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Hydraulic Fracturing on Federal and Indian Lands

*An Analysis of the Bureau of Land
Management's Revised Proposed Rule*

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Abstract

The federal government controls 700 million acres of subsurface rights (plus 56 million subsurface acres of Indian mineral estate) across 24 states, making it the largest landowner in the nation, and therefore in a position to negotiate lease terms and shape regulations of oil and gas development. The federal Bureau of Land Management's (BLM) rules on how drilling activity can take place on federal lands essentially dictate terms, making BLM the largest "regulator" of drilling activity in the country. BLM last revised its oil and gas regulations (the Onshore Orders) in the 1980s and early 1990s, well before the recent rapid expansion of shale gas development. To date there are two rounds of proposed revisions, the first issued in 2012 and the most recent issued in May 2013, after BLM received 177,000 comments on the first round. This paper examines the 2013 proposal in several key respects, including the scope and requirements of the new proposal, the substantial changes from the 2012 proposal, and a comparison of BLM's proposed rules with rules in states with shale gas development and significant federal land holdings, based on earlier work. We find that BLM's proposal addresses some apparent gaps in state-level regulation and that, generally, BLM rules do not appear to impose significant requirements beyond existing state regulations, at least across the regulatory elements we analyzed and in those states with large federal land holdings.

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Contents

| | |
|---|-----------|
| 1. Introduction..... | 1 |
| 2. BLM’s Role in Shale Development on Federal Lands..... | 2 |
| 3. The 2013 BLM Proposal..... | 3 |
| 3.1 Overview..... | 4 |
| 3.2 Changes from the 2012 Proposal | 4 |
| 4. The BLM Proposal and State Regulation | 9 |
| 4.1 Preemption | 9 |
| 4.2 Areas of Concurrent State Regulation and BLM Rules..... | 12 |
| 4.3 Overall Comparisons | 20 |
| 5. Conclusions..... | 24 |

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1. Introduction

The combination of horizontal drilling, hydraulic fracturing, and other technologies has led to a boom in development of oil and gas resources from shale rock previously considered inaccessible, dramatically increasing US hydrocarbon production and opening many areas to significant new drilling activity. This activity is not without environmental, community, and other risks.

Traditionally, state governments have been viewed as the primary regulators of oil and gas development, with the federal government in a secondary role. But it is landowners, not the government, that create the first and, in some cases, strongest limits on developer activity through the restrictions they impose in lease terms. This power is particularly strong for large, institutional landowners. And it is strongest for the federal government, by far the largest landholder in the country. The federal Bureau of Land Management (BLM) sets the lease terms for oil and gas development on 700 million subsurface acres of federal mineral estate.¹ This is similar to (and is often called) a form of regulation, but is better characterized as stewardship of land held in the public trust.

There are 56 million subsurface acres of Indian mineral estate that are also regulated by BLM, but the actual leasing is left to the tribes.² BLM has long regulated oil and gas development on federal and Indian lands, through its onshore oil and gas operating regulations (Onshore Orders)³, most of which were last revised in the 1980s or early 1990s. The recent

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¹ BLM's authority to lease federal mineral estate arises from the Mineral Leasing Act of 1920 and the Mineral Leasing Act for Acquired Lands of 1947.

² Under the Federal Land Policy and Management Act of 1976, Congress charged BLM with regulating oil and gas development and other activities on public lands for multiple use and sustained yield. BLM has interpreted "public lands" to include Indian lands, although there is some debate as to whether that was Congress's intent. See Federal Land Policy and Management Act of 1976, 43 USC §§ 1701-1782 (1976).

³ BLM's Onshore Orders are available online at http://www.blm.gov/wo/st/en/prog/energy/oil_and_gas/onshore_oil_and_gas.html.

expansion of shale gas development has led BLM to propose revisions to its rules specifically aimed at hydraulic fracturing activity. The agency issued a proposed set of rules in May of 2012⁴ (the 2012 proposal), and recently issued a revised proposed rule⁵ (the 2013 proposal) after receiving 177,000 comments.

This paper examines the 2013 proposal in several key respects. First, we consider the scope and requirements of the new proposal. Then, we identify substantial changes from the 2012 proposal. Finally, we compare BLM's proposed rules with those already in place in states with shale gas development and significant federal land holdings, based on earlier work analyzing state-level rules.⁶

2. BLM's Role in Shale Development on Federal Lands

BLM is the administrator of federal and (to a debatable extent) Indian lands, which are held in trust for the American people or for Indian tribes. BLM has the authority to lease federally owned (non-Indian) mineral estate, which lies below over 700 million acres of federal, state, and private land, mostly in western states.⁷ BLM has issued such leases since 1988 under the current law, the Federal Onshore Oil and Gas Leasing Reform Act of 1987,⁸ and production from federal onshore wells currently accounts for roughly 11 percent of the country's natural gas supply and 5 percent of its oil supply.⁹

Pursuant to BLM authority granted in their operating regulations, BLM has issued seven Onshore Orders that implement and supplement the operating regulations.¹⁰ The Onshore Orders

⁴ Oil and Gas; Well Stimulation, Including Hydraulic Fracturing, on Federal and Indian Lands, 77 Fed. Reg. 27691 (proposed May 11, 2012) (to be codified at 43 C.F.R. § 3160).

⁵ Oil and Gas; Hydraulic Fracturing on Federal and Indian Lands, 78 Fed. Reg. 31636 (proposed May 24, 2013) (to be codified at 43 C.F.R. § 3160), *available online at* http://www.blm.gov/pgdata/etc/medialib/blm/wo/Communications_Directorate/public_affairs/hydraulicfracturing.Pa.r.91723.File.tmp/HydFrac_SupProposal.pdf.

⁶ N. Richardson, M. Gottlieb, A. Krupnick, and H. Wiseman, *The State of State Shale Gas Regulation*, (Washington, DC: Resources for the Future, 2013). Available online at www.rff.org/shalemaps.

⁷ Note that the federal government may own (and BLM may therefore administer) mineral rights under land (surface rights) not owned by the federal government. This is termed a "split estate."

⁸ The Mineral Leasing Act of 1920 was amended by the Federal Onshore Oil and Gas Leasing Reform Act of 1987, which leaves BLM to administer leasing but gives the Forest Service a more direct role in the leasing process for lands under its jurisdiction. The amendment also established that all public land leasing must be open to competitive leasing. 30 USC. § 181.

⁹ See Oil and Gas, Bureau of Land Management, http://www.blm.gov/wo/st/en/prog/energy/oil_and_gas.html.

¹⁰ Onshore oil and gas operating regulations authorize BLM's Director to issue Onshore Oil and Gas Orders when necessary to implement and supplement the operating regulations. 43 C.F.R. § 3164.1 (2007).

apply to all oil and gas development on federal and Indian lands, and thus operators developing shale gas on these lands must comply with these rules. The seven Onshore Orders were created between 1983 and 1993 and only one has since been revised.¹¹ In addition to the Onshore Orders that apply to all types of oil and gas development, the operating regulations contain a short provision that is specific to hydraulic fracturing and a few other activities.¹² That rule was created in 1982 and has not been revised since 1988.

Since the mid-1970s, hydraulic fracturing (commonly referred to as fracking)—a process where water, sand, and other chemicals are injected into the wellbore at high pressure to create fractures and stimulate production—has been commonly used on vertical gas wells. However, it was not until the 2000s that combining hydraulic fracturing and horizontal drilling became widespread as a technique to make the production of oil and gas from shale economically feasible.¹³ According to BLM, the expansion of shale gas development has created a need to update existing rules embodied in the Onshore Orders.¹⁴

BLM's recent proposals can be characterized as a set of new rules that will (when and if finalized) apply to fracking and some related activity on those lands within the bureau's jurisdiction—the first substantial revision of such rules since 1993 and the first to apply specifically to fracking.

