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Subsurface Power: How Mineral Rights are Hidden and How to Uncover Them

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Abstract

Mineral rights, and more generally, the land below the surface, are legally classified as real property and sold separately from surface property. The vertical separation of property rights, coupled with intricate procedures for accessing property information, poses complex challenges for people seeking to safeguard their communities, including activists, Indigenous communities, homeowners, environmental organizations, and local communities. Drawing from the conceptual framework of administrative burdens, as defined by Herd and Moynihan (2018), I argue that these deliberate opacities and complex bureaucratic obstacles create significant challenges for individuals seeking government goods and services. In this context, I identify the key legal, bureaucratic, spatial, and cost barriers to uncovering subsurface property details as well as the methods that facilitate the identification of mineral claimants, two pieces of knowledge that can enable the exercise of Indigenous sovereignty and offer a countermeasure against unbridled mineral extraction. In addition, this paper illustrates how limited accessibility to such information benefits the state and corporations while excluding local communities from decision-making. The identification of mineral claimants brings to light dual power dynamics: one at the surface attempting to access public information that remains elusive, and the other delving deep beneath the Earth's surface, unraveling the holders of mineral claims as a strategic resistance against unchecked extraction.

Keywords

mineral rights, private property, mining, resistance, extractivism, activism

Introduction

I stood with staff from the Great Lakes Indian Fish and Wildlife Commission and the Keweenaw Bay Indian Community Natural Resource Department on tribal land in Upper Michigan as a United States Geological Survey plane circled overhead, scanning the ground with Light Detection and Ranging (LIDAR) technology. Using this technique, the plane's occupants were scouring the landscape for extractable mineral resources. However, any resources identified would not belong to the tribe; although we were on sovereign Indigenous land, private entities held claim to virtually all of what couldn't be seen. As the plane circled, we discussed who has mineral rights below the surface and how to access this information. The process of finding out who owns the land beneath us was complicated, and over the course of the next three months, I internalized that fact through a long process of trial and error. What I learned from information buried in county archives was that not only are the power dynamics at play in mineral extraction complicated but that they are carefully, and I argue intentionally, obscured from the public. The obfuscation of power dynamics below the surface primarily exists for two reasons: first, bureaucratic structures, from a fraught legacy of property regimes, routinely maintain limited public access to this information and, second, people are often unaware of the 'severance' of mineral rights from the surface rights.

The complicated processes of accessing mineral claimant information, and securing mineral rights for resource extraction, are part of a firewall against a more equitable distribution of land and land rights. In the U.S., property deeds regarding ownership and leasing of mineral rights are considered public information and housed at county courthouses; yet they are nearly impossible for anyone without legal training to access and use. As a result, mineral rights information falls disproportionately in the hands of extractive industries. Breaking through the bureaucratic barriers, an essential pre-emptive measure to help protect land and communities, to contest corporate land ownership and unchecked mineral extraction, and to regain right to the land below and above ground. In this paper, I offer a step-by-step guide to obtaining mineral claimant information from the register of deeds offices in the Great Lakes region of the United States to better understand the breadth of state and corporate subsurface ownership and to uncover mechanisms of power and land control. Mineral rights refer to the real property below the surface of the earth and mineral claimant refers to those that lease and own mineral rights.

My research is based on information gained from work completed during an internship with the Great Lakes Indian Fish and Wildlife Commission (GLIFWC) in 2018, in which I was tasked with locating mineral claimant information throughout Ojibwe homelands. GLIFWC is an intertribal agency of eleven Ojibwe tribes in Michigan, Wisconsin, and Minnesota and helps to maintain treaty rights and treaty-protected resources. My work with GLIFWC entailed identifying claimants to mineral rights. Without this information, extractive industries are faced with very few challenges or contestations of their claims.

The archival review process at local government offices revealed the convoluted steps of locating mineral claimants that prevent people from quickly and easily accessing mineral information. I spent over three months of full-time work sifting through county courthouse records and online resources to understand and map mineral deeds, and I distill the findings in this paper. Through this experience, I determined that these barriers are intentionally put in place to serve state-market interests in order to maintain tight control over land ownership and usage rights. To illuminate the intentionality of secrecy, I draw from Herd and Moynihan's

(2019) concept of "administrative burdens," which refers to onerous policy and legal structures to access public goods and services. The administrative burdens involved in accessing this information are substantial, creating significant obstacles for individuals seeking transparency. In this article, I illustrate the historical context of mineral rights in the U.S., the administrative burdens and barriers to access mineral claimant information, and steps to bypass the willfully-obfuscated process. I argue that the state's willful obfuscation of mineral claimant information fits within a larger system of bureaucratic secrecy in the United States to maintain state and corporate accumulation.

What minerals exist on a specific property and who holds claim to those rights remains largely hidden from the public, yet many communities could benefit from this information. Groups that identify mineral rights claimants hold information that could potentially aid resistance to resource extraction in vulnerable regions. Similarly, homeowners benefit from identifying mineral rights owners by understanding the possible outcomes for the land beneath their homes. Local governments could benefit from redirecting the accumulation of wealth from multi-national extractive industries by taxing mineral rights. Currently, corporations exploit the complicated process of mineral rights, leaving most people unaware of the complex ownership map beneath their feet.

In this paper, I outline steps to locate mineral claimant information from register of deeds offices to better understand power beneath the surface. I identify barriers associated with the process and then outline possible methods to bypass these very roadblocks. The process of doing this includes utilizing electronic databases to locate the most recent conveyances through a number of property deeds. This information is then combined with state mineral deed information to understand private and public mineral claimant information in one central location. With this information, more people can access information beneath the surface.

