

To: Mitch Landrieu, White House Senior Advisor and Infrastructure Coordinator
From: Megan Milliken Biven, True Transition
Date: February 27, 2022
Subject: Implementation of the Infrastructure Investment and Jobs Act (H.R. 3684): Title VI Methane Reduction Infrastructure Grant Program

Background: President Joe R. Biden signed the Infrastructure Investment and Jobs Act (H.R. 3684)¹ into law on November 15, 2021. Within the 2,740-page statute², is a federal grant program to state oil and gas regulators to plug orphaned wells, of which state oil and gas regulatory programs will be eligible to receive federal grants to catalog and plug orphaned oil and gas wells. To be eligible for performance grants, states must implement reforms to their orphan well management programs, but must also improve “regulation of oil and gas wells” more generally. To credibly disperse these funds, the Federal government will need to establish criteria on what constitutes improvement. To efficiently oversee a national program, the federal government will need to reconcile dozens of state programs and respective definitions and terms. This memo provides a suite of baseline recommendations to meet that mandate as well as recommendations to ensure a streamlined and feasible federal grant program.

- 1. National Definition of Orphan Well.** Implementation of this Federal grant program provides an opportunity to standardize terms across state, federal, and Tribal regulatory programs.³ We recommend that “Orphan Wells” shall be defined nationally as **“a well for which no operator or no predecessor operator can be located.”**

While H.R. 3684 allows for states’ own terminologies, 30+ definitions of what constitutes an eligible well will create unnecessary administrative challenges and jeopardize federal oversight. Current state definitions already create the conditions for fraud and abuse at the state level, where operators already exploit broad “orphan” criteria.⁴ A revised and tighter definition of what constitutes an orphan well will mitigate against this kind of abuse and reduce the public’s exposure to these risks. It will also make implementation of this federal grant program administratively feasible. Again, we recommend for the adoption of a national definition for orphan wells under state jurisdictions to be: **“a well for which no operator or no predecessor operator can be located.”**

- 2. National Database.** The Title VI Methane Reduction Infrastructure Grant Program provides an opportunity to combine state well datasets into one national database. Expecting the federal government to navigate 30+ databases to administer the state grant program is inefficient. We recommend that the US Department of the Interior (DOI) in consultation with the US Geological Survey (USGS) create a new, single, public database of wells on federal, Tribal, state and private lands. The Governmental Accountability Office (GAO) has already advised Interior to combine

¹ <https://www.congress.gov/bill/117th-congress/house-bill/3684/text>

² Specifically, Title VI--Methane Reduction Infrastructure

³ While H.R. 3684 extends this definition to wells where an operator is simply “unable to plug the well” and “to remediate and reclaim the wells site” for federal and Tribal lands, we caution against an extension of this broad definition to other jurisdictions. An oil and gas operator that is simply “unable to plug a well” is too low of a threshold to force the public to shoulder a private actor’s legal obligations.

⁴For instance, Steve Maley is both a Louisiana Oilfield Site Restoration Commissioner and Vice President of Badger Oil. Badger Oil previously operated, owned and profited from 12 wells in Louisiana. Somewhere between Badger Oil making profits off those wells and today, those 12 wells wound up on the state’s official orphan well list. The Louisiana OSR Commission has statutory authority to approve and evaluate the annual priority site restoration list, choose plugging and abandoning contractors, and review administration of site restoration activities. In Colorado, an orphan well can also include a well owned by an **“unwilling owner or operator.”** This is an inappropriate definition inviting fraud.

and update its three oil and gas well data management systems into one, and that recommendation should be broadened to incorporate state and Tribal well data.⁵

H.R. 3684 mandates that the Secretary of Interior “publish on a public website the amount that each State is eligible to receive” and we recommend that the new database is “housed” on this same public website. We recommend that for each plug and abandonment and restoration project funded under this program be required to document details of the project in a uniform template that details the “public accounting of the costs of plugging, remediation, and reclamation for each orphaned well”; all bids received for the decommissioning and restoration; the “emissions of methane and other gasses associated with [the respective] orphaned well; the “contamination of groundwater or surface water associated with [the respective] orphaned well”; “the amount of forfeited financial assurance instruments, the estimated salvage of well site equipment, or other proceeds from the orphaned wells and adjacent land”; the number of workers employed in plugging the well and restoring the associated habitat; and the physical characteristics of the well plugging operation.⁶

While H.R. 3684 will plug thousands of unplugged wells, the federal government must also take into consideration the lifespan of cement and understand that it is not a forever plugging material. Most state regulatory programs treat plugged and abandoned wells as “case closed” and do not monitor the conditions of those wells. Creating a national database will lay the necessary groundwork to monitor these wells into the future and ensure that they are not lost to dozens of byzantine record systems.