3. The 2013 BLM Proposal

The 2013 proposal includes a wide range of requirements spanning the development process, but focuses on frack fluid disclosure and testing requirements for casing and cementing. Other sections of the 2013 proposal create new requirements for mapping of fracture propagation and wastewater fluid storage. For several other activities, the 2013 proposal defers to the Onshore Orders issued by BLM over 20 years ago.

¹¹ Onshore Order Number 1, Approval of Operations, which provides procedures for submitting an Application for Permit to Drill and other required approvals, was updated in 2007.

¹² 43 C.F.R. § 3162.3-2 (1988).

¹³ The percentage of total US natural gas production accounted for by shale gas grew from 1.6% in 2000 to 23.1 percent by 2010. See Zhongmin Wang and Alan Krupnick, US Shale Gas Development: What Led to the Boom? 1 (Resources for the Future, 2013), available online at <http://www.rff.org/RFF/Documents/RFF-IB-13-04.pdf>.

¹⁴ Oil and Gas; Hydraulic Fracturing on Federal and Indian Lands, 78 Fed. Reg. 31636 (proposed May 24, 2013) (to be codified at 43 C.F.R. § 3160) at 12-13.

3.1 Overview

- **Frack fluid disclosure:** Operators would be required to submit chemical information on FracFocus,¹⁵ directly to BLM, or to another BLM-approved database after fracking is completed.¹⁶ Operators will be able to avoid disclosure of compounds they claim are trade secrets in an affidavit, without submitting any chemical information to BLM.¹⁷
- **Testing requirements for casing and cementing:**
 - *Cement Evaluation logs (CELs):* Operators would be required to compile Cement Evaluation Logs (CELs) and make them available to BLM.¹⁸ These logs record the results of tests used to detect areas where casing is not bound to cement, which creates a risk of fluids inside the wellbore migrating into water aquifers.
 - *Mechanical integrity testing:* In addition to maintaining CELs, operators would be required to run mechanical integrity tests (MIT) on the vertical sections of the casing prior to fracking or refracking to ensure that the casing can withstand fracking pressures, and continue to monitor pressures during fracking.¹⁹
- **Fracture propagation monitoring:** Operators would be required to create maps plotting estimated fracture propagation (how cracks in the rock would spread as a result of fracking), along with fracture direction, length, and height, in order to ensure that fracking does not threaten aquifers or other resources.²⁰
- **Wastewater fluid storage:** Operators would be required to use (at a minimum) lined pits to store flowback fluid and other wastewater, and BLM would reserve the authority to require operators to take other protective measures.

3.2 Changes from the 2012 Proposal

The 2013 proposed rule is less stringent than the 2012 proposal in two major regulatory areas—frack fluid disclosure and testing well cementing and casing. This is in addition to the

¹⁵ FracFocus is an internet database for industry's voluntary reporting of chemicals used in hydraulic fracturing, as well as a tool for the public and others to use to query this database. See <http://fracfocus.org/>.

¹⁶ 78 Fed. Reg. 31636 (proposed May 24, 2013) (to be codified at 43 CFR § 3162.3-3(i)).

¹⁷ 78 Fed. Reg. 31636 (proposed May 24, 2013) (to be codified at 43 C.F.R. § 3162.3-3(j)(1)-(4)).

¹⁸ 78 Fed. Reg. 31636 (proposed May 24, 2013) (to be codified at 43 C.F.R. § 3162.3-3(d)(2)).

¹⁹ 78 Fed. Reg. 31636 (proposed May 24, 2013) (to be codified at 43 C.F.R. § 3162.3-3 (f)-(g)).

²⁰ Oil and gas; Hydraulic Fracturing on Federal and Indian Land, 78 Fed. Reg. 31636 (proposed May 24, 2013) (to be codified at 43 C.F.R. § 3162.3-3(d)(4)(iv)).

other major change discussed above—narrowing the scope of the rule to apply only to shale gas development where hydraulic fracturing is used.

3.2.1 Scope

In its 2012 proposal, BLM would have imposed new rules on all “well stimulation” activities, including not only hydraulic fracturing but other activities that increase the permeability of reservoir rock, such as acidizing, flooding, and tertiary recovery through steam injection.²¹ However, BLM narrowed the scope of its 2013 proposal such that it would apply only to “hydraulic fracturing” and “refracturing.”²²

According to BLM, the change was made in response to industry comments that inclusion of well stimulation activities would make the rule too onerous for what they consider routine maintenance operations.²³ However, some of these activities, such as “acidizing” a well by pumping in large amounts of acid to dissolve rock formations and stimulate production, are often used in conjunction with fracking and may involve risk factors similar to those associated with fracking.²⁴

3.2.2 Frack Fluid Disclosure

The 2013 proposal kept in place the 2012 proposal’s requirement that fracking chemicals be disclosed after fracking has been completed.²⁵ However, the 2013 proposal revises the nature of the chemical disclosure requirements in three ways. These changes generally reduce burdens on operators, at the cost of some transparency.

First, the 2013 proposal eliminates a requirement that operators provide the estimated chemical composition of flowback fluids before fracking operations begin, as part of the

²¹ Oil and Gas; Well Stimulation, Including Hydraulic Fracturing, on Federal and Indian Lands, 77 Fed. Reg. 27691 (proposed May 11, 2012) (to be codified at 43 C.F.R. § 3160-5).

²² Oil and Gas; Hydraulic Fracturing on Federal and Indian Lands, 78 Fed. Reg. 31636 (proposed May 24, 2013) (to be codified at 43 C.F.R. § 3160.0-5).

²³ *Id.* at 41.

²⁴ See Leonard Kalfayan, *Production Enhancement with Acid Stimulation* (PennWell Books, 2nd. Ed., 2008); See also Agbaji et al., *Report on Sustainable Development and Design of Marcellus Shale Play in Susquehanna, PA 7* (EME Systems 580), *available online at* <http://energy.wilkes.edu/PDFFiles/Library/Sustainable%20Development%20of%20Marcellus%20Shale%20in%20Susquehanna.pdf>;

²⁵ Oil and Gas; Hydraulic Fracturing on Federal and Indian Lands, 78 Fed. Reg. 31636 (proposed May 24, 2013) (to be codified at 43 C.F.R. § 3163-3(i)).

approval process.²⁶ BLM defended this revision on the grounds that the estimations could be unreliable given that operators are permitted to change the chemical composition of frack fluids after approval to begin operations.²⁷ BLM also noted that requiring the estimations might result in public discovery of chemical constituents of the fluids prior to operations²⁸—some of which might be protected trade secrets. Since the actual chemical composition of frack fluids is reported after fracking takes place rather than as part of the approval process, the 2012 proposal's requirement of advance estimates of flowback fluid composition was the only data related to frack fluids submitted as part of BLM's drilling approval process. Under the 2013 proposal, therefore, no pre-drilling information on frack fluids is submitted to BLM.

Second, the 2013 proposal changed format and procedural requirements for reporting frack fluids after fracking is completed.²⁹ Frack fluid disclosure to BLM is, under the 2013 proposal, explicitly modeled after the fracking disclosure website, FracFocus. Although reporting directly to BLM or another database specified by BLM would still be permitted, FracFocus will presumably become the preferred, if not the exclusive, choice of operators fulfilling BLM regulations.

Use of FracFocus to comply with the new BLM regulations raises some concerns. A recent Harvard study claims that “reliance on the FracFocus registry as a regulatory compliance tool is misplaced or premature.”³⁰ The study finds that FracFocus encourages inaccurate reporting, lacks a review process for submissions, and leaves regulators unable to enforce reporting deadlines.³¹ FracFocus has undergone significant changes since this study was released, however, with version 2.0 of the website deployed on June 1, 2013.³² These upgrades

²⁶ *Compare* Oil and Gas; Well Stimulation, Including Hydraulic Fracturing, on Federal and Indian Lands (proposed May 11, 2012) (to be codified at 43 C.F.R. § 3162.3-3(c)(6)), with Oil and Gas; Hydraulic Fracturing on Federal and Indian Lands (proposed May 24, 2013) (to be codified at 43 C.F.R. § (d)(5)).

