard remediation phase and included three Miami elementary schools, the kindergarten center, the high school, and administrative builds as well as 457 residential yards (Petersen 2002q). The contractors were somehow able to get ahead of schedule. The remediation work at Miami school grounds wrapped up right before the start of the new school year in August (Petersen 2002o). Shortly after this round of school remediation was completed, a new round of soil testing showed that three more daycares and seven public parks in Miami had high lead levels as well (Petersen 2002r).

At this point, all updates related to the Superfund site seemed to be about the uncertainty of funding, delays due to funding issues, and the ever-expanding list of known polluted sites in the area. Funding was not guaranteed on the federal, state, or local level even when it seemed like it. Even more frustratingly, the feasibility report was still unreleased with no explanation. Residents continued waiting for news.

Schoolyard Sham

Before the end of the fall semester, two educators in the Miami school district reported that the work done in their elementary's yard was "shoddy and unacceptable" (Garton 2002a). The teachers funded their own independent tests of the new soil and many sites around the playground tested for well over 500 parts per million with two sites that had results of 600 and 809 parts per million (Sturgeon III 2002b). The teachers enlisted the help of a local chemist who said that CH2MHILL was not testing the soil properly which gave them inaccurate results on where it was necessary to remove soil. The chemist stated, "There was no science to it; they were in a hurry and cut corners" (Garton 2002a). The teachers pushed for the playgrounds to be closed. Due to these allegations, officials from the Miami school district met with EPA officials and CH2MHILL representatives to address the concerns. The EPA stood by their contractor and informed the school district that the work done at the elementary school was done properly and that no follow-up work needed to be done (Sturgeon III 2002a).

The injustice here is that without residents serving as witnesses to the contractor's work and questioning their practices, there are no checks and balances for the actual remediation process. The EPA never conducted follow-up tests on the school grounds in question. They simply took the contractor's word and used that information to determine the yards were safe.

Truth to Power

The year 2002 was the year of filing lawsuits for residents of Ottawa County. Following the example of the 2001 lawsuit filed by residents against the former mining companies, many more residents organized similar suits. The second family to file included a gravel company in addition to the mining companies as respondents (Warford-Perry 2002). In the third lawsuit, the

family's attorney reported that one of the mining companies filed a response claiming they conducted all of their business in complete compliance with the law. The mining company's attorney claimed that the plaintiffs who filed against them were "aware of all of the facts, circumstances, and conditions existing, and assumed the risks" of living in a former mining town (Stogsdill 2002). The mining companies were blaming the families for living in an environment that they desecrated. Eventually, a team of lawyers from four separate law firms formed a team to represent over 150 clients in a series of class action lawsuits against the mining companies (Petersen 2002s). One of the attorneys said, "It's going to be a long haul."

Fed up with the way things were going, residents became more outspoken with their criticisms of the government's plans. Some residents felt all the money was doing was "creating salaried positions for bureaucrats" (Schafer 2002b). Sparkman said, "It appears that somewhere along the way the state has lost sight of the priorities…" about the endless studies conducted with no actual progress so far. In response, a state official said that even if they had access to all of the money in the world there would still be a great deal of issues to handle related to the Superfund site. Later that week, a delegation of mayors from six towns in northern Ottawa County formed to write a letter to the Corps of Engineers. Their letter read, "We believe there is a desperate need for a lead federal agency to coordinate and maximize the effectiveness of the various federal resources" and asked the Corps to coordinate the effort between agencies to fix Tar Creek (Petersen 2002p). The Corps had not been involved with the Superfund site since it cut ties in May 2000 two and a half years prior after an investigation was opened on their subcontractor M-K.

At the end of 2002, the Tar Creek Steering Committee sent a letter to the Oklahoma congressional delegation expressing their exhaustion. They expressed:

> Unfortunately, there appears to be sufficient state and federal funds available to continue conducting studies that lead to no corrective action. In the past 20 years, over 200 studies have been conducted in the Tar Creek Superfund site. As a means of addressing the excessive number of nonproductive studies being conducted and the lack of attention being paid to the Picher-Cardin area, effective immediately, the residents of Picher-Cardin are being advised not to participate in any more studies except the Corps of Engineers Watershed Feasibility/Reconnaissance Study. However, parents are encouraged to continue to have their children tested for elevated blood lead levels. (Richardson 2002)

As several lawsuits on Tar Creek started heating up, residents began considering the heavy burdens Tar Creek placed on their lives. One couple reflected on their parenting style when their child wasn't reading well. They spanked him, when in reality it was lead poisoning that caused him great difficulty (Schafer 2002c). Even the Picher-Cardin School Board voted to join the class-action lawsuit against the mining companies for causing pollution on school grounds and negatively impacting the development of students (Richardson 2003b). The class action lawsuit brought the National Resources Defense Council onto the case, which also brought Robert F. Kennedy Jr. to Picher, Oklahoma to discuss the case (Sturgeon III 2003i). He said that his father, Senator Robert F. Kennedy, visited Ottawa County in 1968 during his presidential campaign and that his uncle, President John F. Kennedy, visited Picher during a miner's strike in 1960. While in town, Kennedy Jr. said, "I've visited dozens of Superfund sites, but I've never visited one where people were living among mountains of toxic waste like they are forced to do here. It's just amazing to see these towns right in the middle of it" (Sturgeon III 2003j). Describing the case details, he said the mining companies were always aware of the dangers of lead because it is the most regulated substance in history but the mining companies disregarded the hazards for profits.

According to the Tulsa World's Sunday Editorial in January 2003, it was long overdue for residents in Picher and Cardin to be relocated away from the Superfund site (Neal 2003). Mark

Osborn, a family physician in Miami agreed, stating, “It is irresponsible of us not to see lead as a significant health threat to people living in Picher and Cardin and the only solution I see is to move residents away from here as part of a buyout plan” (Sturgeon III 2003f). The Picher Elementary principal concurred that a buyout was the best option for the safety of students. Principal Kimberly Pace dedicated her career to helping students with developmental and learning disabilities caused by lead poisoning. She had a dream that the buyout would somehow keep educators and students together to continue their progress overcoming together, and pleaded, “But if that’s not possible, then get these babies out of here to somewhere where they can pursue the American dream” (Pearson 2003b).

Tensions were only rising at Tar Creek among residents who wanted the governing bodies responsible for the Superfund site to create actual solutions and not just more studies. At the same time, Tar Creek was receiving national attention with the involvement of Robert F. Keenedy Jr. and the NRDC. Residents and outsiders alike called for more justice and more solutions.

Inhofe versus Tar Creek: Uncompromising Plans

Brad Henry took office as the Governor of Oklahoma in early 2003. Right out of the gate, he threatened to sue the federal government over Tar Creek. His approach was that if the state could secure a federal declaratory judgment once and for all that the federal government has a duty to address Tar Creek then there might be quicker action (“Governor threatens” 2003). Gov. Henry gave federal officials six months to get to work before he would pursue the lawsuit. Shortly after, U.S. Representative Brad Carson met with residents in Picher who overwhelmed him with remarks that they want the government to move them out. After the meeting, Carson

said although a buyout is an "extraordinary resort, a last resort," he thinks a buyout is the best option and recognized it would require Oklahoma's congressional delegation to work in unison in Washington ("Carson hears" 2003). In April 2003, the federal feasibility report was still held up from being released to the public but was rumored to have been completed in the summer of 2002. Carson indicated, "The fact that it's being held up suggests to me that someone in the federal government doesn't want it released" ("Carson wants" 2003). Frustrated that after spending $100 million over a quarter century, Carson began planning legislation that would propose a voluntary buyout plan expected to cost around $50 million (Richardson 2003a, Sturgeon III 2003a).

The problem was that Oklahoma's U.S. Senator James Inhofe was not a proponent of a buyout (Sturgeon III 2003a). Critical of Inhofe's lack of appearance at the Superfund site, residents called for their Senator to visit them and explain why he refused to support a buyout to move children to a safer environment (Sturgeon III 2003d). At this point, spokespersons from both Inhofe's and Carson's offices went back and forth. Inhofe's office criticized Carson's plan as "an attempt to please everyone" saying the plan lacked solutions and claimed Carson didn't have the technical expertise to solve Tar Creek issues. Carson's office called Inhofe out for spending more time in Bosnia than at Tar Creek, which he had never visited, and claimed he didn't need to be an engineer to know Tar Creek needed immediate action–he just needed to visit and talk to people. Inhofe's office responded by saying, "Others can play childish political games, but Inhofe is in the position to achieve a scientifically based and comprehensive approach to clean up Tar Creek" (Sturgeon III 2003d). Residents were frustrated and felt Inhofe's "plan to have a plan" accomplished very little.

At the beginning of May 2003, a draft copy of the federal feasibility report was leaked and the engineers who conducted the study endorsed a buyout as a necessary step. Rep. Carson said, "Today is nothing short of a liberation day for the people of Picher and Cardin" ("Tar Creek report" 2003). The following week, the final copy of the feasibility report was released with a key edit that changed the wording and meaning of the buyout endorsement (Casteel 2003). The draft copy of the report, which was completed in August 2002, said that even though not all of the technical questions could be answered by the study, their plan created a "visionary approach to solving the area's complex problems" and then admitted there was likely not a federal interest or authority in a buyout of residents. The draft went on to say, "Even so, the team favors a voluntary relocation for a number of reasons" (Myers 2003a). The crucial and controversial final report released in May 2003 had only one line changed. The final report's version of that line was, "Even so, if the goal is to create a resource area, the team favors a voluntary buyout for a number of reasons."

Rep. Carson said that whoever made this edit to the final report created the worst betrayal in Tar Creek's history and said that it must have been a "Washington bureaucrat" motivated to rewrite the document because they opposed the technical team's research results (Casteel 2003). Inhofe expressed he was pleased the federal agencies finished their study and released the report. Soon after, Rep. Carson reported one of the members of the technical team said they were not notified changes were made to the final report before it was released and did not sign off on it (Kurt 2003). With this information, Carson set up meetings with EPA officials who could not answer any questions about the rewording, when it happened, who authorized it, or why. Following that meeting, Carson requested an inspector general's investigation into the document

and stood firm that EPA officials were allowed to overrule a technical team's findings, but they couldn't edit a technical team's report and claim it to be the stance of that team (Myers 2003a).

In 2003, Senator Inhofe served as chairman of the Senate Environment and Public Works Committee, which gave him a lot of influence over environmental bills and funding. Inhofe claimed that when he received this position, he "made a personal commitment to the people of Tar Creek" (Myers 2003b). As part of this personal commitment, Inhofe announced a proposal for Tar Creek with $45 million secured to go towards the first phase of his comprehensive approach to clean the Superfund site – that didn't include a buyout plan. Governor Henry took a very neutral approach to the idea of relocation and said it should be reviewed like everything else but there wasn't enough information at this time. Rep. Carson maintained that relocation was necessary and that the results of Inhofe's phase one plan were only worthwhile and significant if they were paired with a buyout.

Residents criticized Inhofe's plan, citing that it fails to address the immediate health and environmental problems they faced (Sturgeon III 2003e). The Tar Creek Steering Committee reported that the plan was not a comprehensive approach to Tar Creek's issues because it focused only on the peripheral outer fringes of the Superfund site instead of focusing on the portion where most residents live in Picher and Cardin. When the senate committee released the work plans for the proposal, residents started calling it the doughnut plan because remediation work will be done on the outside "with a big hole in the middle" (Sturgeon III 2003r). Inhofe voiced from D.C., "It's going to be unpopular, but we are going to clean up the mess. That is what leadership is about" ("Inhofe opposes" 2003). Later that month, Inhofe made his first visit to Tar Creek and asserted that the people calling for a buyout were motivated by politics and that he planned to ignore that (Sturgeon III 2003h).

Meanwhile, Oklahoma's other U.S. Senator Don Nickles thought a buyout should remain an option because $100 million had already been spent on Tar Creek and he thought some of that money had been wasted (Schafer 2003c). When Sen. Nickles visited Tar Creek, residents greeted him at city hall with signs that read 'You've got to help us' and 'We need a buyout' and many more (Sturgeon III 2003r). With so many diverging opinions in the Oklahoma congressional delegation between Carson, Inhofe, and Nickles, Governor Henry had to attempt to reconcile all of their differences. Since there was no continuity in Oklahoma's delegation position, Gov. Henry decided to hold off on the lawsuit he threatened earlier in the year ("Governor mediating" 2003).

When Robert F. Kennedy Jr. was in town, he discussed Inhofe's plan to consolidate all of the chat into one place and said, "It makes no sense. We'll move it all into one place and instead of poisoning you from many locations it will poison you from one" (Sturgeon III 2003j). The more time that passed, the more impatient people became for a buyout. One report said, "Most reasonable people would agree that moving the people to safety and dealing with the remaining issues over time is the best course. After all, the government has already spent 20 years on this project. It can afford to take more time as long as people aren't at risk" (Pearson 2003).

In October 2003, Gov. Henry visited Tar Creek and said the cleanup remained the top environmental priority of his administration (Sturgeon III 2003o). During his trip, Gov. Henry organized a town hall to meet with residents and hear their concerns (Sturgeon III 2003p). At the meeting with residents, one woman shared that she was ready to be bought out because she wants her grandchildren to be safe and she was embarrassed to have visitors in her home after the yard remediation caused severe damage to her property, including black mold. Another resident shared that he planned on staying in Picher, but he supported a voluntary buyout and

said, “Please relocate these people who want to be relocated. Please buy them out because I’m sick of them” (Sturgeon III 2003q). Gov. Henry shared that his purpose for visiting was to gather facts and information for his upcoming meeting with the Oklahoma congressional delegation in D.C., and said that everyone was sick and tired of the studies and meetings and called for swift action from officials on all levels of government.

During his trip to Capitol Hill, Gov. Henry told the delegation that a buyout should be explored based on the immediate health concerns he saw (“Henry, Inhofe differ” 2003). After Henry’s meetings in D.C., Inhofe and the new director of the EPA Mike Leavitt planned to visit Tar Creek around Thanksgiving. The Tar Creek Steering Committee began reaching out to them ahead of their visit to meet with them during their trip. The Steering Committee was concerned that Inhofe and Leavitt did not have all of the facts and information they needed to make fully informed decisions (Sturgeon III 2003l). Upon arrival, Leavitt said the site was “impressive and difficult” and supported Inhofe’s plan fully and declared he was satisfied that the plan was well-thought out (“EPA chief” 2003). Leavitt may have been satisfied with Inhofe’s promise of progress, but residents were not. Mark Osborn, a Miami family practice doctor, stated, “I can find no indication through his actions or his words that the problems of these children matter” (“Residents say" 2003). Other residents simply expressed fear that their towns would have long, slow deaths under Inhofe’s plan. A billboard was installed along Oklahoma Highway-69 that sums up the communities’ sentiment towards the plan (see Figure 10). The billboard reads, “Tar Creek Plan: phase 1 - dumb, phase 2 - dumber.”

Figure 10. Photo of a billboard in Ottawa County published in the Miami News-Record. Photo by Gary Crow. Unknown date.

In December 2003, Gov. Henry met with state congressmen to discuss his proposal that included a voluntary buyout of all Picher and Cardin residents with children six years old and younger (Sturgeon III 2003s). As buyout plans became more serious, Inhofe mentioned an option no one had heard of yet: a private buyout. Inhofe said, "If people really want a buyout, they can do it through the private sector. The government does not have to foot the bill" (Barber 2003). The following week, Inhofe hosted what he called a public meeting in Miami. Residents who opposed Inhofe's plans alleged that they were intentionally disadvantaged to not attend the meeting due to being informed so last minute and his supporters were the only ones he wanted in attendance (Sturgeon III 2003t). Many residents and local journalists reported that they learned

about the 1 pm meeting at 1 pm. When residents who opposed his plan arrived late, Inhofe said, “If you’d been here on time like everyone else, I’d be happy to talk with you. But you’ve missed the meeting, we’re ready to wrap it up.”

Following the meeting, Inhofe asserted that the Tar Creek Steering Committee survey that found 85% of residents were in favor of exploring a buyout was a myth. His exact words were, “It’s a lie, there is no survey saying that 85% of the residents want to be bought out or relocated” (Sturgeon III 2003u). Dr. Osborn of Miami said no poll would ever satisfy the Senator. Residents had plenty to say about Inhofe and his plan at the end of the year (Schafer 2003u). One resident said Inhofe was forcing his plan down their throats with no compassion. Another said the plan was fatally flawed and another attempted to toss money at the issue to avoid the widespread health and safety concerns. Many residents expressed that Inhofe and Leavitt’s Thanksgiving meeting excluded residents to avoid embarrassment. One woman said, “He’s just a chicken. There’s a lot of other things I could say, but that’s the nicest thing I can say about a man who wouldn’t hold a public meeting for everyone.”

In 2003, the yard remediation project skyrocketed in price. In the year 2000, the Corps of Engineers reported the average cost per yard was $20,500. In 2003, that number rose to $71,000 per yard (Schafer 2003d). The county assessor's records indicated that the average value of residential properties near the Superfund ranged from $15,200 to $26,155. The running total at this point for the Tar Creek Superfund site was $107.5 million with yard remediation totaling $95.6 million. So far, over 1,900 yards had been remediated. TEAL shared their appreciation for the ongoing project, “but as long as the chat piles are in the Superfund area, and as long as the wind is blowing and children are playing on chat piles, there’s always going to be a danger of lead poisoning in the community” (Brower 2003b).

With yard remediation attempts costing three times the value of homes themselves, and government officials creating plans that no one close to the issue thought were a good idea, residents were rightfully beyond frustrated with the situation. At this point, it probably seemed like there was hardly anyone on their side. In addition to this, the threat of lead remained a constant threat to the community. It was impossible to fully eradicate the threat, so residents remained hopeful for a future where they could escape the area.

Mixed Emotions and Multiple Plans

Feeling abandoned by the government and left with many unanswered questions and unresolved problems, a Picher resident of 67 years wrote to the newspaper and explained that he relied on Social Security and cannot afford to leave Picher because there is no one willing to buy the homes around them. He expressed, "Talk to me somebody! I have a real dilemma … Will someone hear me talking? Mr. Inhofe can't hear me talking, main reason: he's never around, when he does come around it's sneak play, or unannounced" (Hatfield 2004). Along with feelings of isolation, desperation, and at times hopelessness, residents facing severe help problems credited them to pollution from the Superfund site. For example, Picher City Councilman Phillip Johnson was diagnosed with an illness common in the mining industry known as black lung disease–despite never having been a miner (Gillham 2004). Even out-of-towners began advocating for immediate action on behalf of people living around the contaminated area. A group of Tulsans called on Inhofe to support a buyout. They stated,

> "It's time to come down to earth, Sen. Inhofe. These people need your help. The problems in Tar Creek could take decades and billions of dollars before the place – that served our nation in times of war by providing the lead for bullets – could be made safely inhabitable…The buy-out of the residents is a logical and fiscally conservative remedy." (Bendel 2004)

Equally frustrated with the lack of progress, Miami Mayor Post proclaimed that Tar Creek and the surrounding communities deserved and required much more attention than Inhofe's plan offered. There were too many immediate health risks going unaddressed: health impacts of lead, water pollution across the entire watershed and downstream, and the inevitable promise of ground collapse. To be frank, Inhofe's plan didn't address any of the immediate risks. Puzzled by the situation, Mayor Post stated, "I cannot understand why a buyout and relocation of Picher and Cardin has not been included." A few weeks later in late January 2004, state health officials also questioned Inhofe and defended scientific findings. Inhofe's office made claims that blood lead levels in children and the concerns over lead poisoning were overblown, to which the director of the state board of health responded by saying the evidence of lead toxicity in the area was a major concern for the state board (Sturgeon III 2004b). The physician shared that while the situation has improved over the years, they remained very concerned about ongoing exposure and the health risks to all residents in the area.

At the end of January 2004, Governor Henry announced a state-funded plan to remove families with children under 6 years old in Picher and Cardin from the area by offering them a fair market price for their homes based on average prices of similar homes in Ottawa County (Sturgeon III 2004c). Families who rent would receive a credit totaling a full year's worth of rent. The $5 million plan also provided a plan for landlords who would lose renters, subsidize the school district and other local government agencies, and help minimize the impacts of relocation on utility companies. A source in the Governor's office shared that Henry's plan would complement Inhofe's plan – not compete against it (Gillham 2004a). For Henry's buyout to move forward, the legislature would have to set aside $5 million in the state budget. In February, the bill supporting the buyout was sent to the state senate appropriations committee where the

logistics assuring residents use the buyout funds to relocate far enough away from the harm were discussed (Sturgeon III 2004e).

As the buyout bill started its journey in state congress, Gov. Henry ordered the state's Department of Human Services officials to stop placing foster children under the age of 6 with families near the Superfund site and to remove any children with that criteria who are already there (Gillham 2004b). There was only one foster child under six years old placed in the area: a three-year-old with health issues who had been living with his foster family for over a year and had plans to adopt him. The foster parents described their pain and heartache of losing a child they saw as their own and had grown to love. The foster father said, "We have cried until we can't cry anymore…I don't think we'll get him back." Health officials with DHS said they couldn't comment on if the child had been tested for elevated blood lead levels, but the foster mother said his most recent test from a few months ago did not register a blood lead level (Sturgeon III 2004g). There was a unique pain felt across the area as the reality set in that they could become a community without children ("heartbreaking loss" 2004).

The buyout bill went to vote in the Senate. While being discussed, several senators argued that the government should not be responsible for relocating people who bought homes near the Superfund site. A Republican senator from Tulsa asked, "Is this not rewarding people who made stupid decisions?" ("Tar Creek bill" 2004). Nonetheless, the Senate passed the bill onto the House of Representatives with reservations. The House passed the bill and sent it back to the Senate for adjustments such as necessary amendments for families who leased land from the BIA (Sturgeon III 2004i). After passing through the legislature, Governor Henry signed the bill in Picher with chat piles serving as his backdrop (Stogsdill 2004b). Tar Creek Steering Committee chairman Sparkman remarked, "I think this is the first time we've gotten any help in

20-plus years" (Branstetter 2004). Residents were told they could expect the application process to begin by September of that year with checks issued later in the fall.