- 3. National Plugging and Restoration Standards.** The Title VI Methane Reduction Infrastructure Grant Program provides an opportunity to create national plugging and restoration standards. Why should Kansas plugging rules be different from Colorado’s rules? The statute also charges states with ranking orphaned wells based on measured methane emissions, “public health and safety; potential environmental harm; and other land use priorities.” We recommend that the Title VI Methane Reduction Infrastructure Grant Program create national and uniform ranking standards based on that criteria. We recommend that the Department of the Interior in consultation with the Department of Energy Office of Fossil Energy and Carbon Management⁷, the Environmental Protection Agency, and the US Geological Survey establish plugging and abandonment criteria and habitat restoration criteria organized by type and age of the well and the habitat and climate where the well is located. This will also help create standardized cost categories to compare and audit grant program expenditures. Because the purpose of this subpart is to reduce national methane emissions from orphaned oil and gas infrastructure, we recommend requiring state regulators to measure methane emissions before and after plugging using either chamber or high-flow or other EPA-approved methods, such as LDAR, is recommended. We also

⁵GAO-21-209 Oil and Gas: Interior Should Strengthen Management of Key Data Systems Used to Oversee Development on Federal Lands (May 2021) <https://www.gao.gov/products/gao-21-209>

⁶ The State of Pennsylvania’s plugging record templates are a good first step in organizing this information: https://files.dep.state.pa.us/OilGas/BOGM/BOGMPortalFiles/AbandonedOrphanWells/Plugging_Projects_CFA_2_9_18.pdf

⁷While standardized plugging practices are necessary to achieve a baseline level of quality and safety, there is also an opportunity for experimentation and improving plugging practices. We recommend that the Department of Energy and the Department of Interior in coordination with the states pilot an alternative materials and methods plugging program which could include the use of BioChar and resins as alternative plugging materials. A recent textbook on plugging techniques pointed out that there is “no international standard describing testing of plugging materials to qualify them for an eternal perspective.” No state oil and gas regulatory program confronts the inevitability of plugging failure. A pilot program, however, could begin creating a baseline understanding of the expected life of various plugging techniques and materials.

recommend that the wells are geo-tagged, and that state plugging programs install a uniform physical marker indicating the well number, the date of plugging, and if the plugging was the result of the Infrastructure Investment and Jobs Act (H.R. 3684): Title VI Methane Reduction Infrastructure Grant Program under President Joe Biden. If appropriate and necessary, plugged wells should also include fencing and other security measures.

- 4. Repeal All Plugging Extensions.** We recommend that the Department of Interior require state oil and gas regulatory programs to discontinue and repeal all plugging and abandonment extensions in order to be eligible for Title VI Methane Reduction Infrastructure performance grants under paragraph (5). Operators delay permanent abandonment of wells for as long as state regulations allow, increasing the physical risks of unplugged wells, and increasing the likelihood of orphaning.⁸ When an operator chooses to decommission does not happen independent of regulation and law, but because of what is allowed by regulation and law. Operators very rarely reactivate wells⁹ and do not justify the very real risks and costs of the unplugged wells that will never be reactivated.¹⁰ As states begin to confront their unplugged well inventories, we recommend the Title VI Methane Reduction Infrastructure Grant Program require current shut-in and inactive wells possess common sense precautions and required safety standards that should include: industrial grade stainless steel fencing around wells and supporting infrastructure, clear signage and warnings, API numbers and date of last production, camera surveillance, and frequent company inspections. Oil and gas infrastructure poses real risks and fencing and signage are the bare minimum of what the federal and state governments should require of operators.