The Importance of Mineral Claimant Information

The significance of mineral ownership extends beyond individual awareness, impacting various stakeholders and influencing broader socio-economic dynamics. In regions like the Great Lakes, where mineral claimant information is not widely accessible, collaborative efforts between environmental NGOs and tribal governments have proven pivotal for protecting culturally significant areas, enhancing tribal sovereignty, and promoting local decision-making. For example, through interviews, I learned about an NGO, Save the Wild Upper Peninsula, which worked alongside tribal entities to unveil details about mineral claims to reinforce Indigenous sovereignty and enable informed decision-making within communities (Save the Wild UP 2021). Their efforts included publicly disseminating maps of mineral claimant owners to enhance local decision making about prospective mining activities.

The identification of mineral claimants serves as a multifaceted tool, benefiting activists, Indigenous communities, homeowners, environmental organizations, and local governments alike. First, it unveils the intricate power dynamics underlying the earth's surface, exposing the complex interplay of economic interests, political influence, historical legacies, and social structures that shape control of subterranean mineral ownership. Second, it acts as a resistance mechanism against unchecked mineral extraction, contributing to the protection

of culturally and environmentally significant areas. Third, this process actively promotes Indigenous sovereignty by deterring subsurface land grabs.

However, the state's willful obfuscation of mineral claimant information significantly complicates this landscape, fitting within a larger system of bureaucratic secrecy in the United States aimed at maintaining state and corporate accumulation. This deliberate lack of transparency involves the intentional inaccessibility of records, including high costs, convoluted legal language, and inconsistencies in location descriptions. Such deliberate opacity aligns with what public administration scholars Herd and Moynihan (2018) term as "administrative burdens" and creates challenges for individuals seeking government goods and services. The concept of administrative burdens is related to what Kroepsch and Clifford (2022) refer to as “inscrutable spaces” and Zalik's (2009) concept of "zones of exclusion," which explain processes that are intentionally made difficult to understand due to a complex interplay of biophysical, epistemic, and political-economic factors. The intentionally difficult process serves the interests of powerful stakeholders at the expense of systemically excluded communities. Mineral claimant information is both physically obscured by the ground beneath our feet and by the bureaucratic obstacles to accessing information on mineral claimants, and I use the framework of administrative burdens to understand the complicated processes of accessing mineral claimant information.

Identifying mineral rights claimants becomes an essential tool to safeguard land and communities. Homeowners benefit by understanding the potential outcomes for the land beneath their residences, while local governments can redirect wealth accumulation from multinational extractive industries by taxing mineral rights. Corporations, on the other hand, capitalize on the complexity of mineral rights processes to retain control, a legacy of property theft that disproportionately benefits white capitalists. For example, in 2013, an investigation by Reuters revealed that home developers are increasingly withholding mineral rights from homeowners and working directly with extractive industries to strip homeowners of the rights to the land beneath their houses (B. Grow and Conlin 2013). The report shows that homeowners generally do not hold the mineral rights below their home because multi-national corporations take advantage of the complicated process and claim mineral rights, which demonstrates a coordinated effort between the state, the extractive sector, and real estate brokers. Especially in the United States, one of the few countries that legally ‘severs’ mineral rights for private ownership, these state-market linkages, maintained by state bureaucrats and legislators, strengthen the corporate hold on mineral rights. Afterall, the state and firms often benefit from limited information (Appel 2019).

Transparency and increased access to information can reveal gaps in information and highlight areas where data is incomplete or undisclosed, whether intentionally or unintentionally. Increased transparency can identify areas where information is lacking, leading to important communication around the openness and completeness of information (Barry 2013). That said, this approach does not simply suggest that having access to information, such as details about mineral claimants, will automatically result in a more just political outcome, but it can provide an increase in opportunities and possibilities for communities, as was my experience. Thus, while information access is crucial, it alone is not sufficient for systemic transformation; it must be coupled with active efforts to mobilize and utilize the information for advocacy and political change.

This complex web of mineral ownership is perpetuated by the state and/or firm's obfuscation of information, fitting into a broader system of bureaucratic secrecy aimed at sustaining state and corporate accumulation. Addressing these administrative burdens becomes essential to identifying barriers and sharing methods to bypass them, thereby restoring public access to information and goods and challenging the unjust distribution of wealth and resources (Burden et al. 2012; Moynihan, Herd, and Harvey 2015; Herd and Moynihan 2019).

Land Theft and the Split Estate

The examination of mineral rights and the legal severance of surface and subsurface property fits within racial and colonial mechanisms of private property. The interplay between racial hierarchy, colonization, and private property is deeply rooted in the enslavement of Africans and the expropriation of Indigenous lands (Du Bois 1935; Harris 1993; Jung, Vargas, and Bonilla-Silva 2011; Dunbar-Ortiz 2015; Moreton-Robinson 2015; Inwood and Bonds 2017; Bhandar 2018). Private property affords capitalist accumulation through mechanisms of enclosure, theft, genocide, violence, and dispossession, which is rooted in settler colonialism and white supremacy (Tuck and Yang 2012; Coulthard 2014; Bhandar 2015, 2018; Nichols 2017; Lee 2020). In this context, the dynamics of mineral rights highlight the intricate relationship between private property ownership structures and processes of racial and colonial exploitation.

