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Small Landowners Fighting Big Oil in Alabama

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Photo credit: Southeast Oil & Gas Association

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KEY TERMS

Allocation formula: The method by which production or revenue from unit operations is apportioned among tracts and owners.

Carried interest: A financing arrangement under which one party advances another owner's share of development costs in exchange for recovering those costs from production.

Correlative rights: The rights of owners in a common reservoir to produce oil or gas without waste and with due regard for neighboring owners' opportunity to do the same.

Decimal interest (DI): An owner's fractional share of a tract or lease before unit-level allocation; expressed as a decimal and used to calculate owner unit interest.

Dissenting landowner: A landowner who does not want oil or gas development on the land but is bound into pooling or unitization once statutory requirements are met.

Field: The general area underlain, or appearing to be underlain, by at least one pool or reservoir containing oil or gas.

Forced pooling: The compulsory combination of separate tracts to satisfy minimum acreage or spacing requirements for drilling.

Heirs' property: Family-owned land inherited without a will or formal probate process, resulting in shared ownership and often clouded title.

Hydrocarbon pore volume (HCPV): An engineering estimate of the volume of recoverable hydrocarbons beneath a tract, typically based on tract area, reservoir thickness, and porosity.

Interest: A legally recognized economic stake in a tract, lease, or unit that determines if an owner shares in revenue or costs.

Mineral acres: The acreage in a tract wherein an owner holds mineral rights. When ownership is fractional, the owner's net mineral acres equal the tract acreage multiplied by the share of ownership.

Minority interest: A noncontrolling ownership share in a tract or unit; in this report, the term often refers to owners who lack enough voting weight to block unitization.

Net revenue interest (NRI): The share of production revenue attributable to an owner after royalties and other lease burdens are accounted for.

Operator: The party responsible for drilling, development, operations, and financing on behalf of working interest owners.

KEY TERMS

Overriding royalty interest (ORI): A royalty carved out of the working interest rather than the landowner's royalty. ORIs are often granted to brokers, consultants, or previous operators involved in the development of the field.

Owner unit interest (OUI)/unit interest: An owner's final share of total unit production or revenue after the tract participation factor is applied to the owner's decimal interest and aggregated across tracts.

Pool (reservoir): An underground accumulation of oil or gas from which one or more wells may produce.

Productivity: A tract's demonstrated production performance, often measured using the tract's best consecutive six-month production window.

Ratification status: Ratification status indicates whether an owner has formally signed the unitization agreement. Ratification documents serve as the legal proof of consent.

Risk penalty: This cost recovery mechanism can include additional penalties applied to non-participating working interest owners. As a result, some owners may receive reduced or delayed payments until the operator has recovered development expenses.

Royalty interest owner: An individual or entity entitled to a share of production revenue without bearing drilling or operating costs. In many cases, these owners are landowners who leased their mineral rights to an operator.

Royalty rate: The fraction of production or production revenue that is owed to a royalty owner. The base royalty rate for Alabama is 1/8, or 12.5%.

Tract: A distinguishable parcel, or portion of a parcel, whose mineral or lease interests are treated as distinct for pooling, unitization, and allocation purposes.

Tract participation factor (TPF): The percentage of total unit production assigned to a tract under the approved allocation formula.

Unit area: The area containing the tracts or tract portions included in a unit because they contribute to unit production.

Unitization: The joint operation of all or part of a reservoir through the consolidation of separately owned tracts, leases, or mineral rights.

Working interest owner: An owner who holds an operational stake in the well, bearing a corresponding share of leasing, drilling, production, and operating costs in exchange for a corresponding share of production after royalties are deducted.

EXECUTIVE SUMMARY

This project evaluates the structural equity of Alabama's oil and gas unitization system through the Johnson family case, assessing whether the current framework protects landowners as effectively as it does operators in the coordinated extraction process. It situates the case within the broader history of Black land loss and heirs' property in the South, reviews the statutory and administrative framework of Alabama with a juxtaposition of selected states, reconstructs how the consent threshold is calculated, reevaluates the tract apportionment formula, and assesses whether estimated revenues and payments indicate fair allocation and impartial consideration of affected landowners.

Across this report, the central finding is that Alabama's framework is predominantly dependent on data generated by operators, technical discretion and informational opacity, and administrative deference. The dual 66 ⅔% consent threshold does not render involuntary inclusion of substantial minority interests infeasible, and this case-study's 50/50 formula of weighting hydrocarbon pore volume (HCPV) and productivity disadvantages tracts with strong geological contributions but insufficient historical production. The apportionment reevaluation found tract-level loss ratios ranging from 18% to 53% under the current weighting scheme, which represent the annual monetary loss of the landowners. The revenue analysis indicates that, for 2018 alone, the Johnson family's minimum estimated royalty entitlement from oil production was approximately $330,000, yet some family members had received no payment as of April 2026. However, this figure reflects only one year of production and excludes two additional family tracts for which complete data were unavailable, so the cumulative amount potentially owed to the family is materially higher.

Overall, the evidence supports the need for a major reform of the unitization program in Alabama that emphasizes procedural clarity and substantive fairness. Alabama must require that the state make written findings and technical reviews of the allocation formulas, provide notice and neutral-expert technical assistance to small and heirs' property owners, disclose denominator values, tract-level inputs, and other inputs through an easy-to-use online data portal, create a low-cost pathway for documenting heirs' property ownership prior to unitization, and consider impact-fee and compensation mechanisms for nearby landowners burdened by external harms. Together, these reforms would not eliminate unitization, but they would reduce opacity, improve contestability by dissenting landowners, and more precisely correlate compensation with contribution and burden.

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Introduction

In Alabama, the oil and gas industry intersects with the region's history of Black landownership, land loss, and unequal legal power. Much of the land that had been passed down across generations, frequently via heirs' property arrangements instead of formal probate, enters modern extractive systems under fragmented titles, unclear records, and limited bargaining leverage. These conditions shape who is counted, who is heard, and who ultimately bears the risk when oil and gas development expands. Downstream from these aggregated ownership thresholds and technical formulas, this can lead to unjust economic, political, and health-related outcomes, and this is where the Energy Justice Law & Policy Center plays a critical role. The advocacy organization, headed by Raya Salter, works with local communities to address the harms caused by energy systems such as forced unitization and seeks to catalyze equitable green infrastructure.[1]

This report is a study of the Johnson family to evaluate whether Alabama's unitization system, and the Alabama Oil and Gas Board's (OGB) administration of it, operate justly. The Johnsons' property sits on the largest oil field in the state, and the family was forced into the unitization process. Because the property is classified as heirs' property, there is a clouded legal title that can lead to holdout classification, in which landowners are subject to fiscal penalties if they do not allow oil drilling to proceed. Hence, operators are able to extract oil from their land, destroying it in the process, without proper compensation, negotiation, or consent. Residents, including the Johnson family, have noticed increased instances of health impacts, water table disruptions, and oil field spills.[2] Peer-reviewed literature associates adjacency to oil and gas development with adverse health outcomes, with groundwater contamination being documented in some oil and gas incidents.[3,4]

Importantly, landowners like the Johnson family have little to no visibility into how decisions were made throughout the unitization process, including whose consent counted, how ownership was weighted, or whether legal thresholds were met. This report determines how landowners such as the Johnsons are treated within Alabama's unitization system, how their interests are classified and diluted, and what legal and policy pathways may exist for them to assert rights, recover value, or seek reform. The analysis of the Johnson family case allowed a complete investigation of the unitization system, from land and tract identification to unit participation factors, to owner classification, to consent thresholds, payment risk, and procedural barriers.