Meanwhile, Inhofe's plan was getting organized. Oklahoma's new Secretary of Environment Miles Tolbert, shared the state's desire to be more involved with local agencies moving forward. While visiting Ottawa County he said,

> We are trying to be very disciplined about coordinating our efforts for the good of the area. We spent much of the last two years trying to make sure that the federal agencies were working with the state agencies and we realized there has been a big hole here with us not working with the Ottawa County reclamation authority. One of the reasons we're here is because we realize we've done a bad job. I've been working on Tar Creek for over a year and this is the first time I'm meeting (the board). It's kind of embarrassing. (Brower 2004a).

Overall, Inhofe's plan was not the most popular or painted in the best light. The Tulsa World published a comic depicting Gov. Henry surrounded by children holding a sign that read 'SAVE THE KIDS!! TAR CREEK BUYOUT APPROVED' and Inhofe scoffing at the scene with his arms crossed saying, "another one of those 'humanitarian do-gooders'" (see Figure 11). Inhofe's approach rightfully left a bad taste in residents' mouths.

Figure 11. Comic published by the Tulsa World. Illustrator and date unknown.

Even after years of the remediation process, there were still decision-makers who believed the people impacted by pollution at Tar Creek were people who made bad decisions and might not deserve assistance. It seemed like time and time again the biggest obstacle residents of northern Ottawa County faced was that people who held the power to help them often did not know their situation as intimately as those who experience toxicity firsthand. This dichotomy between those in power and those at the mercy of those in power created a sense of desperation that led many who lived in Tar Creek to write into the local newspaper with feelings of isolation and like there was no one willing to help them. Even people from out of town were driven by compassion to write into the paper calling for better solutions for residents around Tar Creek.

That empathy seemed to be lacking in many plans for the site, including Inhofe. For example, even high-ranking state officials responsible for coordinating Inhofe's plan shared that even after years of working on the project, there were local agencies he had never met with personally. Arguably, a comprehensive plan that prioritized and centered the well-being and input of residents would have started there.

Waiting on Shaky Ground

At the beginning of September 2004, Gov. Henry appointed a group to serve on the trust that would handle the buyout applications. The trust is called Lead-Impacted Communities Relocation Assistance Trust, or LICRAT (Sturgeon III 2004k). At the same time the trust was formed, residents began discussing if they planned to move or not. Approximately 100 families were eligible for the buyout. Fifty applications were picked up on the first day they were available (Sturgeon III 2004m). Residents had until December 31, 2004, to complete their applications (Sturgeon III 2004l). By the first week of December, LICRAT began reading the initial 62 applications. To qualify for the buyout, a family must have had a child under six years old or a pregnancy that began on or before December 1, 2003. One family was rejected from the buyout because their son turned 7 years old right before the deadline and conceived their now three-month-old infant ten days after the deadline (Sturgeon III 2004j). The father of the infant said, "I have a couple of nephews who have had bad reactions to the lead up here, and I wanted to move my child for protection. That doesn't look like it is going to happen" ("Tar Creek families" 2004). Residents waited for updates in fear the trust wouldn't offer them what their properties would be worth in a different area. One family said their 1,700-acre ranch should be worth $1 million and wouldn't want to relocate unless they could move somewhere similar to

what they were offered. At the end of 2004, LICRAT said it was possible that renters would receive assistance in January and that homeowners would be compensated by March.

Throughout 2004, residents waited through each phase of the buyout news on literal shaky ground. A former Oklahoma mine inspector Don Ziehl, who at this time worked for the Bureau of Land Management, sounded alarms across Ottawa County when he contacted Picher Mayor Freeman concerned that the sports park was compromised and going to collapse (Sturgeon III 2004f). About the mine shaft beneath the surface, Ziehl said "I've been to that void and I can tell you it is massive…I am not sure everyone understands what the records show or the size of this particular void. I don't think there has been adequate testing done to determine the potential for subsidence." Mayor Freeman responded to Ziehl's claims casually and attempted to reassure the community, "It's big down there, no doubt. I wasn't afraid of it then and I'm not afraid of it now. I'll get hit by a car before I fall in Reunion Park" (Brower 2004b). Freeman was determined to not let the alleged threat interfere with baseball season and shared that his grandson would be playing on the fields. After the concerns circulated Miami, Mayor Freeman was skeptical of Ziehl's sudden concern over the stability of this park after 35 years away from Oklahoma. The EPA shared that they determined the Reunion Park area was a safe and stable place to store heavy equipment in 1997 at the start of the yard remediation project but has not done any testing since (Brower and Sturgeon 2004). To put things to rest once and for all, the director of the Picher mining museum requested that the Corps of Engineers conduct tests to be certain the park was safe. Throughout the year, more and more sinkholes appeared throughout the county (Sturgeon III 2004d).

Residents were watching the ground collapse across the region. Since a majority of them didn't qualify for the state buyout because there weren't children of qualifying ages in their

families, most residents lived with the fear of subsidence not knowing if they would ever be able to escape the risk. Even locally, the government did not go to great lengths–or in this case, any lengths at all–to ensure the safety of the community. It was not the mayor or anyone else in the local government who requested tests on the stability of the mines, it was a local museum director.

Who's tampering with the blood tests?

Despite everything else that happened in 2004, arguably the most shocking events were related to the blood lead level testing of children in Ottawa County. In November 2004, two workers gathering children's blood samples for lead testing were accused of falsifying the samples with their blood. Three canvassers on the project noticed something wrong when they met two phlebotomists at each home to gather samples, some of which they were not able to draw blood or they were only able to draw a small amount of blood that did not fill up a full vial. The canvassers left each site in a separate vehicle from the phlebotomists and met them back at the testing facility where the phlebotomists arrived with no empty or partial vials – they were all full (Stogsdill 2004). When John Sparkman heard of the alleged tampering, he said he was sick over the fact that parents were potentially being misled about their children's health and called for a full investigation and charges to be pressed (Stogsdill 2004). The University of Oklahoma Health Sciences Center (OUHSC), the lab responsible for the blood testing, announced that no outside investigation would be pursued and that they would conduct an internal investigation (Stogsdill 2004).

In January 2005, the internal investigators at OUHSC said the results of their investigation showed that the two phlebotomists in question did not tamper with the blood

samples (Sturgeon 2005b). Despite this, more allegations of faulty testing arose. One mother said she received test results from her daughter's sample that indicated her blood lead level was 1.9 micrograms per deciliter – even though phlebotomists were unable to collect a sample from her daughter. The mother said, "They weren't able to get a drop of blood from her, so I don't know how they got the result" (Sturgeon III 2005c). Additionally, Jennifer Andrews, the canvasser who reported the initial samples was terminated from her position. Chuck Wade, the OUHSC supervisor for the project, said that Andrews was a "disgruntled employee who quit after he would not make a change in her schedule." Andrews' attorney disputed this claim and said, "She is a nursing student and she asked to be able to leave 20 minutes early once or twice a week so she could make it to class on time. Chuck Wade granted that schedule change and there was not a problem with it. It was one week after she made the allegation that she was fired." Eventually, OUHSC said they were considering conducting a DNA study of the samples taken and testing them against the phlebotomists' blood to determine once and for all if the original tests were legitimate (Gillham 2005a). Five months later in August 2005, OUHSC officially reopened its investigation into tampering to include DNA testing and offered to retest all children involved in the original sample (Gillham 2005b).

The results of OUHSC's DNA investigation on the alleged tampering came back in the spring of 2006. It was confirmed that workers substituted their blood for that of the children they were testing (Gillham 2006c). The two phlebotomists originally accused confessed to the substitution and also shared that several others associated with the blood sampling substituted their blood as well. Overall, 15 blood samples contained blood from workers on the project or from an unknown source. The Vice President of Research at OUHSC said their team would turn over the investigation report to "responsible federal agencies" but refused to say which agencies

and said the report would not be made public (Warford-Perry 2006b). Jennifer Andrews, the original whistleblower of the tampering, expressed, "I feel absolutely vindicated. When I went public they called me a disgruntled former employee. Now we know what has really gone on and I was the one telling the truth."

In addition to the threat of lead exposure in their children, parents also had to worry if the tests that were supposed to accurately depict their children's lead levels were valid. The first investigation that resulted in OUHSC declaring there was no tampering with the tests seemed dismissive and downplayed the gravity of the accusation and the severity of health hazards at Tar Creek. For nearly a year and a half, residents had to wonder how much of the blood lead level testing conducted in the last year accurately reflected their reality while they waited for OUHSC to conduct their full investigation. OUHSC concluded only 15 samples were tampered with, but residents were never even able to see the investigation report.

Yard Remediation Ends

In April 2004, after spending $113 million over the seven-year project, the EPA announced it was wrapping up the yard remediation project. There were 270 sites left that had been identified as in need of remediation, but the EPA said they would be focusing only on the ones that are residential properties with children. One report on the news stated, "The EPA finally gets what U.S. Senator Inhofe stubbornly refuses to get. That is that the entire 40-square-mile site is dangerous, but is particularly dangerous to children" (Jones 2004). The year 2004 also brought the trial results from lawsuits filed against the EPA's former yard remediation contractor Morrison-Knudsen, who had changed their name to Washington Group International Inc. A past employee of the company, David Lovelace, who was the whistleblower

in this case testified that the company “routinely and blatantly falsified soil sampling logs in an effort to defraud the U.S. government” (“Lawsuit says" 2004). Lovelace also claimed that the company would fill trucks with contaminated soil from one location and use it as “clean” soil to fill in the new yards.

The lawsuit against the former M-K ended with the U.S. Attorney General’s office dropping the charges. The Vice President of Corporate Communications of the Washington Group said, “We have always asserted we had done nothing wrong. The folks who filed suit, who made claims we did things improperly, could not prove criminal conduct. In fact, the government raided our job offices and confiscated all of our critical papers, but they found nothing criminal there” (Kennedy 2004b). After leaving the yard remediation project following their FBI raid, the Washington group filed for bankruptcy protection after the acquisition of a portion of the Raytheon Corporation, Raytheon Engineers & Constructors.

After a yard remediation project that cost over $100 million and, though it wasn’t determined in a court of law, being exploited by contractors motivated by capitalist gain, residents were still left living in pollution. Children could still access lead-contaminated sites. The source of the pollution remained. The long, drawn-out project, which was originally planned to take only three years, ended without major success and without holding those who capitalized off of the situation accountable. Even when the justice system was involved to provide checks and balances, no accountability was upheld to protect and prioritize the community of Tar Creek, who remained the victim of agencies and contractors who were negligent in ensuring an effective and efficient remediation project. To their credit, though, they could have added new dirt to every square inch of Ottawa County and the threat of pollution would still be there because the

chat piles and mines full of acid water still existed because they were never addressed in the project plans anyways.

Buyouts Begin

As the buyout program started rolling, a total of 65 families applied for the program (Sturgeon III 2005a). Of the 65 applicants, three were rejected and two were asked to share more information. A total of 200 people made up the families approved for the buyout, approximately 10% of the population of Picher and Cardin. LICRAT selected a bidder to perform the appraisals as well as a second company to make sure the offers were fair. The goal was to have all offers completed by May 31, 2005. When the appraisals began, one of the residents approved for the buyout confided, "When I found out the lead was hurting my kids, I was ready to go. That was years ago. Everyone here should have an opportunity to go. They're just like the rest of us" (Kennedy 2005a). On April 6, 2005, the first buyout offer was accepted by the Frost family (Sturgeon III 2005d). Michael Frost said,

> "This is an opportunity from God. We wouldn't have got this if it weren't for God and Governor Henry…It was easy. They had all the paperwork and photos of similar properties in Miami and how much they cost. They were prepared for all our questions and really did an excellent job explaining it all to us." (Sturgeon III 2005d)

Beyond the first happy homeowner, LICRAT expressed their desire to hopefully help some of the renters become homeowners through the buyout process. LICRAT also planned on organizing counseling sessions that would aid families throughout the entire home-buying process.

A major obstacle LICRAT faced was what to do with the properties the trust acquired. For a moment, the trust considered putting deed restrictions on the homes that would prevent children under age 7 from ever living on the properties in the future (Sturgeon III 2005f). At this point, 27 families had accepted offers to relocate away from the Superfund site. Ultimately, the

trust decided demolition was the best approach to avoid liability, deed restrictions were a 'value killer', and they didn't want to market anyone else moving to the area. Picher Mayor Freeman heavily disputed this decision because many of the homes were in good shape and residents still living in the area wouldn't have the opportunity to purchase better homes if they were demolished (Kennedy 2005b). One of the homes that was demolished was a 7,000-square-foot home known as the Semple Mansion. By the time half of the offers were accepted, the offers ranged from $17,000 to $228,000 (Sturgeon III 2005g).

Unfortunately, the buyout didn't bring out only the best in everyone (see Figure 12). Homes involved in the buyout were targeted by burglars, sometimes while the properties were still in the possession of the homeowner before closing with the trust (Sturgeon III 2005i). Appliances like air conditioning units and furniture seemed to be the most common items stolen. One of the reports even named Picher Mayor Freeman as a suspect in their buyout home burglaries (Burhenn 2005b). Freeman said the allegations were untrue and were made by residents who do not like him or his politics. In addition to the looting taking place in their community, many families whose children were a year or two too old to participate in the buyout felt stuck watching their neighbors leave (Garcia 2005). For many residents, watching their neighbors experience the excitement of accepting an offer to leave was bittersweet. They thought they would never be able to leave and would have to slowly watch their towns die.

Figure 12. Bought and abandoned houses in Picher with ‘KEEP OUT’ spray painted on the side to thwart looting. Photo taken by Randy Peppler in November 2018.

Prospecting for a Wasteland: Tar Creek targeted for more extraction

Alternatively, some saw Picher as their opportunity to make a large profit. A company called Agrico announced their plan to lease many acres of contaminated land from the City of Picher to grow genetically engineered trees that they claimed would leach toxic material out of the land (Sturgeon III 2005e). Their business plan included utilizing wind-powered wells that would bring water up from the Boone Aquifer. Agrico planned on planting 7,800 trees (Burhenn 2005a). Many residents became skeptical of this company’s plan and intentions. Ed Keheley shared that he hoped the company had done thorough research and had a full understanding of what they were doing (Sturgeon III 2005k). Additionally, mining engineer Mike Sharp mentioned the ‘buoyancy effect’ that stabilizes the mine shafts and said withdrawing water from

the Boone Aquifer is dangerous because it holds the surface in place. Agrico representatives shared again that the tree will draw contaminants from the soil and that "all of the environmental studies have shown the tree will clear up the problem."

John Sparkman was not fully convinced. He asked, "Have these people been to Tar Creek? I think they are just here because they want a federal subsidy for their business. They're like some of the others, they've got their hand out." The president of Agrico confessed his company was initially attracted to Tar Creek because of the opportunity to receive federal funds. He said,

> "We're looking for federal funding. We'd like to get some money out of the Superfund, or through grants, or partnerships with whoever wants to participate. It's astronomical the amount of money that can be made with these trees, but we're also looking at waiting four years to harvest trees and get any return on our investment." (Sturgeon III 2005k)

Ed Keheley followed up by iterating that if Agrico planned to use contaminated water from the Boone Aquifer in their production then they would be contributing to the contamination. Keheley said, "It would then be a little disingenuous for them to say they were involved in the remediation." Later that week, news came out that Agrico did not have the funds to finance the project or begin any soil testing on the 26-acre plot they leased from the city (Sturgeon III 2005l). They had not even paid their first rent payment for the plot of land. Officials of the company went on to say that they weren't even certain if their prized tree breed would grow in the soil conditions of the Superfund site. A company representative responded to a question and said that this specific tree had never been tested for remediating lead, but was successful at remediating plutonium in a university study in Ohio. An investor with the company shared their plan to buy chicken litter, municipal sewer sludge, and straw as compost – but noted they would of course take measures to prevent runoff into Tar Creek.

Ultimately, sewer sludge killed the deal with Agrico. Picher Mayor Freeman reported Agrico told the city they would be using compost from leaves and other broken-down plant matter and had not shared their plans to use sewer sludge or chicken litter on the land. An Agrico investor responded by saying, "We won't use sludge if that's not acceptable. We're going to need to use large quantities of compost, but it doesn't have to contain sludge" (Sturgeon III 2005m). The Agrico team estimated their project would cost $150,000 and were still seeking financing. The company leaders pitched their company to local tribal leaders at the Inter-Tribal Council meeting and discussed funding opportunities with their company. Picher City Councilman Phillip Johnson said at the next council meeting, "I'm pretty sure we'll ask to get out of this deal. I can't speak for everyone on the council, but I'm not going to vote to let our town become a dumping ground for sewer sludge from every other town in the area."

If the Agrico deal had gone through, it would be history repeating itself. People still lived in Picher at this point and their homelands would have been used as a sacrifice zone for yet another industry. It is manipulative for companies to represent themselves as stakeholders in the remediation of a polluted place yet have plans that would make the contamination infinitely worse. Thankfully, Agrico's plan had so many holes that they were stopped before more damage could be done.

Insurmountable Instability

Throughout 2005, the threat of subsidence across Ottawa County became increasingly intense. In January, a sinkhole appeared and the ground cap sunk 12 feet beneath the surface (Duhon 2005). After cross-referencing the site with every map they had of the mines, it was determined that this site was never used for mining, but perhaps a shaft was drilled in search of

ore before being covered and forgotten about until it collapsed half a century or more later. This was a scary discovery to find that there were places with the threat of collapse that weren't on any maps. During the spring rains of 2005, erosion revealed an open mine shaft a few feet off Oklahoma Highway 69 (Sturgeon III 2005n). Officials say there would be no threat as long as they could stop and control the erosion from getting worse. Eight months later in December 2005, the United States Geological Service announced that after extensive testing, results showed that Oklahoma Highway 69 was going to collapse (Warford-Perry 2005). Officials were unsure of when it would happen or how large of a collapse it could be, but they were certain that someday it would.

The year 2006 started with a group of residents gathering together to form a grassroots group in favor of a full buyout of their towns (Warford-Perry 2006d). Residents discussed how the yard remediation project and the problems that came from it made their homes worth nothing and that they couldn't understand why so much money has been spent on projects without addressing immediate health concerns. One resident even said that cows are treated better than people who live around Tar Creek. Over 80 residents attended the first grassroots group meeting. At the second meeting two days later, over 250 residents joined together in favor of a full federal buyout (Warford-Perry 2006e). No one at the meeting spoke out against the idea of a buyout. Many residents expressed concern that the droughts they experienced that year were going to result in more ground collapse across the county.

The Corps of Engineers had spent the last year and a half conducting a subsidence study of the area following Don Ziehl's concern that the Reunion Park sports field was going to collapse. Jonna Polk, with the Corps of Engineers, said their full subsidence report would be made public on January 31, 2006, with a public meeting scheduled along with its release. Three

weeks ahead of that day, Polk met with the Picher school board to share the urgent news that the elementary school playground had a 20%-50% chance of collapsing (Warford-Perry 2006f). Parents of children who attended the school were notified of the danger immediately (Kennedy 2006). The engineers who conducted the study gave school officials two options. The school could either close the playground, or they could pay for a $16,000 safety study as well as purchase an $8,000 monitoring system (Stogsdill 2006a).

The final report of the subsidence study did not offer comfort or good news to the residents of Picher and Cardin. The final report says that across the area 286 locations were at risk of collapsing if the mine shafts beneath them were to collapse and warned, “Every mine shaft has the potential to collapse” (Stogsdill 2006b). The scale of collapses predicted by the engineers varied between 1 foot in diameter to 50 feet which would risk the lives and properties around it. The Corps stated that of the 286 sites with a potential of collapse, there were 122 sites with a 20% chance of caving in and 11 sites with a 50% chance of caving in. They also indicated that there could be many more sites across the region also faced with the threat of collapse that was not included in their study.

Following the study, a packed room of residents met to hear updates from Senator Inhofe’s aide. The crowd rose to their feet in applause and cheering with Inhofe’s aide announcing that given the dire results of the subsidence survey, a federal buyout was back on the table. One resident addressed Jonna Polk from the Corps of Engineers and asked why the government had spent nearly $200 million on Tar Creek without researching the underground conditions first. Another resident shared that they don’t sleep well because every sound makes them afraid their house was going to fall in and couldn’t wait for a buyout opportunity to get out. Inhofe said that the reason the subsidence report changed his outlook was, “an elementary school

could fall in and kids could be killed. That's much more of a threat than some lead would be to someone's health. Consequently, we're going to have to do some relocating as a result" (Myers 2006).

Providing an update on the buyout plan's progress, Inhofe said the residents could not survive there and that is what motivated a relocation. He said, "This could be referred to as the bite-the-bullet model for others to follow," about his drastic change in opinion over the buyout (Myers 2006). Inhofe said there was not a set timeline yet but that officials would work as quickly as possible. John Sparkman, who was an early advocate of a buyout, said that a buyout would take away the need for the Picher Housing Authority, "I may be out of a job but at least there won't be any more children having to grow up in this kind of polluted environment. I would like to thank Senator Inhofe for his leadership and for making the agencies listen to the truth. Without his leadership, we would not be here or have this way out" (Gillham 2006b). The buyout created new hope for the residents of Tar Creek. The Tulsa World published a comic depicting crumbling mine shafts full of toxic water with housing falling into open mine shafts and at the center, there is a shining flower that says BUYOUT (see Figure 13).