²⁷ Oil and Gas; Hydraulic Fracturing on Federal and Indian Lands, 78 Fed. Reg. 31636 (proposed May 24, 2013) (to be codified at 43 C.F.R. § 3160) at 55-56.

²⁸ *Id.* At 55.

²⁹ *Compare* Oil and Gas; Well Stimulation, Including Hydraulic Fracturing on Federal and Indian Lands, 77 Fed. Reg. 27691 (proposed May 11, 2012) (to be codified at 43 C.F.R. § 3162.3-3(g)(2), (4) and (5)), with Oil and Gas; Hydraulic Fracturing on Federal and Indian Lands 78 Fed. Reg. 31636 (proposed May 24, 2013) (to be codified at 43 C.F.R. § 3162.3-3(i)(1)).

³⁰ Kate Koschnick et. al., Legal Fractures in Chemical Disclosure Laws: Why the Voluntary Chemical Disclosure Registry FracFocus Fails as a Regulatory Compliance Tool, (Harvard Environmental Law Program, April 23, 2013), available online at <http://blogs.law.harvard.edu/environmentallawprogram/files/2013/04/4-23-2013-LEGAL-FRACTURES.pdf>.

³¹ *Id.*

³² FracFocus Chemical Disclosure Registry, <http://fracfocus.org>.

may have addressed some of the concerns raised by the Harvard study. The FracFocus website notes that the upgrades will “dramatically improve the site’s functionality for state regulatory agencies, industry, and public users.”³³ Specifically, users will be able to more efficiently locate well site chemical information, chemical names, and Chemical Abstract Service (CAS) numbers.³⁴

Third and finally, the 2013 proposal also revises substantive rules for fluid disclosure, eliminating the 2012 proposal’s requirement that operators submit chemical information to BLM in order to substantiate trade secrets claims.³⁵ This was replaced by a provision that instructs operators to submit affidavits that the information is subject to trade secret protection.³⁶ The affidavits, which were modeled after those required by Colorado, must affirm the following:

- that the chemical information is not public,
- that the chemical information is not required to be made public,
- that the information is not easily discoverable through reverse engineering, and
- that its release would likely diminish the competitiveness of the company.³⁷

BLM would retain discretion to require submission of non-disclosed chemical information for review³⁸, and suggests that discretion would be exercised in the event of incomplete affidavits.³⁹ However, no information is provided as to how BLM will review the affidavits or the specific criteria that will be used to evaluate trade secret exemptions.

Whether operators’ claims regarding trade secret protection (formalized in affidavits) are sufficiently reliable is not clear. Under the 2013 proposal, BLM will clearly have less information available to evaluate trade secrets claims, and in practice may not be able to do so.

³³ FracFocus Chemical Disclosure Registry, FracFocus 2.0 to revolutionize hydraulic fracturing chemical reporting nationwide, (May 29, 2013), <http://fracfocus.org/node/347>.

³⁴ *Id.*

³⁵ *Compare* Oil and Gas; Well Stimulation, Including Hydraulic Fracturing on Federal and Indian Lands, 77 Fed. Reg. 27691 (proposed May 11, 2012) (to be codified at 43 C.F.R. § 3162.3-3(h) -(i)), *with* Oil and Gas; Hydraulic Fracturing on Federal and Indian Lands, 78 Fed. Reg. 31636 (proposed May 24, 2013) (to be codified at 43 C.F.R. § 3162.3-3(j)(1)-(4)).

³⁶ Oil and Gas; Hydraulic Fracturing on Federal and Indian Lands, 78 Fed. Reg. 31636 (proposed May 24, 2013) (to be codified at 43 C.F.R. § 3162.3-3(j)(1)).

³⁷ *Id.*

³⁸ 78 Fed. Reg. 31636 (proposed May 24, 2013) (to be codified at 43 C.F.R. § 3162.3-3(j)(2)).

³⁹ 78 Fed. Reg. 31636 (proposed May 24, 2013) (to be codified at 43 C.F.R. § 3160) at 97-98. (

3.2.3 Testing Requirements for Casing and Cementing (CELs/CBLs)

A variety of tests are commonly used to detect areas where casing is not properly bound to cement. Such failures increase the risk of frack fluids, flowback water, or other materials in the wellbore migrating into water aquifers. The results of these tests are recorded in instruments referred to as cement evaluation logs (CEL) or cement bond logs (CBL). Both the 2012 and 2013 proposals require such tests and logs, but the 2013 proposal changed several aspects of the testing requirements. Notably, the 2013 requirements regarding when and under what circumstances casing and cementing must be tested would result in less agency overview of well integrity, especially during the approval process.

The 2012 proposal would have required testing on each well⁴⁰, while the 2013 proposal would allow operators to avoid testing well integrity where other wells with the same specifications and geologic parameters have been tested and have produced satisfactory results.⁴¹ According to BLM, this change was made due to their agreement with industry comments that testing on every well may be unnecessarily expensive, induce unnecessary delay, and would not decrease the risk of contamination of water aquifers.⁴²

Additionally, the 2012 proposal would have required submission of test results to BLM during the approval process—before beginning fracking operations.⁴³ In response to comments asserting that BLM’s review of casing and cementing test results during the approval process would cause significant delay, the rule was revised to take submission of test results out of the approval process, and instead require operators to submit the results after fracking operations are completed.⁴⁴ The 2013 proposal does, however, add a requirement for operators to monitor and record the flow rate, density, and pumping pressure of the cementing and run a cementing and casing test prior to operations in the event that monitoring indicates inadequate cementing.⁴⁵

The 2013 proposal also adds more flexibility for operators in choosing which method to use in testing the well cementing and casing. The 2012 proposal would have required operators

⁴⁰ Oil and Gas; Well Stimulation, Including Hydraulic Fracturing, on Federal and Indian Lands, 77 Fed. Reg. 27691 (proposed May 11, 2012) (to be codified at 43 C.F.R. 3162.3-3(c)(2)).

⁴¹ Oil and Gas; Hydraulic Fracturing on Federal and Indian Lands, 78 Fed. Reg. 31636 (proposed May 24, 2013) (to be codified at 43 C.F.R. § 3162.3-3(e)(3)).

⁴² 78 Fed. Reg. 31636 (proposed May 24, 2013) (to be codified at 43 C.F.R. § 3160) at 70.

⁴³ Oil and Gas; Well Stimulation, Including Hydraulic Fracturing, on Federal and Indian Lands, 77 Fed. Reg. 27691 (proposed May 11, 2012) (to be codified at 43 C.F.R. § 3162.3-3(c)(2)).

⁴⁴ Oil and Gas; Hydraulic Fracturing on Federal and Indian Lands, 78 Fed. Reg. 31636 (proposed May 24, 2013) (to be codified at 43 C.F.R. § 3162.3-3(d)(2)).

⁴⁵ 78 Fed. Reg. 31636 (proposed May 24, 2013) (to be codified at 43 C.F.R. § 3162.3-3(e)(1)).

to create CBLs.⁴⁶ Those logs are comprised of data generally gathered through a sonic technology that detects whether casing is bound to the cement based on the level of resonance of vibrations.⁴⁷ The 2013 proposal uses the broader term CEL rather than CBL.⁴⁸ CELs include a variety of additional methods for testing well cementing and casing.⁴⁹ BLM may also allow another test required by a state or tribe so long as it is “at least as effective in assuring adequate cementing”.⁵⁰ Whether these changes will affect BLM’s ability to ensure proper casing and cementing is unclear.

4. The BLM Proposal and State Regulation

All western states with large shale gas reserves and significant federal land holdings regulate oil and gas development and have done so for decades. Within these regulations, many states have rules that apply specifically to unconventional development. State law generally does not apply on Indian lands, but many Indian lands also have their own laws regulating oil and gas development. Therefore, if BLM rules are different than state or tribal regulations, operators would appear to be left with two layers of regulation. In one sense, this is no different than on private lands, where operators must comply with state law as well as any restrictions imposed by the landowner via the lease or other agreement. Nevertheless, BLM rules may require operators on federal lands in many cases to interact with multiple layers of government (federal and state), and therefore function in many ways as concurrent regulations.