Overall, this report addresses the following central questions:

- How does the way unitization is designed and implemented in Alabama protect, or disadvantage, landowners and communities?
- How does it systematically transfer risk, loss, and exclusion onto certain groups of owners?
- Where does discretion by operators and the OGB create opportunities for procedural

Background

BLACK LAND OWNERSHIP & ENERGY GOVERNANCE IN THE SOUTH

Dispossession of Black-owned land is a racialized process of extraction of land value, agricultural income, and intergenerational wealth embedded in law and policy. Across disciplines, scholars have studied how land has been systematically stripped from Black communities through mechanisms that primarily benefited white landowners.[5] Ultimately, Black land loss is a cumulative, historical, and structural process with enduring social, economic, and political consequences that continue to shape modern racial disparities.

Contemporary energy governance operates within this structure and in light of this history, as racialized land dispossession significantly contributed to the legal, economic, and power asymmetries that now allow fossil fuel extraction processes like unitization to place disproportionate economic and health burdens on Black property owners. The Johnson family has lived on and held land in Alabama since before the emancipation of enslaved people in 1863. This area is occupied by many Black landowners, and according to oral tradition, the Johnson family purchased the Johnson family land so that the descendants of Lewis and Ada Johnson would always have a home to return to. Black families acquired land in the post-emancipation South for residence, autonomy, and intergenerational security, only to face systemic fragmentation and dispossession. This pattern is well documented in the broader literature on Black land loss.[6-8] This history of land ownership is a crucial context for the for the way oil and gas are extracted in the modern day.

Scholarship on Black land loss focuses significantly on loss of farmland, and this is essential for understanding how Black-owned land became extremely fragmented. By the year 1910, Black farmers collectively owned approximately 14 million acres of land, primarily concentrated in the Southern United States.[9] The decades following were characterized by systematic dispossession driven by the institutionalization of discriminatory policies and legal practices. During the New Deal era, federal agricultural programs institutionalized racial inequality through localized administration.[10] Discretion over access to credit, subsidies, and relief payments was delegated to county-level agricultural committees that were largely composed of white committee members.[11] This structure systematically limited Black landowners' access to federal assistance, increasing risk of foreclosure, forced sale, and loss of land.[12]

Figure 1 : Family of Black tenant farmers. | Source: Bettmann Archive

This systemic disadvantage compounded over time. Limited access to credit, legal representation, and technical assistance undermined Black landowners' ability to

retain or invest in their land, accelerating land dispossession.[13] By the year 2000, approximately 90% of Black-owned farmland had been lost.[14] These processes also contributed to title insecurity and weakened land control among Black landowners.

A key legacy of this systemic property fragmentation is the prevalence of heirs' property—land inherited without a legal will or formal probate process, resulting in shared ownership among descendants.[15] Notably, over 35% of Black-owned rural land is classified as heirs' property.[16] This ownership structure makes it difficult to sell, mortgage, or access government aid and leaves land vulnerable to partition sales, tax foreclosure, and other forms of loss.[17] As a result, land may be lost through legal mechanisms that disproportionately disadvantage owners with fragmented or unclear title. The Johnson family's land, passed down through generations and classified as heirs' property, reflects these vulnerabilities, as fragmented ownership limits participation and increases exposure to financial penalties and procedural risks in systems such as the oil and gas unitization process.

Figure 2 : First oil well in Alabama, 1944. | Source: Hunt Oil Company

More broadly, a history of racialized land dispossession has weakened property rights, fragmented land ownership, and limited political power for Black landowners.[18] This structural disadvantage continues to shape how landowners engage, challenge, and seek recourse within modern energy governance systems such as unitization—particularly where consent, participation, and outcomes depend on complex legal and technical processes.

Procedural Inequality in Energy Governance

Governance Structures and Energy Decision-making

Energy governance is structured through institutional processes that shape stakeholder participation, representation, and decision-making.[19] In states with forced pooling and unitization laws, regulatory frameworks are designed to prioritize resource optimization and economic growth, framing these as collective goods. While procedures such as notice requirements, public hearings, and standards for evidence are intended to ensure consistency in rulemaking and structured participation across stakeholders, in practice, different stakeholders face different outcomes. Stakeholders with greater access to technical expertise, legal representation, and financial resources are better positioned to interpret statutory requirements, navigate regulatory proceedings, and influence outcomes.

Smaller, fragmented, or heirs' property owners may instead face obstacles in identifying relevant owner interests, accessing information, interpreting technical materials, or obtaining legal representation.

As a result, formally consistent regulatory processes can produce inequitable patterns of stakeholder participation and representation. Energy governance, therefore, operates within a structure in which institutional capacity determines whose interests are fully represented in decision-making processes. The Johnson family's land, classified as heirs' property and located within an active extraction zone, reflects these institutional asymmetries. Their case provides a basis for analyzing how participation, consent, ownership recognition, and decision-making function inpractice within oil and gas unitization systems.

Limits of Procedural Neutrality

The mandatory unitization procedures governing oil and gas extraction are grounded in the theory of correlative rights and the principle of conservation, which support forced inclusion to advance coordinated development and prioritize waste reduction. These principles substantiate incorporating multiple landowners into unitized operations even when consent and participation are not unanimous.

Under the unitization framework, key decisions and allocations regarding participation weights and revenue distribution rely on technical assessments of oil field geologic characteristics and production potential. As a result, the ability to evaluate or contest these measurements is not equally shared among all stakeholders. This complexity tends to advantage large mineral holders and operating firms that have access to technical expertise, expert testimony, and advocacy.[20] These asymmetries demonstrate how even formally neutral procedures can produce skewed outcomes when underlying differences in technical capacity and access to resources shape how decisions are defined, evaluated, and contested.