In this case study in the Great Lakes region, the extraction of resources is intricately linked to settler colonialism. The United States government exhibited keen interest in this area due to its substantial potential for industrial timber harvest and mineral extraction. In 1825, the U.S. government actively promoted the signing of a treaty between the Ojibwe and Sioux Nations. This treaty delineated land ownership boundaries for the Ojibwe people and established a "peaceful frontier" for settlers (Great Lakes Indian Fish and Wildlife Commission 2018). The U.S. government also pursued resource capitalization through the Treaty of 1837, commonly known as the "White Pine Treaty," which involved the cession of land in Wisconsin and Minnesota. This relinquishment aimed to secure land for mining and logging activities. The Treaty of 1842, referred to as the "Copper Treaty," further expanded settlers' access to northern lands by ceding land in Michigan's Upper Peninsula. Importantly, this treaty safeguarded the rights of Ojibwe peoples to engage in hunting, fishing, and gathering of foods (Kappler 1904, 7 Stat. 591). Unchecked mineral extraction could impact these treaty rights. The designation "Copper Treaty" specifically referenced the Michigan Upper Peninsula region, celebrated for its plentiful copper deposits. White European settlers aimed to export these resources, and the separation of mineral rights from surface rights proved advantageous to both the state and corporations.

The establishment of mineral rights, often termed "the split estate," can be traced back to 1807 in the United States and are entwined with the legacy of the Homestead Acts (Maley 1982). Unlike most countries, where the state retains subsurface property rights, the US hosts regional variations in mineral rights ownership. For example, in the Great Lakes study area, property acquisition differs from the western United States, where the federal government often retains subsurface mineral rights. In much of the western US, the Homestead Act and Stock Raising Homestead Act of 1916 granted settlers land for stock raising and maintained mineral rights under federal control due to the escalating interest in mineral extraction. The

divergence in mineral rights ownership between regions, states, and even counties underscores the complexity of mineral claimant information, which is exacerbated by varying laws and regulations governing mineral claims. Mining laws and extractive industries are most often associated with perpetuating legacies of imperialism, colonialism, dispossession, and land theft (Churchill and LaDuke 1983; Hoogeveen 2015; Curley 2023). I call attention to these dynamics by integrating local-scale historical narratives with broader analyses of political economy (Keeling, Arn, and Sandlos 2009). This approach unveils broader state-sanctioned environmental racism and violence central to ongoing environmental injustices (Pulido 2017). Following this understanding, identifying mineral claimants can be pre-emptive for Indigenous groups and allies in order to resist potential mining by corporate interests and enhance local decision-making to resist capitalist and colonial exploitation.

The government's separation of surface and mineral rights, along with the differentiation of land claims based on mineral types, necessitates a nuanced understanding of the scalar politics of minerals. This complexity is evident as owners of surface rights and mineral rights often constitute distinct groups, creating an intricate map of land ownership. Furthermore, the government distinguishes land claims based on specific minerals; for instance, oil and gas rights might be owned separately from hard rock minerals. The social production of scale, as highlighted by Huber and Emel (2009), offers a valuable approach to understanding the politics of control, ownership, and development of natural resources. This perspective is essential for identifying mineral claimants and understanding the involvement of various stakeholders, including global mining companies, government entities, and local regions operating at different scales. Additionally, multiple owners may claim rights to minerals within a single tract of land, adding further complexity to the situation.

The mineral law generally differs based on the type of mineral available, and this process outlined here is used primarily for hardrock mineral claims. Oil and gas mineral rights are regulated under different laws than hard rock minerals and are more accessible and transparent than hardrock. Mineral rights, and more generally, the land below the surface, are legally classified as real property although there is no clear distinction between surface and subsurface. One mechanism for instituting such distinctions involved the government's establishment of the Public Land Survey System in the 18th century. The U.S. government divided land into property for sale and settlement in a complex map of townships, sections, ranges, and quarters and divided subsurface land in the same ways, despite the curvature of the earth, which complicates the spatial representation of ownership (see Figure 1). This looks similar to a deck of cards - from the box, the deck appears as one unit with a single owner, just as property rights appear from the surface. After opening the box, one begins to see the layers and stratified dimensions of ownership, with the top card representing surface rights and the following cards depict mineral rights. The cards representing mineral rights are separately owned or claimed by multiple people, depending on local law and mineral availability. For example, one claimant can hold rights to the hardrock minerals, whereas another can hold claim to oil and gas mineral rights. Similar to this deck of cards, the mineral rights exist in a cube-like shape following surface gridlines. Figure 1 shows the surface constructed grid boundaries, the multitude of claimants, and vertical dimensions of mineral rights. Figure 1 also uncovers additional complexity in that this grid covers a sphere, which essentially forces a square into a circle. This two-dimensional representation of mineral rights

obscures depth and breadth, making it easier for the state and corporations to claim land by hiding what is below.

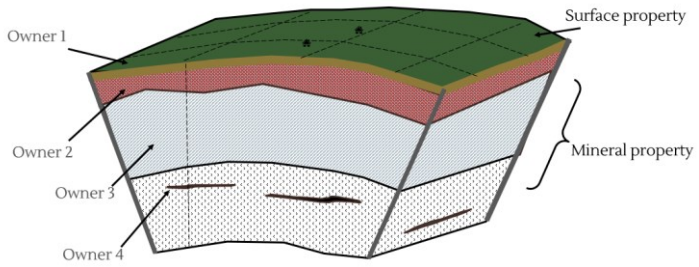

Figure 1. Simplified visual representation of multiple ownership within one parcel and the 'severance' of mineral rights.

