



September 10, 2012

Via e-filing on www.regulations.gov

Director, Bureau of Land Management
Attn: Regulatory Affairs
20 M Street, SE
Room 2134 LM
Washington, DC 20003

Re: RIN 1004-AE26. *Oil and Gas; Well Stimulation, Including Hydraulic Fracturing, on Federal and Indian Land*, proposed rule published in the Federal Register on May 11, 2012 (77 Fed. Reg. 27691).

Dear Mr. Pool:

These comments are filed on behalf of the Independent Petroleum Association of America (IPAA) and the Western Energy Alliance (The Alliance) and the following organizations:

Association of Energy Service Companies (AESC)
International Association of Drilling Contractors (IADC)
International Association of Geophysical Contractors (IAGC)
National Stripper Well Association (NSWA)
Petroleum Equipment Suppliers Association (PESA),
Arkansas Independent Producers and Royalty Owners Association
California Independent Petroleum Association
Coalbed Methane Association of Alabama
Colorado Oil & Gas Association
East Texas Producers & Royalty Owners Association
Eastern Kansas Oil & Gas Association
Florida Independent Petroleum Association
Illinois Oil & Gas Association
Independent Oil & Gas Association of New York
Independent Oil & Gas Association of West Virginia
Independent Oil Producers Agency
Independent Oil Producers Association Tri-State
Independent Petroleum Association of New Mexico
Indiana Oil & Gas Association
Kansas Independent Oil & Gas Association
Kentucky Oil & Gas Association

Louisiana Oil & Gas Association
Michigan Oil & Gas Association
Mississippi Independent Producers & Royalty Association
Montana Petroleum Association
National Association of Royalty Owners
Natural Resources Growth Coalition
Nebraska Independent Oil & Gas Association
New Mexico Oil & Gas Association
New York State Oil Producers Association
North Dakota Petroleum Council
Northern Alliance of Independent Producers
Northern Montana Oil and Gas Association
Ohio Oil & Gas Association
Oklahoma Independent Petroleum Association
Panhandle Producers & Royalty Owners Association
Pennsylvania Independent Oil & Gas Association
Permian Basin Petroleum Association
Petroleum Association of Wyoming
Public Lands Advocacy
Southeastern Ohio Oil & Gas Association
Tennessee Oil & Gas Association
Texas Alliance of Energy Producers
Texas Independent Producers and Royalty Owners Association
Utah Petroleum Association
Virginia Oil and Gas Association
West Virginia Oil and Natural Gas Association

By way of background, the Alliance represents 400 members engaged in all aspects of environmentally responsible exploration and production of oil and natural gas on federal and Indian lands across the West. Member producers are generally small businesses with, on average, twelve employees. The IPAA represents thousands of independent oil and natural gas producers and service companies across the United States. Independent producers develop 95 percent of American oil and gas wells, produce 68 percent of American oil and produce 82 percent of American natural gas

In addition to the specific comments made herein, we support those comments submitted separately by the participants in these comments.

As you will note from the length and breadth of these comments, our members have significant concerns with the proposed rule. We urge you to listen to, and analyze in detail, the comments of the regulated community and recommend withdrawal of the proposed rule altogether in favor of allowing states to continue their respective regulatory programs. At the very least, we urge you to significantly revise the impractical, duplicative and costly requirements that would be imposed on operators should this rule

be finalized and implemented. Our members work to provide reliable, American oil and natural gas to the citizens of the United States while at the same time protecting health

and the environment. We believe the proposed rule is unwarranted because its genesis appears to have been claims that stimulation activities have affected public health, water supplies, and even caused seismic events. In fact, there have been no incidents of contamination from hydraulic fracturing in over 1.2 million wells in more than 60 years, and no incidents on public lands that would necessitate the rule. Claims concerning the environmental and health impacts of stimulation activities—including hydraulic fracturing—have all turned out to be false or have resulted from activities or natural occurrences unrelated to stimulation activities. Further, regulation by BLM is premature in advance of the Environmental Protection Agency’s (EPA) study of the hydraulic fracturing process, due for completion in 2014. To date, EPA has found no link between stimulation activities and human health problems or water problems.

Recently BLM senior officials have reiterated the statement in the proposed rule’s preamble that the rule was developed to address three primary goals: 1) ensure the public disclosure of chemicals used in well stimulation activities; 2) ensure that wells used in fracturing operations meet appropriate construction standards; and 3) ensure that operators have sufficient plans in place to manage flowback water from fracturing operations. 77 Fed. Reg. 27692. For the myriad of reasons discussed below, we urge the Bureau to recognize that the regulations proposed are unnecessary and grossly excessive in light of the goals expressed. Further, while the stated goals all address *fracturing* operations, the proposed rule regulates much more than hydraulic fracturing.