Energy Justice: An Applied Analytical Framework

The literature on energy justice offers a principled framework for evaluating procedural dynamics, extending the analysis beyond questions of legal validity to examine whether governance processes produce equitable outcomes for affected parties. Scholars have argued that without energy justice, there can be no social justice.[21] Energy justice is conceptualized as consisting of three closely interdependent elements, which are distributive justice, procedural justice, and recognition justice.[22]

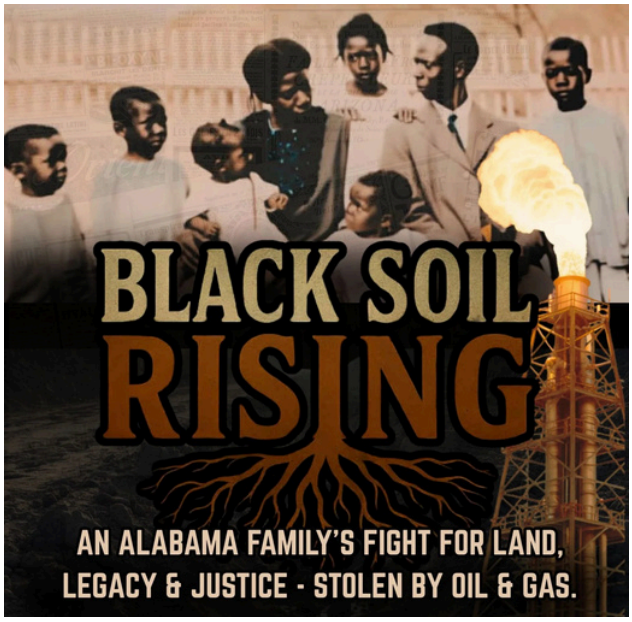

Figure 3 : Poster for *Black Soil Rising,* a film co-produced by the EJLPC. | Source: Black Soil Rising

Distributive justice addresses the unequal allocation of environmental benefits and burdens; procedural justice concerns the fairness and inclusiveness of decision-making; and recognition justice examines whether marginalized identities, histories, and lived experiences are acknowledged within governance structures.

These concerns can also be stated in Rawlsian terms. Rawls argues that the political institutions that exist within a society should provide the terms under which all free and equal citizens may cooperate within that society, and that those institutions should be justified to all individuals who are subject to those institutions.

Thus, the requirement of internalization of external costs reflects the idea that the costs to an individual of a political institution should be reflected in the institution itself because a fair scheme of cooperation cannot permit powerful actors to privatize benefits while shifting harms onto smaller landowners. Feasibility is required of any political institution because political reform, in a Rawlsian view, must be directed towards institutions that are not simply just, but also workable, under democratic conditions.[23]

Meet the Johnson Family

Applied to the Johnson family's case, these frameworks illuminate dimensions of the case that a legal analysis might obscure. Under Alabama's statutory framework for unitization, once qualifying percentages of interested parties consent, nonconsenting owners are required to integrate their tracts and develop them in accordance with regulatory orders.[24] The Johnson family asserts that they were not duly notified or compensated regarding certain exploration and production activities affecting their land, a claim that implicates procedural justice concerns related to participation, notice, and access to information. Recognition justice further draws attention to the Johnson family's documented historical presence in Alabama since emancipation and the broader context of Black landownership in the region. Recognition justice does not presume legal wrongdoing; rather, it examines whether governance processes adequately account for the historical and structural conditions affecting marginalized landowners.[25]

Figure 4 : Members of the Johnson family, sharing stories on the impacts of oil and gas drilling on and near their land. | Source: Black Soil Rising

Methodology

This project followed a mixed-methods approach combining a case study, policy analysis, and quantitative analysis to evaluate the structural equity of Alabama's unitization policy framework. Using the geographic, historical, and institutional context of the Johnson family case, the analysis examined how statutory design and implementation shape ownership recognition, consent, and distributional outcomes.

First, a policy analysis was conducted to characterize Alabama's regulatory and administrative framework governing oil and gas field unitization in the state. This included an analysis of Alabama Code §§ 9-17-80–88 and the OGB's standard administrative practices. A comparative policy analysis across other states with unitization policy frameworks and substantial oil and gas extraction activity was also conducted to compare Alabama's policy framework to other existing policy across key dimensions including consent thresholds, treatment of nonconsenting interests, and any procedural requirements.

Once the unitization framework was outlined, the subsequent quantitative analysis focused on the oil and gas units relevant to the Johnson family. Ownership and interest data were compiled from publicly available documents and organized into a single dataset. Tract numbers, interest type, NRI, consent status, and TPF data were collected for thousands of ownership entities across nearly one hundred tracts. Once the dataset was built, it was used to reconstruct the aggregation of ownership interests and evaluate whether the reported consent percentages satisfy required thresholds.

Beyond owner-specific data, the study also evaluated the unit-specific TPF formula both in how it was derived and how it was applied to field revenue allocation. To assess the equity implications of the field-specific formula, alternative formulas with varied weightings of geologic variables were applied to the field-specific dataset. Tract-level outcomes in allocated production shares under each scenario were then compared to assess distributional equity.

The analysis concludes with an estimation of the revenue from the oil field of focus. Using publicly available production data, estimated operating costs, state tax rates, and assumptions regarding oil prices, total field revenue from oil extraction was estimated. Using this estimated revenue, the payouts to both working and royalty interests were approximated. The expected revenue to the Johnson family was also approximated and compared to reported outcomes, and discrepancies between expected and realized compensation were evaluated.

Key limitations included the reliance on publicly available data to conduct the analysis. Many files were difficult to read for conversion to a tabular format, did not follow a standardized structure, and were sometimes incomplete. Additionally, some case-specific results have been withheld from this report to preserve confidentiality. Despite these limitations, the analysis methodology provides a robust framework for evaluating the structural equity of Alabama's oil and gas unitization system.

Policy Landscape

DEFINING THE UNITIZATION POLICY FRAMEWORK

Oil and Gas Unitization Policy in the United States

The process for unitization of oil and gas fields in the United States is largely governed by state-level policies with limited federal oversight.[26] As a result, unitization policies differ across states with distinct requirements for reaching consent among owner interests, allocating field revenues, and facilitating due process for minority and dissenting interests. Thirty-nine U.S. states employ some form of forced pooling or unitization for the extraction of resources on privately owned land.[27,28] These laws permit oil and gas companies to combine an area of land containing a reservoir of fossil fuels or hydrocarbons where there are multiple landowners.[29] "Pooling" is generally the aggregation of smaller land tracts to create a large enough piece of land to qualify for an oil or gas well, whereas "unitization" is "the joint operation of all or some part of a producing reservoir."[30]

These state-level unitization laws impact two main parties: royalty interest owners and working interest owners.[31,32] Royalty interest owners receive a portion of the production revenue, but do not put up capital for the extraction. These are individuals or entities that own the land or the mineral rights to the oil and gas extracted. Royalty owners receive interests or royalties—a percent of revenues —that are proportional to their tract share multiplied by a TPF derived from tract-specific geologic data.[33]

Working interest owners instead supply capital for a portion of the cost of operations for a unit or well and, in return, receive an agreed-upon percentage of revenue generated from production.