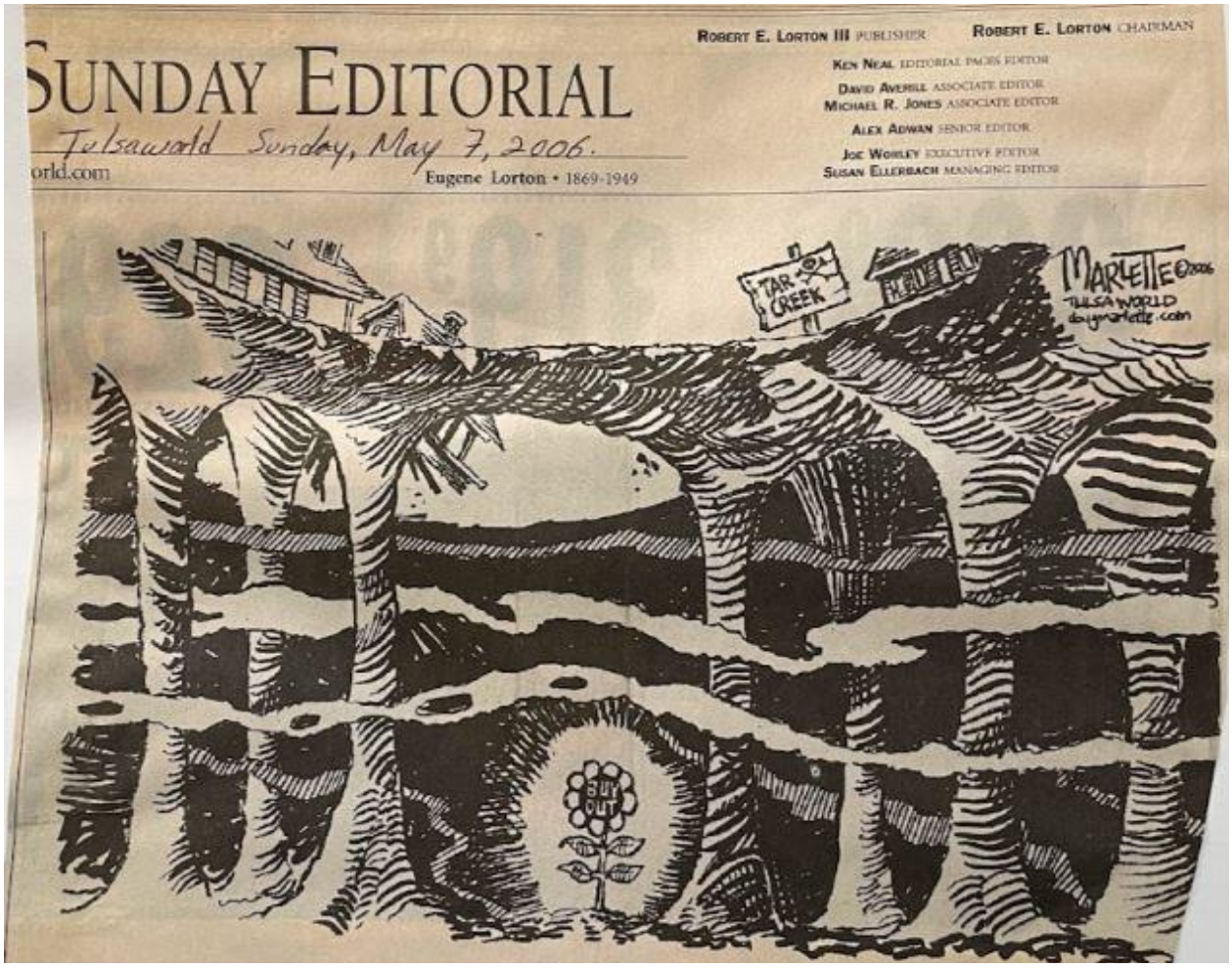

Figure 13. Comic published by the Tulsa World on May 7, 2006. Illustrated by Andy Marlette.

While it was relieving that Inhofe finally accepted the idea of the buyout, the reason why he had not supported a buyout sooner is disheartening. His stance that the threat of collapse was a far more legitimate concern than generations of lead poisoning demonstrates the mechanisms through which slow violences is enacted: hidden, long-term effects of desecration on the environment and human health are not taken as seriously as more immediate threats. In Inhofe's view, children living with the threat of subsidence were deserving of his full attention and aid, but the generations of children who experienced severe lead exposure and alarming rates of lead poisoning were not.

Community Response: Bittersweet for some, just bitter for others

With new knowledge of harm, officials from the Pitcher Housing Authority voted to close 24 of the 78 low-income units at the complex due to the buildings being in one of the locations with a high-risk of collapsing ("Officials vote" 2006). While waiting for any updates on a buyout, residents of Picher and Cardin lived with the threat of caving in every day. Two months passed after the subsidence report was released and residents were still left without answers (Duhon 2006c). One resident stated, "We have been in limbo for six years. We thought the subsidence report – and the science behind it – would mean that we would get a decision." Inhofe tried to divert funding from his remediation plan to go towards a buyout to expedite the process, yet local and state agencies continued with their remediation plans as previously scheduled.

The unknown future led school board members from the Picher-Cardin school district to meet with the state school board to discuss the possibility of a mandatory annexation that would dissolve the district (Duhon 2006b). The state board said they would only step in to annex a district in case of a severe financial crisis in a district that caused a lack of functionality. Voluntary annexation of the school district required a public vote. At this point in the year, it was too late to add anything to the ballot for residents to vote on for the upcoming school year. The Picher-Cardin school board decided to maintain the status quo and renew contracts for all district teachers (Duhon 2006e). The school board said they planned on keeping the sports programs going in the upcoming school year as long as they had enough students to form teams.

For many residents, the buyout was an incredibly poignant experience. People had spent their whole lives living in the area and knew all of their neighbors – most of whom had also been there their whole lives. Now, there were many people they would likely never see again (Duhon

2006a). The 2006 high school graduation only had 25 graduating seniors. School officials said there would likely only be one more graduating senior class from Picher High School. For the upcoming school year, enrollment already dropped 60% and 10 certified teachers left the district (Muchmore 2006). Many students were leaving the school district because Picher-Cardin was not going to have enough students to form sports teams or music programs. The school board voted unanimously to suspend high school and junior high athletics due to dwindling enrollment numbers (Tramel 2006). Before the 2004 buyout, there were 430 students in the district. The enrollment for the upcoming 2006-2007 school year was 150 and was expected to drop even more (Baugh 2006).

The news of a buyout brought out the selfishness of some community members. Many officials were guilty of rushing to purchase property in Picher in hopes of turning a profit when the government offered a buyout of the contaminated land (Warford-Perry 2006c). A group of residents gained over 300 signatures in a petition that the LICRAT board needed to be neutral parties without any property interests in Picher or Cardin.

Governor Henry announced the trust to oversee the functions of the buyout (Duhon 2006h). When residents received applications for the buyout, the state only had $300,000 when Inhofe promised $12 million (Duhon 2006i). A month later, the state received $7 million from Inhofe's plan which was diverted to the buyout (Warford-Perry 2006i). Ed Keheley, who was serving on the trust, notified Inhofe that there were a total of 695 structures in the area that were eligible for buyout (Warford-Perry 2006l). While they waited for funding to hit the state treasury, LICRAT began organizing priority lists to move those with the greatest risk first (Warford-Perry 2005k).

Despite a constant back-and-forth between state and federal agencies and officials on every level about funding issues and coming up short on the proposed buyout budget, LICRAT encouraged residents to keep faith and said appraisals would begin soon. The trust chose a randomized list of 100 properties from the first priority group to go first which caused a lot of tension in the community (Warford-Perry 2006m). Residents started judging each other's situations and debating who was deserving of being in the first group and who wasn't. Elementary school Principal Kimberly Pace said, "Every one of us goes through an emotional roller coaster every day" (Warford-Perry 2006h).

On December 19, 2006, home appraisals began. The community was filled with jealousy and competition as residents tried to figure out how to increase their chances of being in the next priority group (Warford-Perry 2006n). With a projection that the buyout could last through 2008, Picher officials began worrying how the town would continue providing services without any revenue and said that even if one person remained in town they had to continue with municipal operations (Warford-Perry 2006j, Baugh-Schultz 2006b).

The government structures were too busy sorting out the convoluted funding issues to give full aid to the community and the local government throughout the process. Government buyouts aren't necessarily expected to be a fun experience, but the lack of clarity on the future was eating away at the community. For decades, this community had hundreds of studies conducted on different aspects of their lives and the results seemed to only be getting more and more catastrophic. In comparison to the state buyout a couple of years prior, there was not the same sentiment of joy, excitement, or gratitude among those involved in the federal buyout. After living with constant disappointment and fear for the past several years, residents were rightfully emotionally exhausted and were tired of being patient and hopeful. They wanted their

turn at a better future than what was offered to them by the legacy of the Tar Creek Superfund site. Arguably, the federal buyout came too late to receive the praise and gratitude it could have received if it had come earlier. It will be the legacy of these politicians that they spent years making plans that left residents in harmful situations while they idled at fully addressing the situation.

'Eulogy for a small town'

There were many residents of Picher and Cardin who were determined to stay until the very end. Voters even voted to keep the school district open for another year with results of 142 in favor of keeping the district and 132 in favor of a voluntary annexation ("Some residents" 2007). The local pharmacist was known as Lights Out Gary because he wanted to be the very last one to leave the town. Nevertheless, the buyout continued. However, the start of 2007 came with the news that the trust only had enough funds to last through June before they would have to take a few months off until more funds could be secured (Myers 2007).

As appraisals were completed and offers were ready to be made, LICRAT held back several offers out of concern that residents were receiving offers on the lowest end of their homes' values (Duhon 2007a). Ed Keheley then suddenly resigned from his position as vice-chairman of LICRAT. He said he made a personal commitment to himself that he would see LICRAT through until the first offers were ready and said he had to put many things in his life on hold to make sure he had a positive impact on his hometown (Duhon 2007b). No other reason was cited as to why he resigned.

As more offers were made on homes, the more residents came forward in disappointment with their offer amounts (Duhon 2007c). Other residents started comparing offers and found that

their identical homes have over a $10,000 discrepancies in the amounts they were offered (Duhon 2007d). Residents were frustrated that the state and the appraisal companies were not making their master addenda information accessible to the community. As a result of all of the problems they were experiencing in this buyout, residents called for Gov. Henry to show his face and answer questions instead of sending updates through J.D. Strong (Warford-Perry 2007). One resident wrote in the newspaper and said, “I am just a still quiet voice crying out in the midst of the old chat piles in Picher and Cardin. Help-Help-Help. We are being raped and robbed by government officials and hired contractors. We can’t defend ourselves” (Hatfield 2007). Residents felt like they had no one in their government who would help them.

Then another LICRAT member resigned, the trust manager Sonya Harris. She submitted a two-page resignation letter, effective immediately, that in part read,

> My decision is not an easy one based on my desire to see this project succeed and my passion for seeing justice for the residents of Tar Creek. I feel that my authority and responsibilities as operations manager were stifled and I could not operate at my full potential for the benefit of the trust and residents involved in the buyout. My wish is that this project be given a 'new start' in that, with this information, the trust might come together to recognize the problems and resolve them for the betterment of the project. However, until the problems are resolved, the trust is going to have great difficulty in completing the buyout in a reasonable length of time. (Duhon 2007f)

After receiving plenty of criticism and publicity, LICRAT shared statistics in an attempt to paint themselves in a better light and claimed that the average price offered for homes in the 2005 buyout was $53,000 and so far they have averaged $60,000 per home (Stogsdill 2007a).

Amidst the decreasing population and dwindling enrollment in the school district, the school board appointed a new superintendent for the 2007-2008 school year (Baugh-Schultz 2007). This decision came after the previous superintendent resigned from the position. When the new school year started in August 2007, there were only 90 students enrolled in the entire

district (“Picher-Cardin School" 2007). Basically, the entire town was dwindling. The Picher Development Authority decided to take over the town’s only convenience store when the owner decided to give it up and move (Schultz 2007). They hoped to break even on the investment because the main goal was to provide the store as a service to the community. As things began coming to a close in Picher, the town funeral director who had been there since 1948 said he had buried a lot of people in his life, but saying the last rites over Picher would be tough (Gillman 2007).

Not only were residents dealing with the sorrow of their community breaking apart and mourning the loss of their hometowns, they were also left questioning if their only way out was giving them a fair chance. The regulatory organization established to navigate the community through their difficult situation was so misaligned in its priorities that it pushed individuals who worked for justice to resign.

Questionable Investments

By the start of 2008, LICRAT had overseen 353 appraisals, made 260 offers, and approved 190 closings (Duhon 2008c). At this point, the projections for overall costs were over $50 million. While Picher and Cardin dwindled in size, the buyout caused severe strain on the housing market in Miami (Kennedy 2007). Miami was already short on housing due to a flood that destroyed between 120 and140 of the city’s houses. Coupled with the buyout, Miami was approximately 426 units short.

LICRAT hired a contractor to conduct the demolition of homes bought out in the process. After winning the contract bid, the company presented a plan to county officials to refurbish the homes instead of destroying them (Duhon 2008b). Residents were displeased that a company would profit from the buyout even before all of the residents had a chance to leave (Rooney

2008). The company intended to move between 200 to 300 homes to a lot north of Quapaw where they would sell the homes for a profit. Meanwhile, 50 residents gathered together on a Saturday in February 2008 in frustration on their buyout offers. Ed Keheley attended the meeting and discussed with residents that there was a major difference between the two buyouts and how they were handled by LICRAT (Schultz 2008b). Keheley urged residents to hold the trust accountable. LICRAT continued claiming that an overwhelming majority of residents were satisfied with their offers and accepted. Residents declared, "We are tired of seeing state and trust officials say 95% of those who have accepted offers are satisfied. They are not satisfied. We know they are not happy with what they got. They were desperate to get out."

Residents met with LICRAT members to discuss the financial decisions of the trust. The main takeaway from the meeting was that residents mentioned that the first buyout used Bank of Picher to hold the trust's funds but in this buyout LICRAT chose First National Bank (Shultz 2008b). Residents inquired if the trust was motivated to offer lower appraisal amounts so the bank could provide home loans when residents didn't receive enough to purchase homes they wanted. One member of the trust was also an official at First National and speculated that the bank had probably lost money from the buyout due to being required to take out bonds in order to accept the trust fund. Residents followed up and asked if the bank had provided any home loans to residents involved in the buyout due to offers not covering the full expenses of their new homes. The trust members responded yes, the bank did make temporary loans to local residents.

The most emotionally exhausting and devastating experience for many members of this community was viewed as a cash grab for others. Once again, private companies had their own agendas, independent of the official remediation or buyout plans, to capitalize on the situation. This time it was a demolition company who concealed their intentions until after they won the

bid to tear the homes down and a bank that was motivated to profit from the misfortunes of residents in their community.

Insult to Injury: An Unfortunate Storm

Additional tragedy struck Picher on May 10, 2008 when a devastating EF-4 tornado with winds of 166 to 200 miles per hour plowed through the town. After making a massive swatch across the area there were multiple deaths reported, 95 people were treated at local hospitals that initiated disaster response plans, and over 200 houses were damaged ("Deadly storm" 2008). Such winds also undoubtedly spread additional chat debris over the area. Governor Henry dispatched the National Guard to help and local towns set up temporary shelters for people displaced by their homes being destroyed (Luthy 2008). President Bush issued a disaster declaration for the area which allowed residents whose homes were destroyed to access assistance such as grants for temporary housing and low-interest loans to cover property losses that weren't insured ("Disaster declaration" 2008). Those who lost homes were moved to the top of the buyout priority line. Many residents decided to opt out of the buyout to collect insurance money. Residents were not allowed to rebuild in Picher.

One resident reflected on the tragedy and said in the moments after the tornado he thought, "how much more can this town take?" and told reporters, "As much as I hate to say it, Picher will never come back. It's done" ("Picher residents" 2008). Following the tornado, many of the local officials no longer had homes in town. There weren't enough people left to fill the municipal positions (Schultz 2008c). The devastation brought by the tornado made an already tragic situation worse. Residents who were waiting for their turn in the buyout were already

prepared to leave, but now they could not even say proper goodbyes to their homes or their town. There wasn't even a full local government established anymore.

Lights Out: Final farewells

At the start of Obama's first term as president, Inhofe said the buyout was 95% complete and ensured that Obama's pick for EPA leadership was committed to continuing the buyout and remediation at the site ("Inhofe" 2009).

Back in Picher, LICRAT was still working on the buyout. Dr. Osborn, the family physician in Miami and member of the trust, expressed his frustration that the Picher Housing Authority was filling units just as quickly as the trust was buying people out (Kennedy 2009). John Sparkman responded, "I never thought I would be criticized for providing quality housing to elderly, handicapped, disabled, and other needy people." Soon after, it was discovered that PHA's administrative costs rose 30% since the fiscal year that ended in 2007 (Gillman 2009). Sparkman could not be reached for comment on these claims.

Things started winding down for good in Cardin as well. The Cardin post office, which provided service to 30 families until the end, closed on February 28, 2009 (Schultz 2009a). In April 2009, there were still seven occupied residences in Cardin but the water was going to be shut off at the end of May 2009 (Stogsdill 2009a). For Picher, the post office closed July 6, 2009 (Stogsdill 2009b). Shutting down the utilities inspired the remaining residents to adopt more traditional and rustic ways of life. The cost of septic tanks ranged from $4,000-$7,000 so a group of the remaining residents started sharing instructions on how to build outhouses.

The Picher-Cardin school district ceased to exist July 1, 2009. To celebrate and say farewells, alumni of the district gathered for a bonfire on the last day the district existed on June

30, 2009 (Ellis 2009). Hundreds of graduates of all ages attended the last Picher-Cardin reunion that was hosted at their old school (Leever 2009).

LICRAT finished the last of the buyout procedures in fall 2009. Lights Out Larry again requested that the pharmacy be the last building bought out.

Beyond the Buyouts

The State of Oklahoma remained committed to remediation at Tar Creek, but the significance of the amounts of chat left were more well-known a few years after the buyout. The Deputy Secretary of Environment Tyler Powell said, "just removing the chat piles alone could take thirty years if you could move 100 train car loads a day" (Gillham 2011).

In 2012, lead testing was offered in Craig County, Oklahoma – which is the county directly west of Ottawa County – as a precautionary measure and so researchers could begin tracking the spread of contamination from the epicenter in Picher (Thomason 2012).

In 2013, Picher was officially unincorporated despite a few residents that still lived there. Most of the traffic left in the area is chat trucks (Goforth 2014). Back in 2008, the EPA estimated that chat removal was a 35-year remedy, but the reality in 2014 showed that it likely will take much longer.

In the fall of 2008, construction started on Dr. Nairn's passive water treatment site near Commerce (Schultz 2008d). As time has gone on, Dr. Nairn's passive water treatment system has been considered a success (see Figure 14). Commerce Mayor Hart said, "You don't have to have a PhD to see the difference. When you look at the orange water in the first well and see the clean water flowing into the tributary - it's amazing" (Schultz 2009c). In 2016, passive water

treatment efforts were working with data that showed marked improvements in the water quality and early signs that fish could return to Tar Creek (Barker 2016). While this type of green infrastructure has promising results, even if there was funding to scale it to address one hundred percent of the contamination in Tar Creek it would be a drop in the bucket in terms of contamination at Tar Creek. Passive water treatment only addresses surface waters moving through the contaminated landscape, without addressing the chat piles as perpetual sources of contamination or groundwater contamination. Passive water treatment also leaves behind the waste products that it filters from the water, meaning the heavy metals still exist in the treatment ponds with nowhere to go.

Figure 14. A portion of Dr. Nairn's passive water treatment system near Commerce, Oklahoma. Photo taken by Randy Peppler in November 2018.

REFLECTION

I think it could be easy to learn about these stories and think this story was so unique and distant from one's own lived experiences because of how unique the circumstances are at Tar Creek. As time went on throughout my research, though, I had the opposite experience. The more I learned about these people and the more I learned about their lives, the more I saw myself in them. It's not lost on me that many of the children whose blood was tested for lead in the late 1990s and early 2000s are no more than five years older and younger than me. As I've done this research I've thought about them extensively. I only learned a few of their names–like Ashley. The rest of them are mysteries to me. I think about where they are now and if our lives are similar at all. I wonder about the ways they are different, too. What kind of advantages did growing up in a less toxic environment give me? I wonder if the now grown-up Tar Creek kids have kids of their own. I wonder if they still live in Ottawa County or if they moved away.

I think about their parents, who are probably close to my parents' ages. I wonder if they swam in Tar Creek before it was declared contaminated in November 1979. I wonder if my parents ever heard about Tar Creek growing up in Tulsa County and Rogers County before it became a Superfund site. I wonder if they would've wanted to swim in the creek, too.

As I reflect on the generations of children who grew up in the contamination at Tar Creek, I am transported back to my own childhood of playing in the nameless creek that flowed behind my parents' house. My creek was there to be the neighborhood pond overflow and the land had never been developed there. So,each summer I got to explore all of the new rocks and fossils the creek's new path revealed for me. My creek was magic. I had an individual relationship with every tree, rock, and creature I encountered at my creek while I was growing up. To get down to the creek, you had to go down the big hill behind my backyard fence. I spent

my summers rolling down it to put my feet in the water at the bottom. In the winters, it was the best sledding spot in town. My childhood looked a lot like the kids at Tar Creek. Somewhere throughout my research I realized my childhood actually looked exactly the same, except I got lucky that my creek was an hour away from the Superfund site instead of flowing right through it. I cannot imagine how heartbroken I would be to learn the sacred place of my childhood was harming me the entire time. I don't know how I would reconcile it.

I've also thought a lot about the foster child who was taken from the foster family who loved him. My family started fostering my brother the same year. No one came to take him away because we lived too close to anything. I hope somehow that boy found his way back to the parents that cherished him. And if he didn't I hope wherever he is now is filled with the same amount of love and I hope his former foster family found ways to heal the hole they felt in their lives when he was taken from them.