The grid reduces the complexities of depth by offering a two-dimensional representation of a three-dimensional object. Geographers attentive to this issue tend to focus on verticality and volume rather than area (Braun 2000; Elden 2013; Huber and McCarthy 2017; Marston 2019; Himley 2021). The shift from two dimensions to three uncovers hidden power dynamics at play on and within the land and illuminates the "vertical territories" produced by land fragmentation (Braun 2000; Weizman 2002). In the realm of mineral claimant information, this perspective becomes crucial. The transition from a flat representation to a three-dimensional understanding helps uncover intricate relationships and power structures related to mineral resources. Huber and McCarthy's (2017) assertion that industrial capitalism is fundamentally shaped by a vertical dependence on underground energy and minerals gains relevance in the exploration of mineral claims. Unlike earlier production modes that relied more horizontally on land, the contemporary focus on vertical dimensions underscores the significance of understanding resource extraction beneath the Earth's surface. This shift has implications for identifying and comprehending mineral claimants, as it exposes the complexities inherent in the vertical territories associated with mineral resource ownership and exploitation.

The final realm of the government's mineral severance covers the designation between private and public mineral claims. There is a legal precedent requiring the filing of ownership or leasing information for mineral rights. The distinction between public and private ownership affects the methods used to locate these ownership claims. For example, with private mineral rights, individuals or corporations file or locate claims at local county courthouses, where the corresponding information is housed. On the other hand, state-held mineral rights information is generally available on state websites, and finding lease information requires additional searching. In my experience in Michigan, corporations hold the majority of private mineral rights, whereas the state holds public mineral rights and leases to corporations. Again, this differs from much of the western U.S. where the federal government holds significant claims to minerals and leases to corporations through competitive bidding.

The examination of mineral rights and property severance reveals a complex interplay with white supremacy, racial capitalism, and colonial mechanisms of private property. Mining laws most often perpetuate a legacy of colonialism, dispossession, and land theft, necessitating proactive measures to identify mineral claimants as a means of resisting

potential exploitation and safeguarding communities. The shift from a two-dimensional to a three-dimensional understanding, emphasized by geographers focusing on verticality and volume, reveals hidden power dynamics beneath our feet that can be better understood by examining access to mineral claimant information.

Methods

My research combines archival and ethnographic methods to delve into the intricate dynamics of subsurface property. Specifically, the focal point of this investigation took place at register of deeds offices throughout Michigan, where the endeavor aimed to meticulously unearth the often-concealed world of mineral deeds. With these combined methods, I successfully identified entities holding mineral rights beneath tribal lands and disseminated this previously unknown information to tribal governments.

In this case, archival research entails systematic exploration and analysis of publicly accessible historical records and documents including deeds, titles, and ownership records housed at county register of deeds offices. The archival method proves invaluable for unraveling the historical and legal facets of property ownership, providing crucial insights into the transfer and documentation of mineral rights over time. Within the scope of my research, the archival component primarily involved identifying the most recent mineral owners using electronic records dating back to the early 2000s. Records predating this period necessitated search through written documentation. The intricate process of locating mineral owners involved a nuanced understanding of the electronic recordation system, utilizing two software programs—Land Link and Tract Index. While Land Link served as the initial step for document searches, Tract Index facilitated the reading or printing of materials with associated charges accruing for software usage and printed pages.

Complementing the archival methods, my research incorporates ethnographic elements, using informal interviews to glean background knowledge and insights into accessing ownership records. Employing snowball sampling techniques, interviews were purposively conducted based on recommendations from previous interviewees. The diverse pool of interviewees included individuals from county equalization and register of deed departments, the Michigan State Geologist, land title attorneys, Inter-tribal agencies, and non-governmental organizations. These informal interviews played a dual role by validating and spotlighting the intricacies of archival search processes and providing contextual information. The insights garnered from these informal conversations proved instrumental in guiding the research process, offering a deeper understanding of the specific language and complexities inherent in land titles. This methodological approach aimed to identify mineral deeds while fostering a nuanced understanding of the social and institutional dimensions that shape access to mineral claimant information.

Mineral Claimant Barriers and Ways Around

The first day I entered the county register of deeds office, the county clerks strongly discouraged me from searching for mineral claimants; they expressed concern that I was not a lawyer trained in understanding mineral rights. And although mineral claimant information is considered "public," accessing it requires background knowledge. As they put it, "If you want to come in off the street and find who owns the rights under your house, you are going to run into some issues." This statement held true in my experience, but I did find ways around

the issues they alluded to. In this section, I outline the major challenges I encountered in the register of deeds office and identify methods to bypass and reduce such barriers. My aim is not to categorize barriers as "solutions" to the fraught legacy of subterranean land theft. Instead, by highlighting these barriers, my goal is to bring attention to those who profit from and exert control over existing mineral rights information. Next, I address these barriers and outline a process for accessing mineral claimant information.

Private mineral claimant information is located at county register of deeds offices and found in property deeds. Information on the deeds includes the names of the grantee and grantor of mineral rights as well as location of the claim. The deeds act as a sort of legal receipt. Although systems of recording deeds vary slightly across state and county lines, consistent barriers exist. These barriers can be categorized as bureaucratic, legal, cost, and spatial, include inconsistent systems of recordation, complicated legal language, high fees to access public information, and visual representation issues. Together, these barriers make it difficult for someone to easily locate mineral claimant information. For example, activists, Indigenous nations, environmental organizations, and local communities greatly benefit from transparent understandings of subsurface property transactions and ownership. Therefore, what follows is an in-depth account of major barriers and methods to reduce challenges (Table 1).