Implementation and enforcement of the statutes and the protections therein are generally overseen by a state's regulatory agency, which is created by statute and given jurisdiction and authority to administer and enforce those laws. These boards exercise statutory conservation authority commonly justified via "prevention of waste." [34,35] These oil and gas boards vary in number of total members, but are typically composed of governor or state agency appointees and usually include at least 1–2 representatives of oil and gas interests.[36]

Alabama's Unitization Policy

State-level Policies

Alabama's unitization policy landscape, specifically, is framed by Alabama Code §§ 9-17-80-88 and OGB standards.[37] The statutory code establishes legal and procedural requirements for the unitization process statewide, whereas the OGB standards provide the technical and procedural mechanisms necessary for implementation.

The stated intention of Alabama's statutory framework is to maximize efficient oil or gas reservoir development while minimizing economic and physical waste.

According to Alabama Code §§ 9-17-81 of the 2025 OGB Administrative Code, "in order to promote the conservation of oil and gas resources, prevent waste, avoid the drilling of unnecessary wells, allow the drilling of wells at optimum geologic locations, and protect correlative rights," the state has authority to require the consolidation of separately owned tracts into a single unit for coordinated oil and gas operations.[38] The OGB can then impose compulsory fieldwide unitization when voluntary agreement among all interest holders cannot be achieved and when such action is deemed necessary to advance these conservation objectives.

The OGB Regulatory Framework (Alabama Admin Code Title 400) also governs the petition procedures, notice requirements, hearing protocols and all other steps for forced pooling proceedings in each unitization case, establishing the administrative structure through which unitization proposals are reviewed and approved by the OGB.[39]

Consent Thresholds for Unitization

In practice, compulsory unitization is realized by reaching a consent threshold among unit interests. These thresholds are established at the state level and apply uniformly across unitization proceedings, rather than being determined on a case-by-case basis for individual units. In Alabama, a unitization order does not become effective unless it is signed, ratified, or approved in writing by at least 66 ⅔% in interest of the owners sharing in unit costs within the proposed unit area (working interest), and at least 66 ⅔% in interest of the royalty owners sharing in revenues within the proposed unit area.[40] These thresholds must both be met within six months of the unitization order.

While this structure establishes a supermajority approval requirement, the 66 ⅔ % threshold means that up to one third of interest holders in each class can be bound to the unitization agreement involuntarily.

In order for the OGB to ultimately issue a compulsory unitization order, Alabama Code requires a public notice and hearing, as the owners involved must be informed of the unitization status, be given an opportunity to present evidence or objections, and be allowed to cross-examine witnesses at hearings before the OGB.[41] The OGB must also find that the proposed unit plan safeguards correlative rights, ensuring that every interest owner has the opportunity to obtain an equitable share of production from the shared reservoir. According to the OGB, the Board's order must be "fair and reasonable under all circumstances," meaning that it should protect the rights of interested parties. The state of Alabama requires that production be allocated among separately owned tracts according to the "relative contribution" each tract is expected to make to total production during unit operations.[42]

In effect, these findings establish the legal justification for overriding individual ownership in favor of coordinated development. After the issuance of a final order, dissenting parties may seek judicial review.[43, 44] These procedural protections are time-limited. Already-bound owners may have little practical ability to revisit the consent calculation or allocation terms absent timely judicial review once the six-month ratification window closes and the subsequent final order takes effect.

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Unit-specific Policies

While consent thresholds are established at the state level for application across all fields, Alabama Code provides that the formula to derive a unit's TPF is constructed on a case-by-case basis. As a result, each unit may employ a different formula for converting owner decimal interest to unit interest, which directly affects revenue allocation among interest owners. Factors contributing to the TPF can include the HCPV, historical or projected oil or gas production (productivity), reservoir thickness, porosity, permeability, and tract acreage, among others. The relative weight or inclusion of these factors is proposed by the unit operator and subject to approval by the OGB. This stage establishes a procedural asymmetry for small and nonexpert landowners because the operator proposes the formula and supplies the technical record. The OGB evaluates whether the allocation reflects each tract's expected relative contribution, but Alabama does not standardize engineering practices, disclosure exhibits, or independent third-party technical review across cases.

Figure 5: State Oil and Gas Board of Alabama Logo | Source: Geological Survey of Alabama

Judicial Review of Unitization Orders

After the issuance of a final order, dissenting parties may seek judicial review. For fieldwide unitization and allocation disputes, the governing statutory standard is that the unit order, including the allocation formula, must be "fair and reasonable under all the circumstances," and allocation must be grounded in relative contribution concepts, such as each tract's expected contribution to unit production.[45]

Judicial review is limited to the record of evidence and submissions presented to the OGB throughout the unitization proceedings, and courts generally defer to the OGB's determinations regarding revenue allocation and interest participation, including the selection and weighting of geological factors used to estimate each tract's contribution to production.[46] Courts do not typically reweigh competing evidence or substitute their judgment for that of the OGB in disputes over productivity measures or reservoir characteristics. Instead, an OGB unitization order will generally be upheld so long as it is supported by evidence in the record and does not violate statutory requirements.[47]

Comparative State Unitization Policy Frameworks

While Alabama relies on a dual 66 ⅔% consent threshold and administration by its OGB, other states vary significantly in how they structure interest participation requirements, constrain operator discretion, and protect nonconsenting interests. Dual consent means that statute requires distinct thresholds for approval for working interests and royalty interests.

To contextualize Alabama's unitization framework, selected oil- and gas-producing states are compared across key policy dimensions, including consent thresholds, treatment of nonconsenting owner interests, and any notable procedural requirements. Note that a risk penalty is the additional cost-recovery charge imposed on nonconsenting working interest owners before the owner receives the working interest share of production.

Louisiana

High dual consent threshold (75%) paired with substantial risk penalties (200%) for nonconsenting owner interests. Additionally, Louisiana has no stated minimum required royalty interest afforded to a nonconsenting owner.[48, 49] Compared with Alabama, Louisiana requires a higher consent threshold, but is less protective after approval because nonconsenting owners can face steep cost-recovery penalties and no stated royalty-floor protection.