I've thought about the conversations, feelings, and experiences that residents had that weren't published in the newspapers. I recognize that I have a very narrow view of these people's lives by only learning about them through a journalist's interpretation of isolated events that I strung together to tell these stories. I wish I could transport myself to some of these moments and learn the full stories and get to know the full people. I will never be able to describe the environmental injustices of Tar Creek better than the people who experienced it themselves.

DISCUSSION

It is difficult to determine one specific source or cause of the environmental injustice related to the Tar Creek Superfund site. Injustice was the result of what seems to be every aspect of the government and private companies' involvement with Tar Creek because justice was

never the explicit goal of any of the plans. In this sense, every single plan and effort fell short. Even with the best plans presented for Tar Creek, there was always a catch that prevented true justice for anyone. Most of the time, it was funding issues and the motivation to do something positive, but do it in the cheapest way possible. Even when residents did receive market value offers on their home to move after their homes lost all value, they were never compensated for the harm they endured for the many years and decades before. One of the biggest themes throughout this story is betrayal, much of which came from within the regulatory structures that were intended to be devoted to championing remediation and aid. Betrayal came in many forms but hurt and limited progress just the same. Some examples throughout Tar Creek's history were U.S. Rep. Coburn tirelessly advocated for residents whose yards were made worse throughout the remediation project only to adamantly oppose a buyout opportunity, federal reports that were mysteriously edited before final drafts were released, leaders like Sen. Inhofe who hardly ever actually met with residents to learn about their burdens enacting plans that don't address any major concerns, and more.

Additionally, even when the regulatory agencies produced plans for positive progress that guaranteed action, securing the funding to execute plans was consistently an obstacle. When put in conversation with the bodies of literature of legal geographies and environmental justice, this constant cycle of funding issues and a priority on money that defined nearly the entirety of the Tar Creek Superfund site's existence highlights the influence of uneven dynamics of power on the process. Scholars contributing to legal geography literature have noted the importance of analyzing power dynamics, but Tar Creek as a case study sheds light to the existing power imbalance that citizens experience under a democratic system that is intended to serve them in a time of vulnerability. If the democratic system and regulatory framework–which hold the power

to address environmental harm–cannot ensure funding to create necessary solutions, then there was never a chance of justice to begin with.

Funding was a concern for practically every project at Tar Creek. The federal funding structure cannot function and release funds until states are able to match 10% or more of the total amount of a project. Even when the EPA had 90% ready to be allocated to the Tar Creek Superfund site, the decision-makers with the power to fund the entire project are actually state legislators who determine if the state budget will include the necessary funds or not. This requires state legislators, who may or may not actually care about the topic, to champion the cause and advocate to secure the funding. This also allows many legislators who often do not have a deep understanding of the situation to ultimately determine the funding. For example, the congressman who questioned if funding a state buyout was rewarding "stupid decisions," insinuating that residents around Tar Creek got themselves into the mess and the state government shouldn't be responsible for helping. This resonates with Davies' (2019) question about the visibility of slow violences: out of sight to whom? For residents near the Superfund site, there was no need for convincing that they were not at fault for the environmental degradation and harm to human health present in their communities. The reality of slow violence existed in their lives everyday. Nevertheless, the actuality of severe harm was continuously discounted by decision-makers who could not see or experience the lived reality at the toxic site.

Even locally, some of the most valiant advocates for the community were silently motivated by selfish desires, like John Sparkman who worked overtime to keep people in Picher Housing Authority units even after the buyout was well underway. At one point, Ottawa County Commissioner Crawford was audited by the state for potentially double-ending contracts in his role in the county and with his private contracting business. This came to light after Crawford

accidentally drove a bulldozer into an open mine shaft he was filling in as part of his contracted work through his private business (Garton 2001a). He defended his actions and said, "You people have made me sound like the biggest crook in the world, and I haven't done anything wrong." Motivations varied; for some, such as corrupt contractors who positioned themselves to skim money from remediation funds, as well as those who organized empty trucks and claimed they were full of contaminated soil, it was an opportunity for financial gain. There were also those who falsified blood tests whose motivations remain a mystery because there was no accountability from any regulatory body to make that information public. Regardless if their actual intentions or actions were motivated by personal gain or not, conflict of interest was an ongoing concern throughout this story. This affirms legal geography scholarship that analyzes who benefits from legal and regulatory frameworks (Braverman et al. 2014). Just because a regulatory framework exists, does not mean it is guaranteed to function for the benefit of the community. In this case, there was opportunity for those in every level of government to benefit from these frameworks. In addition to the examples previously listed, many officials over the course of the Superfund site's existence have politicized the pollution for their own gain in future campaigns.

The betrayal of self-interest took other forms as well, such as private companies seeing the devastation of Tar Creek's situation and viewing it as an opportunity for their own gain. Three major examples of this are Agrico and the failed tree planting project, First National Bank during the federal buyout, and the demolition company that wanted to make huge profits off of selling bought out homes–many of which were subsequently destroyed beyond repair during the tornado. Tar Creek, which was land that had already been sacrificed (de Souza 2021, Hopkins 2020) and hosted a myriad of slow violences (Nixon 2011, Davies 2019), was considered to be

sacrificed in other ways. Voyles (2015) describes the process of 'wastelanding' in which lands are sacrificed because they, and the people who live there, are deemed pollutable. Even after decades of discussion and coverage on the injustices at Tar Creek, it was still viewed as a resource to ravage and extract from. This affirms the previously mentioned scholarship on slow violence and sacrifice zones that shows how capitalism rationalizes extraction to the point of complete degradation. Going beyond previous scholarship that establishes socio-economic vulnerability as the primary indicator for slow violence and sacrifice zones, this research establishes a clear pattern that lands and communities that have been "deemed pollutable" are likely to become future targets for other forms of extraction and pollution as well. Voyles (2015) discusses how vulnerable communities are the most likely targets for wastelanding, but arguably, the state of being previously polluted creates an even greater threat of future pollution than any other socio-economic indicator.

There has been no justice at Tar Creek. Thinking back to Kohl et al. (2021, 646) and their assertion that environmental justice governance is "not undertaken by a monolith governmental agency; it is enacted by individuals and the decisions they make," Tar Creek made it difficult for individuals to make a difference – even in positions of power. During the buyout process, members of the community who fought for justice for Tar Creek residents resigned from their roles in the Lead-Impacted Communities Relocation Assistance Trust, the trust that managed the buyout process. The entire regulatory process on Tar Creek had no focus on justice which made it more difficult for residents to advocate for comprehensive options and insert themselves into the remediation planning. The negligence throughout the remediation attempts caused residents to be focused on the damage done to their own properties, which took away much of their opportunity to focus on the Superfund site as whole. Residents were so worn down by the

process that they simply wanted solutions that would get them and their families out of a terrible situation made worse by incompetent remediation practices. Justice, and specifically environmental justice, have been defined within the legal context of the United States. Consistently, environmental justice has been criticized for its narrow view of justice without incorporating other perspectives, such as those from Native American traditions (McGregor 2018b). This approach to justice under the current legal and regulatory framework fails to even consider what justice is from a community perspective.

Overall, government agencies did very little to assure the community of their credibility and reliability throughout this experience. From the Corps of Engineers breaking their contract to conduct yard remediation halfway through the project, to the EPA not having a consistent point of contact until many years into the project, state agencies dragging their feet to initiate projects like sealing open mine shafts, and many more, it was difficult to feel confident in the government's handling of the situation. After all, the ground was crumbling beneath them the whole time and none of the agencies thought to check the stability of the mines before throwing millions and millions of dollars at smaller portions of the problem. As argued by Graves (2015), regulatory guidelines fail to incorporate the unique perspectives residents can contribute to the remediation process, which Atari et al. (2011) argue is a necessity in making legal and regulatory decisions about degraded environments and the communities who inhabit them. Even the official Superfund Cleanup Process list does not mention any form of community engagement (US EPA 2015b). The entire regulatory framework and process can legally without any involvement with impacted communities. In fact, the process could work entirely against the desires of the community with this framework.

It could be argued that many of the unfortunate decisions made by different stakeholders who are not directly involved in the regulatory structure, such as private companies and private citizens acting in their own interest, the regulatory structure doesn't offer any protection to people experiencing the harm of toxicity from being further victimized by private interests that could result in greater injustice. Regulatory frameworks of remediation also perpetuate injustice through a lack of focus on maintaining good relations with the land and people. As stated previously, pollution is a result of colonial land relations (Liboiron 2021). Pollution remediation and its legal foundation are rooted in the same concepts of colonialism. As it stands, the environmental regulation of Tar Creek has not produced just solutions.

The key contributions of this research to legal geographies are an analysis of power, an examination of ineffective funding procedures within legal and regulatory frameworks, an investigation of inadequate structures of environmental justice governance, and an exploration of the disconnected system of remediation that fails to meaningfully include communities, all in relation to the legal and regulatory frameworks of pollution remediation. This research offers a myriad of Tar Creek-specific perspectives while also putting them in conversation with the patterns of pollution and pollution remediation that exist across the United States. The key contributions of this research to environmental justice literature are an evaluation of just and unjust procedures and outcomes throughout the remediation process, an exposition of the legal mechanisms of slow violence and sacrifice zones through previously unexplored positions of vulnerability, an assessment of the narrow understandings of environmental justice within remediation governance, and an inquiry on how the remediation process reproduces colonial land relations.

CONCLUSION

By and large, Tar Creek's history illustrates how environmental regulation fails at promoting just solutions throughout remediation. While injustice is not explicitly pursued by regulatory structures, injustice is the byproduct. These frameworks cannot and do not guarantee any measure of justice because there is no formal approach to justice through the remediation process. Throughout every phase of Tar Creek's history, there has not been an organized attempt from remediation regulators at achieving justice for the residents or land that have been harmed by toxicity. There also has not been any effort that has accidentally achieved just outcomes, either. Residents who lived and still live at the Tar Creek Superfund site have not experienced justice, nor have those responsible for the pollution. Just solutions have not been produced by regulatory processes; in fact, injustice has been perpetuated through imbalanced power dynamics, the allocation process of funding, lack of consistent communication and involvement with residents, internal corruption, negligence, and lack of accountability. Yet, the residents of Tar Creek have shown remarkable resiliency in their commitment to progress, fostering hope, and advocating for a better future at Tar Creek.

PART 2: BUILDING HOPE AND COMMUNITY ALONG THE WAY

Due to the imbalance of power that exists in regulatory frameworks, community activism serves as an important tool for communities to empower themselves within a process that otherwise would not recognize community perspectives. Community activism has played a significant role in Tar Creek's ongoing history by building community, advocating for justice, and fostering hope for the future. As determined in Part 1, the regulatory frameworks in place perpetuate injustice. Consistently, the main proponents of justice were members of the affected community. The current structure leaves a lot to be considered. Should communities need to be involved for progress to take place? Can justice even be achieved without the involvement of community members in the process? Should the regulatory structure invite the formal inclusion of community members throughout each phase of remediation? There are key lessons that can be learned from Tar Creek and its relationship with community activism. My motivation for conducting this research is to understand what level of influence community activism had throughout the process. This portion of my research examines which community activism methods are the most effective, how to generalize them, and how the regulatory structure can integrate community involvement into remediation processes.

Van Horne et al. (2023) offer recommendations on how environmental justice can be applied to exposure science research, which is research focused on communities exposed to a variety of hazards. The findings of their study suggest a strategy for researchers to develop more environmental justice procedures throughout their work (see Figure 15).

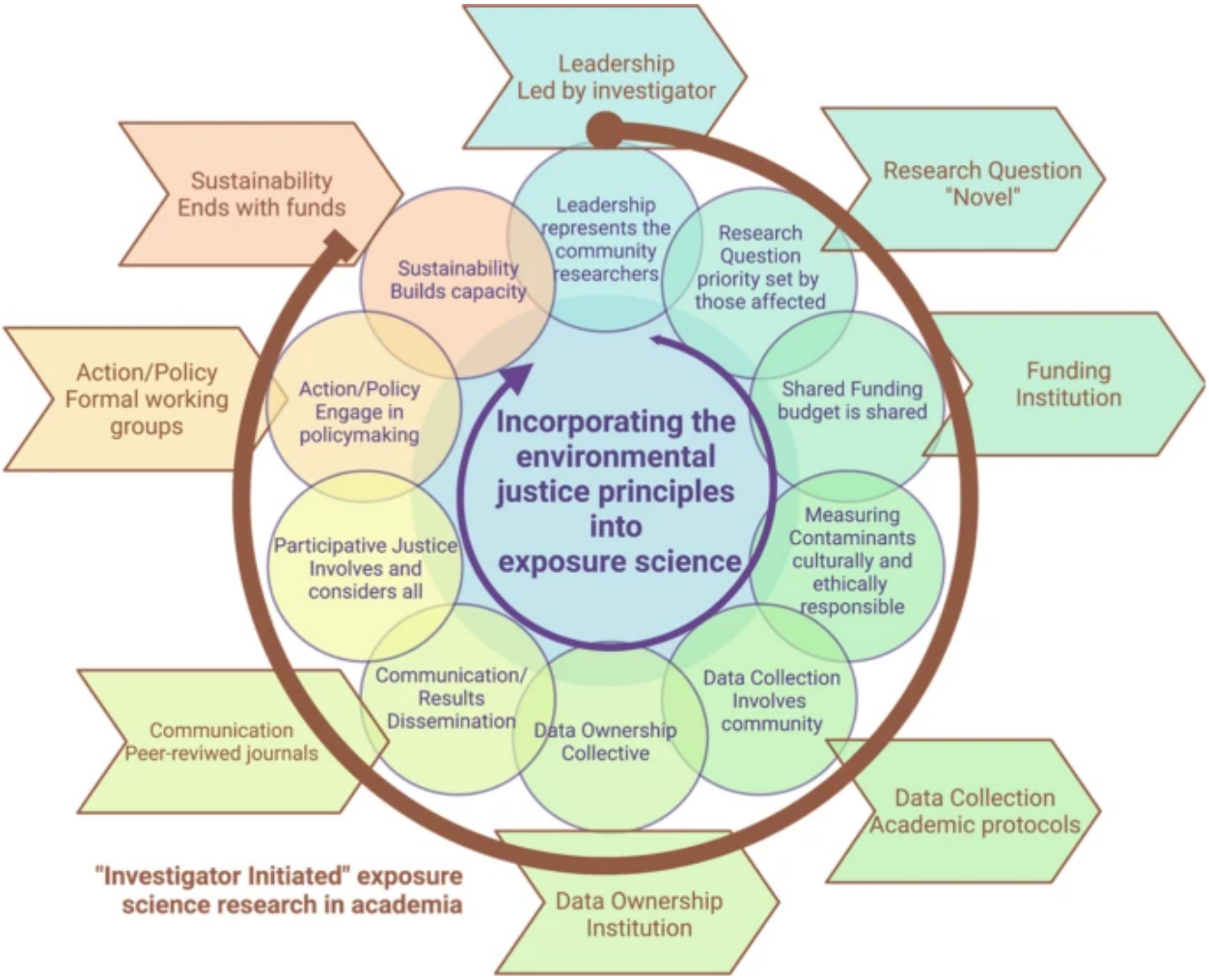

Figure 15. Van Horne et al. (2023) circular flow chart depicting how to incorporate environmental justice principles into exposure science research.

This strategy emphasizes the importance of researchers personally meeting with the community to gain knowledge, involving communities throughout the entire process, prioritizing the community's highest concerns, developing sustainable plans to address concerns, and more. This guide even acknowledges the need to be fully transparent from a project's start about funding, budgets, and every financial allocation related to the project. After learning about the strategies presented in this study, I began wondering what this type of approach would look like if employed by government agencies and remediation regulation. The key difference between

academic research and government-led remediation projects is that scholars typically initiate academic studies, whereas communities are the first to sound the alarms that government agencies react to. In other words, environmental justice research has the ability to achieve justice by inviting communities as full participants in research, but this dynamic does not exist in the regulatory framework. In order to be involved in the remediation process, communities often must make themselves heard. By studying how community activism has shaped the remediation process at Tar Creek, this research offers key insights on how community activism can be used as a tool to move towards justice in the context of Superfund sites and other examples of slow violences in the United States. I argue that community activism is a key catalyst for positive change in the remediation process and is influential in promoting and advancing efforts for environmental justice.

RESULTS

Cherokee Volunteer Society & the Tar Creek Project

There are some students that have taken the burden
With hopes to raise the lead laced curtain
They have come to an outstanding realization
That we are not doing this for us
But more so for the next generation
- Andrew Jenkins (Jim 2001)

During the 1995-1996 school year, the counselor at Miami High School Rebecca Jim led the Cherokee Volunteer Society (CVS) to start the Tar Creek Project (see Figure 16). Tar Creek runs through Miami two blocks away from the high school. When the Tar Creek Project started, there had not been fish in Tar Creek for almost twenty years. The purposes of the Tar Creek Project were to help students engage with their community, address a local issue, and teach

young people to connect with decision makers in meaningful ways (Jim 2001). This group of students became trailblazers of environmental activism in their community. The Project connected Tar Creek stakeholders that previously worked independently. Scott Thompson of ODEQ said the Tar Creek Project's efforts to bring different decision-makers together produced dialogue "that does not occur through any of the federal Superfund process" (Jim 2001).

Figure 16. Photo of the Cherokee Volunteer Society found in a Tar Creek Project scrapbook located in LEAD Agency's Toxic Library. Photographer and date unknown.

The Cherokee Volunteer Society followed a method known as service-learning that focused on gaining knowledge through community service projects. Students led and participated in a variety of projects that gave back to their community in some way. One student remarked, "service learning encourages us to be leaders, and to try to reach beyond our goals and learn as much as possible" (Jim 2001). As students engaged more in service-learning, they

developed a deeper understanding of Tar Creek and the hazards their community faced. Jamie Stephens, an English teacher at MHS, said, “As the students watched the rusty, red mine water pour into Tar Creek – the same creek that runs through their town, floods their houses, and dumps into the lakes where they play, they began to understand the impact of the environmental disaster” (Jim 2001). As students became more knowledgeable on the severity of Tar Creek, they also became more outspoken. In frustration of the lack of solutions up until then, one student said, “They say it could be 10 to 15 years before they bring this to a halt or even begin to solve it. What are we supposed to do in the meantime while you guys figure out what to do? This is not the time frame we’re looking for. Our children can’t grow up in this” (Robertson 1999b).

Over the years, their efforts took many forms. One year, they hosted a fish-themed school dance. Attendees were encouraged to submit drawings of two-sided fish, one side that looked like it could be in Tar Creek and the other side that was clean and perfect (Jernigan 1998i). CVS received hundreds of submissions and used the fish to decorate the dance. In 2000 when Gov. Keating established the Tar Creek task force, students organized to send in handwritten notes with themes of what they hope for when they think of the Tar Creek Superfund site (Jim 2001). One of the letters said, “I don’t want my aunt and uncle's house to fall in with a sinkhole.” Another pleaded, “My grandma told me when she was little her and her sister could go swimming, and go fishing and eat the fish they caught, and that they could see through the water all the way to the bottom. One of these days I wish I could go swimming in it, too. Keep helping.” Another student shared, “I wanted to tell you how much I like to give gifts to people, and if I could give an elderly person one gift I know they would love, it would be for them to be able to swim in Tar Creek. I can just see someone's face who had swam in Tar Creek as a kid

about my age and was able to get back in." The students made a habit of representing their community well with hopefulness and leadership.

One of the major ways CVS was so successful in their efforts was their ability to get others excited and involved as well. In an application for the President's Environmental Youth Award, Rebecca Jim said, "The Tar Creek Project is bringing hope back to the community. There are solutions to the huge problems that surround these young people and one of the solutions is awareness. Our students are finding unique ways to bring these messages home." It wasn't just their families getting involved, either. Earl Hatley described CVS,

> As a citizens group they have done more to promote awareness, interest, and participation by their community on a serious community issue, than most adult led non-profit groups. CVS is a model for how concerned citizens can organize to make a difference in their community…CVS students not only learn, they inspire others to learn. They not only serve, they inspire others to serve. (Jim 2001)

In response to their activism efforts for the Tar Creek Project, CVS received letters of thanks from state representatives, Governor Keating, and even President Bill Clinton. In a letter from the Cherokee Nation thanking them for their work, a representative credited CVS for recent work conducted on the Superfund site through the yard remediation. They said, "because of renewed interest in Tar Creek, EPA reinstated a yard remediation program…because of the unrelenting efforts of the students to learn and tell the truth, the story of Tar Creek has become one of inspiration rather than oppression" (Jim 2001). The TEAL Project that conducted blood lead level testing on children for years credited CVS and said extensions of the project were only possible because of their partnership (Jim 2001). Their sphere of influence extended beyond the agencies they were working with directly. A spokesperson with Citizens Action for A Safe Environment reached out to CVS encouraging the group to apply for grants that would support their work and said, "It seems appropriate to say that in regards to the contamination of Tar

Creek, we have not borrowed the land from future generations but we have stolen it from future generations with greed and bureaucracy" (Jim 2001).

Overall, the Cherokee Volunteer Society's Tar Creek Project started a snowball that brought attention to the topic, held decision-makers accountable, and built resilience in the community. They combined fun and more serious methods of activism to educate their community and call people to action. Consistently, the Cherokee Volunteers led with their hearts and set an example of sincerity in their efforts.

Fishless Fishing Tournament

Figure 17. Invitation to the first ever Tar Creek Fishing Tournament as found in the LEAD Agency Toxic Library. 1996.