Common Challenges and Methods to Reduce Barriers

Common problem	Barrier	Methods to reduce barriers
Multitude of claims and deeds in written and electronic databases	Bureaucratic - onerous process to access public information	-Locate electronic first and print records at the local county register of deeds office -Begin by locating the most recent mineral claims and conveyances.
Differing laws based on location, legal standing of claims, complicated language	Legal - language and structure of record-keeping	- Print sample mineral deeds to increase familiarity with legal language prior to entering the register of deeds office. - Review local laws on recordation, such as state recordable title acts and mining, oil, and gas laws.
Combining public and private databases, inconsistent location descriptions, and disparate county records	Spatial – scattered data sources lacking consistent spatial locations	- Scan and convert deeds for a consistent spatial coordinate system. - Combine with state and public databases in ArcGIS or other mapping software.

Fees accrue per minute of software usage and per page printed, challenges sorting through claims	Financial & emotional costs – access expenses and fees	-Negotiate costs, print or download software depending on local fees. - Build alliances across organizations and negotiate financial costs.

Table 1. Identifying and lessening barriers to improve access to mineral claimant information

I spoke with a local real estate agent who worked for over thirty hours to find a mineral claimant for one parcel of land. They hoped to identify more mineral claimants for the county, but due to the complicated processes, they gave up on the search because it would take years and thousands of dollars. The most cumbersome barriers, bureaucratic and legal, consist of maze-like search systems, inconsistencies in written and electronic records, location of deeds, and filing mechanisms. Additionally, locating a claim does not necessarily mean that the claim is valid; instead it may ultimately require validation through a court of law. The process of understanding mineral rights and the corresponding laws associated with recordation requires time and training, thus preventing easy access to this public information. To understand mineral rights, the legal description of property and deeds, which is written in a coded language, must be understood. The next obstacle is that the description of mineral owners may be listed in any property deed such as a mineral deed, quitclaim deed, warranty deed, mineral royalty, fee simple title, life estate, and more. These deeds are filed in either electronic or written records within register of deeds offices. The written property records date back to the 1800s and take immense time and patience to sort through as they are often incomplete, illegible, and unorganized. The digitization of electronic deeds began in the 1990s or 2000s depending on location, and the electronic deeds present a limited, but most recent, archive of mineral claims. The process of locating mineral claimant information is akin to a jigsaw puzzle of legal and bureaucratic barriers, which is also true for locating the actual claim itself.

The location description on property deeds lists a long form property description, making it difficult to reference location. As seen in Figure 2, locations are recorded in various formats and take additional time and labor to combine locations for multiple deeds. In fact, the spatial barrier of mineral claims is described in various ways including the township, range, section, quarter or metes and bounds in a long text format. The descriptions of property are often listed inconsistently, making it difficult to combine multiple locations for a spatial representation of ownership. Additionally, the private mineral claims must be combined with public records, such as the data from the Michigan Department of Natural Resources. Simply put, when you visit the register of deeds office to locate mineral right claimants, the information you obtain is incomplete and only one piece in a complex puzzle.

<table>
<tr>
<td>Southwest Quarter of Southeast Quarter (SW ¼ of SE ¼), Section 10, T51N, R29W
Southwest Quarter of Northeast Quarter (NW ¼ of NE ¼), Section 15, T51N, R29W
Southwest Quarter of Southeast Quarter (NW ¼ of SE ¼), Section 17, T51N, R29W
Southwest Quarter of Southeast Quarter (SW ¼ of SE ¼), Section 10, T51N, R29W</td>
<td>
<table>
<tr><th>Township</th><th>Range</th><th>Section</th><th>Description</th></tr>
<tr><td>T55N
T54N
T54N</td><td>R34W
R34W
R34W</td><td>34
3
3</td><td>SW ¼
N ½
SW ¼</td></tr>
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<tr>
<td>NW ¼ of SW ¼ and SE ¼ of SW ¼, Section 5, Township Forty-nine, North (T49N), Range 32 West, (R32W): approximately 40.00 acres and 40.00 acres respectively,
and
SW ¼ of SW ¼ of NE ¼ of SE ¼ and SW ¼ of SE ¼, Section 6, Township Forty-nine North (T49N), Range 32 West (R32W): 30.56 acres and 40.00 acres respectively</td>
<td>Township 51 North, Range 29 West
Section 03: SE/14NE1/4
Section 07: SW1/4SE1/4, SE1/4NW1/4 Section 08: SE1/4SE1/4
Section 10: NW1/4SE1/4
Section 17: NW1/4NW1/4, NW1/4SW1/4
Section 18: SW1/4SW1/4, SE1/4SE1/4, SE1/4SW1/4
Section 19: NW1/4NE1/4
Entire section excluding one square acre in SW corner of SENE and Railroad Right-of-Way of Section</td>
</tr>
</table>

Figure 2. Four examples representing the many ways in which the state conveys location on mineral deeds.

The search for mineral claimant information is a long and arduous process and comes with high financial costs. At the register of deeds office, fees accrue for electronic record searches and printing, as county governments charge per minute of software use and pages printed. In most counties, it is impossible to send deeds electronically, and the only option is to pay to print or write down the information, presenting financial obstacles. I encountered fees of anywhere from $1-$5 per 15 minutes for electronic deed searches and printing costs of generally $0.25-$1.00 per page. A local title company quoted between $350 and $500 to search for mineral owners in one parcel, or 40 acres of land. For an entire county, the cost could range in the thousands or millions of dollars, depending on records and the area. This paywall limits access to those with financial capital and legal training. Moreover, the search does not guarantee the identification of an owner or a valid claim, which provokes frustration, stress, fatigue, especially when county employees discourage searches or do not provide assistance.