Colorado

Low consent threshold (45%) with requirements for good-faith efforts to secure the consent of mineral interest owners before applying for forced pooling.[58, 59] Unitization plans must be approved such that at least 80% of costs are covered by consenting working interest owners, with more defined statutory treatment of nonconsenting interests. Compared with Alabama, Colorado has a lower threshold with stronger mandated good-faith outreach and pre-application efforts.

Oklahoma

Moderate dual consent threshold (63%) with nonconsenting risk penalties at 100% of surface equipment costs (plus interest), 300% of drilling costs, and 300% of underground pipelines, injected substances, and other unrecoverable development costs. However, both consenting and nonconsenting interests are given legal status to enforce payment through claims on production revenues and leasehold interests.[53, 54, 55] Oklahoma's threshold is marginally lower than Alabama's, but its treatment of payment enforcement and recoverable costs is significantly more explicit in its statutes.

North Dakota

Moderate dual consent threshold (55%) including at least two nonaffiliated cost-bearing persons, as well as at least two voluntary royalty interests. Nonconsenting owners face a risk penalty (200%) exclusive of royalties, but with a more structured, protective cost recovery process.[51, 52] North Dakota combines a moderately lower threshold as compared to Alabama, with more specific structural protections regarding who must consent and how nonconsent recovery works.

Texas

No fixed consent threshold; pooling requires state commission approval following reasonable notice and a good-faith effort to pool voluntarily. Owner interests that do not contribute to upfront costs (i.e. nonparticipating owners) are subject to a risk penalty (100%). Royalty interest and revenue allocation terms are determined through private agreements between interest owners and operators, subject to commission approval for "fairness."[56, 57] Texas is less reliant on a fixed statutory consent threshold than Alabama, and instead relies more on documented notice and good-faith pre-application efforts.

Mississippi

Low consent threshold (33% of drilling rights held by one or more owners), coupled with statutory notice and good-faith negotiation requirements. This statute is keyed to drilling-rights consent, not approval thresholds for working interest and royalty interest owners, and so it is not a dual-consent regime. Nonconsenting owners face a risk penalty of 100% of surface equipment costs, 250% of drilling and well costs, and 100% of operating costs. Operators must pay royalties of 3/16 of the royalty owner's share of the unit, but only after all costs of operations have been recovered.[50] Mississippi's threshold is much easier to satisfy than Alabama, while its nonconsent cost recovery remains severe.

Conclusion

Across these states, unitization frameworks are typically structured through more explicit procedural requirements, including documented good-faith outreach, statutory limits on the scope of forced pooling, and statutory limits on cost recovery for nonconsenting interests. In contrast, Alabama's framework relies more heavily on administrative approval from the OGB and case-specific technical determinations, particularly in allocation and nonconsent treatment. Relative to the alternative state models, Alabama places greater reliance on administrative discretion rather than fixed statutory constraints.

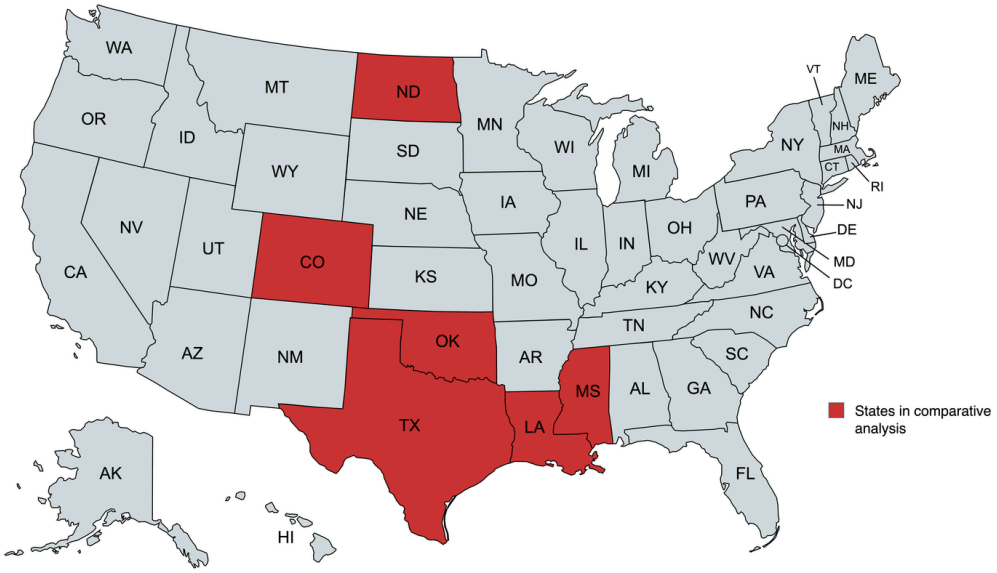

Figure 6 : Map highlighting the states with policy frameworks analyzed against Alabama's. | Created using MapChart

Reconstructing the Consent Calculation

This section reconstructs the interest consent percentage calculation used in the case-study oil field unitization process. The objective of this analysis is to understand how oil and gas operators assemble ownership data, determine whether the legal consent threshold has been met, and ultimately construct the formula used to allocate production revenues among landowners.

This reconstruction relies on publicly available ownership and interest records for the case-study oil field, which is administratively divided into a few unit areas. These records can be located online through regulatory filings under the Schedule of Interests associated with each unit application.

All ownership data from the four units were compiled and standardized into a single Excel dataset. The dataset includes the following variables: Tract Number, Entity Name, Interest Type, Total NRI, TPF, and Unit NRI.

By consolidating these records into one dataset, the calculation can be replicated to determine whether the consent threshold required for unit formation was met. As a verification step, the sum of all Unit NRIs across the dataset was calculated to determine whether it approximated 1.00 (100%), confirming whether all ownership shares in the unit have been properly accounted for.

This reconstruction also clarifies how ownership structures, consent documentation, and allocation formulas interact across four distinct stages of the unitization process: (1) establishing ownership and title structure, (2) consent calculation and unit formation, (3) revenue allocation, and (4) payment distribution and application of risk penalties.

Photo credit: Anita Starzycka via Pixabay

Stage 1: Ownership and Title Structure

The first stage establishes the legal ownership structure of the land and mineral rights included in the proposed unit. Operators compile ownership records to determine who holds mineral rights and whether those rights are held individually or through more complex structures such as estates or trusts.

Ownership structures commonly fall into four categories:

Estate
An estate is the legal entity that temporarily holds and manages a person's property after they die. When the owner of mineral rights passes away, those rights become part of their estate. During the probate process, the estate legally controls the mineral rights until the court determines who the rightful heirs are and officially transfers ownership to them.

Trust
In a trust structure, a trustee holds the property on behalf of designated beneficiaries. Trusts often have centralized management, meaning a single trustee may have authority to make decisions on behalf of multiple beneficiaries.