One of the most creative, long-lasting impacts of the Tar Creek Project is the annual fish-less Tar Creek Fishing Tournament (see Figure 17). The tournament first took place in May 1996 as an event with live music, speakers who shared environmental messages, and a clean up project on the banks of Tar Creek as a way to inspire hope that there could be real fish in Tar Creek someday (Jim 2001, Jim 2015). The first fishing tournament served a traditional Native American dinner and hosted a stomp dance. Cherokee Volunteers also led the very first Toxic Tour of the Superfund site where attendees of the tournament could run, bike, or rollerblade through the track they set up on nearby roads. CVS partnered with the local college, NEO, to allow county residents to receive a biology credit by attending the conference and paying a $50 registration fee.

After a couple years of hosting fishing tournaments there were more and more updates on Tar Creek, and the Cherokee Volunteer Society saw a need to bring stakeholders together in a more serious setting. Starting in 1998, in addition to the fishing tournament, the annual Tar Creek Conference was born (Jim 2001). This forum served as an opportunity for community members, scientists, tribal leaders, and government agencies to convene and discuss the status of Tar Creek. Without this, many stakeholders would likely not have ever collaborated. Each year the conference has a different theme. For example, the 2006 theme was ‘Our Voices Will Not Subside’ and topics reflected the Corp of Engineers subsidence report (Warford-Perry 2006a). In 2007, the theme was ‘You Cannot Buy-Out Nature’ and reflected that even though the residents were gone, the environmental hazards remained (“Annual Tar Creek” 2007).

The annual fishing tournaments and conferences serve as community-building opportunities in their own unique ways. The fishing tournament is more laid back, casual, and fun whereas the conference, although still enjoyable and pleasant, focuses more on the technical

updates on Tar Creek. Throughout the last 25 years of Tar Creek's history, these events have been influential in educating the community as well as drawing in outsiders to help the Tar Creek cause.

LEAD Agency: Rebecca Jim's legacy

In 1997, Rebecca Jim officially organized LEAD Agency, which stands for Local Environmental Action Demanded. Jim's main motivation for establishing LEAD was the student activists from Miami High School, where she was a school counselor, who worked tirelessly over years to promote environmental remediation at Tar Creek. Jim expressed hope by saying,

> "I think the work these kids are doing has helped inspire some of our adult volunteers who want to be a part of LEAD Agency. Maybe if we can get a regional community action group working, it will get more attention from the federal and state agencies–let them know we're serious about our concerns." (Garton 1997c)

LEAD Agency has been a treasure to Ottawa County for spreading information and hope throughout its history. At the time of its founding in 1997, there weren't any fences or signs around the Superfund site warning of the dangers of the landscape. LEAD Agency solicited design ideas from the community and secured grant money and donated supplies to place warning signs around the area (Jernigan 1997b). LEAD chose multiple designs and had them printed on aluminum signs to post around the Superfund site as well as making them into bumper stickers. The designs are simple, black and white illustrations that share direct messages like "Don't Spread the Lead' and 'Don't Play on Chat Piles' (see Figure 18).

Figure 18. LEAD Agency designs for signs and bumper stickers sourced from the Toxic Library. Unknown artists, 1997-1998.

LEAD Agency has hosted many meetings over the years. They've gathered community members for environmental meetings, hosted forums with the Agency for Toxic Substances and Disease Registry (Taft 1998), hosted chocolate tasting fundraisers ("LEAD Agency" 2005, 2006), and even hosted meetings with Harvard University professors at the beginning of the Tooth Fairy project that LEAD initiated (Taft 1999). Jim shared her correspondence with the professors. She wrote them and said,

> It's been hard to know what to say to you and your colleagues since your visit. It was like being exposed, letting strangers into our world. We wondered what you all must be thinking. Was it bad enough to warrant concern? Are we making too much over the issues we have? Or is it so huge that there is no hope? Thank you for coming. You honored us, our communities and our youth with your visit. (Taft 1999)

To which they responded,

> "I guess it was a mutual reality test. We were impressed by the risks that seemed apparent. Most of all we were impressed by the warmth of your community, and your organizational abilities. No matter what the outcome, it will be a pleasure to work with you and your community."

This type of relationship of respect, friendship, and sincerity would not be possible with intentional vulnerability and genuine kindness.

The Agency also has a reputation of taking creative, yet effective, approaches to activism. In 2000, LEAD Agency sold prints of a painting depicting the central mill of the mines to raise money for the mine shaft sealing projects that ODEQ didn't fund (Vance 2000d). In 2001, LEAD received the EPA's technical assistant grant that awarded them $50,000 to hire someone to translate all of the government reports into layman's terms so the community could stay informed on what was going on (Warford-Perry 2001e). While it was exciting that they received the grant, Jim questioned the timing of it and said, "It's late. It's too little. There's no way to investigate everything that has been done and will be done. But, it's a start. We need to talk to experts that are not a part of the government" (Kennedy 2001). LEAD hired an expert to consult as their technical assistant and Jim said that LEAD Agency had every study, report, technical review, and analysis of the Tar Creek Superfund site produced in the ten years prior for the assistant to analyze.

LEAD Agency also received another important EPA grant. In 2003, the Agency received an environmental justice grant that allowed them to launch a door-to-door survey to better understand resident's health and how the Superfund site affected their community (Sturgeon III 2003k). The results of the environmental justice survey showed that of the 1400 people interviewed, 58% experienced hypertension, 43% have diabetes, and 40% have heart disease (Stogsdill 2004a). In another effort to give back to the community, LEAD began offering a scholarship for graduating seniors in the area who were passionate about the environment

("LEAD Agency" 2004). An additional way LEAD has served the community is partnering with PUR water filtration to provide free water filters. With the help of the county health department and local tribes, residents in the area experiencing lead poisoning received free water filters ("PUR donates" 2017).

In 2002, Jim retired from her position as a counselor at Miami High School to focus on activism full time. In her retirement speech she shared,

> "Your face appeared before me, not your problem or worry, but your individual spirits came back to visit: students, teachers and administrators, parents and grandparents, guardians…I cherish your trust and value your individual worth and believe in each of you exists the possibility to change the world." (Rector 2002)

Jim has been a treasure to the community in all of the roles she has served in. Arguably, though, her greatest strength is her ability to share her resiliency and optimism with her community. She has been highlighted again and again for her determination that led the way for "one of the most powerful environmental movements in state history" (Lindley 2004, Sutter 2008). When asked to share her vision for the future of the Tar Creek Superfund site, Jim said, "I can see it clean, and I can see it looking like the original prairie did. I have a lot of hope."

LEAD Agency has filled a role that was not offered or available within the governmental regulatory structure. LEAD has brought the Tar Creek Superfund site closer to justice through their efforts to ensure equitable dissemination of information, provide opportunities for community members to be involved, and most of all, to promote a healthy, safe, and nontoxic future for all.

Creative Activism

The community participated in environmental activism in their own ways, as well. Activism can be achieved in many forms, and arguably one of the most impactful forms of

activism is art. Throughout Tar Creek's recent history, it has been the topic of songs, poems, books, storytelling, photography exhibitions, films, and more. Art has been an important tool for knowledge preservation, representation, and advocacy for Tar Creek. Art served as a way for community members to voice their thoughts and experiences of living in a polluted place.

One of the most moving pieces of creative work produced about Tar Creek is the Cherokee Volunteer Society's book published in 1999 titled *Tar Creek Anthology: The Legacy*. Students wrote poems and essays about their lives and how they've been impacted by Tar Creek in different ways. They also shared historical accounts of the creek as well as their visions for the future. One poem titled Gallant Ponies was about George Mayer's white Arabian horses who were stained red in 1979 by the contaminated water in Tar Creek. Another poem described Tar Creek as an "unfit mother" and a disgrace to Mother Nature in its current state. Many entries mentioned a hope for fish to return, some talked about flooding bringing contamination into their homes, and others talked about how bad the remediation experience was. Jim said, "I think it's clear that our students want to leave a better legacy than they received" (Vance 1999). In 2002, the Cherokee Volunteer Society published a second anthology, this one titled *Our Toxic Place* (Petersen 2002h).

Songwriting was another influential form of activism. In 1998, four middle school students from Picher won the EPA's songwriting contest for their song titled The Water's Brown (Jernigan 1998h). The four girls were invited to perform the song in Dallas on Earth Day that year. A couple of years later in 2000, Bill Honker wrote a song titled "Made to Last" to describe the town's past and present (Jim 2001). The third and fourth verses, along with the chorus, are:

This old town was sacred ground before the mining came
fish swam up and down its streams and horses ran its plains
But now the hills are piles of barren rock and its streams run orange and red
the sons and daughters of the mines are raised on iron and lead

This old town is a mining town
It made a living underground
but glory days are in the past
and piles of waste and empty shafts
Are the only things that were made to last

A mining town knows all too well that the mining costs go on
and you never see the final bill til the mining company's gone
The things the miners left behind tell a tale we won't forget
A few many profit from the mines, but many pay the debt

These verses capture the spirit of sorrow in the town in a way that I have not found anywhere else. Just as it is important for activist work to foster hope, it is validating when art acknowledges the pain and injustice felt.

Visual arts played an important role as well. Photojournalist Earl Dotter spent his career capturing hazardous working conditions. His journey as a photographer began in West Virginia working with coal miners in the late 1960s. In 2003, he visited Tar Creek and photographed mothers holding their newborn children while doctors poked them to test their blood lead levels, women tending to their homes by cleaning the everpresent chat dust, abandoned picnic tables and parks at the base of monstrous chat piles, and researchers studying the site (Sturgeon III 2003c). Rebecca Jim said, “With this quality of work, I think we can finally get the kind of exposure we need to bring attention to Tar Creek … We see these things everyday. We’re used to them, but we need for people elsewhere to see them and understand what is going on.” Dotters photographs were exhibited at the 2003 Tar Creek Conference. Unfortunately, I could not find any of his photographs of Tar Creek to include here. Another visual art piece on Tar Creek was

the PBS documentary episode titled *The Creek Runs Red*. Production of the film began in 2003 and premiered at the Coleman Theater in Miami ahead of its debut on public television in late 2007 (Stogsdill 2007b).

One of my favorite of Rebecca Jim's many creative activist-related routines is her weekly, sometimes monthly, blog posts. For the last eight years, Jim has published a diary entry of sorts sharing messages of hope, new findings, and sometimes righteous anger on a variety of global topics but the majority of them relate to environmental issues, especially Tar Creek. Jim's columns can be found in the Miami News-Record and the LEAD Agency website. In a blog post at the end of May 2023, Jim talks about the upcoming Youth Activist Camp that would be hosted at LEAD headquarters the following week. Jim shared,

> There are many communities around the country that wake up to fresh air, have clean, clear streams running through their neighborhoods to enjoy, and do not live downstream of a superfund site. They may never know what you endure. They may never mobilize as environmental activists. But clearly our Tar Creek makes us the "Poster Child" for what can go wrong when mining comes for the widening list of essential elements. This week LEAD Agency is doing our part in raising the next environmental activists… (Jim 2023)

These many art forms tell Tar Creek's story specially and uniquely. Not all of them were specifically intended to be pieces of activist work or advocate for justice – in fact, many of them are simply telling a story. Even so, their impacts are long-lasting and memorable just the same.

OPERATIONALIZING COMMUNITY ACTIVISM

Numerous times throughout my exploration of Tar Creek's history I asked myself, what would've happened if these people weren't involved? The role that community activism played in the last quarter century at Tar Creek has been essential to the progress made along the way. In many ways, community involvement shaped Tar Creek history. By understanding Tar Creek's

story and community activism efforts throughout each phase, it is possible to see which strategies had the greatest positive impacts. As I analyzed the available data, I was focused on what activities promoted positive change. I divided what I consider to be the most effective methods of community activism into three categories: bringing people together with a purpose, creative education endeavors, and being resourceful.

Bringing people together with a purpose

The Cherokee Volunteer Society and LEAD Agency are responsible for some of the most effective connections between people and organizations in all of the Superfund site's recent history. Even state officials noticed that these events started conversations that didn't exist anywhere in the regulatory processes of perceptual studies, meetings, and discussions that generally did not include community members or their perspectives. Arguably, these events were successful because they were organized intentionally and sincerely. For example, when Harvard researchers visited Tar Creek, Rebecca Jim and LEAD Agency were of course professional, but they didn't try to put on a mask of being anything other than genuine. It's likely that the Harvard researchers were surprised by the level of hospitality shown to them while conducting academic researchers. I know it stopped me in my tracks, too, when I first met the LEAD Agency team years ago. In this way, LEAD Agency proves that bringing people together doesn't need to be a physical gathering, rather establishing shared motivations and good relationships is the key component to purposeful assembly.

Although, congregating physically is a powerful tool, as well. The Tar Creek Fishing Tournament and the Tar Creek Conference both fill their niches and their purposes well. The first time I ever attended either one of these events was the fishing tournament that took place on

Earth Day 2021. The fishing tournament that year was on Zoom because the pandemic was a major concern. At this point, I had never met Rebecca in person but I had been meeting with her virtually weekly or biweekly for the semester leading up to this event. Rebecca talked to everyone like we were all best friends. She spoke of Tar Creek like it was our best friend, too. We learned about new creative projects happening at LEAD Agency and chatted about upcoming plans. Even on Zoom, Rebecca made sure we all had the chance to make connections and split us into break out rooms to make friends and network. My favorite part was when we listened to the musical numbers Rebecca planned for us, she waved some past art projects of fish and other fish knick knacks in front of her camera to give the appearance that they were swimming across the screen. Even on Zoom, the fishing tournament was filled with magic. I will never forget how I felt when I left that Zoom meeting with tears in my eyes and a warm gratitude in my chest that I lived on a beautiful planet and that somehow I got lucky enough to know Rebecca Jim

Somehow, LEAD Agency captures this spirit of hope whenever they bring people together, even at the more technical Tar Creek Conference. What is interesting to me about the Tar Creek Conference is that government agencies seem to use it as an opportunity to give all of their reports and updates in recent years. It makes me wonder how they would approach community relationships if LEAD Agency didn't exist. It also begs the question, do community organizations need to serve as a bridge between communities and regulatory agencies? Nevertheless, LEAD Agency has mastered the art of connecting people with purpose.

Creative education endeavors

Perhaps there are good and bad ways to educate people through community activism efforts. If this is the case, then LEAD Agency knows the positive methods. Activism efforts that created positive awareness of Tar Creek took many shapes and sizes, like writing handwritten notes to the Governor of Oklahoma, incentivizing participation in educational events by offering accessible college credits, creating artwork such as *Tar Creek Anthology: The Legacy*, and so much more. Community activism was cited as a driving force for several tangible outcomes throughout Tar Creek's history. For example, in the late 1990s, the Cherokee Volunteer Society was credited for the revival of interest in Tar Creek that ultimately led to the EPA getting involved again after nearly 15 years. Another example when community activism-led education efforts shined was in the early 2000s when LEAD Agency's collaborative project with TEAL was recognized for their outreach efforts which were credited as the reason why blood lead levels decreased.

Additionally, LEAD Agency knows how to make education fun. Instead of taking residents on stale informational tours of the site, they host Toxic Tours and encourage biking or rollerblading through it. Another example is the Cherokee Volunteer Society hosting a school dance with fish as their theme in hope to involve their classmates. CVS ended up receiving way more fish submissions than they'd expected, and the dance was an overwhelming success.

Not only do these education approaches make knowledge seem fun and inviting, they make it seem like knowledge is something people are entitled to. LEAD Agency empowers the community with knowledge as if it is their right. The same cannot be said for regulatory structures. In this way, community activism has contributed more toward justice throughout the remediation process.

Being resourceful

The third major category of activism methods is being resourceful. By this I mean being aware of the opportunities that exist and as well as having the capability to make creative solutions to issues. For example, LEAD Agency has conducted numerous types of fundraising over the years to support a variety of causes, such as the chocolate tasting events and selling art prints. The ability to envision and then create fundraisers like this is an important tactic when engaging in long-term activism. Beyond fundraising, resourcefulness is an essential skill in regards to knowing what opportunities for things like grants and partnerships exist. Time and time again, LEAD Agency has been able to provide services that were not available prior to their intervention by taking full advantage of the opportunities offered. Examples of this are hiring a technical assistant through the EPA grant in 2001, conducting the environmental justice survey through a different EPA grant in 2003-2004, sourcing funding and materials for the warning signs around the Superfund site and creek, as well as their partnership with PUR water filtration to ensure vulnerable people in the community have access to safe drinking water.

While it is disappointing to me that many of these outcomes are not automatically available, such as having an expert technical assistant to keep the community informed with layman's terms, I am relieved that these opportunities exist at all. LEAD Agency's dedication to bringing more justice to the Tar Creek area is evident in their commitment to ensuring the community receives every opportunity they can. Being resourceful is arguably the most important of the three categories for bringing about justice, because this section has the most tangible benefits associated with it.

DISCUSSION

As it relates to environmental justice, community activism is a promising tool. As discussed by Kohl et al.(2021), the current regulatory framework does not have an enforced top-down structure of environmental justice. This means that there is no formal system to ensure justice from within and throughout regulatory processes. In many ways, community activism at Tar Creek successfully achieved environmental justice goals independent of the regulatory process. Their methods of organizing, hosting, communicating and advocating are comparable to the housewives of the Love Canal neighborhood. The major difference between Love Canal and Tar Creek is the amount of media attention given to each on a national level. While Love Canal was a name known across the country, there were (and still are) many Oklahomans who have never heard of Tar Creek (O'Brien 2022). In addition to being a comparable example of grassroots activism, Love Canal served as a relevant marker for progress and efficiency for the Tar Creek Superfund site. Following the remediation of Love Canal, editors of the Miami News-Record inquired, "One year after the completion of the Love Canal Superfund cleanup site, we can't help but wonder when the government is finally going to take a substantial interest in the Tar Creek Superfund site" ("Tar Creek" 1998). Even the Governor of Oklahoma remarked about the State's reputation as a result of Tar Creek and said, "You cannot be associated with Love Canal and not have that diminish what you do" (Jernigan 2000b).

Arguably, these comparisons of Love Canal and Tar Creek showcase that the regulatory framework can be influenced by public outcry and media attention. Just as the Miami News-Record editors rhetorically ask why government agencies have not given Tar Creek the same attention, Gov. Keating acknowledges the mantle of housing one of the worst toxic sites in U.S. history in your state. With this in mind, it is clear that public knowledge and perception of

environmental injustice has the potential to expedite the process. While this research has established that regulatory frameworks fail to formally involve community activism, I argue that it is not immune to the influences of public opinion, media attention, and more importantly, activism.

The EPA's definition of environmental justice describes it as "the fair treatment and *meaningful involvement* of all people…with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies" (Burda and Harding 2014, emphasis added). Across many examples in Tar Creek's history, community members were not invited to be "meaningfully involved" in the remediation process and had to create most opportunities for involvement by themselves. One example of this is LEAD Agency applying for the technical assistant grant that provided an opportunity for community members to be more fully educated on the remediation process. Yes, this grant was funded by the EPA, but a more equitable approach would be for the EPA to be more fully involved with the community and available to educate those impacted by toxicity on updates in the process. This makes it seem as though awareness among community members on remediation processes is not a priority of the regulatory framework, so they outsource it as an opportunity that someone in impacted communities must be savvy enough to successfully navigate themselves in order to receive more equitable dissemination of knowledge. Rebecca Jim even described receiving the grant as too little, too late (Kennedy 2001). This is an example of how community involvement in the remediation process has direct results on achieving greater justice.

While Pulido (2016) argues for critical oppositionality to the state in order to achieve radical environmental justice, this research establishes that radical environmental justice can be achieved by establishing community influence, and ultimately community control, on the

remediation process. In this sense, I argue that community influence is the ability for impacted residents in polluted places to plan and change the remediation process to fit their needs, wants, and desires. There is certainly a balance to be achieved here, because the regulatory frameworks do offer generally important guidelines and goals, such as water and air quality standards, but the pendulum is currently swinging completely against community members. A couple of examples of how this structure of community influence does not exist in the regulatory framework are when residents were rightfully dissatisfied with the results of the yard remediation and it took years to address as well as when residents organized to stop the yard remediation all together in favor of a buyout when the remediation plans paused for winter. Government officials are never going to care about communities and their well-being as much as the people who live there themselves. By providing a formal system within the remediation process for residents to influence the process, it will be mutually beneficial for frameworks trying to create effective methods as well as residents who have to live with the consequences.

Charles Lee (2021) describes how federal agencies fail at adopting environmental justice policies and how the current bureaucratic culture obstructs efforts through actions that water down progress toward justice in multiple ways. In this sense, the regulatory framework cannot be trusted to achieve justice on its own. Community influence on the process allows for unique perspectives to be shared on what justice would look like on a local level, rather than the vague and unenforced federal definitions of environmental injustice.

Overall, community activism at Tar Creek has been more successful in many efforts, a key effort being communication, than the regulatory framework. This is showcased in Rebecca Jim's weekly/biweekly blog posts, annual fishing tournaments and Tar Creek conferences, and the dissemination of educational information about the remediation, impacts of chat and lead,

and much more, in comparison to regulatory agencies not having a point of contact for residents, not having one person assigned to manage a project, and officials not taking resident complaints seriously. This dynamic is illustrated throughout Tar Creek history, and shows that community leaders approach communication with consistency while governmental officials have more haphazard approaches to communication. Community activism has had great success at starting conversations and making crucial connections that would not otherwise happen. For example, the Tar Creek Conference is an important annual meeting hosted by LEAD Agency that government agencies have grown to use as an opportunity to share their updates as well. Activism efforts that bring people together have been praised by officials that said the opportunities create dialogue "that does not occur through any of the federal Superfund process" (Jim 2001).