- 5. Uniform Production Thresholds.** The Title VI Methane Reduction Infrastructure Grant Program provides an opportunity to raise and implement national production categories. Egregiously low production thresholds in various jurisdictions allow companies to push the decommissioning of a well further into the future, increasing the Net Present Value of that well, and inflating the value of that company, which creates market uncertainty and imposes risks onto the global commodity markets. Weber (2021) modeled increasing production thresholds for the state of Pennsylvania, and found that an increased and uniform threshold resulted in more uneconomic wells being plugged.¹¹ In other words, low production thresholds make uneconomic wells appear economic. Increasing what constitutes economic production would result in market efficiencies, reveal true risks, and force operators to plug languishing wells. For federal income tax purposes, oil wells producing an average of less than 15 BOPD and gas wells producing less than 90 Mcfd in one year are classified as “Stripper Wells.”¹² Current research finds that, “some stripper wells are venting or leaking 100 percent of the gas they produce,” and that idle and marginal wells could be responsible for as much as “between 5 and 11 percent of methane emissions in the oil and gas

⁸In Colorado, it is cheaper for companies to pay a small idle well bond than to safely plug and abandon their wells, which helps explain why Colorado now has 60,000 unplugged wells. In Texas, the law is such that it is easier for a state regulator to grant a plugging extension than it is to deny one, which is why there are now 148,410 inactive wells across the state. States have huge inventories of unplugged and inactive wells because their laws and regulations are designed to produce huge inventories of unplugged and inactive wells.

⁹ For example, less than 2% of Texas’ 130,000 unplugged and inactive wells were reactivated between 2009 and 2020.

¹⁰For example, in 2020 a Texas company’s tank battery for a shut-in well exploded and killed a child, 14-year-old Zalee Day. The child’s family rented a home from the surface right owners, and were told that the shut-in well and tank battery were secured and safe enough that the children could have full access to the site. This was not the case and Zalee died a painful and avoidable death as a consequence. According to Louisiana regulation, the operator was allowed to pay a marginal yearly fee instead of a low-end \$50,000 to plug the well.

¹¹ Weber, Jeremy G. “Identifying the end: Minimum production thresholds for natural gas wells” Resources Policy Volume 74, December 2021, 102404 <https://www.sciencedirect.com/science/article/abs/pii/S030142072100413X>

¹² Internal Revenue Service. (2019, December 19). 4.41.1 Oil and Gas Handbook. https://www.irs.gov/irm/part4/irm_04-041-001

production sector.”¹³ A 2020 study¹⁴ conducted in Pecos County found that half of the measured wells were actively leaking methane.¹⁵ Almost 75% of the United States’ active wells are stripper wells, but in sum, produce a negligible 8% of the nation’s total supply.¹⁶ In Louisiana, for example, the State considers 32,998 crude wells as “producing.” Of those, 54% (18,087) produce less than one barrel of crude oil a day. There is no public benefit to allow operators to delay abandonment through the practice of marginal production indefinitely and raising what constitutes active production will create more certainty for both regulators and regulated operators.

- 6. Joint & Several Liability.** H.R. 3684 authorizes the Secretary of the Interior to “seek to determine the identities of potentially responsible parties associated with the orphan well” and “make efforts to obtain reimbursement for expenditures to the extent practicable” for federal lands. How “responsible party” is defined varies by state, where in many jurisdictions, regulations allow operators to sell both a well and escape decommissioning liability all at once. This means that an operator can produce from a well for years, make considerable profits from that well, and then sell near the end of that well’s life, escaping its liability, and increasing the likelihood that well winds up on the public’s doorstep.

The Department of the Interior’s Bureau of Ocean Energy Management’s (BOEM) policy is that federal Outer Continental Shelf (OCS) lessees and owners of operating rights are jointly and severally liable and responsible for meeting decommissioning obligations for facilities on leases, including the obligations related to lease-term pipelines, as the obligations accrue and until each obligation is met. This definition of “responsible party” allows the federal government to pursue prior operators and recoup funds for decommissioning. H.R. 3684 also requires that states make improvements designed to “reduce future orphaned well burdens, such as programs relating to well transfer.” If the liability remained with an operator even after transferring, there would be less companies “dining and dashing.” We recommend that states seeking Title VI Methane Reduction Infrastructure Grant Program funds are required to retroactively apply “joint and several liability” to all oil and gas wells in their states to facilitate seeking the identities of potentially responsible parties associated with orphan wells.¹⁷ We also recommend that the new public database of oil and gas wells contain a chain of operator history to aid in this effort.