Heirs
Heirs are individuals who inherit mineral rights following the death of a previous owner. In many cases, multiple heirs inherit equal shares of the property, creating a situation known as tenancy-in-common, where each heir owns a fractional interest in the same tract.

Heirs' property
Heirs' property occurs when land passes to multiple descendants without formal probate or clear title documentation. This structure is particularly common in historically marginalized communities that faced barriers to formal legal systems. When land becomes fragmented across many heirs, operators may face difficulty identifying all rightful owners. In practice, missing heirs or unclear documentation can affect who is notified about unitization proposals and who is counted in consent calculations.

Structure	When it exists	Who controls	Key characteristic
Heirs	After probate or legal transfer of ownership	Individual heirs	Individuals inherit fractional ownership shares, often as tenancy-in-common
Heirs' Property	Land passes informally across generations without clear probate	Multiple family descendants	Ownership becomes fragmented; documentation of all owners may be unclear
Estate	After a person dies and during probate	Executor or estate administrator	Temporary legal entity holding property until it is distributed by the court
Trust	Created before or during a person's life	Trustee manages for beneficiaries	Centralized management; trustee can often make decisions for all beneficiaries

Table 1: Differentiated royalty interest ownership structures

Stage 2: Consent Calculation and Unit Formation

Once relevant royalty interests are assigned their respective ownership structures, the operator compiling the unitization proposal must collect individual ratifications of the proposed unitization agreement and determine whether there is enough consenting interest to reach the 66 ⅔% consent threshold. This is then also done to achieve the 66 ⅔% consent threshold among working interest owners.

To demonstrate that the threshold is met among royalty interest owners, the operator must first determine the decimal interest held by each mineral rights owner within the proposed unit. This is calculated by dividing the net mineral acres owned by the royalty interest owner by the total mineral acreage in the tract. Then, this fraction is multiplied by the base royalty rate, which is 12.5% in Alabama. The product of the royalty rate and the net mineral acreage fraction owned by the royalty interest owner is the royalty owner's decimal interest:

Net Mineral Acreage Fraction × Royalty Rate = Royalty Owner Decimal Interest

Working interest owners are instead assigned a decimal interest that reflects the fraction of the total operating costs they contribute. This value is not multiplied by a set rate to reach the final decimal interest value as is done for royalty interest owners.

Once the complete set of owners with interest is determined, the operator reaches out to the individual interests to seek ratification of the unitization agreement. The signatures collected through this process affirm consent from each signing owner to enter the unitization agreement. Owners that do not sign or respond to the unitization order do not consent, and their respective interests do not contribute to the total consenting interest required to reach the 66 ⅔% minimum threshold.

Ultimately, this process counts owners by fractional interest rather than headcount, scales down royalty participation relative to ownership share, and reflects working interests at their full cost-bearing share.

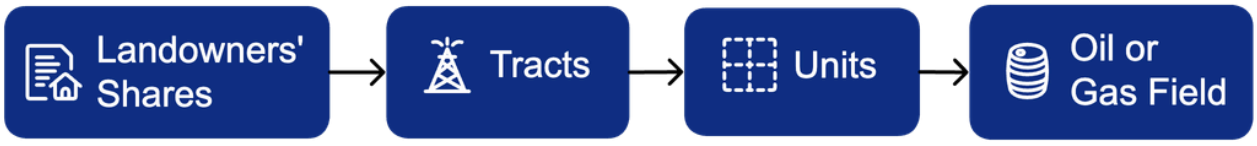

Figure 7: Flow chart of Alsbama's unitization process . Mineral shares (interests) are aggregated into tracts, which make up units. Multiple units can be in one oil or gas field. | Created using Napkin

Stage 3: Revenue Allocation Using the Tract Participation Factor Formula

After the unit is formed, production revenue must be divided among the participating tracts. This allocation relies on the TPF, which is multiplied by the tract decimal interest to find the total unit NRI for each interest.

In the case-study field, the TPF is calculated using the following formula:

$$TPF = 0.50 \times (\text{tract HCPV} / \text{total unit HCPV}) + 0.50 \times (\text{tract productivity} / \text{total unit productivity})$$

This formula combines two types of inputs: an estimate of each tract's geological contribution to the reservoir and a measure of its historical production performance. The resulting TPF is then multiplied by each owner's decimal interest in the tract to calculate the owner's unit interest.

$$\text{Owner unit interest} = \text{Tract participation factor} \times \text{Decimal interest}$$

This calculation converts tract-level production allocation into owner-level revenue shares. Where an owner holds interests across multiple tracts, those tract-level unit interests are aggregated to determine the owner's total unit interest. Aggregation across multiple tracts does not eliminate the inequity that exists within each tract; small owners with heirs' property and thin fractional interests across several tracts will have a low participation factor and extremely thin interests in each tract, making it more difficult to verify and compensate for their interests.

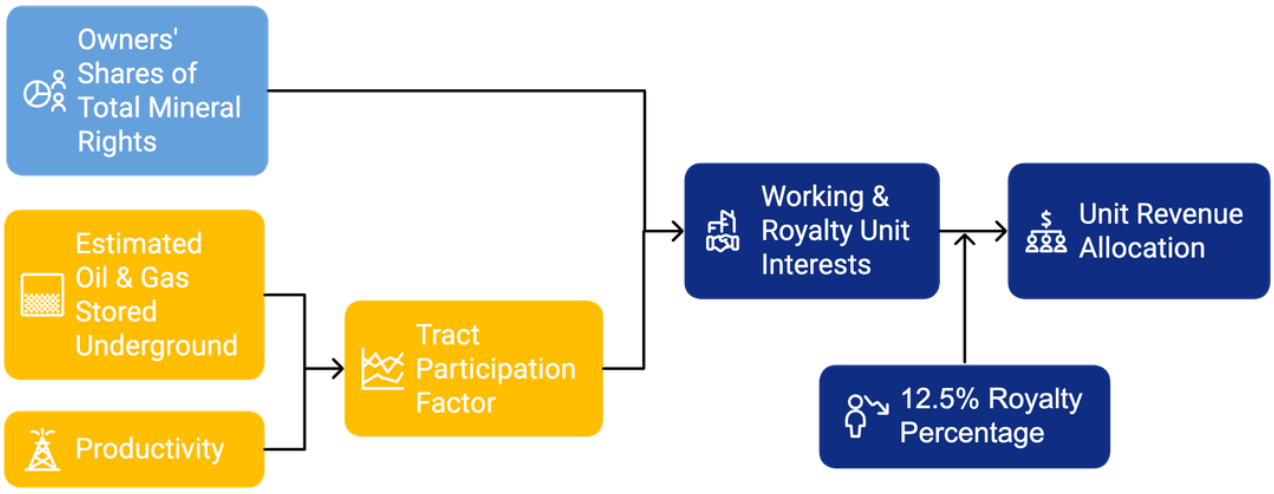

Figure 8: Flow chart demonstrating the variables and calculations of the apportionment forumla used in the Johnson family case. | Created using Napkin

Stage 4: Payment Distribution and Risk Penalties

After the unit is formed, production revenue must be divided among the participating tracts. The final stage determines how revenues are distributed once production begins. The amount ultimately received by an owner depends not only on NRI, but also on interest type and consent status.