Despite initially encountering discouragement from county clerks, I acknowledge that my identity as a white graduate student from outside the area played a pivotal role in eventually securing assistance and gaining access to necessary information. Moreover, my Indigenous collaborators highlighted that my experience as a white student navigating this

bureaucratic process was made comparatively easier due to the structural racism associated with the legal system. This emphasizes the pervasive influence of systemic racism intertwined with white supremacy, settler colonialism, and property ownership. The emotional toll associated with accessing public information varies depending on one's positionality and connection to place. When coupled with financial costs, the emotional toll creates a significant barrier, encompassing fees, stress, frustration, experiences of racism, and fatigue, all of which collectively exacerbate the challenges of obtaining public information. This underscores the broader societal impact of systemic inequities and biases in administrative processes.

The bureaucratic, legal, spatial, and financial barriers require time, money, emotional, and physical labor as the process remains muddled through complicated systems of land titling. Though the information is considered public, these barriers prevent people from carrying out searches and ensure that the select few with wealth, corporate power, and lawyers maintain access to information and subsurface power. However, despite these barriers and burdens, there are methods to bypass barriers that allow anyone with the time and persistence to navigate some of these intentionally obfuscated structures.

Steps to access mineral claimant information

The process of identifying mineral claimants reveals two levels of power dynamics: one on the surface trying to access data and the other deep below the surface of the earth. These varying levels of power make it nearly impossible to walk into a register of deeds office without legal expertise and easily locate mineral claims. This section uncovers methods to locate mineral claimants which equips local communities with information to improve decision-making processes. With this information, the layers of power dynamics become more visible. The process of mapping subsurface mineral claims begins with locating recent property transactions through electronic property deeds, then combining the data with state leasing maps to visualize the spatial extent of mineral ownership. In the previous section, I identified legal, bureaucratic, spatial, and cost barriers to securing mineral claimant information. My intention in this is to not frame these methods around barriers as solutions to the fraught legacy of land theft and ownership; rather, by identifying such barriers, I hope to draw attention to those that benefit and control current mineral rights systems. The following steps lay out the process for accessing private records, which is divided into four major steps: identify, filter, document, combine (see Figure 4).

1. *Identify* – The search for private mineral claimant information begins with locating deeds at local county register of deeds offices. Once in the office, I began by examining the most recent transactions recorded in electronic records. Register of deeds clerks discouraged me from examining the written records as they explained the filing system for written records cannot be sorted by deed type in most places but are, instead, recorded by date. For this reason, electronic deeds make it easier to sort for mineral claims in various ways. The electronic systems present an opportunity to simplify the search process by allowing filters based on search terms, which is not possible through the written record. However, examining the written record is often required when searching for a full chain of ownership as the electronic record only shows digitized records since the late 1990s or early 2000s, depending on location.
2. *Filter* – It is possible to search and filter electronic records based on the following three criteria: 1) location, 2) conveyor/claimant, or 3) deed type. The filter selected will

depend on interest. For example, if you know an exact plot of land whose owner you want to identify, it is easiest to search by location. If you are searching for a company, filter by the claimant. If you are looking more broadly, search by deed type. Mineral claimants may be listed in many deeds, including quit claim deeds, warranty deeds, mineral royalty, fee simple titles, life estate, and a myriad of other transfer instruments requiring close examination of all deed types. In fact, the clerks encouraged me to begin by printing a few deeds to familiarize myself with the legal language and descriptions of property. I found that familiarizing myself with deeds helped reduce the amount of software use time and therefore, fees. Additionally, I found that acquiring a local platt booklet of surface ownership helped to provide a visual of local surface and potential subsurface ownership. In some cases, the surface owners correspond with subsurface claimants, which may help when searching by owner.

3. *Document* – After identifying a mineral claimant, the next step is to document the claimant information by either printing or transposing the information. In my experience, there is typically no option to send deeds electronically, so it is easiest to print the deeds. For me, printing deeds helped to familiarize myself with the language of deeds, provided an archive to refer back to and proved beneficial to the next step of combining data. Aside from printing or transposing from the software, buying the county software for use on a personal computer might be an option in some locations. I spoke with one group who had success with this approach and acquired a copy of the software at $300 per month. As I previously mentioned, the fees for software use and printing can be quite high and I found occasional success in negotiating prices with register of deeds employees.
4. *Combine* – This step combines both individual deeds from county register of deeds offices and state held mineral lease maps for visual projection in ArcGIS. To begin, I downloaded a Microsoft Excel spreadsheet from the Public Land Survey System (PLSS) to designate a consistent and central database for transposing information. It is useful to combine and transpose deeds by converting the pdf to a spreadsheet and ensuring all location descriptions and claimants are listed in separate rows and columns. Functions like *Query Builder* help sort the descriptions of section/township/range easier in order to develop a standard nomenclature to eventually join with the base layer for spatial representation. At the same time, adding a column for the current and previous claimant's name tracks the conveyance of mineral rights and identifies owners. With printed deeds, I double checked correct claimant and location of claims before combining and mapping the data with state-held mineral lease data.

For visual representation, I connected property deed data with state held mineral rights in ArcGIS. Projecting data from property deeds requires integration with ArcGIS or other mapping software. To begin, I joined the data collected from county register of deeds to a base map of public land survey system data from Michigan in ArcMap using the join table function. I then used the same function to join data with publicly-owned mineral data from the state sources, in my case, the Michigan Department of Natural Resources. This new dataset combines both public and private mineral claimant information with options to view based on claimant, project ownership or leasing based on the claimant column. Finally, this shows the distribution of mineral claimants, which I show in an example map in Figure 3.