Additionally, we are concerned that the rule is a misguided attempt to address concerns with well stimulation that may be based on inaccurate or unsubstantiated claims relating to the environmental and health impacts of the processes. BLM states in the rule’s preamble that it has developed the rule in response to undefined “public concerns” related to well stimulation and hydraulic fracturing activities, but it does not identify those concerns or whether those concerns are warranted based on the array of publicly available information related to well stimulation activities that have occurred nationwide for decades. A rule of this magnitude should be based on facts, science and engineering not on concerns or unsubstantiated fears which may not have any basis in reality.

Finally, to the extent the bulk of the proposed rule is carried forward despite the issues raised herein, the final rule must be coordinated and formatted consistently with existing Onshore Oil and Gas Orders. Additionally, several senior BLM officials have made statements that the BLM is currently updating Onshore Orders 2 through 7. We have significant concerns that this rule is being proposed without coordination to ensure that the new Onshore Order policy and this rule will not conflict. Furthermore, the Bureau must alleviate and streamline the duplicative and unnecessary information submittal requirements between this proposed rule and existing Onshore Orders.

We urge you to act responsibly in light of the facts and rescind, or significantly revise and amend the scope and requirements of, the proposed rule.

I. General Comments

A. Lack of Basis for the Rule

The proposed rule is a poorly-conceived solution to a non-existent problem. BLM states that the rule is necessary because its current regulations applicable to stimulation activities have not been revised in many years, and because of a vague “public concern” relating to well stimulation. Yet, nowhere does BLM explain whether any of these “concerns” are warranted due to actual instances of stimulation activities affecting health or the environment, or why it has expanded the regulations so dramatically. Unfounded concerns without a basis in fact should not be the justification for a rule that will impose significant costs on small businesses, independent producers, and society at large in terms of decreased access to energy resources, job loss and slowed economic growth.

In fact, the EPA is studying the health and environmental impacts of well stimulation and has yet to find one verifiable instance where stimulation activities caused aquifer contamination, human health impacts, environmental degradation, or any other health or environmental impact that would warrant such a dramatic expansion of BLM authority. Federal officials have consistently stated that there is no evidence of hydraulic fracturing causing groundwater contamination. Following are examples of these statements:

“EPA did not find confirmed evidence that drinking water wells have been contaminated by hydraulic fracturing fluid injection...”

– *“Evaluation of Impacts to Underground Sources of Drinking Water by Hydraulic Fracturing of Coalbed Methane Reservoirs,” U.S. Environmental Protection Agency (executive summary, p. ES-16, [2004](#))*

“In no case have we made a definitive determination that the fracking process has caused chemicals to enter groundwater.”

– *Lisa Jackson, U.S. Environmental Protection Agency Administrator ([April 30, 2012](#))*

“I’m not aware of any proven case where the fracking process itself has affected water.”

– *Lisa Jackson, U.S. Environmental Protection Agency Administrator ([May 24, 2011](#))*

On hydraulic fracturing: “From my point of view, it can be done safely and it has been done safely.”

– *Interior Secretary Ken Salazar ([February 15, 2012](#))*

According to EPA’s website, the study will not be released for peer-review until 2014. Given EPA’s negative track record as to the release of information related to hydraulic fracturing’s effect on public health to date, no action should be taken relative to EPA’s study until the study is peer reviewed.

At the very least, BLM has a public service responsibility to acknowledge that well stimulation, including hydraulic fracturing, is a safe activity when undertaken responsibly pursuant to existing state and federal regulation, that the proposed rule is premature until EPA’s study and analysis is completed, and that until there is evidence that the significant expansion of federal authority embodied in the proposed rule is warranted, the proposed rule will be withdrawn or significantly pared down

At best, the proposed rule is premature as EPA continues to study the issue. The industry recognizes that wells must be constructed to insure that stimulation activities do not affect aquifers, which is why significant effort and money go into the design and construction of every well. Any well standards or stimulation reporting requirements developed by BLM must be based on sound science and proven engineering practices, and should not be driven by knee jerk reactions to unsubstantiated claims that stimulation activities are damaging human health or causing environmental degradation.

B. Duplication of State Efforts

We appreciate BLM's request for specific comment on how best it can avoid duplication with existing state regulatory schemes. 77 Fed. Reg. 27694. In reality, however, it appears that the drafters of this proposed rule have entirely ignored the scope and effectiveness of existing state regulations governing stimulation activities. Despite official announcements to the contrary,¹ oil and natural gas companies operating on federal or Indian lands must obtain a state permit and comply with all state regulations, as well as all federal regulations. Therefore, the proposed BLM rule is redundant with many state regulations and is unnecessary.