- 7. National Financial Assurance Standards.** H.R. 3684 requires for formula based grants that states provide “certification that any financial assurance instruments available to cover plugging, remediation, or reclamation costs will be used by the State” and for performance based grants that states make improvements designed to “reduce future orphaned well burdens, such as financial assurance reform.” We recommend that state programs reform their financial assurance programs to conform to one single, national standard. There should be no exemptions to the legal obligation to safely plug and abandon oil and gas wells in the United States of America,

¹³ Conversation with Dr. Amy Townsend-Small, University of Cincinnati, December, 2020

¹⁴ Amy Townsend-Small and Jacob Hoschouer 2021 Environ. Res. Lett. 16 054081

<https://iopscience.iop.org/article/10.1088/1748-9326/abf06f>

¹⁵ <https://grist.org/energy/amy-townsend-small-study-methane-pecos-county-texas-abandoned-wells/>

¹⁶ U.S. Department of Energy. Energy Information Administration. (2022) U.S. Oil and Natural Gas Wells by Production Rate

¹⁷Note: There is precedent for retroactive joint and several liability for environmental debts under the Environmental Response, Compensation, and Liability Act (Superfund) 42 U.S.C. §9601 et seq. (1980). EPA cleans up orphan sites when potentially responsible parties cannot be identified or located, or when they fail to act. Through various enforcement tools, EPA obtains private party cleanup through orders, consent decrees, and other small party settlements. EPA also recovers costs from financially viable individuals and companies once a response action has been completed. EPA is authorized to implement the Act in all 50 states and U.S. territories.

regardless of which state a company operates in. First, we recommend that in order for states to be eligible for Title VI Methane Reduction Infrastructure Performance Grants, that they adopt national single well/ financial assurance instruments appropriate to the level of risk the individual well poses. We recommend that state programs eliminate the use of blanket bonds and require individual trust funds or full cost surety bonds per well. These combined requirements will push the risks back to the operator where they belong and protect the public.

- 8. State Inspection Programs.** H.R. 3684 requires that states improve both their regulation of oil and gas operations and orphan well plugging programs to qualify for performance grants. While this is a very broad mandate, we can safely interpret Congress' intent as reforms that reduce methane emissions. In support of that mandate, we recommend reforms to state programs that necessarily include a buildout of layered monitoring and inspection regimes with multiple redundancies to prevent hazards and protect human life. State regulators should be staffed, equipped and funded to meet their missions which includes a baseline ratio of staff to infrastructure and increased inspection frequency.¹⁸

As an example of current state regulatory capacity, let's once again look to Louisiana. The Louisiana Department of Natural Resources (DNR) is responsible for inspecting and monitoring the State's oil and gas well inventory which includes 1,165,000 legacy, previously plugged, idled, inactive, stripper and producing wells. The state agency currently employs 311 Full Time Equivalent (FTE) employees, and of those, only 132 oil and gas specific FTEs responsible for processing everything from permits, to financial assurance, to managing contractors for well plugging. And of those, only 52 perform physical inspections. Worse yet, those inspectors rely on smelling for gas (note: methane is odorless before odors are added), the dish soap "bubble test," and listening for the hissing sound of leaking gas. In sum, Louisiana currently boasts a ratio of 1 inspector per 22,403 wells, each of which must solely rely upon her eyes, ears, and nose to identify leaking methane.

The performance grant program provides an opportunity for the federal government to assert clear standards on what constitutes responsible and reasonable oil and gas oversight. Public inspectors should be trained and equipped with the appropriate equipment and afforded legal power to issue "red light" enforcement actions and penalties at the time of inspection. State regulators are responsible for implementing a variety of federal statutes.¹⁹ If the state agencies cannot rise to the level of capacity needed to fulfill all parts of its mission, federal agencies can withdraw monitoring and enforcement authorities they have delegated to the state agencies.