4.1 Preemption

Do BLM rules preempt (i.e., displace) state law? Generally, no. The Supreme Court has recognized two ways that federal law can preempt state law. “Conflict preemption” occurs where a federal and state law directly conflict so that compliance with both is not possible.⁵¹ Even where federal and state laws do not directly conflict, state law may be “field preempted” where federal regulation in a certain area is so pervasive that it is clear, either by express language or by

⁴⁶ Oil and Gas; Well Stimulation, Including Hydraulic Fracturing on Federal and Indian Lands, 77 Fed. Reg. 27691 (proposed May 11, 2012) (to be codified at 43 C.F.R. 3162.2-2(c)(2)).

⁴⁷ Wikipedia: Cement Bond Log, http://en.wikipedia.org/wiki/Cement_bond_log (last visited Aug. 11, 2013).

⁴⁸ Oil and Gas; Hydraulic Fracturing on Federal and Indian Land (proposed May 24, 2013) (to be codified at 43 C.F.R. § 3162.3-3(e)(2)).

⁴⁹ *Id.*

⁵⁰ 78 Fed. Reg. 31636 (proposed May 24, 2013) (to be codified at 43 C.F.R. § 3162.3-3(e)(2)).

⁵¹ See *Gibbons v. Ogden*, 22 US 1 (1824).

implication, that lawmakers intended for the federal government to occupy that entire field of regulation.⁵²

BLM makes clear in the 2013 proposal that it does not intend to be the sole regulator of shale gas development on public lands (and thus will not field preempt), but rather intends to create a backstop regulation that will not preempt more stringent state laws.⁵³ States are therefore free to impose additional requirements beyond those in BLM's rules, and existing state law that is more stringent is not affected by BLM rules.

Furthermore, the 2013 proposed rule adds a provision allowing states or tribes to apply for variances from the BLM rule for operational activities and technology standards, such as monitoring and testing.⁵⁴ If a variance is approved by BLM on the grounds it meets or exceeds BLM's standards, compliance with the specific state or tribal rule would satisfy the BLM rule.

BLM does not, however, address in the proposal the fact that there could be areas where the state rule is different from the BLM rule but not necessarily more or less stringent (and a variance is not applied for or granted). In those cases, where the two rules directly conflict so that an operator could not simultaneously comply with both, the state rule would presumably be preempted by the BLM rule. In this respect, BLM rules are different from those imposed by private landowners who obviously have no authority to alter state law requirements. Whether such conflicts actually might occur in practice is unclear, however. In our analysis of a selection of regulatory elements below, we have not identified any.

Preemption on Indian lands is a bit different, as the Constitution grants Congress full authority to control tribal affairs and limit their powers. Nonetheless, due to the long-existing policy of recognizing tribal autonomy, federal regulation of oil and gas development on Indian lands has been seen by some as overstepping boundaries of tribal sovereignty.⁵⁵ In fact, some

⁵² See for example *Rice v. Santa Fe Elevator Corp.*, 331 US 218 (1947).

⁵³ BLM concluded that the rule would not require a Federalism Assessment under Executive Order 13132 (1999) because it "would not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government." A Federalism Assessment includes identifying the additional costs and burdens on the states, including the likely sources of funding and the ability of the states to fulfill the purposes of the policy, and identifying the extent to which the policy affects the states' ability to discharge their traditional functions (Executive Order 12612, October 26, 1987).

⁵⁴ Oil and Gas; Hydraulic Fracturing on Federal and Indian Lands, 78 Fed. Reg. 31636 (proposed May 24, 2013) (to be codified at 43 C.F.R. § 3162.3-3(k)).

⁵⁵ See Tom Fredericks & Andrea Aseff, When Did Congress Deem Indian Lands Public Lands?: The Problem of BLM Exercising Oil and Gas Regulatory Jurisdiction in Indian Country, *The Energy Law Journal*, Vol. 33:119, available online at http://www.felj.org/docs/elj331/14-119-fredericks_and_aseff-problem_of_blms_indian_country_oil_and_gas_jurisdiction.pdf.

argue that BLM lacks statutory authority to regulate oil and gas on Indian lands at all because Congress excluded Indian lands in its definition of public lands under BLM jurisdiction.⁵⁶

However, there is an apparent need for regulation of oil and gas development on Indian lands. Unlike state regulations, tribal laws governing oil and gas production are generally vague or non-existent. For example, the legal code for the Blackfeet Indian Reservation in Montana requires approval by a board for “extraction” and “oil wells” but has no codified regulations for oil and gas drilling in general, or for fracking in particular.⁵⁷

The position of the tribes appears to be mixed. Some Native American advocates pushed for an opt-out provision for tribes with their own regulations, which BLM refused to include in either version of the proposed rule.⁵⁸ Other tribes appear to support federal regulation. For example, Wind River Indian Reservation in Wyoming includes in its legal code a provision emphasizing the importance of compliance with various federal environmental acts and especially BLM’s rules for onshore oil and gas development.⁵⁹

Given the overlap between state (and tribal) regulations and BLM rules, and the ability of states to regulate more stringently, the substantive significance of BLM’s proposal in practice depends on the degree to which it imposes requirements beyond those under existing law. BLM rules will only provide additional environmental protection if they are more stringent than those imposed by states or restrict operator behavior in areas not addressed by state rules at all.

It is important to note, however, that it is possible for BLM rules to impose additional *procedural* burdens even if they do not impose additional substantive requirements beyond those under existing state law. For example, BLM could require operators to undergo a separate permit process with identical (or weaker) standards than states, or to submit documents in different formats than states require. Such procedural burdens should not be ignored—they impose costs on operators without any direct environmental or public health benefit.

⁵⁶ *Id.*

⁵⁷ Blackfeet Tribal Law and Order Code, Ch. 12 Land, Section 3.03, *available online at* <http://www.narf.org/nill/Codes/blackfeetcode/blkftcode12land.htm>.

⁵⁸ See Mike Soraghan & Ellen M. Gilmer, Revised Interior rule loops in industry-favored FracFocus, EnergyWire, (Feb. 8, 2013), <http://www.eenews.net/stories/1059976058>.

⁵⁹ Shoshone and Arapaho Law and Order Code, Title XI Regulation of Natural Resources and Land, *available online at* http://www.narf.org/nill/Codes/shoshonearapaho/title_xi.pdf.

4.2 Areas of Concurrent State Regulation and BLM Rules

In order to ascertain the extent to which BLM's 2013 proposal would require operators to take measures beyond those in current state laws, we look at regulations in six states with large percentages of federally-owned mineral rights and potential shale gas development (California, Colorado, Montana, New Mexico, Utah and Wyoming) and compare these regulations to the BLM rules. Most of the state-level data are drawn from our 2013 report, *The State of State Shale Gas Regulation*.⁶⁰ That report detailed regulations in 31 states across 25 regulatory elements that span the shale gas development process. In comparing state rules to BLM's proposal, we look at a 11 regulatory elements⁶¹, excluding those that are generally regulated by another federal agency or which are only relevant at the state level.⁶² For a few elements covered by BLM's rules, we provide additional detail on state regulations beyond that included in the report. The elements reviewed in this section include:

- Building setback restrictions
- Water setback restrictions
- Casing and cementing restrictions
- Testing of casing and cementing, including Mechanical Integrity Tests (MITs) and Cement Evaluation or Bond Logs (CELs or CBLs)
- Wastewater storage options (pits or tanks)
- Pit liner requirements
- Wastewater transportation tracking
- Accident reporting
- Well Idle time limits
- Temporary abandonment time limits
- Frack fluid disclosure rules

⁶⁰ See N. Richardson, M. Gottlieb, A. Krupnick, and H. Wiseman, *The State of State Shale Gas Regulation*, (Washington, DC: Resources for the Future, 2013). Available online at www.rff.org/shalemaps.