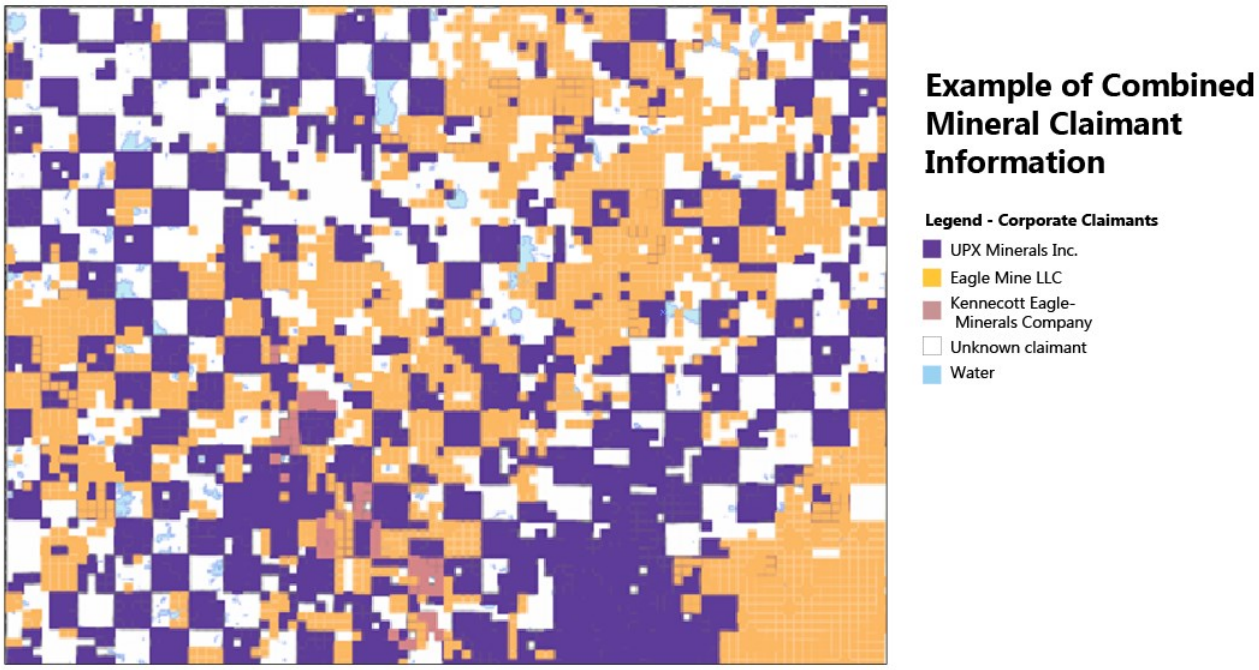

Figure 3. Fictious map showing mineral claimant information, primarily held by multi-national corporations.

I generated this fictional map (Figure 3) illustrating the distribution of mineral claimant information based on the companies I identified during my collaboration with GLIFWC. This serves as an example of the final product based on the previous steps and emphasizes the records I uncovered. Due to the sensitive nature of the information related to tribal communities, the actual map cannot be widely shared. Each square represents one parcel of land, as previously explained by the Public Land Survey System mechanisms of land claims.

In the specific location I examined, UPX Minerals Inc., a subsidiary of the Canadian-based extractive company Highland Copper Company Inc., dominates mineral rights, claiming approximately 61% of the identified mineral property. Highland Copper Company Inc., headquartered in Longueuil, Canada, holds interests in over 700 square miles in the Upper Peninsula of Michigan (KPMG LLP 2018). Comprising Upper Peninsula Holding Company Inc., Highland Copper Company Inc. owns four subsidiary companies: Keweenaw Copper Co., White Pine LLC, Copperwood Resources Inc., and UPX Minerals Inc. The company is actively developing mining projects in the region, including Copperwood, White Pine, and Keweenaw mining. The identification of mineral claimants is crucial for Indigenous communities as it contributes valuable insights into the underlying dynamics of mineral extraction and potential mining activities. This information enables tribal governments to proactively engage in agreements before extraction occurs.

The intricate task of identifying mineral claimants aims to unveil the beneficiaries of a complex process. I simplify this process in Figure 4, which shows a streamlined decision-making process for locating mineral claimants in register of deeds offices. This guide is designed to aid individuals visiting local register of deeds offices, facilitating the identification of mineral claimants by circumventing bureaucratic, legal, financial, and spatial obstacles. While there are methods to intervene and mitigate these barriers, it is important to note that

they do not offer a complete solution. Moreover, these methods do not stand alone as an entire solution to the willfully-obscured process of accessing mineral claimant information, they highlight the challenges and reveal who benefits from these structures.