¹⁸ Take the Railroad Commission of Texas as an example: the commission is made up of just 873 employees and responsible for implementing dozens of federal and state laws, monitoring, inspecting, responding to emergencies, and enforcing penalties on 250,000 miles of pipelines, and an estimated 1,650,694 oil and gas wells of various types and status. There are just 173 inspectors in the oil and gas safety inspection team. The Commission's most recent oil and gas division monitoring and enforcement plan stated that in 2020, 170 inspectors conducted over 347,000 inspections. As one commenter put it, "this is over 2,000 inspections per inspector. Assuming 260 workdays per year, each inspector would have to average nearly 8 inspections per day every single day or nearly 1 per hour of every hour worked."# There are just 65 inspectors on the pipeline safety team. That's just one site inspector per 3,856 miles of pipeline and one inspector per 9,541 wells across the state of Texas. These ratios raise serious doubts about the thoroughness and efficacy of inspections of both active and inactive wells across the state.

¹⁹The federal statutes include: the Safe Drinking Water Act, Resource Conservation and Recovery Act, Clean Air Act, Clean Water Act, Comprehensive Environmental Response, Compensation, and Liability Act, and the Oil Pollution Act.

9. **In-house plugging programs:** Exclusive reliance on private contractors increases costs and creates risks.²⁰ When regulators respond to an orphan or legacy well related emergency, both the regulators and affected communities must often wait on approved contractor availability. This creates unnecessary operational inefficiencies and imposes real costs onto stakeholders near these sites. It's as if the fire department had to wait to rent its trucks prior to an emergency.

Once again, we return to Louisiana for our case study. In 2020, a barge collided with a submerged, unmarked orphan well [causing an oil spill](#) in the Barataria Bay.²¹ The well spewed a [100-foot-high geyser](#) of natural gas and light crude oil for weeks. OSR reported that because of the accident, “the program would [only] plug and abandon urgent and high priority scored orphan wells in marine environments that are potential hazards to navigation instead of plugging urgent, high, moderate and low priority orphan wells statewide.”²² The program office acknowledged that the program realignment would result in a significant decrease of total number of orphan wells plugged and abandoned by the program per fiscal year due to the increased costs associated with this work (from \$26,000 to \$163,000 per well average). Therefore, the Louisiana Oilfield Site Restoration Program currently does not even address onshore wells, but only those offshore wells that directly interfere with navigation.

Contractor availability is a limiting factor for all state orphan well programs. Indeed, a recent proposal outlining a federal to states grant program admitted that “the marginal cost of plugging each well may increase if demand for well plugging services leads to higher...costs.”²³ The authors also speculated that higher oil and gas prices could place demand pressure on service providers leading to increased plugging and restoration costs. In other words, states will be competing with drillers for resources to plug wells, and the more it costs to safely plug each well, the fewer wells will be plugged.

If instead, state governments maintained their own trained workforce and equipment to perform this work directly, it could more efficiently plan yearly budgets and schedules, as well as respond to emergencies more nimbly. Instead of costly management and oversight of contractors, governments could create uniform procedures and processes that it perfects in house. While initial capital costs for rigs and equipment would have an initial sticker shock, regulators could retain exclusive use of that equipment and not be forced to respond to ever changing industry mobilization rates. More wells could be plugged, costs standardized, and efficiencies realized if states carried out the plugging and abandonment and site restoration activities themselves. The Title VI Methane Reduction Infrastructure Grant Program presents an opportunity for states to bring their well plugging programs “in-house” and federal overseers of the grant program should provide guidance and support to those states that pursue this course.

²⁰ Biven, M.M. and Virginia Palacios. (2022, January) Commission Shift: Eliminating Orphan Wells and Sites in Texas: A Toolkit for Redesigning the Railroad Commission’s Oilfield Cleanup Program

https://commissionshift.org/wp-content/uploads/2022/01/Eliminating-Orphan-Wells-and-Sites-in-Texas_CommissionShift.pdf

²¹ <https://skytruth.org/2010/08/barataria-bay-louisiana-abandoned-well/>

²² <https://wwwcfprd.doa.louisiana.gov/lapas/public/index.cfm?action=browse&fy=2011&dept=11&agv=432&pgm=A&obj=3&pi=1>

²³ Raimi, Daniel, Nerurkar, Neelesh, Bordhoff, Jason. (2020, July). Green Stimulus for Oil and Gas Workers: Considering a Major Federal Effort to Plug Orphaned and Abandoned Wells. Columbia Center for Global Energy Policy. https://www.energypolicy.columbia.edu/sites/default/files/file-uploads/OrphanWells_CGEP-Report_071620.pdf