⁶¹ In the report (see above), readers will find four casing and cementing regulatory elements. In the discussions in this paper, these are aggregated into one category for convenience purposes.

⁶² For example, air quality regulation generally falls under EPA authority; BLM therefore did not regulate venting and flaring of gas in its proposal. Severance tax rates and the number of state-level regulatory agencies are also irrelevant to BLM's proposal.

Even within these elements, there are limits on our ability to make meaningful comparisons between state and BLM rules. BLM may lack legal authority to regulate some elements fully. The agency might also regulate informally via its case-by-case approval process. More generally, we do not have data on enforcement or effectiveness of BLM or state regulations. This limits our ability to make any claims about relative or absolute quality of regulations in practice.

The following subsections discuss each regulatory element in both state regulations and BLM's rules, including the 2013 proposal. The next section presents a general and statistical comparison.

4.2.1 Setback Restrictions

BLM's 2013 (and 2012) proposals do not impose setback restrictions (required minimum distances between wells and other features believed to merit protection, such as buildings or water sources). Though setback restrictions from buildings and water are common in state regulations across the country, of the six Western states we examine here (California, Colorado, Montana, New Mexico, Utah, and Wyoming), only half have such regulations.⁶³

While there is no evidence to suggest that setback restrictions are outside BLM jurisdiction, there may be other reasons for leaving out setback restrictions. BLM land generally has far lower building density than non-BLM land,⁶⁴ so setback rules might be less necessary. Where setback restrictions are beneficial, BLM might add them to their otherwise standard terms for oil and gas leases.⁶⁵ For example, Wayne National Forest in Ohio requires analyses by the Forest Service to determine whether setback restrictions should be added to specific fracking leases for the purpose of protecting objects of historic or scientific interest, or sensitive habitat and wildlife.⁶⁶ Deciding whether and to what extent to include setbacks based on conditions at the lease-site is akin to case-by-case permitting.

⁶³ See N. Richardson, M. Gottlieb, A. Krupnick, and H. Wiseman, *The State of State Shale Gas Regulation*, (Washington, DC: Resources for the Future, 2013), 25. Available online at www.rff.org/shalemaps.

⁶⁴ For example, in 2012 there were only 149 buildings on Wyoming BLM-managed federal lands, 678 buildings on California BLM lands, 215 buildings on New Mexico BLM lands and 18 buildings on BLM lands in all of the eastern states combined. See US Department of the Interior, Bureau of Land Management, Public Land Statistics 250 (2012), available online at http://www.blm.gov/public_land_statistics/pls12/pls2012.pdf

⁶⁵ A standardized BLM oil and gas lease form can be found at <http://www.blm.gov/pgdata/etc/medialib/blm/noc/business/eforms.Par.71287.File.dat/3100-011.pdf>.

⁶⁶ Wayne National Forest, Lease-specific Oil and Gas Notifications/ Stipulations, available online at http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5387924.pdf.

4.2.2 Casing and Cementing

The 2013 proposal defaults to Onshore Order No. 2⁶⁷ for casing and cementing rules.⁶⁸ According to Onshore Order No. 2, casing and cementing programs "shall be conducted as approved to protect and/or isolate all usable water zones, lost circulation zones, abnormally pressured zones, and any prospectively valuable deposits of minerals."⁶⁹ In addition, casing depth is to be determined based on "all relevant factors" including: presence or absence of hydrocarbons, fracture gradients, usable water zones, formation pressures, lost circulation zones, and other minerals.⁷⁰ No specific requirements are given. We classify this type of regulation as a performance standard.

In contrast, all six Western states regulate casing and cementing depth with command-and-control regulations.⁷¹ Regulations in four of the states impose requirements on cement composition.⁷² All six states also regulate cement circulation: all require surface casing to be cemented fully to the surface, and four of the six impose requirements on circulation in intermediate and production casing as well.⁷³

While the casing and cementing rules in Onshore Order No. 2 provide a large amount of flexibility, they are inherently less transparent because of the lack of specific standards. BLM's performance standards are therefore not necessarily less stringent than state command-and-control rules (and could in practice be *more* stringent), but it is difficult to ascertain exactly what is expected of operators on federal and Indian lands. As a result, it is unclear to us (and perhaps also to operators) whether compliance with a particular state (or tribe) rule is adequate to meet those standards.

Onshore Order No. 2 was issued in 1988, well before the shale gas development boom. However, new information can alter what BLM determines is adequate to satisfy the performance standards it imposes. This illustrates the flexibility of a performance standard approach.

⁶⁷ Onshore Order No. 2, Drilling Operations, 43 C.F.R. §3160 (1988).

⁶⁸ Oil and Gas; Hydraulic Fracturing on Federal and Indian Lands, 78 Fed. Reg. 31636, (proposed May 24, 2013) (to be codified at 43 C.F.R. § 3160) at 103-104.

⁶⁹ Onshore Order No. 2, Drilling Operations, 43 C.F.R. §3160 (1988).

⁷⁰ *Id.*

⁷¹ N. Richardson, M. Gottlieb, A. Krupnick, and H. Wiseman, *The State of State Shale Gas Regulation*, (Washington, DC: Resources for the Future, 2013), 33. Available online at www.rff.org/shalemaps.

⁷² *Id.* at 34.

⁷³ *Id.* at 35-38.

4.2.3 Casing and Cementing Testing

BLM requires Mechanical Integrity Tests (MITs) before fracking operations begin and every five years thereafter.⁷⁴ All six of the western states require MITs, and four of them require testing at five year intervals.⁷⁵

Colorado, Montana and Wyoming require logging to ensure casing is properly bound to cement, and New Mexico requires such logging in certain counties.⁷⁶ Colorado and New Mexico (in the counties where logging is required) specifically require CBLs.⁷⁷ Similar to BLM's more general CEL requirement, Wyoming and Montana require CBLs or other "acceptable" or "equivalent" methods.⁷⁸ California and Utah do not require logging.⁷⁹

Wyoming requires logging results as part of their approval to drill process, and Colorado requires logging results thirty days after the setting of production casing in the form of an "interval report" to ensure compliance with approved drilling plans.⁸⁰ In contrast, BLM would not require CEL results until 30 days after fracking is completed, unless monitoring indicates a problem with the casing.⁸¹

4.2.4 Frack Fluid Disclosure

As noted above, BLM would require operators to use FracFocus (or an equivalent method) to fulfill the requirement to report frack fluids after completing operations.⁸² Colorado, New Mexico, and Montana also require disclosure after operations take place⁸³, while Wyoming requires disclosure beforehand, as part of the approval process.⁸⁴ Colorado and Montana require

⁷⁴ Oil and Gas; Hydraulic Fracturing on Federal and Indian Lands, 78 Fed. Reg. § 31636 (proposed May 24, 2013) (to be codified at 43 C.F.R. 3162.3-3 (c)(3)(i) and (f)).

⁷⁵ N.M. Code R. § 19.15.26.11 (LexisNexis 2008); Colo. Code Regs. § 404-1:326(a) (2013); Mont. Admin. R. 36.22.1416 (2011); 4 Wyo. Code R. § 7(d) (LexisNexis 2008); Utah Admin. Code r. 649-5-5 (2013); Cal. Code Regs. tit. 14 § 1724.10(j) (2011).

⁷⁶ Colo. Code Regs. § 404-1:317(o) (2013); Mont. Admin. R. 36.22.1416(3) (2011); 4 Wyo. Code. r. 7(f)(iii) (LexisNexis 2010); N.M. Code R. § 19.15.39.9 and 19.15.39.10 (LexisNexis 2008).

⁷⁷ Colo. Code Regs. § 404-1:317(o) (2013); N.M. Code R. § 19.15.39.9 and 19.15.39.10 (LexisNexis 2008).

⁷⁸ 4 Wyo. Code R. § 7(f)(iii) (LexisNexis 2010); Mont. Admin. R. 36.22.14.18(3) (2011).