Community activists can use opportunities that exist to maximize their influence on regulatory structures. This is exhibited time and time again throughout this research. Additionally, community activists can look for opportunities for positive impact in areas that the regulatory framework has neglected. For example, before LEAD Agency initiated their project to post warning signs around the Superfund site, there were no plans from government agencies to have any kind of signage or even fence off the contaminated areas. In this example and many others, the regulatory framework is not as equipped to address many of the existing issues experienced by communities living in a sacrifice zone. The community itself holds pivotal knowledge and firsthand experience of the threats they face day-to-day and are therefore better prepared to understand and execute plans that will protect them from slow violences. Hypothetically, for a state or federal official who has never lived near the Superfund site, it might not be viewed as necessary to fence off the contaminated areas because they might think

that telling the community the chat piles are dangerous is enough to protect the community from harm. In reality, LEAD Agency had the community-based knowledge that many children in the area played on the chat piles and in Tar Creek and needed additional precautions to keep safe. This research shows that there is a multitude of untapped community knowledge that would highly benefit the regulatory process if it were included and involved.

The key contributions of this research to existing literature include a comparison of activist tools used at Tar Creek and Love Canal, an exploration of how community activism has addressed gaps left by the lack of top-down environmental justice structures, an investigation of community involvement's influence on the remediation process, and an examination on how radical environmental justice can be achieved through increased community involvement.

CONCLUSION

Amending the remediation process to formalize community activism will not happen overnight. In the meantime, community activists can do their best to influence the remediation process to the full extent they can. LEAD Agency and community members near Tar Creek have created dynamic and effective methods of involving themselves in remediation. Ultimately, the biggest takeaway from these methods is that they each make a disheartening situation and the burdens that come with it feel light. Notably, community activists at Tar Creek do not get so caught up in the seriousness of it all or the pressure to be overtly professional or rigid that they forget to be human. In regards to influencing the remediation process, these methods help achieve more justice by promoting more equitable distribution of information, asserting that each individual is deserving of a spot at the table, and each person is worth advocating for.

CONCLUSION

At this point in time, Tar Creek remains largely unremediated. In many ways, this is a sad story of injustice. There is a sense of progress over the last nearly thirty years, but the major remediation initiatives have been baby steps toward addressing the full extent of environmental harm. On the other hand, I would argue that this is a story of strengthening community and resilience. There is no justice for Tar Creek, yet, but there is hope in the meantime.

Through my research on the history of injustice at Tar Creek, I set out to discover the specifics of how the regulatory framework of remediation is insufficient at achieving justice and the degree to which community activism affects regulatory processes and promotes justice. What strikes me about these two phases of my research is the difference in spirit between Chapter 1 and Chapter 2. The findings of Chapter 1 left me feeling sorrowful, angry, and frustrated. In Chapter 2, I was constantly reminded of the hope of Tar Creek and the potential individuals have to create positive influences. I have decided that the main difference here is that the regulatory framework doesn't have a place for human emotions. The structure of regulation is dehumanizing. By this, I mean that in order to cooperate with the regulatory system's status quo, it is necessary to take an unemotional approach. This concept played out during the years of yard remediation when residents repeatedly shared their frustrations and disappointments with the work done on their properties, only to be dismissed for years by government officials who claimed their requests were "unreasonable."

It seems as though the lack of an enforced definition of justice throughout the regulatory structure leaves it up to interpretation. Perhaps government agencies function on the idea that in a polluted place, clean means the same thing as justice. This is not the case. In fact, the approach

that government agencies took by letting people continue living in toxicity while they conducted study after study and project after project that never adequately addressed the harm they faced can be considered slow violence. For example, Senator Inhofe did not see a buyout as a valid option until he was aware of the threat of ground collapse. Before that, when he was only aware of the long-term severe threat of lead poisoning on children, he believed there was no reason for anyone to leave. In the meantime, people continued to suffer the consequences of slow violence.

This research produces significant findings for legal geographies and environmental justice research. The results of this research produce a thorough analysis of the power dynamics exploring how community members near polluted places are often disenfranchised by a remediation process that prioritizes outside voices over theirs, in addition to illustrating that the current legal and regulatory frameworks of pollution remediation perpetuate injustice by failing to meaningfully include communities. These inadequate structures of environmental justice governance create a disconnected system of remediation that perpetuates a narrow understanding of justice and fails to consider what just outcomes would be from a community perspective. By putting Tar Creek's experience in conversation with polluted places of past and present across the United States, this research establishes how Tar Creek is unique while also falling victim to the nationwide patterns of pollution that are perpetuated by capitalism, colonialism, and extractivism. Additionally, this research produces novel analysis on slow violence and sacrifice zones that explores how the circumstance of pollution is potentially the greatest determination of if a place will be targeted for future extraction, pollution, or other slow violences. Further, these results explore how community activism has addressed gaps left by the lack of top-down environmental structures as well as evaluating the extent to which specific activist efforts influence the remediation process. These findings offer an examination of how environmental

justice can be achieved through increased community involvement and formalizing the inclusion of community desires in the remediation process.

Given the convoluted nature of CERCLA and other environmental laws and regulations in the United States, the process of formalizing community involvement in the remediation process is a complex issue. While this research sought only to address how community involvement is necessary to produce just outcomes, future research projects can analyze more thoroughly what this would look like in practice. One option to mandate community involvement would be to host representatives from communities on all decision-making teams within regulating agencies throughout the entirety remediation process. There are many pitfalls to this option, given that not all polluted sites are near communities, not all communities that are near polluted sites have residents who would be willing to participate, and having one community vote on a team of outsiders could be easily undermined by the majority. Additionally, approaching community involvement as a case-by-case procedure leaves too much room for error and subjectivity and fails to establish a strong top-down approach. While this research doesn't analyze the implementation of community activism enough to make a specific recommendation to amend the regulatory framework, the potential for useful implementation options still exists. Community involvement remains the most influential driver for justice this research found.

Time after time throughout Tar Creek's history, the issue could have been addressed more effectively if the regulatory structure involved residents in the process more formally. All involvement that community members have had in the process has been informal agreements because the regulatory framework does not have a plan for this. I assert that the best way to achieve more justice during environmental remediation processes is to formally include

community perspectives throughout all phases of the process. Until that can be achieved, community activism can play an influential role independent of the regulatory framework to promote justice and foster hope in the community by increasing their ability to connect with purpose, enhance their creative education methods, and improve their resourcefulness.

BIBLIOGRAPHY

Adams, J. C. (1980). *Tar Creek Quality Reconnaissance Regarding Ground Water Discharge from Abandoned Lead and Zinc Mines of Picher Field, Ottawa County, Oklahoma*. Oklahoma Water Resources Board - Water Quality Division.

Armstrong, J. (1988, March 20). The legacy of Tri-State Mining District: a “cancer hot spot.” *The Joplin Globe*.

Atari, D. O., Luginaah, I., & Baxter, J. (2011). “This is the mess that we are living in”: residents' everyday life experiences of living in a stigmatized community. *GeoJournal*, *76*(5), 483–500. https://doi.org/10.1007/s10708-010-9365-7

Balayannis, A. (2020). Toxic Sights: The Spectacle of Hazardous Waste Removal. *Environment and Planning D: Society and Space*, *38*(4), 772–790. https://doi.org/10.1177/0263775819900197

Barber, B. (2003, December 20). Private buyouts discussed. *Tulsa World*.

Barker, K. (2016, September 15). Reversing the irreversible. *Miami News-Record*.

Barker, K. (2017, September 19). Cleaner site. *The Joplin Globe*.

Barringer, F. (2004, April 17). New York Times sees murky Tar Creek dilemma clearly. *The New York Times*.

Baugh, S. (2006, August 9). Picher expecting 150 students. *Miami News-Record*.

Baugh-Schultz, S. (2006a, December 3). Picher-Cardin to discuss annexation. *Miami News-Record*.

Baugh-Schultz, S. (2006b, December 27). Picher officials prepare for closure. *Miami News-Record*.

Baugh-Schultz, S. (2007, May 9). Picher board names new school superintendent. *Miami News-Record*.

Bendel, R. G. (2004, January 4). *Senator should step up*.

Blomley, N. K., & Bakan, J. C. (1992). Spacing out: towards a critical geography of law. *Osgoode Hall Law Journal (1960)*, *30*(3), 661-.

Bluhm, R. (1998a, September 1). Workers present proposal to officials. *Miami News-Record*.

Bluhm, R. (1998b, September 3). Tar Creek employees return to work. *Miami News-Record*.

Branstetter, Z. (2004, June 2). Relocation bill signing slated today. *Tulsa World*.

Braverman, I. (2011). Hidden in Plain View: Legal Geography from a Visual Perspective. *Law, Culture and the Humanities*, *7*(2), 173–186. https://doi.org/10.1177/1743872109355579

Braun, V., & Clarke, V. (2021). *Thematic Analysis: A Practical Guide*. SAGE Publications.

Braverman, I., Blomley, N., Delaney, D., & Kedar, A. (2014). *The Expanding Spaces of Law: A Timely Legal Geography*. Stanford University Press.

Brewer, M., McNelis, N., Randall, K., & Jim, R. (2000, February 9). Tar Creek Task Force needed. *Miami News-Record*.

Brower, J. W. (2003a, July 30). Backyard sinkhole leaves Picher couple with concerns. *Miami News-Record*.

Brower, J. W. (2003b, September 2). Yard remediation projects could be finished next month. *Miami News-Record*.

Brower, J. W. (2004a). Secretary of environment: "We realize we have done a bad job." *Miami News-Record*.

Brower, J. W. (2004b, February 24). Picher officials not concerned with suggested collapse risk. *Miami News-Record*.

Brower, J. W. (2004c, June 8). Picher-Cardin superintendent to probe consolidation option. *Miami News-Record*.

Brower, J. W. (2004d, July 30). Water testing to begin. *Miami News-Record*.

Brower, J. W., & Sturgeon III, K. E. (2004, March 19). Is it safe or not? *Miami News-Record*.

Brown, R. (2002, July 7). Tar Creek: 20 years later, Superfund site's future is as cloudy as its water. *The Joplin Globe*.

Browning, G. (1998, October 26). "I was afraid the house would fall in." *The Joplin Globe*.

Buckhoy, N. (2015). Environmental Justice for Whom?: A Social Construction Framework Analysis of Executive Order 12898. *Environmental Justice (19394071)*, *8*(5), 157–164. https://doi.org/10.1089/env.2015.0014

Buffery, C. A. (2016). *Changing landscapes: a legal geography of the river severn* [ProQuest Dissertations Publishing]. https://search.proquest.com/docview/1784058927?pq-origsite=primo

Bullard, R. D., & Johnson, G. S. (2000). Environmental Justice: Grassroots Activism and Its Impact on Public Policy Decision Making. *Journal of Social Issues*, *56*(3), 555–578. https://doi.org/10.1111/0022-4537.00184

Burda, M., & Harding, M. (2014). Environmental Justice: Evidence from Superfund cleanup durations. *Journal of Economic Behavior & Organization*, *107*, 380–401. https://doi.org/10.1016/j.jebo.2014.04.028

Burhenn, M. (2005a, July 11). Trees may root out lead woes. *The Joplin Globe*.

Burhenn, M. (2005b, July 26). Mayor named in looting report. *The Joplin Globe*.

Casteel, C. (2003, May 8). Pollution site report lessens endorsement on moving residents. *The Daily Oklahoman*.

Coach, J. (1998, August 11). Off the beaten path. *Miami News-Record*.

Collins, D. C. A., & Kearns, R. A. (2001). Under curfew and under siege? Legal geographies of young people. *Geoforum*, *32*(3), 389–403. https://doi.org/10.1016/S0016-7185(00)00033-6

Concerned Youth and Citizens. (1999). *Tar Creek Anthology "The Legacy."* Tahlequah Daily Press.

Davies, T. (2022). Slow violence and toxic geographies: 'Out of sight' to whom? *Environment and Planning C: Politics and Space*, *40*(2), 409–427. https://doi.org/10.1177/2399654419841063

de Souza, M. L. (2021). 'Sacrifice zone': The environment–territory–place of disposable lives. *Community Development Journal*, *56*(2), 220–243. https://doi.org/10.1093/cdj/bsaa042

Delaney, D. (2016). Legal geography II. *Progress in Human Geography*, *40*(2), 267–274. https://doi.org/10.1177/0309132515571725

Delaney, D. (2017). Legal geography III: New worlds, new convergences. *Progress in Human Geography*, *41*(5), 667–675. https://doi.org/10.1177/0309132516650354

Duhon, K. (2002, January 30). Eyes turn to Tar Creek. *Miami News-Record*.

Duhon, K. (2004, January 30). "Oklahoma" plan "good news" for Commerce. *Miami News-Record*.

Duhon, K. (2005, January 12). Commerce cave-in. *Miami News-Record*.

Duhon, K. (2006a). News brings sweet taste of sadness. *Miami News-Record*.

Duhon, K. (2006b). Officials discuss Picher schools. *Miami News-Record*.

Duhon, K. (2006c). Residents waiting for answers. *Miami News-Record*.

Duhon, K. (2006d, February 19). Officials vote to close Picher housing units. *Miami News-Record*.

Duhon, K. (2006e, April 7). Picher board renews contracts. *Miami News-Record*.

Duhon, K. (2006f, April 9). Government "glitches" to blame. *Miami News-Record*.

Duhon, K. (2006g, May 12). Picher public meeting slated. *Miami News-Record*.

Duhon, K. (2006h, July 16). Henry names buyout trust. *Miami News-Record*.

Duhon, K. (2006i, August 2). Relocation forms in hand. *Miami News-Record*.

Duhon, K. (2006j, December 8). Buyout funding hits snap. *Miami News-Record*.

Duhon, K. (2007a, April 5). Buyout offers held back. *Miami News-Record*.

Duhon, K. (2007b, April 25). Keheley resigns from trust. *Miami News-Record*.

Duhon, K. (2007c, April 29). "No Way, Shape or Form." *Miami News-Record*.

Duhon, K. (2007d, May 6). Another Picher resident disappointed in buyout offer. *Miami News-Record*.

Duhon, K. (2007e, May 18). Funding for Tar Creek buyout clears U.S. Senate. *Miami News-Record*.

Duhon, K. (2007f, June 21). Trust manager resigns. *Miami News-Record*.

Duhon, K. (2008a, January 9). $10 million marked for buyout. *Miami News-Record*.

Duhon, K. (2008b, February 22). EPA to fund buyout. *Miami News-Record*.

Duhon, K. (2008c, September 17). Priority II buyout begins. *Miami News-Record*.

Edens, S. (2001, February 19). Bad news spells need for buyout option. *Miami News-Record*.

Ellis, J. (2009, June 21). Picher-Cardin High School alumni say goodbye with bonfire. *Miami News-Record*.

EPA. (2015, August 17). *Superfund: National Priorities List (NPL)*. https://www.epa.gov/superfund/superfund-national-priorities-list-npl

Flinn, A., Stevens, M., & Shepherd, E. (2009). Whose memories, whose archives? Independent community archives, autonomy and the mainstream. *Archival Science*, *9*(1), 71. https://doi.org/10.1007/s10502-009-9105-2

Floehr, T., Xiao, H., Scholz-Starke, B., Wu, L., Hou, J., Yin, D., Zhang, X., Ji, R., Yuan, X., Ottermanns, R., Roß-Nickoll, M., Schäffer, A., & Hollert, H. (2013). Solution by dilution?—A review on the pollution status of the Yangtze River. *Environmental Science and Pollution Research*, *20*(10), 6934–6971. https://doi.org/10.1007/s11356-013-1666-1

Ford, B. (1993, July 7). New Department Touted as Ally of Environment. *Tulsa World*.

Forest, B. (2000). Placing the Law in Geography. *Historical Geography*, *28*, 8.

Garcia, M. (2005, August 11). For a lucky few, Oklahoma offers an exit from tainted town. *The Kansas City Star*.

Garton, G. (n.d.). Agency to use grant to organize reports. *The Joplin Globe*.

Garton, G. (1993a, July 30). District ignores boil order. *The Joplin Globe*.

Garton, G. (1993b, July 31). Residents notified of water warning. *The Joplin Globe*.

Garton, G. (1996, October 1). Well work improves water. *The Joplin Globe*.

Garton, G. (1997a, March 1). EPA gives up on Tar Creek cleanup. *The Joplin Globe*.

Garton, G. (1997b, March 1). Ottawa County work may expand. *The Joplin Globe*.

Garton, G. (1997c, May 3). Area group targets Tar Creek cleanup as first challenge. *The Joplin Globe*.

Garton, G. (1997d, October 3). EPA: Lead problems linked to mine waste chat. *The Joplin Globe*.

Garton, G. (1997e, December 12). Woman hopes to take a bite out of lead problem. *The Joplin Globe*.

Garton, G. (1997f, December 13). Test of teeth to determine lead-exposure problems. *The Joplin Globe*.

Garton, G. (1998, April 11). State officials tour Tar Creek sites. *The Joplin Globe*.

Garton, G. (1999a, January 22). Plants may pull lead from soil. *The Joplin Globe*.

Garton, G. (1999b, September 23). EPA seeks to streamline lead cleanup project. *The Joplin Globe*.

Garton, G. (1999c, December 23). Does chat dust pose risk? *The Joplin Globe*.

Garton, G. (2000, September 8). Picher buyout proposed. *The Joplin Globe*.

Garton, G. (2001a, July 31). Bulldozer fished out. *The Joplin Globe*.

Garton, G. (2001b, July 31). Towns seeks feasibility of moving. *The Joplin Globe*.

Garton, G. (2002a). 2 educators raise doubts about Miami lead cleanup. *Joplin Globe*.

Garton, G. (2002b, October 16). 2 schoolyards cordoned off. *The Joplin Globe*.

Gillham, O. (2004a, January 25). Henry to unveil Tar Creek buyout. *Tulsa World*.

Gillham, O. (2004b, February 27). Foster child is removed from Picher. *Tulsa World*.

Gillham, O. (2005a, March 27). More blood tests considered. *Tulsa World*.

Gillham, O. (2005b, August 20). OU will reopen blood probe. *Tulsa World*.

Gillham, O. (2006a, February 4). Eulogy for a small town. *Tulsa World*.

Gillham, O. (2006b, May 5). Federal buyout plan revealed. *Tulsa World*.

Gillham, O. (2006c, May 25). Blood-study tampering confirmed. *Tulsa World*.

Gillham, O. (2006d, November 4). Tar Creek: $20 Million Off: Federal buyout shy of needs. *Tulsa World*.

Gillham, O. (2006e, December 10). Tar Creek approaches what could be its final Christmas. *Tulsa World*.

Gillham, O. (2007a, March 4). Picher fixing what might be destroyed. *Tulsa World*.

Gillham, O. (2007b, June 29). Blood tampering is confirmed. *Tulsa World*.

Gillham, O. (2008, May 14). Buyouts are expedited. *Tulsa World*.

Gillham, O. (2009, February 15). Picher public housing costs rise amid buyout. *Tulsa World*.

Gillham, O. (2010, March 14). Tar Creek buyouts create ghost town. *Tulsa World*.

Gillham, O. (2011, September 27). Unfinished business: Tar Creek requires more cleanup. *Tulsa World*.

Gilliland, A., & Flinn, A. (2013). *Community Archives: what are we really talking about?*

Gillman, O. (2004, May 7). Residents attribute ailments to Tar Creek-area pollution. *Tulsa World*.

Goforth, D. (2014, February 9). Still life in Picher. *Tulsa World*.

Graves, M. E. (2015). *Spatial Narratives of Struggle and Activism in the Del Amo and Montrose Superfund Cleanups: A Community-Engaged Web GIS Story Map* [M.S., University of Southern California]. https://www.proquest.com/docview/2067305870/abstract/10292BC43EE641D5PQ/1

Grunwald, M. (2000, May 22). As Corps Widens Reach, A Cleanup Turns Messy. *The Washington Post*.

Hale, J. (2002, September 26). Sierra Club Profiles Ottawa County Left At Risk By Bush Administration's Environmental Policies. *The Sierra Club*.

Hasan, R. (2019). *Dilution 'Is No More' the Solution to Pollution* (SSRN Scholarly Paper No. 3429511). https://doi.org/10.2139/ssrn.3429511

Hatfield, R. (2004, January 21). Picher resident seeks answers. *Miami News-Record*.

Hatfield, R. (2007, July 1). Appraisals are unfair. *Miami News-Record*.

Hayworth, J. S., & Clement, T. P. (2011). BP's Operation Deep Clean—Could Dilution be the Solution to Beach Pollution? *Environmental Science & Technology*, *45*(10), 4201–4202. https://doi.org/10.1021/es201242k

Hicks, L. (2004, March). Tar Creek: the land of lead. *Cherokee Phoenix*.

Hogg, R. (2002). *Law's Other Spaces*. 8.

Holmes, R. (1996, June 18). EPA unveils lead remediation, health education plan. *Miami News-Record*.

Hopkins, H. (2020, June 8). *Racism Is Killing the Planet*. Sierra Club. https://www.sierraclub.org/sierra/racism-killing-planet

Howe, L. (1999). Tribalography: The Power of Native Stories. *Journal of Dramatic Theory and Criticism*, *14*(1), 117–125.

Hull, E. V. (2002). Soiling the Sea: The Solution to Pollution Is Still Dilution - A Re-Evaluation of the Efficacy of 40 C.F.R. 122.3 and Annex IV of MARPOL. *Barry Law Review*, *3*, 61. https://heinonline.org/HOL/Page?handle=hein.journals/barry3&id=65&div=&collection=

Hylton, S. (1996, June 28). Picher water wells to be sampled for metals. *Miami News-Record*.

Hylton, S. (1997, March 30). $26 million plan set for superfund site. *Miami News-Record*.

Hylton, S., & Holmes, R. (1996, October 2). Work continues on Picher water supply. *Miami News-Record*.

Hynes, J. (2023). *Legal Geographies of Immigration Bail: Space, Time and Remote Hearings*. University of Exeter.

Jernigan, B. (1997a, August 15). LEAD group seeking help from “slush fund.” *Miami News-Record*.

Jernigan, B. (1997b, September 25). Group to put up warning signs along Tar Creek. *Miami News-Record*.