As a general oil-and-gas accounting matter, working interest net revenue is calculated after royalties are deducted.[60] Although royalty interest owners are not subject to cost recovery or risk penalties, they receive only a fixed royalty fraction of the production volume allocated to their tract, which, given the application of the 12.5% royalty rate in Stage 2, can result in minimal realized revenue where allocated production is low.

The remaining production revenue, attributable to working interests, is used to recover drilling and operating costs before being returned to the working interests. For nonconsenting working interest owners, the operator may recover both underlying costs and an additional risk penalty from the working interest share before distributing the production revenue. As a result, these working interest owners may receive reduced or delayed payments until cost recovery is complete.

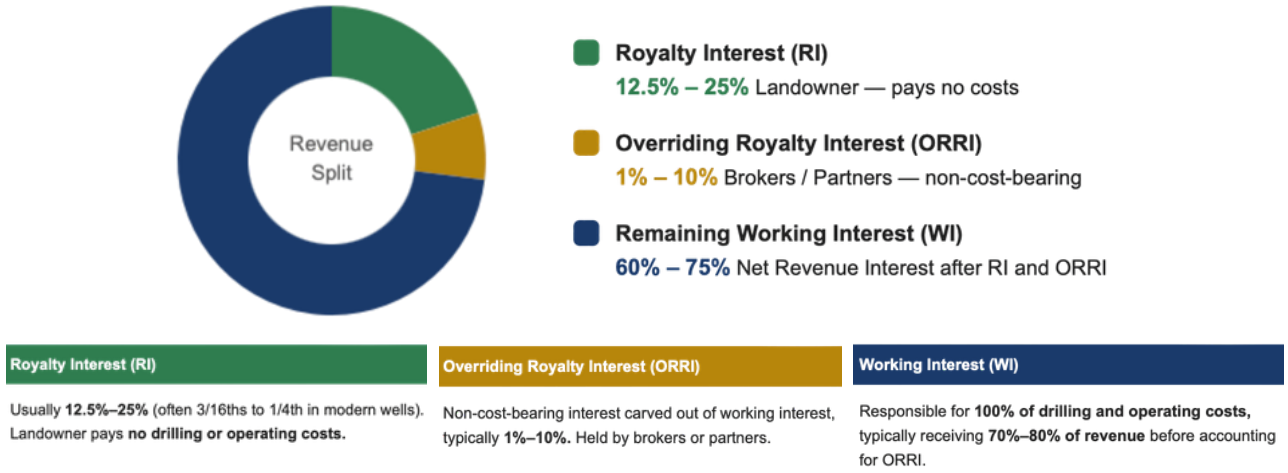

Figure 9: Expected revenue split among interest types. | Created using Claude

Policy Evaluation

ASSESSING EQUITY IN APPORTIONMENT FORMULAS & REVENUE PAYOUT

Apportionment Formula Evaluation

Alabama does not use a statewide allocation formula. Instead, the OGB of the State of Alabama approves allocation formulas specific to each unitized field. The case-study unit utilizes a 50/50 allocation of HCPV—that is, estimated oil or gas volume in the reservoir—and productivity. As a result, tract owners that seem to hold mineral rights on land with a high estimated HCPV, but limited prior production of oil or gas, are disadvantaged compared to owners whose tracts have already been producing with wells. This dynamic structurally disadvantages small and heirs' property owners who lacked the capital, information, or bargaining power needed to generate historical production before unitization.

To test the sensitivity of weighting geological variables differently, the allocation formula used for the Johnson family case-study unit was compared to a scenario that utilized only HCPV estimates for each tract, with no incorporation of the tested productivity variable. As a result, tracts that had high estimates for HCPV but low productivity experienced the greatest declines in their loss ratios. The loss ratios within the study declined to between 18% and 53%. Without being able to determine the total HCPV and total productivity of the unit, the landowners cannot verify the calculations of the HCPV and productivity of the individual study tracts.

Unitization Framework Evaluation

Combined findings from the Johnson case-study and policy analysis indicate that Alabama's unitization framework is more protective of oil and gas extraction than it is of landowner bargaining power. While the statute includes provisions that require the consent of 66 ⅔% of both the working and royalty owners to establish a unit, requires that the Board determine that the unitization plan is "fair and reasonable under all the circumstances," and requires that the allocation of working interests within a unit be based upon the relative contribution of each tract to the development of oil from the unit, the decision of the operator and the Board of Supervisors determine the outcome of those provisions. Because the operator determines the ownership schedule of the land tract to be unitized and the allocation formula to be employed, and because those individuals tend to possess the geological expertise the landowners lack, the landowners are often unable to compete with the expertise that the operator and the Board possess.

Furthermore, if the land that is to be unitized is owned by a group of individuals, as is the land of the Johnson family, those landowners are likely to experience difficulties in satisfying the requirements of the statute. While a dual supermajority threshold exists, a unit can still be established once owners holding at least 66 ⅔% in interest of the cost-bearing class and 66 ⅔% in interest of

the royalty class approve it. As a consequence, substantial minority interests are legally coerced into involuntary pooling. Owners whose land is bound to the unit often have little meaningful ability to challenge these allocations because the ratification and challenge windows are limited. Thus, these landowners are again subject to a disadvantage in comparison to other landowners in the state; those disadvantages are compounded by their existing difficulties in establishing ownership interests in their lands.

Even beyond these potential disadvantages of the existing allocation methodology for the state of Alabama, the formula itself is also potentially disadvantageous to the landowners. In the case-study field methodology, HCPV and productivity are each weighted at 50%. Although a 50/50 split is not inherently irrational, there is no clear or particularly strong rationale to defer to equal weighting, especially considering the different weightings in other states and units. Any adjustment of the percentage of each of these factors can lead to changes in the percentage of the revenues from those tracts that are distributed to both the royalty and working interests in those tracts. Additionally, because there does not appear to be a standard allocation formula for each unit in Alabama, the decision of the Board of Supervisors of each unit is key to assessing the percentage of revenues distributed to each of the owners of those tracts. Thus, the Board's justification of the adoption of the case-study field formula is crucial to ensuring the fairness of the process.