⁷⁹ Cal. Code Regs. tit. 14 § 1722 (2011); Utah Admin. Code r. 649 (2013).

⁸⁰ 4 Wyo. Code. r. 7(f)(iii) (LexisNexis 2010); Colo. Code Regs. § 404-1:317(o) (2013) and Colo. Code Regs. § 404-1:308B (2013).

⁸¹ Oil and Gas; Hydraulic Fracturing on Federal and Indian Lands, 78 Fed. Reg. § 31636 (proposed May 24, 2013) (to be codified at 43 C.F.R. § 3162.3-3(e)(1) and (4)).

⁸² 78 Fed. Reg. § 31636 (proposed May 24, 2013) (to be codified at 43 C.F.R. 3162.3-3(i)).

⁸³ Colo. Code Reg. § 404-1:205A(b)(2) (2012); N.M. Code R. § 19.15.16.19(b) (LexisNexis 2008); Mont. Admin. R. 36.22.1015 (2011).

⁸⁴ 3 Wyo. Code R. § 45(d) (LexisNexis 2010).

submission to FracFocus.⁸⁵ California and Utah currently lack disclosure rules.⁸⁶ Given that operators on federal lands will also be subject to state rules, a BLM rule requiring disclosure only after fracking is completed would not affect operators in the four states that require pre-fracking disclosure, but would be important in states without any disclosure rules.

All four states with disclosure rules (Colorado, Montana, New Mexico and Wyoming) and BLM ask for disclosure of chemical names and Chemical Abstracts Service (CAS) numbers,⁸⁷ additive types and the concentration or maximum concentration of each chemical used in the additives, the total concentration or maximum total concentration of each chemical in frack fluids, and the total volume of water or frack fluid used.⁸⁸ Trade secret exemptions are permitted by all four states and BLM.⁸⁹ However, Colorado and Montana mandate that trade secret information be released to healthcare professionals if they sign a confidentiality agreement, or in the case of emergency situations, without the confidentiality agreement.⁹⁰ BLM, New Mexico and Wyoming do not have such rules.

BLM declined to revise the rule⁹¹ to follow several states (in addition to Colorado and Montana) that require limited disclosure of trade secrets under certain circumstances.⁹² BLM claims that the Federal Trade Secrets Act makes it a crime to release trade secret information even under such circumstances.⁹³ However, comments submitted in response to BLM's 2012 proposal gave detailed legal explanations of why the Act does *not* prevent disclosure of trade

⁸⁵ Colo. Code Reg. § 404-1:205A(b)(2) (2012); Mont. Admin. R. 36.22.1015 (2011).

⁸⁶ Cal. Code Regs. tit. 14 (2011); Utah Admin. Code r. 649 (2013).

⁸⁷ CAS numbers are unique numerical identifications assigned by the Chemical Abstracts Service to all chemicals described in open scientific literature.

⁸⁸ Oil and Gas; Hydraulic Fracturing on Federal and Indian Lands, 78 Fed. Reg. § 31636 (proposed May 24, 2013) (to be codified at 43 C.F.R. 3162.3-3(i)); Colo. Code Reg. § 404-1:205A(b)(2) (2012); Mont. Admin. R. § 36.22.1015; ; N.M. Code R. § 19.15.16.19 (LexisNexis 2008); 3 Wyo. Code R. § 45(d) (LexisNexis 2010).

⁸⁹ Oil and Gas; Hydraulic Fracturing on Federal and Indian Lands, 78 Fed. Reg. § 31636 (proposed May 24, 2013) (to be codified at 43 C.F.R. 3162.3-3(j)); 3 Wyo. Code R. § 45(f) (LexisNexis 2010); N.M. Code R. § 36.22.1016 (LexisNexis 2008); Colo. Code Reg. § 404-1:205A(b) (2012); Mont. Admin. R. § 36.22.1016 (2011).

⁹⁰ Colo. Code Reg. § 404-1:205A(b)(5) (2012); Mont. Admin. R. § 36.22.1016 (2011).

⁹¹ Oil and Gas; Hydraulic Fracturing on Federal and Indian Lands, 78 Fed. Reg. 31636 (proposed May 24, 2013) (to be codified at 43 C.F.R. § 3160) at 98-99.

⁹² At least six states (Colorado, Montana, Arkansas, Ohio, Pennsylvania and Texas) have rules requiring operators to release trade secret information to health professionals. In four of the states (Colorado, Montana, Pennsylvania and Texas) confidentiality agreements must be signed unless there is an emergency situation, and in the remaining two states (Ohio and Arkansas), confidentiality agreements are not required. See Matthew McFeeley, State Hydraulic Fracturing Disclosure Rules and Enforcement: A Comparison (NRDC, 2012), *available online at* <http://www.nrdc.org/energy/files/Fracking-Disclosure-IB.pdf>.

⁹³ Oil and Gas; Hydraulic Fracturing on Federal and Indian Lands, 78 Fed. Reg. 31636 (proposed May 24, 2013) (to be codified at 43 C.F.R. § 3160) at 98-99.

secrets to health professionals, or perhaps at all.⁹⁴ Furthermore, courts have emphasized that the Act was not meant to prevent agencies from promulgating rules requiring disclosure, but to “forestall casual or thoughtless divulgence—disclosure made without first going through a deliberative process with an opportunity for input from concerned parties.”⁹⁵ BLM authority to require disclosure of trade secrets therefore remains ambiguous.

4.2.5 Wastewater/Fluid Storage

As explained above, BLM’s 2013 (and 2012) proposals do not require tanks for storage of any fluids, but do require the use of (at a minimum) single-lined pits for flowback and other wastewater storage; BLM reserves the discretion to require additional measures to protect against leakage.⁹⁶ BLM rules would not restrict types of fluids that can be stored in pits. Four of the western states also allow lined pit storage for all fluids.⁹⁷ However, New Mexico requires an application to use a pit, which must include operating and maintenance procedures, a closure plan, and a hydrogeological report.⁹⁸ Montana also restricts the type of fluids that can be stored in pits, and many other states restrict the circumstances under which pits can be used or the types of fluids they can store.⁹⁹

There were comments in response to the 2012 proposal requesting BLM to require double-lined pits or tanks for some or all fluids.¹⁰⁰ In the 2013 proposal, BLM claims that single-lined pits and tanks “reasonably protect land and water” and is in keeping with the American Petroleum Institute’s recommended practices for handling completion fluids.¹⁰¹ BLM did, however, request an evaluation on the costs of requiring flowback fluids to be stored in tanks.¹⁰²

⁹⁴ See for example Natural Resources Defense Council, Comments on Proposed Rule on Oil and Gas; Well Stimulation, Including Hydraulic Fracturing, on Federal and State Lands, (Sept. 10, 2012), *available online at* <http://www.sierraclub.org/pressroom/downloads/BLM-comments-9-10-12.pdf>.

⁹⁵ *CAN Financial Corp. v. Donovan*, 830 F.2d 1132, 1141 (D.C. Cir. 1987).

⁹⁶ Oil and Gas; Hydraulic Fracturing on Federal and Indian Lands, 78 Fed. Reg. 31636 (proposed May 24, 2013) (to be codified at 43 C.F.R. § 3162.3-3 (h)) (May, 2013).

⁹⁷ See N. Richardson, M. Gottlieb, A. Krupnick, and H. Wiseman, *The State of State Shale Gas Regulation*, (Washington, DC: Resources for the Future, 2013), 50–51. Available online at www.rff.org/shalemaps.

⁹⁸ N.M. Code R. § 19.15.17.9(B)(4) (2013).

⁹⁹ See for example Illinois’ law that allows pits for temporary storage only in the event that flowback is more than anticipated. 225 Ill. Comp. Stat. Ann. 732/1-75 (West 2013); See also Michigan’s law that limits the type of wastewater that can be stored in pits and requires tanks if drilling is located in a residential zone. Mich. Admin. Code.r. 324.407 (2006).