Jernigan, B. (1997c, October 2). EPA: Superfund project moving in right direction. *Miami News-Record*.

Jernigan, B. (1997d, October 3). Remedial phase of cleanup to begin in January. *Miami News-Record*.

Jernigan, B. (1997e, October 6). High lead levels in children can be prevented. *Miami News-Record*.

Jernigan, B. (1997f, October 8). Blood lead level tests reveal remediation process works. *Miami News-Record*.

Jernigan, B. (1997g, December 15). Children's teeth collected to help in lead study. *Miami News-Record*.

Jernigan, B. (1997h, December 30). Health concerns raised over lead finding in Miami home. *Miami News-Record*.

Jernigan, B. (1997i, December 30). Young children have greatest risk from effects of lead exposure. *Miami News-Record*.

Jernigan, B. (1998a, January 5). Hidden danger. *Miami News-Record*.

Jernigan, B. (1998b, January 8). EPA, DEQ seeks homeowners with chat in ductwork. *Miami News-Record*.

Jernigan, B. (1998c, January 15). EPA, DEQ officials not sure of extent of problems. *Miami News-Record*.

Jernigan, B. (1998d, January 19). TEAL project finds challenge in combating lead problem. *Miami News-Record*.

Jernigan, B. (1998e, February 1). Experts: wetlands may hold answer to Tar Creek problem. *Miami News-Record*.

Jernigan, B. (1998f, February 23). Tooth fairy project underway. *Miami News-Record*.

Jernigan, B. (1998g, April 1). Agency's signs simple yet direct. *Miami News-Record*.

Jernigan, B. (1998h, April 17). Picher students win national songwriting contest. *Miami News-Record*.

Jernigan, B. (1998i, April 30). Something is fishy. *Miami News-Record*.

Jernigan, B. (1998j, May 31). Researchers tour hazardous areas. *Miami News-Record*.

Jernigan, B. (1999a). Coburn visits Superfund site. *Miami News-Record*.

Jernigan, B. (1999b, July 5). EPA fires back. *Miami News-Record*.

Jernigan, B. (1999c, August 8). *EPA promises more scrutiny of Superfund project*.

Jernigan, B. (1999d, August 9). *EPA to get tougher about cleanup*.

Jernigan, B. (2000a, May 15). Free soil testing to be discontinued. *Miami News-Record*.

Jernigan, B. (2000b, September 8). Picher relocation proposed. *Miami News-Record*.

Jernigan, B. (2000c, September 12). Residents debate relocation. *Miami News-Record*.

Jernigan, B. (2000d, September 14). Cardin residents say "no." *Miami News-Record*.

Jernigan, B. (2000e, September 19). Task force recommends moving cities. *Miami News-Record*.

Jernigan, B. (2000f, September 20). Coburn against Tar Creek plan. *Miami News-Record*.

Jernigan, B. (2000g, October 6). Keating accepts Tar Creek report. *Miami News-Record*.

Jernigan, B. (2000h, October 13). Meeting targets task force plan. *Miami News-Record*.

Jernigan, B. (2000i, November 20). Relocation option going public. *Miami News-Record*.

Jernigan, B. (2000j, December 13). Report lists potential subsidence sites. *Miami News-Record*.

Jernigan, B. (2000k, December 13). Yesterday, today . . . tomorrow? *Miami News-Record*.

Jernigan, B. (2001a, January 12). Survey says: Explore options. *Miami News-Record*.

Jernigan, B. (2001b, March 9). Education effort credited. *Miami News-Record*.

Jernigan, F. (2000a, February 21). Tar Creek considered "a challenge." *Miami News-Record*.

Jernigan, F. (2000b, August 9). Keating brings message to city. *Miami News-Record*.

Jim, R. (n.d.). *Cherokee Volunteer Society Promotes Environmental Awareness*.

Jim, R. (2001). *The Tar Creek Project*.

Jim, R. (2014, July). LEAD Agency Update. *The LEADer*.

Jim, R. (2015, September 22). Art rocks. *Miami News-Record*.

Jim, R. (2023, February 12). *You Have A Right - Tar Creekkeeper*. Local Environmental Action Demanded. https://www.leadagency.org/tar-creekkeeper.html

Jones, M. (2004, April 4). Finishing touches. *Tulsa World*.

Jones, W. (2001, January 14). Picher shouldn't move. *Miami News-Record*.

Joseph, K. (2000, July 16). Area lead testing heats up. *Miami News-Record*.

Kennedy, W. (2001). Tar Creek residents get $50,000 grant. *Joplin Globe*.

Kennedy, W. (2004a, November 16). Researcher details breast-milk study. *The Joplin Globe*.

Kennedy, W. (2004b, November 17). Feds drop lead-cleanup investigation. *The Joplin Globe*.

Kennedy, W. (2005a, February 12). "Starting point." *The Joplin Globe*.

Kennedy, W. (2005b, May 5). Panel votes to demolish homes expected to be purchased in Picher-Cardin buyout program. *The Joplin Globe*.

Kennedy, W. (2005c, November 18). Study raises health questions. *The Joplin Globe*.

Kennedy, W. (2006, January 10). Hazards of childhood. *The Joplin Globe*.

Kennedy, W. (2007, October 21). Miami: Housing crippling growth. *The Joplin Globe*.

Kennedy, W. (2009, January 25). Frustration continuing in Picher buyout effort. *The Joplin Globe*.

Kohl, E., Sullivan, M., Chambers, M. M., Sellers, C., Cordner, A., Fredrickson, L., Ohayon, J. L., & Varner, J. (2021). The Problem of Accountability: Environmental Justice and the Trump Administration. *Environmental Justice (19394071)*, *14*(5), 353–359. https://doi.org/10.1089/env.2021.0012

Krista, D. (2008, February 20). Houses to leave Picher. *Miami News-Record*.

Kurt, K. (1998a, September 27). Lead-filled chat use widespread. *Miami News-Record*.

Kurt, K. (1998b, September 28). Orange water remains. *Miami News-Record*.

Kurt, K. (1998c, October 7). Mounds of contamination go untracked. *Parsons Sun*.

Kurt, K. (2003, May 8). *Tar Creek report gives mixed review of wetlands plan*.

Lake, W. (2001, January 21). Picher residents need to know all the facts. *Miami News-Record*.

Lee, C. (2021). Confronting Disproportionate Impacts and Systemic Racism in Environmental Policy. *Environmental Law Reporter: News & Analysis*, *51*(3), 10207–10225.

Leever, K. (2009). Hundreds attend final all-school reunion in Picher. *Miami News-Record*.

Lewin, S. (2004, June 2). Henry will sign Tar Creek law this week. *Native American Times*.

Liboiron, M. (2021). *Pollution Is Colonialism*. Duke University Press. https://www.dukeupress.edu/pollution-is-colonialism

Lindley, T. (1999a, December 9). Who will save the children of Ottawa County? *The Daily Oklahoman*.

Lindley, T. (1999b, December 10). Another broken promise. *The Daily Oklahoman*.

Lindley, T. (1999c, December 11). Scars of lead poisoning. *The Daily Oklahoman*.

Lindley, T. (1999d, December 17). Miami mayor asks for limits on chat. *The Oklahoman*.

Lindley, T. (2000, January 6). Tar Creek panel set. *The Daily Oklahoman*.

Lindley, T. (2001a, February 8). New study won't delay Tar Creek lead cleanup. *The Daily Oklahoman*.

Lindley, T. (2001b, February 8). Relocation of towns on hold for study. *The Daily Oklahoman*.

Lindley, T. (2004, June 13). Tar Creek's future held by dreams. *The Daily Oklahoman*.

Lohan, T. (2021, April 14). 'There's No Memory of the Joy.' Why 40 Years of Superfund Work Hasn't Saved Tar Creek • The Revelator. *The Revelator*.

Luthy, B. (2008, May 11). Picher tornado kills 6. *Tulsa World*.

Lyons, B. (1994a, April 19). Tar Creek group told water is safe. *Miami News-Record*.

Lyons, B. (1994b, April 25). Tar Creek report reviewed tonight. *Miami News-Record*.

Lyons, B. (1994c, April 29). Chat's potential health risk under evaluation. *Miami News-Record*.

Lyons, B. (1994d, May 6). Study shows high lead in children. *Miami News-Record*.

Marino, A., & Cheney, T. (2023). Centring Environmentalism in Space Governance: Interrogating Dominance and Authority Through a Critical Legal Geography of Outer Space. *Space Policy*, *63*, 101521. https://doi.org/10.1016/j.spacepol.2022.101521

Masterson-Allen, S., & Brown, P. (1990). Public Reaction to Toxic Waste Contamination: Analysis of a Social Movement. *International Journal of Health Services*, *20*(3), 485–500. https://www.jstor.org/stable/45130997

McCarthy, C. M. (1993, July 30). 850 homes told to boil water today. *Miami News-Record*.

McGregor, D. (2018a). Mino-Mnaamodzawin: Achieving Indigenous Environmental Justice in Canada. *Environment and Society*, *9*, 7–24. https://www.jstor.org/stable/26879575

McGregor, D. (2018b). Indigenous Environmental Justice, Knowledge and Law. *Kalfou Journal of Comparative and Relational Ethnic Studies. Temple University Press: 5 (2): 279-296*. https://digitalcommons.osgoode.yorku.ca/scholarly_works/2901

McGregor, D., Whitaker, S., & Sritharan, M. (2020). Indigenous environmental justice and sustainability. *Current Opinion in Environmental Sustainability*, *43*, 35–40. https://doi.org/10.1016/j.cosust.2020.01.007

Meadows, R. (n.d.). *The Death & Life of Tar Creek | Rebecca Jim, Tar Creekkeeper*. Waterkeeper.

Menton, M., Larrea, C., Latorre, S., Martinez-Alier, J., Peck, M., Temper, L., & Walter, M. (2020). Environmental justice and the SDGs: from synergies to gaps and contradictions. *Sustainability Science*, *15*(6), 1621–1636. https://doi.org/10.1007/s11625-020-00789-8

Mezzadra, S., & Neilson, B. (2017). On the multiple frontiers of extraction: excavating contemporary capitalism. *Cultural Studies*, *31*(2/3), 185–204. https://doi.org/10.1080/09502386.2017.1303425

Milloy, R. (2000a, July 21). Waste From Old Mines Leaves Piles of Problems. *The New York Times*.

Milloy, R. (2000b, July 21). Waste From Old Mines Leaves Piles of Problems. *The New York Times*.

Muchmore, S. (2006). Fading Picher: Graduation marks a dwindling district. *Tulsa World*.

Myers, J. (2001, September 7). Wetlands project urged for Tar Creek cleanup. *Tulsa World*.

Myers, J. (2003a, May 11). Tar Creek report stirs Carson ire. *Tulsa World*.

Myers, J. (2003b, May 15). Tar Creek plan pushed. *Tulsa World*.

Myers, J. (2006, May 4). Inhofe to unveil Tar Creek plan. *Tulsa World*.

Myers, J. (2007, January 27). Funding snag solved in Tar Creek buyout. *Tulsa World*.

Myers, J., & Gillham, O. (2006, February 1). Inhofe: Report changes outlook. *Tulsa World*.

Myers, J., & Walton, R. (2000, February 24). Superfund firm's data seized. *Tulsa World*.

Neal, K. (2003, January 12). It's time to move. *Tulsa World*.

Nixon, R. (2011). *Slow Violence and the Environmentalism of the Poor*. Harvard University Press. https://www.hup.harvard.edu/catalog.php?isbn=9780674072343

Obama, B. (2014). Proclamation 9082--20th Anniversary of Executive Order 12898 on Environmental Justice. *Daily Compilation of Presidential Documents*, 1–2. http://libraries.ou.edu/access.aspx?url=https://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=94484427&site=ehost-live

O'Brien, K. (2022). *Paradise Falls*. Pantheon. https://www.penguinrandomhouse.com/books/665371/paradise-falls-by-keith-obrien/

O'Neil, S. G. (2007). Superfund: Evaluating the Impact of Executive Order 12898. *Environmental Health Perspectives*, *115*(7), 1087–1093. https://doi.org/10.1289/ehp.9903

Overall, M. (2005, October 15). Tar Creek landmark comes down. *Tulsa World*.

OWRB - Oklahoma Water Resources Board. (n.d.). *Tar Creek Task Force Executive Summary*.

OWRB - Oklahoma Water Resources Board. (1983a). *Groundwater Investigation in the Picher Field*.

OWRB - Oklahoma Water Resources Board. (1983b). *Water Quality Assessment of the Flooded Underground Lead and Zinc Mines of the Picher Field*.

OWRB - Oklahoma Water Resources Board. (1983c). *Water Quality Characteristics of Seepage and Runoff at Two Tailings Piles in the Picher Field*.

Pearson, J. (2003a, July 20). On shaky ground. *Tulsa World*.

Pearson, J. (2003b, November 23). "Get these babies out of here." *Tulsa World*.

Pearson, J. (2005, June 19). The Oklahoma Plan. *Tulsa World*.

Peša, I., & Ross, C. (2021). Extractive industries and the environment: Production, pollution, and protest in global history. *The Extractive Industries and Society*, *8*(4), 100933. https://doi.org/10.1016/j.exis.2021.100933

Petersen, R. (1999, December 21). Commissioners delay chat decision. *Miami News-Record*.

Petersen, R. (2000a, January 23). Finding solution could be battle. *Miami News-Record*.

Petersen, R. (2000b, August 9). Government comes to Miami. *Miami News-Record*.

Petersen, R. (2001a, June 1). Keating confirms match funds. *Miami News-Record*.

Petersen, R. (2001b, July 12). Chat impact felt by city. *Miami News-Record*.

Petersen, R. (2002a). Tar Creek report date extended. *Miami News-Record*.

Petersen, R. (2002b, January 31). Federal team asked to help children. *Miami News-Record*.

Petersen, R. (2002c, February 6). Miami soil testing planned. *Miami News-Record*.

Petersen, R. (2002d, March 28). Yard work nears end. *Miami News-Record*.

Petersen, R. (2002e, April 21). Residents seek limits on chat. *Miami News-Record*.

Petersen, R. (2002f, April 22). Who will foot the bill? *Miami News-Record*.

Petersen, R. (2002g, May 1). School lead results in. *Miami News-Record*.

Petersen, R. (2002h, May 2). Sharing their stories, thoughts. *Miami News-Record*.

Petersen, R. (2002i, May 6). Miami mayor vows support. *Miami News-Record*.

Petersen, R. (2002j, May 19). Tar Creek federal report nears. *Miami News-Record*.

Petersen, R. (2002k, May 26). Tar Creek match passes. *Miami News-Record*.

Petersen, R. (2002l, July 3). Tar Creek funds safe. *Miami News-Record*.

Petersen, R. (2002m, July 17). Chat dust still a concern. *Miami News-Record*.

Petersen, R. (2002n, August 5). Blood lead testing push comes with school start. *Miami News-Record*.

Petersen, R. (2002o, August 15). School remediation project finished. *Miami News-Record*.

Petersen, R. (2002p, September 11). Mayors seek Corps coordination. *Miami News-Record*.

Petersen, R. (2002q, September 18). Next wave of yards slated for Superfund work. *Miami News-Record*.

Petersen, R. (2002r, September 19). New Miami lead tests released. *Miami News-Record*.

Petersen, R. (2002s, September 26). More Tar Creek suits planned. *Miami News-Record*.

Philippopoulos-Mihalopoulos, A. (2009). Law's Spatial Turn: Geography, Justice and a Certain Fear of Space. *University of Westminster School of Law Legal Studies Research Paper Series*, *7*. https://doi.org/10.1177/1743872109355578

Philippopoulos-Mihalopoulos, A. (2021). And For Law: Why Space cannot be understood without Law. *Law, Culture and the Humanities*, *17*(3), 620–639. https://doi.org/10.1177/1743872118765708

Playton, S. J., Davis, R. E., & McClaflin, R. G. (1978). *Chemical Quality of Water in Abandoned Zinc Mines in Northeastern Oklahoma and Southeastern Kansas*. United States Geological Survey.

Post, H. (2004, January 4). Time for action in matters of Tar Creek. *Miami News-Record*.

Previch, C. (2006, May 3). Buyout plan at Tar Creek nearly ready. *The Oklahoman*.

Pulido, L., Kohl, E., & Cotton, N.-M. (2016). State Regulation and Environmental Justice: The Need for Strategy Reassessment. *Capitalism Nature Socialism*, *27*(2), 12–31. https://doi.org/10.1080/10455752.2016.1146782

Ramírez, M. M. (2020). City as borderland: Gentrification and the policing of Black and Latinx geographies in Oakland. *Environment and Planning D: Society and Space*, *38*(1), 147–166. https://doi.org/10.1177/0263775819843924

Ray, S. (2000, May 18). Picher looks into the complaints of home owners. *The Tri-State Tribune*.

Rector, L. (2002, July 15). Miami High School Indian counselor retires to activism. *Native American Times*.

Richardson, P. (2002, November 21). Residents urged to refuse studies. *Miami News-Record*.

Richardson, P. (2003a, May 2). Time to end Tar Creek problem. *Miami News-Record*.

Richardson, P. (2003b, May 6). Picher-Cardin school board votes to join lawsuit. *Miami News-Record*.

Robertson, J. (1998, August 6). Some Ottawa County residents believe U.S. has done little to clean up waste from mines. *Tulsa World*.

Robertson, J. (1999a, January 16). Officials celebrate clean water at Superfund site. *Tulsa World*.

Robertson, J. (1999b, May 22). Students are pushing for Tar Creek cleanup. *Tulsa World*.

Robertson, J. (1999c, May 23). Piling up. *Tulsa World*.

Robinson, D. (1998, May 28). Lead testing continues in Granby, Diamond. *The Joplin Globe*.

Rooney, Y. (2008, March 9). We need to unite. *Miami News-Record*.

Rowell, A., & Zeben, J. van. (2021). *A Guide to U.S. Environmental Law*.

Royster, J. V., Blumm, M. C., & Kronk Warner, E. A. (2018). *Native American Natural Resources Law: Cases and Materials* (Fourth Edition). Carolina Academic Press. https://cap-press.com/books/isbn/9781531007010/Native-American-Natural-Resources-Law-Fourth-Edition

Sarathy, B., Hamilton, V., & Farrell Brodie, J. (2020). *Inevitably Toxic: Historical Perspectives on Contamination, Exposure, and Expertise*. http://www.vlebooks.com/vleweb/product/openreader?id=none&isbn=9780822986232

Schafer, S. (2002a, August 1). Mine tailings may find use in asphalt. *Tulsa World*.

Schafer, S. (2002b, September 11). Tar Creek area residents say money squandered. *Tulsa World*.

Schafer, S. (2002c, December 29). Tar Creek's legacy a heavy burden. *Tulsa World*.

Schafer, S. (2003a). Ottawa County residents criticize Inhofe's plan. *Tulsa World*.

Schafer, S. (2003b, February 16). Regions take different approach to green. *Tulsa World*.

Schafer, S. (2003c, July 3). Nickles wants options open. *Tulsa World*.

Schafer, S. (2003d, August 3). Dirt- cheap it's not. *Tulsa World*.

Schafer, S. (2003e, August 20). Heads or tailings. *Tulsa World*.

Schultz, S. (2007). Picher authority to take over convenience store. *Miami News-Record*.

Schultz, S. (2008a, February 24). Residents offended by relocation effort. *Miami News-Record*.

Schultz, S. (2008b, March 16). Trust defends buyout approach. *Miami News-Record*.

Schultz, S. (2008c, June 3). When there is no quorum. *Miami News-Record*.

Schultz, S. (2008d, October 3). Passive treatment: Water treatment project in works. *Miami News-Record*.

Schultz, S. (2009a, February 25). Post office closes in Cardin. *Miami News-Record*.

Schultz, S. (2009b, April 16). Tar Creek receives $25 million in new funding. *Miami News-Record*.

Schultz, S. (2009c, October 9). Officials meet for tour of Passive Treatment System. *Miami News-Record*.

Smith, B. R. (2007). Is Dilution The Solution To Pollution? Municipal Sewerage Systems In Late Nineteenth Century San Francisco And London. *Berkeley Planning Journal*, *20*(1). https://doi.org/10.5070/BP320111912

Stearns, M. (2010, September 23). Large wetlands proposed to cleanup Tar Creek. *Miami News-Record*.

Stewart, A. (1993a, July 22). Dirty water is OK. *Miami News-Record*.

Stewart, A. (1993b, September 29). Contaminated water wells need attention. *Miami News-Record*.

Stogsdill, S. (2002, February 11). Third lawsuit filed against mining companies. *Miami News-Record*.

Stogsdill, S. (2004a, June 2). Survey reveals health conditions in Tar Creek area. *The Oklahoman*.

Stogsdill, S. (2004b, June 3). Tar Creek relocation bill signed in Picher ceremony. *The Oklahoman*.

Stogsdill, S. (2004c, July 18). 48 to file suits against mining companies. *Miami News-Record*.

Stogsdill, S. (2006a). Collapse of Picher playground predicted at Tar Creek site. *The Oklahoman*.

Stogsdill, S. (2006b, February 1). Picher area faces cave-in threat. *The Oklahoman*.

Stogsdill, S. (2007a, July 28). Picher prices rise. *The Joplin Globe*.

Stogsdill, S. (2007b, September 21). Tar Creek documentary showing tonight. *The Joplin Globe*.

Stogsdill, S. (2009a, April 20). The end is near for small Tar Creek town of Cardin. *Miami News-Record*.

Stogsdill, S. (2009b, June 30). Tar Creek residents prepare for community's final days. *Miami News-Record*.

Stogsdill, S. (2011, January 25). Dismantling Picher. *Tulsa World*.

Sturgeon III, K. E. (2002a, April 28). Superfund stagnates economy. *Miami News-Record*.