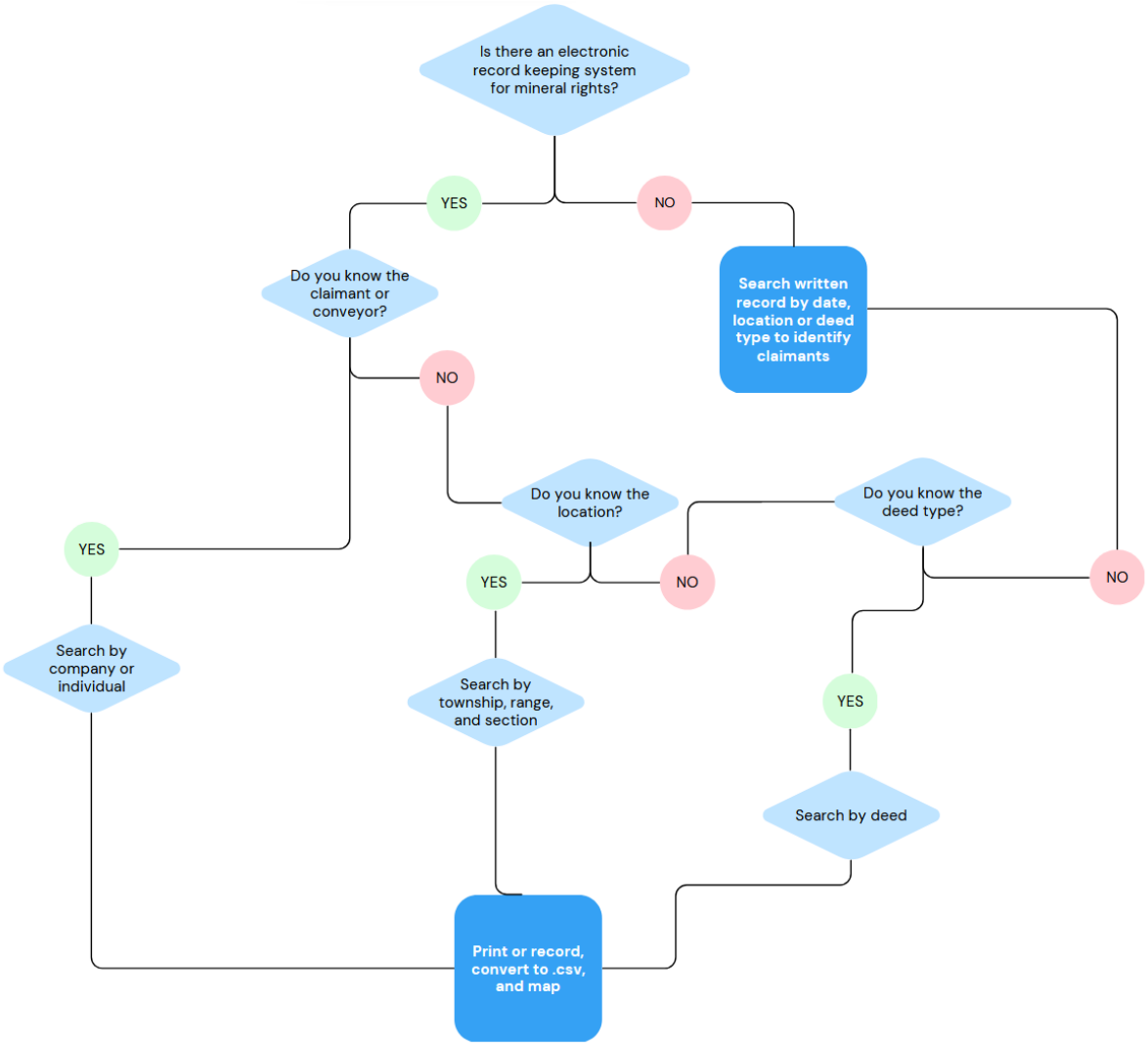

Figure 4. Decision tree to simplify the process of locating mineral claimants at register of deeds offices.

Discussion and Conclusion

The exploration of subsurface power dynamics involves uncovering the intricate processes both at the surface, to locate information, and below the surface, to extract resources. Within this framework, I posit that the intentional obfuscation of mineral claimant information by the state aligns with a broader system of bureaucratic secrecy in the United States, perpetuating state and corporate accumulation. Collaborating with GLIFWC reiterated that identifying mineral claimants is essential for Indigenous governments, enabling them to exercise sovereignty, engage in consultations with claimants, and extend mining restrictions in vulnerable areas. This information is equally valuable for environmental groups, activists, and communities, shedding light on often unknown mineral claims and contributing to a comprehensive understanding of the potential fate of specific areas.

Despite mineral rights ownership and leasing information being deemed public, my research unveils numerous administrative burdens and barriers hindering access to these public records. The methodology developed to navigate these obstacles revolves around strategic interventions, such as employing electronic deed software to identify recent mineral claims, utilizing cost-effective printing and scanning of deeds to reduce financial barriers, and integrating public and private data sources for a comprehensive view of mineral rights controllers.

As it stands, the public remains largely unable to access information about mineral rights ownership and leasing, resulting in the consolidation of control by the state and corporations. This consolidation, in turn, ensures the accumulation of wealth predominantly for a select group of white individuals, mainly represented by multi-national mining corporations. The convoluted process of identifying mineral claimants emerges as a legacy of coordinated efforts by the state and corporations to maintain power and control over land, specifically mineral rights, through legal mechanisms rooted in private property and property recordation systems. This process is deeply entwined with ongoing settler colonialism in the United States, perpetuating the grant of stolen land for the benefit of white colonizers.

However, it's crucial to emphasize that the methodological intervention presented here does not offer a definitive solution but rather aims to draw attention to persistent traditions of land theft, in this case subsurface property, by the state and corporations. While these methods function to map subsurface power for the protection of land, a more extensive intervention through the abolition of the current property regime, represents a long-term approach to addressing intentional obfuscation and gatekeeping. In the meantime, locating mineral claimants exposes the hidden subsurface power that continues to shape the surface landscape.

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