¹⁰⁰ Oil and Gas; Hydraulic Fracturing on Federal and Indian Lands, 78 Fed. Reg. 31636 (proposed May 24, 2013) (to be codified at 43 C.F.R. § 3160) at 81.

¹⁰¹ *Id.* at 80.

¹⁰² *Id.* at 82.

Other commenters accused the fluid storage regulation of being repetitious of state rules (a claim generally made regarding the BLM proposal).¹⁰³ But according to BLM, their pit liner requirement would “compel only six additional lined pits per year” because most of the states where BLM manages oil and gas resources already require pit liners.¹⁰⁴

4.2.6 Wastewater Transportation Tracking

In choosing not to revise the 2012 proposal to include more information on wastewater transportation plans as requested by some commenters, BLM pointed to Onshore Order No. 7,¹⁰⁵ which requires an operator to submit a copy of the disposal facility’s permit, and where wastewater will travel over federal or Indian lands off the lease site, a BLM right-of-way authorization.¹⁰⁶ The proposal leaves out comprehensive record-keeping of wastewater transportation, which is required by many states.¹⁰⁷

Colorado, Utah and New Mexico have record-keeping requirements, and New Mexico also requires a permit for wastewater transportation.¹⁰⁸ While some aspects that are typically included in record-keeping, such as the location of the disposal facility, are required by Onshore Order No. 7, many other aspects are left out, including dates of pick-up and delivery, the type of fluid being transported, and a requirement to hold on to transportation records for a specified period of time.¹⁰⁹

However, there may have been good reason for leaving out such record-keeping. The wastewater transportation by means of vehicles using interstate highways is regulated by the Department of Transportation (DOT),¹¹⁰ and is outside the jurisdiction of BLM¹¹¹—while drilling occurs on federal lands, transportation may not. While BLM could have created more

¹⁰³ *Id.* at 81-82.

¹⁰⁴ *Id.* at 125.

¹⁰⁵ Oil and Gas; Hydraulic Fracturing on Federal and Indian Lands, 78 Fed. Reg. 51636 (available online at 43 C.F.R. § 3162 .3-2 (i)(5)(iii)).

¹⁰⁶ Onshore Order No. 7, Disposal of Produced Water, Section III. B., 43 C.F.R. § 3160 (1993).

¹⁰⁷ See N. Richardson, M. Gottlieb, A. Krupnick, and H. Wiseman, *The State of State Shale Gas Regulation*, (Washington, DC: Resources for the Future, 2013), 57–58. Available online at www.rff.org/shalemaps.

¹⁰⁸ See *Id.*; See also Utah Admin. Code § 649-9-11 (2013) (updated after the RFF study came out).

¹⁰⁹ Onshore Order and Gas Order No. 7, Disposal of Produced Water, Section III. B., 43 C.F.R. § 3160 (1993).

¹¹⁰ 49 C.F.R. Subt. B, Ch. I (2011).

¹¹¹ “Equipment and vehicles using interstates and highways must be licensed and follow Department of Transportation procedures for transporting wastewater. These procedures are outside of BLM’s jurisdiction.” BLM, Utah State Office official document (Feb. 15, 2013), available online at http://www.blm.gov/pgdata/etc/medialib/blm/ut/lands_and_minerals/oil_and_gas/february_20130.Par.41810.File.dat/Living%20Rivers%20Protest%202013%202-15-13%20508.pdf.

stringent regulations for tracking wastewater transportation on public lands, jurisdiction would shift to the DOT whenever interstate highways were used. Wastewater transported on state or private roads would fall within the jurisdiction of the state and would also be outside of BLM's jurisdiction.

4.2.7 Accident Reporting

Existing BLM rules require operators to notify BLM when “undesirable events occur” which may include accidental spills or releases of hydrocarbon fluids, produced water, hydraulic fracturing flowback fluids, or other substances.¹¹² Notification is required within 24 hours for accidents considered major.¹¹³ The majority of all states with shale gas development have specific maximum time limits for accident reporting, with California being the only state of the six analyzed here that does not have such requirements. Montana requires reporting immediately and the remaining four require reporting within 24 hours.¹¹⁴

4.2.8 Well Idle and Temporary Abandonment

Most states, including all six western states analyzed, put specific time restrictions on how long a well can be left idle until it must be put back into operation, converted to a waste disposal well, plugged and abandoned, or in many states, temporarily abandoned.¹¹⁵ These regulations prevent operators from allowing wells to fall into disrepair. BLM did not address idle time or temporary abandonment in their 2013 (or 2012) proposals, nor are these addressed in Onshore Order No. 2. Well idle time and time limits vary widely across states. Four of the western states (Colorado, New Mexico, Utah, and Wyoming) allow temporary abandonment, during which an operator may continue to leave a well idle but must generally take certain measures to reduce the risk of damage or contamination.¹¹⁶

¹¹² US Department of the Interior, Geological Survey Conservation Division, Notice to Lessees and Operators of Onshore Federal and Indian Oil and Gas Leases, Reporting of Undesirable Events, available online at http://www.blm.gov/pgdata/etc/medialib/blm/wo/MINERALS_REALTY_AND_RESOURCE_PROTECTION/_energy/oil_and_gas.Par.86049.File.dat/NTL3A.pdf.

¹¹³ *Id.*

¹¹⁴ See N. Richardson, M. Gottlieb, A. Krupnick, and H. Wiseman, *The State of State Shale Gas Regulation*, (Washington, DC: Resources for the Future, 2013), 71–72. Available online at www.rff.org/shalemaps.

¹¹⁵ *Id.* at 67–71.

¹¹⁶ See N. Richardson, M. Gottlieb, A. Krupnick, and H. Wiseman, *The State of State Shale Gas Regulation*, (Washington, DC: Resources for the Future, 2013), 70–71. Available online at www.rff.org/shalemaps.

4.3 Overall Comparisons

The simplest comparison of existing state and proposed BLM rules is a tally of the regulatory elements we analyze for the states and the BLM. This gives some sense of the breadth of BLM's regulatory posture compared to state regulations. Figure 1 shows the total number of elements regulated by California, Colorado, Montana, New Mexico, Utah, Wyoming and BLM. Of the elements in our analysis, Colorado and New Mexico regulate all eleven in some fashion. Under its 2013 proposal and existing rules, BLM would regulate 7 elements. Only California among the six states analyzed would regulate fewer.

Table 1 shows each element and how it is regulated by each state, existing BLM regulations, and the 2013 proposal, including the regulatory tool used. This shows two notable differences between BLM rules and the state rules, which were also explained in more detail above. First, BLM neither has nor proposes to add requirements for idle time or temporary abandonment, which are regulated in some way by all six states. Second, all six states have command-and-control regulations addressing various aspects of casing and cementing, while BLM has performance standards.

Table 1 also shows that *existing* BLM rules do not appear to impose significant substantive requirements on operators in these states, at least for the elements in our analysis—though, as noted, determining the effective stringency of BLM casing and cementing performance standards is difficult. State command-and-control rules for casing and cementing could be stringent enough to satisfy BLM performance standards for casing and cementing. Since, like BLM, four of the states require accident reporting within 24 hours and a fifth requires reporting immediately, BLM regulation only impacts operators in one out of six of the states we considered—California, where accident reporting is not required.

There are only three areas for which the BLM's 2013 proposed rule is more stringent than the rules in certain states, also shown in Table 1. First, BLM rules would ensure that pit liners are to be used on federal and Indian lands in the three states that do not already require them generally. Second, the BLM rule would add frack fluid disclosure requirements on federal and Indian lands in both California and Utah. Finally, a BLM rule would require operators to record integrity tests in CELs on federal and Indian lands in California, Utah and Montana, and would require more frequent tests (MITs) in California and Utah.