Case-specific Quantitative Findings

The estimated annual gross revenue for oil alone in the analyzed pool falls between $123.1 million and $136.5 million, based on OGB production data and U.S. Energy Information Administration oil price data. This calculation estimates operating costs of approximately $15 per barrel of oil equivalent, based on the 2018 lawsuit, and includes a total state tax of 10%, with an 8% oil and gas privilege tax and a 2% oil and gas production tax. This model estimates that royalty interest payouts should be approximately 12.14% of net revenue or 8.13% of gross revenue, while working interest payouts are approximately 81.20% of net revenue, or 54.41% of gross revenue in the 2018 case. In 2018, our low-end estimate of gross revenue was $123.1 million; the estimated operator and working interest share was $67 million; and the estimated royalty payout was $10 million. Under these assumptions, the Johnson family's estimated 2018 payout should have been a minimum of approximately $330,000 in royalties,[61] yet some family members have received no payment as of April 2026. Within the analyzed multi-unit pool, the unit that produces more than half of the pool's total oil output has the lowest royalty proportion among units with royalty interests, suggesting that production volume and royalty allocation are not evenly distributed across the pool.

State Policy Recommendations

This analysis supports five major reforms to be implemented in the permitting and management of oil and gas leases in Alabama:

1. Written findings and independent expert review of allocation formulas;
2. Stronger notice, outreach, mediation, and neutral technical assistance for small and heirs' property owners;
3. Tract-level disclosure through a public data portal and standardized denominator tables;
4. Low-cost heirs' property documentation pathway prior to consent calculation finalization; and
5. Compensation for surface damage, environmental risk, infrastructure strain, and other localized external harms.

Some of these reforms will require changes to the OGB, while others will require legislative action or appropriations to implement. The recommendations for reform of the unitization framework are guided by four principles already reflected within this project: equity, transparency, internalization of external costs, and feasibility.

The first principle that should guide any reform of the apportionment process would be to reduce the discretion that is provided to the oil and gas operators. Instead, the state of Alabama would be required to disclose written findings regarding both the reasons that the selected formula for apportionment is reflective of the contribution of each tract to the production of the oil and gas wells, and the reason that each of the variables within that formula is weighted in the way that it is. Where the allocation depends on disputed geological or engineering assumptions, the Board should be required to commission an independent technical evaluation rather than relying exclusively on operator-submitted evidence. This reform should also include statewide baseline engineering and evidentiary template standardization, as well as a trigger for periodic redetermination review of a unit's performance when it deviates from the assumptions approved in the original formula. The Board should adopt baseline engineering and disclosure standardizations for unit applications. Then, if productivity, pore volume, or other tract-level factors are materially disputed, the review should be performed by an independent technical review expert retained by the Board rather than exclusively by the operator. The Board should require periodic review of the performance of units to ensure that allocation formulas are not treated as fixed once approved. Written findings, standardized evidentiary requirements and disclosure exhibits, and independent technical review are easier reforms the Board may begin to implement without needing to wait for statutory overhaul. Related valuable statutory options include minimum compensation thresholds and clearer definitions of what counts as recoverable operational cost in risk-penalty calculations.

Second, Alabama should create a formal notice and technical assistance regime for small landowners, including heirs' property owners. Clearer pre-application notice, documented good-faith outreach, mandatory mediation before compulsory unitization, and access to neutral experts should be required by the state so small and heirs' property owners can more intelligibly evaluate the proposal. These standardized notices and disclosures are a kind of institutional regime change the Board can implement immediately. Wiginton has argued for the appointment of experts in situations of compulsory unitization to help mitigate the negative perceptions of the process, especially among small landowners who do not have access to geologists or engineers to assist in the process.[62] Other states like Colorado, Oklahoma, and Texas provide notice and disclosures to interested natural gas owners prior to the commencement of compulsory unitization proceedings.[63, 64, 65]

Third, the state should develop a digital data portal that replaces the current use of portable document format applications for unitization. These files should include a table that reveals the value of the total unit HCPV and the total unit productivity of the natural gas units within the tract, allowing any owner with an interest in the tract to independently calculate the unitization division used to determine each owning entity's percentage contribution to natural gas production within the area instead of accepting the operator's spreadsheet as a black box. At minimum, the Board should require standardized denominator and tract-level tables in every application even prior to a fully built public portal.

Fourth, Alabama should create a low-cost means for heirs' property owners to document their property and determine each owner's percentage of natural gas production prior to calculating the thresholds for consent among the tract owners. Such a process could occur at the county level and in the probate court of each county. This process would ensure that any owner of a tract through heirs' property is not disregarded due to their title to the land. Additionally, because many Black landowners have been victims of land loss through heirs' property, this suggestion provides equity to those individuals and preventing the continued discrimination against individuals of that population.

Lastly, Alabama should establish an impact-fee or compensation mechanism for landowners living near wells who are affected by the oil and gas extraction, such as by surface damage, environmental risk, and infrastructure strain. Compensable harms should explicitly include surface restoration, water testing and replacement, spill remediation, road damage, documented declines in property values, and other localized harms associated with extraction-related burdens. These compensation mechanisms, with a minimum compensation floor, are the recommendations most likely to require legislative action. Other states have established clearer compensation rules for harms caused by resource extraction; Alabama should internalize these costs instead of privatizing and imposing them on affected families.

Conclusion

The evidence aggregated within this report indicates that Alabama's unitization system is organized around fossil fuel resource conservation and coordinated extraction. In practice, this means the system shifts substantial informational, procedural, and economic burdens onto landowners who are least able to evaluate operator-generated data or challenge Board-approved allocations. Many owners still face unitization without consent once the threshold is satisfied because the statutory consent threshold is 66 ⅔% for working interest and royalty interest classes; thus, the dual consent threshold does not eliminate involuntary inclusion. The formulas designed by operators and the opaque technical inputs meaningfully impede independent review by affected landowners. Further, heirs' property owners face several barriers at the point of notice, consent, and payment. Thus, it is clear that the contemporary formal legal structure does not simply coexist with substantial inequity; it produces it.

The Johnson family case study illustrates the stakes involved with contemporary legal and institutional structures. The field analyzed generates significant revenue; however, the available estimates reveal a wide gap between what is produced by the system and what affected landowners receive; the Johnson family's estimated 2018 royalty entitlement of approximately $330,000 stands in sharp contrast with the fact that some family members had received no payment as of April 2026. Alabama is not locked into this design by virtue of nature.

Written findings, independent technical review, transparent data disclosure, clearer notice, heirs' property assistance, and compensation for external harms would not prevent resource development while making the process materially more legible, more defensible, and fairer to the landowners whose property makes this development possible.

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