Sturgeon III, K. E. (2002b, November 20). Board awaiting lead results. *Miami News-Record*.

Sturgeon III, K. E. (2003a). Competing Plans. *Miami News-Record*.

Sturgeon III, K. E. (2003b, February 25). Local lawmaker proposes sinkhole insurance. *Miami News-Record*.

Sturgeon III, K. E. (2003c, May 1). Exposing Tar Creek. *Miami News-Record*.

Sturgeon III, K. E. (2003d, May 4). Carson, Inhofe differ over solutions to Tar Creek issue. *Miami News-Record*.

Sturgeon III, K. E. (2003e, June 1). Tar Creek cleanup plan criticized. *Miami News-Record*.

Sturgeon III, K. E. (2003f, June 12). Class action lawsuit calls for Picher buyout. *Miami News-Record*.

Sturgeon III, K. E. (2003g, June 12). Residents say help is harmful. *Miami News-Record*.

Sturgeon III, K. E. (2003h, June 29). Inhofe: Buyout talk political. *Miami News-Record*.

Sturgeon III, K. E. (2003i, July 8). Kennedy plans trip to Tar Creek. *Miami News-Record*.

Sturgeon III, K. E. (2003j, July 11). Kennedy visits Tar Creek. *Miami News-Record*.

Sturgeon III, K. E. (2003k, August 10). Local environmental group will launch door-to-door survey on heavy metals. *Miami News-Record*.

Sturgeon III, K. E. (2003l, August 28). Superfund residents expect EPA visitors. *Miami News-Record*.

Sturgeon III, K. E. (2003m, August 31). Residents step up to the microphone, questions EPA. *Miami News-Record*.

Sturgeon III, K. E. (2003n, October 8). Engineers say political influence is absent from their wetlands study. *Miami News-Record*.

Sturgeon III, K. E. (2003o, October 15). Henry plans Tar Creek trip. *Miami News-Record*.

Sturgeon III, K. E. (2003p, October 19). Governor to meet with area residents, talk about Tar Creek. *Miami News-Record*.

Sturgeon III, K. E. (2003q, October 22). Governor calls for swift action. *Miami News-Record*.

Sturgeon III, K. E. (2003r, November 21). Senate committee releases Tar Creek work plan. *Miami News-Record*.

Sturgeon III, K. E. (2003s, December 18). Henry talks Tar Creek. *Miami News-Record*.

Sturgeon III, K. E. (2003t, December 21). Opponents of senator's plan say he "deliberately" slighted them. *Miami News-Record*.

Sturgeon III, K. E. (2003u, December 24). Senator says buyout survey not accurate. *Miami News-Record*.

Sturgeon III, K. E. (2004a). Lack of health study questioned. *Miami News-Record*.

Sturgeon III, K. E. (2004b, January 18). Health officials dispute Inhofe claim. *Miami News-Record*.

Sturgeon III, K. E. (2004c, January 27). Governor calls for relocation. *Miami News-Record*.

Sturgeon III, K. E. (2004d, February 12). ODOT testing highway stability near sinkholes. *Miami News-Record*.

Sturgeon III, K. E. (2004e, February 12). Tar Creek buyout bill in review by Senate committee. *Miami News-Record*.

Sturgeon III, K. E. (2004f, February 22). Stability of Picher park area called into question. *Miami News-Record*.

Sturgeon III, K. E. (2004g, February 27). Boy removed from Superfund home. *Miami News-Record*.

Sturgeon III, K. E. (2004h, March 21). Harvard study will focus on Tar Creek Superfund site. *Miami News-Record*.

Sturgeon III, K. E. (2004i, April 14). Relocation bill passes in House. *Miami News-Record*.

Sturgeon III, K. E. (2004j, June 6). EPA staff to meet with residents. *Miami News-Record*.

Sturgeon III, K. E. (2004k, September 7). Relocation panel to meet Wednesday. *Miami News-Record*.

Sturgeon III, K. E. (2004l, September 8). Relocation panel plans meetings. *The Plus Extra*.

Sturgeon III, K. E. (2004m, September 14). Applications available. *Miami News-Record*.

Sturgeon III, K. E. (2004n, November 5). Trust tries to sort out land issues. *Miami News-Record*.

Sturgeon III, K. E. (2005a, January 14). Two hundred plan to move from Picher. *Miami News-Record*.

Sturgeon III, K. E. (2005b, January 20). Tests show no discrepancies. *Miami News-Record*.

Sturgeon III, K. E. (2005c, January 27). More suspicions of tampering voiced. *Miami News-Record*.

Sturgeon III, K. E. (2005d, April 6). First buyout offer accepted. *Miami News-Record*.

Sturgeon III, K. E. (2005e, April 24). Growers see potential in Picher. *Miami News-Record*.

Sturgeon III, K. E. (2005f, April 25). Relocation trust considers Superfund deed restrictions. *Miami News-Record*.

Sturgeon III, K. E. (2005g, May 5). Trust will demolish Picher homes. *Miami News-Record*.

Sturgeon III, K. E. (2005h, June 12). On the move. *Miami News-Record*.

Sturgeon III, K. E. (2005i, July 17). Buyout homes targeted by thieves. *Miami News-Record*.

Sturgeon III, K. E. (2005j, July 18). Final round of Superfund yard remediations has begun. *Miami News-Record*.

Sturgeon III, K. E. (2005k, July 20). Questions arise regarding tree project. *Miami News-Record*.

Sturgeon III, K. E. (2005l, July 21). Agrico makes no guarantees. *Miami News-Record*.

Sturgeon III, K. E. (2005m, July 27). Sludge will sink Picher deal. *Miami News-Record*.

Sturgeon, K. E. (2005, April 20). Erosion unveils shaft near highway. *The Plus Extra*.

Sturgeon III, K. E. (2002). EPA says Miami schools are Unsoiled. *Miami News-Record*.

Sutter, J. D. (2008, July 13). It took a town to find help for Tar Creek. *The Oklahoman*.

Taft, M. (1998, December 1). LEAD hosts forums in Miami and Picher. *Miami News-Record*.

Taft, M. (1999a, January 17). Picher well dedication ceremony held. *Miami News-Record*.

Taft, M. (1999b, January 21). LEAD meetings to feature Harvard professors. *Miami News-Record*.

Taft, M. (1999c, January 22). Plants can help clean soil. *Miami News-Record*.

Taft, M. (1999d, January 24). “Tooth Fairy” arrives looking for teeth to test. *Miami News-Record*.

Taft, M. (1999e, February 5). LEAD meeting focuses on need for more soil, teeth samples. *Miami News-Record*.

Taft, M. (1999f, March 25). Picher back to having “orange” water. *Miami News-Record*.

Taft, M. (1999g, April 16). Wetlands can purify toxic water. *Miami News-Record*.

Taylor, D. E. (2014). *Toxic Communities: Environmental Racism, Industrial Pollution, and Residential Mobility*. New York University Press. https://nyupress.org/9781479861781/toxic-communities

Teresa, B. F. (2016). Managing fictitious capital: The legal geography of investment and political struggle in rental housing in New York City. *Environment and Planning A: Economy and Space*, *48*(3), 465–484. https://doi.org/10.1177/0308518X15598322

Thomas, L. (2022). *The Intersectional Environmentalist: How to Dismantle Systems of Oppression to Protect People + Planet*. Little, Brown and Company. https://www.barnesandnoble.com/w/the-intersectional-environmentalist-leah-thomas/1139653636

Thomason, D. (2012, April 25). Lead testing available for Craig County residents. *Vinita Daily Journal*.

Todd, Z. (2016). An Indigenous Feminist's Take On The Ontological Turn: 'Ontology' Is Just Another Word For Colonialism: An Indigenous Feminist's Take on the Ontological Turn. *Journal of Historical Sociology*, *29*(1), 4–22. https://doi.org/10.1111/johs.12124

Tombs, F. P., Steve. (2019). *Toxic Capitalism: Corporate Crime and the Chemical Industry*. Routledge. https://doi.org/10.4324/9780429026416

Tramel, J. (2006, July 3). Picher residents brace for quiet Friday nights. *Tulsa World*.

Tulsa World. (2000, September 14). Moving Picher, Cardin may be best. *Miami News Record*.

US EPA. (1972). *FEDERAL WATER POLLUTION CONTROL ACT*. 234.

US EPA, O. (2015a, May 29). *Clean Air Act* [Collections and Lists]. https://www.epa.gov/clean-air-act-overview/clean-air-act-text

US EPA, O. (2015b, June 2). *Superfund Cleanup Process* [Overviews and Factsheets]. https://www.epa.gov/superfund/superfund-cleanup-process

US EPA, O. (2015c, August 14). *National Priorities List (NPL) Sites - by State* [Data and Tools]. https://www.epa.gov/superfund/national-priorities-list-npl-sites-state

US EPA, O. (2015d, September 1). *Superfund Technical Assistance for Communities* [Overviews and Factsheets]. https://www.epa.gov/superfund/superfund-technical-assistance-communities

US EPA, O. (2015e, September 15). *Public Comment Process* [Other Policies and Guidance]. https://www.epa.gov/superfund/public-comment-process

US EPA, O. (2015f, February 5). *Superfund History* [Overviews and Factsheets]. https://www.epa.gov/superfund/superfund-history

US EPA, O. (2017, November 9). *What is Superfund?* [Overviews and Factsheets]. https://www.epa.gov/superfund/what-superfund

COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY, 42.

Van Horne, Y. O., Alcala, C. S., Peltier, R. E., Quintana, P. J. E., Seto, E., Gonzales, M., Johnston, J. E., Montoya, L. D., Quirós-Alcalá, L., & Beamer, P. I. (2023). An applied

environmental justice framework for exposure science. *Journal of Exposure Science & Environmental Epidemiology*, *33*(1), 1–11. https://doi.org/10.1038/s41370-022-00422-z

Vance, C. (1999a, August 23). Action minimal on remediation problems. *Miami News-Record*.

Vance, C. (1999b, September 2). Child's lead level test result expected faster. *Miami News-Record*.

Vance, C. (1999c, September 3). Bavinger studies use of plants in lead removal. *Miami News-Record*.

Vance, C. (1999d, September 3). Coburn attempts to get clean-up information. *Miami News-Record*.

Vance, C. (1999e, September 12). Picher Council: Remediation efforts damaging city roads; company unresponsive to requests for repair work. *Miami News-Record*.

Vance, C. (1999f, September 22). Sinking. *Miami News-Record*.

Vance, C. (1999g, September 23). Talks continue on remediation of cities' drainage, road problems. *Miami News-Record*.

Vance, C. (1999h, October 21). Yard cleanup taking winter off. *Miami News-Record*.

Vance, C. (1999i, December 9). Cleanup complaints answered. *Miami News-Record*.

Vance, C. (1999j, December 12). Not working as promised. *Miami News-Record*.

Vance, C. (2000a, January 4). Open mine shafts ready for sealing. *Miami News-Record*.

Vance, C. (2000b, January 11). Goal to raise education on area lead problems. *Miami News-Record*.

Vance, C. (2000c, January 13). Task force to take on Tar Creek. *Miami News-Record*.

Vance, C. (2000d, January 21). Image of mining past helping change future. *Miami News-Record*.

Vance, C. (2000e, January 30). Tar Creek task force formed. *Miami News-Record*.

Vance, C. (2000f, February 2). Task force seeking comment. *Miami News-Record*.

Vance, C. (2000g, February 24). FBI raids contractor. *Miami News-Record*.

Vance, C. (2000h, February 25). Chat pile trespassers targeted. *Miami News-Record*.

Vance, C. (2000i, March 16). Chat pile policing up. *Miami News-Record*.

Vance, C. (2000j, April 25). County to tackle filling mines. *Miami News-Record*.

Vance, C. (2000k, April 28). State preparing chat regs. *Miami News-Record*.

Vance, C. (2000l, May 2). Corps to end Superfund work. *Miami News-Record*.

Vance, C. (2000m, May 2). Mine shaft capping delayed. *Miami News-Record*.

Vance, C. (2000n, May 3). Finding alternatives for Tar Creek. *Miami News-Record*.

Vance, C. (2000o, May 9). County mine capping put on legal hold. *Miami News-Record*.

Vance, C. (2000p, May 23). Mine shaft sealing caving in. *Miami News-Record*.

Vance, C. (2000q, May 26). Living with shaft problems. *Miami News-Record*.

Vance, C. (2000r, May 31). Superfund unfunded by state. *Miami News-Record*.

Vance, C. (2000s, June 1). Chat restrictions begin today. *Miami News-Record*.

Vance, C. (2000t, June 4). Superfund match put on hold. *Miami News-Record*.

Vance, C. (2000u, June 26). Chat moratorium may lift soon. *Miami News-Record*.

Vance, C. (2000v, July 21). EPA moving forward. *Miami News-Record*.

Vance, C. (2000w, July 28). Superfund complaints persist. *Miami News-Record*.

Vance, C. (2000x, August 2). New Tar Creek options revealed. *Miami News-Record*.

Vance, C. (2000y, August 15). Picher residents voice concern. *Miami News-Record*.

Vance, C., & Petersen, R. (2000, June 15). More Superfund funding possible. *Miami News-Record*.

Vickery, J., & Hunter, L. M. (2016). Native Americans: Where in Environmental Justice Research? *Society & Natural Resources*, *29*(1), 36–52. https://doi.org/10.1080/08941920.2015.1045644

Voyles, T. B. (2015). *Wastelanding: Legacies of Uranium Mining in Navajo Country*. University of Minnesota Press. https://www.upress.umn.edu/book-division/books/wastelanding

Walker, R. (1982). The Illusion of Effluent Charges, or Regulatory Dilution is No Solution to Pollution*. *Antipode*, *14*(2), 12–20. https://doi.org/10.1111/j.1467-8330.1982.tb00026.x

Walton, R. (2001, March 3). Children's blood-lead levels drop. *Tulsa World*.

Warford-Perry, J. (n.d.-a). Moratorium on chat sales ends. *Miami News-Record*.

Warford-Perry, J. (n.d.-b). Sparkman: Move us now. *Miami News-Record*.

Warford-Perry, J. (n.d.-c). Wetlands study gets nod. *Miami News-Record*.

Warford-Perry, J. (2001a, January 11). Second lead lawsuit filed. *Miami News-Record*.

Warford-Perry, J. (2001b, March 21). Miners take on task force report. *Miami News-Record*.

Warford-Perry, J. (2001c, April 8). Wetlands only a vision. *Miami News-Record*.

Warford-Perry, J. (2001d, April 16). How many generations will it take? *Miami News-Record*.

Warford-Perry, J. (2001e, April 18). Funds sought to make public aware. *Miami News-Record*.

Warford-Perry, J. (2001f, April 20). Council endorses relocation. *Miami News-Record*.

Warford-Perry, J. (2001g, May 16). Chat blamed for ill health. *Miami News-Record*.

Warford-Perry, J. (2001h, June 3). Mayors vow to support neighbors. *Miami News-Record*.

Warford-Perry, J. (2001i, July 19). Third dust study headed to area. *Miami News-Record*.

Warford-Perry, J. (2001j, August 24). Keating seeks help for Tar Creek. *Miami News-Record*.

Warford-Perry, J. (2001k, August 24). Steering committee meets with governor. *Miami News-Record*.

Warford-Perry, J. (2001l, November 6). Picher family files lead suit. *Miami News-Record*.

Warford-Perry, J. (2001m, November 26). Newest remediation project in progress. *Miami News-Record*.

Warford-Perry, J. (2002, January 15). Wetland study funds uncertain. *Miami News-Record*.

Warford-Perry, J. (2005, April 14). Lake metal tests don't jive. *Miami News-Record*.

Warford-Perry, J. (2006a). "Our voices will not subside." *Miami News-Record*.

Warford-Perry, J. (2006b). Tar Creek blood tampering confirmed. *Miami News-Record*.

Warford-Perry, J. (2006c). The Picher land run. *Miami News-Record*.

Warford-Perry, J. (2006d, January 4). Objective: Buyout. *Miami News-Record*.

Warford-Perry, J. (2006e, January 6). "Time to go" Hundreds of Tar Creek residents call for a federal buyout. *Miami News-Record*.

Warford-Perry, J. (2006f, January 10). Engineer: Picher playground at risk. *Miami News-Record*.

Warford-Perry, J. (2006g, February 1). Searching for solid ground. *Miami News-Record*.

Warford-Perry, J. (2006h, May 16). Residents gather for answers. *Miami News-Record*.

Warford-Perry, J. (2006i, September 27). Partial funding in place for planned buyout. *Miami News-Record*.

Warford-Perry, J. (2006j, October 9). Buyout timeline set in specs. *Miami News-Record*.

Warford-Perry, J. (2006k, October 18). Residents no closer to answers. *Miami News-Record*.

Warford-Perry, J. (2006l, November 2). Buyout eligibility to be posted. *Miami News-Record*.

Warford-Perry, J. (2006m, November 29). Relocation trust: "Have faith." *Miami News-Record*.

Warford-Perry, J. (2006n, December 19). Superfund home appraisals begin. *Miami News-Record*.

Warford-Perry, J. (2007, May 10). Where is Henry? *Miami News-Record*.

Warford-Perry, J., & Duhon, K. (2007, April 10). Trust faces shortfall. *Miami News-Record*.

Wood, F. (2003, August 17). The “children of lead.” *Tulsa World*.

Zavala, J., Migoni, A. A., Caswell, M., Geraci, N., & Cifor, M. (2017). ‘A process where we’re all at the table’: community archives challenging dominant modes of archival practice. *Archives and Manuscripts*, *45*(3), 202–215. https://doi.org/10.1080/01576895.2017.1377088

Zhou, Y., & Liu, Y. (2022). The geography of poverty: Review and research prospects. *Journal of Rural Studies*, *93*, 408–416. https://doi.org/10.1016/j.jrurstud.2019.01.008

INCOMPLETE CITATIONS

Annual Tar Creek Conference begins Thursday. (2007, May 14). *Miami News-Record*.

Arasco to settle Tar Creek claims. (2008, January 25). *Miami News-Record*.

Buyout funding appears short. (2006, November 1). *Miami News-Record*.

Carson hears residents’ concerns about Tar Creek. (2003, April 23). *Vinita Daily Journal*.

Carson wants Tar Creek reports released. (2003, April 26). *The Daily Oklahoman*.

Deadline passes for buyout of Picher, Cardin, Hockerville communities. (2006, October 1). *Miami News-Record*.

Deadly storm slams area. (2008, May 11). *The Joplin Globe*.

Disaster declaration issued for Picher as buyout changes. (2008, May 15). *Vinita Daily Journal*.

EPA begins testing soil around play areas. (1994, August 25). *Tri-State Tribune*.

EPA chief visits Superfund site. (2003, November 28). *Miami News-Record*.

EPA develops chat plan. (2007). *Miami News-Record*.

EPA to check area for lead contamination. (1994, August 4). *Tri-State Tribune*.

Feds plan Superfund cut. (2002, July 2). *Miami News-Record*.

Governor mediating between Tar Creek opinions. (2003, July 6).

Governor threatens lawsuit over Tar Creek. (2003, February 25). *Miami News-Record*.

Henry, Inhofe differ on Tar Creek. (2003, November 11). *Miami News-Record*.

Indians fight for the right to sell chat. (1999, May 24). *Miami News-Record*.

Inhofe, EPA nominee discuss Tar Creek site. (2009, January 15). *Miami News-Record*.

Inhofe seeks protection of WRDA. (2007). *Miami News-Record*.

Inhofe still opposed buyout plan; work on project to begin. (2003, June 18).

Keating invites Whitman to visit Tar Creek Superfund site. (2001, September 15). *Native American Times*.

Keheley's quest. (2007, April 28).

Lawsuit says lead remediation contractor wronged government. (2004, July 6). *Miami News-Record*.

LEAD Agency seeks scholarship applications from high school seniors. (2004, April 13). *Tulsa World*.

LEAD agency to host chocolate tasting. (2005, April 13). *Miami News-Record*.

LEAD Agency to host second "Taste of Chocolate" event. (2006, February 10). *Miami News-Record*.

Mayors meet with state officials. (2001, March 16). *Miami News-Record*.

More buyout funding secured. (2008, September 3). *Miami News-Record*.

New rules to bar use of mine waste. (2000, May 5). *Tulsa World*.

Officials: Miami parks, baseball fields contaminated by lead. (2001, June 24). *Vinita Daily Journal*.

Picher residents await cleanup, prepare to move on. (2008, June 25). *Vinita Daily Journal*.

Picher residents living with cave-in threat as officials debate relocation. (2006, February 27). *Vinita Daily Journal*.

Picher-Cardin School District dwindling. (2007, August 19). *Miami News-Record*.

PUR donates water filtration systems to benefit community members. (2017, October 13). *Miami News-Record*.

Residents say Inhofe's plan for Tar Creek "fatally flawed." (n.d.). *Miami News-Record*.

Some Picher residents determined to stay to the end. (2007, February 28). *Vinita Daily Journal*.

State officials plan Tar Creek area tour. (1998, April 18). *Miami News-Record*.

Tar Creek bill passes Senate. (2004, March 4). *Miami News-Record*.

Tar Creek buyout comes in $10M under. (2010, December 20). *Miami News-Record*.

Tar Creek cleanup addressed. (1999, August 11). *Tulsa World*.

Tar Creek cleanup needs to be quicker. (1998, July 1). *Miami News-Record*.

Tar Creek discussion to go to Washington. (2001, August 30). *NewsOK*.

Tar Creek report endorses buyout. (n.d.). *Miami News-Record*.

TEAL Project focuses on children's health, lead concerns. (1997, June 22). *Miami News-Record*.

"They would let Mother Nature take care of it," says Commissioner Graves. (1994, April 21).

U.S. Senate approves WRDA. (2007, September 25). *Miami News-Record*.

USGS: Highway collapse likely. (n.d.).