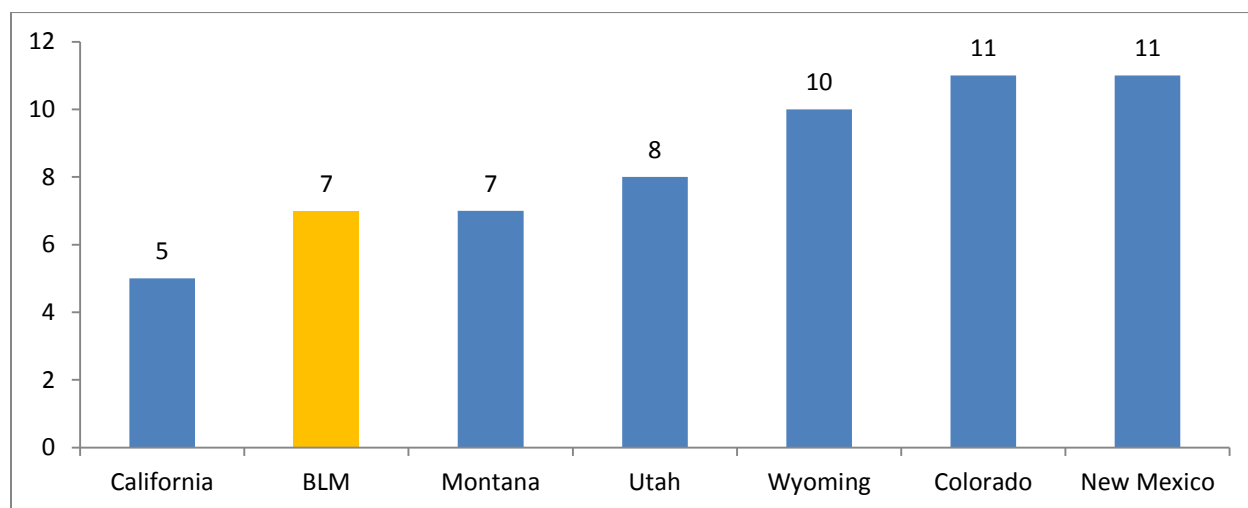
Figure 1. Number of Regulated Elements

Table 1. Comparison of BLM Proposed and Previous Existing Rules to State Rules

| Regulatory body | | Building set-backs | Water set-backs | Casing/ cementing ¹¹⁷ | Testing of casing/ cementing ¹¹⁸ | Pits/ tanks | Pit liners ¹¹⁹ | Wastewater transport tracking ¹²⁰ | Accident reporting | Idle time | Temporary abandonment | Frack fluid disclosure |
|-----------------|------------|--------------------|-----------------|--|--|--------------------------------|---------------------------|--|--------------------|-----------|-----------------------|----------------------------|
| State | California | | | Surface circulation, inter./prod. circulation, cement type | MIT | Allow and regulate pits | | | | 300 mths. | Performance standard | |
| | Colorado | 500 ft. | Yes | Surface circulation, inter./ prod. circulation, water table | MIT every 5 yrs., CBL | Allow and regulate pits | 24 mil. | 5 yrs. | 24 hrs. | 6 mths. | 6 mths. | Disclosure after fracking |
| | Montana | | | Surface Circulation, cement type | MIT every 5 yrs. | Tanks required for some fluids | | | 0 hrs. | 12 mths. | Performance standard | Disclosure after fracking |
| | New Mexico | Yes | Yes | Surface circulation, inter./ prod. circulation | CBL in some counties | Tanks required for some fluids | 20 mil. | 5 yrs. | 24 hrs. | 12 mths. | 60 mths. | Disclosure after fracking |
| | Utah | | | Surface circulation, cement type | MIT, CBL or other acceptable method | Allow and regulate pits | 40 mil. | 6 yrs. | 24 hrs. | 60 mths. | 12 mths. | |
| | Wyoming | 350 ft. | 350 ft. | Surface circulation, inter./ prod. circulation, cement type, water table | MIT every 5 yrs., CBL or other acceptable method | Allow and regulate pits | Performance standard | | 24 hrs. | 12 mths. | 24 mths. | Disclosure before fracking |

¹¹⁷ “Surface circulation” refers to requiring the outer layer of casing to be cemented to the surface, “inter./ prod. circulation” refers to requiring intermediate and production casing and for it to be cemented to the surface or other depth, and “water table” refers to requiring casing and cementing to a certain depth below the water table.

¹¹⁸ MIT refers to Mechanical Integrity Test; CBL refers to Cement Bond Log; CEL refers to Cement Evaluation Log.

¹¹⁹ The heading refers to the minimum thickness of the liner. BLM requires liners but has no thickness rule.

¹²⁰ The heading refers to the minimum period of time that records must be kept.

Resources for the Future

Feiden et al.

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|-----|------------------------|--|--|----------------------|---|-------------------------|-----|---|---------|--|--|---------------------------|
| BML | BLM 2013 proposed rule | | | | MIT every 5 yrs., CEL | Allow and regulate pits | Yes | | | | | Disclosure after fracking |
| | BLM existing rules | | | Performance standard | MIT (testing pressure is less than the 2013 proposed MIT) | Allow and regulate pits | | Only facility permit and right-of-way authorization | 24 hrs. | | | |

Command-and-control
 Addressed in permit
 Performance standards
 No evidence of regulation

5. Conclusions

The federal government controls access to oil and gas resources on 36 million acres of federal and Indian lands (and private lands for which the federal government retains subsurface rights) across 24 states. This makes BLM, as administrator and steward of these lands, the largest single player in unconventional development and, in effect, the largest regulator. With its 2012 and 2013 proposals, BLM set out to update rules not revised in decades to better address risks imposed by the rapid expansion in unconventional development driven by hydraulic fracturing and horizontal drilling technologies.

Whether or not BLM achieved that goal remains a subject of debate. The 2013 proposed rule contains significant changes that generally make the rule less restrictive than the 2012 proposal. In some cases, lack of BLM authority means that the breadth of the rule appears limited in comparison to state rules. For a crucial part of the development process—casing and cementing—BLM’s rules are not updated at all, though existing rules are framed as performance standards that appear sufficiently flexible to address any additional risks imposed by unconventional development.

Comparing BLM’s proposal with existing state rules reveals that in a few states and regulatory areas, operators would face additional requirements on federal lands. For example, BLM rules would require use of lined pits and disclosure of frack fluids in those states that do not impose similar requirements. Generally, however, BLM rules do not appear to impose significant requirements beyond existing state regulations, at least across the regulatory elements we analyzed and in those states with large federal land holdings. Moreover, in some regulatory areas (notably setback requirements) states generally have requirements whereas BLM does not.

Nevertheless, it is important to remember that like the states, BLM may place additional requirements on operators during the permitting process as a condition of approval. And, like a landowner, they might also add lease terms that go beyond the requirements in the regulations. Moreover, BLM might enforce its regulations more (or less) consistently or effectively than states do.

Critics of BLM’s proposal have claimed that it is either inadequate to protect the public and the environment on federal lands, or that it is unnecessary and burdensome. Given the background of state regulation, a better measure may be whether each component of the proposal provides meaningful additional protections. Based on our analysis, BLM’s proposal does fill some apparent gaps in state regulation, but does not significantly deviate from the prevailing set of requirements under state law.

Indeed, industry critics allege that BLM's proposal unnecessarily duplicates state rules. Unless BLM imposes costly new procedural requirements, there is little downside to such federal rules that duplicate state rules for the most part and impose additional requirements only in states that leave certain practices unregulated. BLM's resources are therefore probably best focused on those areas where either some states have failed to regulate a risk BLM considers significant, or where the consequences of development are greater on public lands. Advocates of stronger regulation, therefore, would be better off advocating for (for example) greater requirements for flowback/wastewater containment so as to better protect pristine surface waters rather than criticizing BLM's decision not to include setback restrictions from buildings, which state law may already address adequately. Generally, BLM appears to be following this model.

Alternatively, however, some argue that federal rules should not merely fill gaps in state regulations or address special risks, but rather serve as a model for strong, effective regulations. If one holds this view, than a comprehensive, internally consistent set of regulations is important. Limitations on BLM's jurisdiction, resources, and expertise make this task difficult, however.