Duplication causes unnecessary delay, expense, and potential confusion as operators must comply with two distinct regulatory schemes. We believe the best way to avoid duplication is to suspend this rulemaking and continue to defer to state regulation of hydraulic fracturing. Where there is a perceived deficiency in any one state's regulatory mechanisms, the BLM should work with the state rather than impose a one-size-fits-all federal rule applicable to every state regardless of the many states' existing regulatory schemes. In fact, there are existing programs in place to ensure that state regulation is sufficient, such as the State Review of Oil & Natural Gas Environmental Regulations (STRONGER) program which reviews states' oil and gas regulatory programs and recommends improvements. In fact, given limited federal budgets and the difficulty the BLM has with retaining qualified petroleum engineers and other technical staff, BLM should consider ways to delegate more to the states rather than proposing an entire new regulatory regime for which it does not have the budget, the staff, or the technical expertise.

The BLM should allow states to maintain primacy, and provide states with additional authority for the enforcement of their existing equivalent programs in a manner similar to other delegated federal programs such as those under the Clean Air Act and Clean Water Act. States are the appropriate regulatory authority for hydraulic fracturing operations because they are able to tailor their regulations to state-specific factors, whereas a federal one-size-fits-all approach is often ill-suited to address local issues.

Further, state regulators, not BLM staff, have the technical expertise to appropriately evaluate stimulation activity within a given state, and states are better staffed and have state-specific knowledge that makes regulation at the state-level more efficient. BLM's regulatory proposal ignores state expertise in addressing state-specific issues, and it ignores significant regional differences in geology, hydrology, and processes. BLM is not equipped to provide the

¹ Acting BLM Director Mike Pool before the U.S. House of Representatives' Committee on Oversight and Government Reform, May 31, 2012: "The issue is there that the state regulations don't obtain [sic] to federal lands." Acting Chairman James Lankford: "With public lands, you are saying that state rules would not apply." Mr. Pool: "That is correct."

level of service that is necessary to enforce this ill-advised rule, and it must recognize its shortcomings both in terms of staff resources, and site-specific expertise. From a regional perspective, we are very concerned that the proposed rule will unfairly penalize the historical oil and gas producing states in the West where federal lands are most abundant. If we accept for the sake of argument that the final rule will apply only to federal and Indian lands, eastern states, where there are not significant BLM lands, would avoid the brunt of the regulation. This inequity seems to have been entirely ignored by the Bureau.

On a related note, we are equally concerned about the duplicative nature of the rule in relation to requirements of existing Onshore Oil and Gas Orders. The rule appears to have been drafted without consideration of the information that is already submitted to the federal government, and we do not understand why information needs to be submitted multiple times for the same well. BLM should conduct an internal review of existing requirements and then re-examine the proposed rule to eliminate redundant requirements.

C. State/ Federal Water Rights Concerns and Federalism Issues

We are very concerned that BLM has neither seriously considered, nor disclosed, the potential federalism ramifications of the proposed rule. Until those ramifications are analyzed and discussed publicly, we believe the rule is premature.

The proposed rule will have a substantial direct effect on the relationship between the federal government and the states and the distribution of power and responsibilities between the federal government and the states, yet the BLM has failed to comply with Executive Order 13132 which requires a Federalism Assessment when these issues arise. In fact, many states already have vigorous and practical regulatory programs governing well stimulation activities. The federal government's decision to ignore existing state programs in favor of a one-size-fits-all scheme is impractical and an affront to the expertise of the state regulators who crafted workable regulations that meet the requirements of both their respective citizens and the energy industry.

Whether operators use water that originates on federal, private or tribal land, such uses are governed by state water laws. Federal approvals or mitigation requirements would unlawfully circumvent the prior appropriation doctrine and deprive landowners, cities and industry in the western states of one of their most valuable economic interests--water. Moreover, the proposed rule could interfere with the allocation of water between the states through the interstate compacts and United States Supreme Court decrees that allocate them.

Additionally, the proposed rule continues a worrying trend relative to water rights. Water is essential to oil and gas extraction and is used throughout the process of drilling, completion and production. During well drilling, water is used to cool the drill bit and as a mechanism to bring drill cuttings to the surface. Water is a constituent of the cement used to case the wellbore, and water is used in well stimulation. Further, water is used for a variety of ancillary purposes during an oil and gas operation, such as washing rigs, cooling engines, and for sanitary purposes on a site. Because oil and gas operations require water, operators generally secure access to water or water rights prior to drilling to ensure that water is reliably and economically available throughout their operations. As proposed, the rule appears to allow BLM staff to direct operators to use, or not use, water from various sources without explaining from where the federal

government's authority comes to impose water access limitations or requirements. This proposed requirement is untenable.

As Secretary Salazar is keenly aware, in the West a water right is a recognized property right, *Santa Fe Trail Ranches Prop. Owners Ass'n v. Simpson*, 990 P.2d 46, 53 (Colo. 1999), and water rights are routinely purchased and sold like other property rights. To obtain water for a given operation, an operator may enter into a contract to purchase water from a source; may purchase or lease an existing water right; may divert unappropriated water; or may utilize recycled water produced in association with oil and gas operations. For the BLM to now suggest in the rule that it has the authority to dictate to operators—especially operators in the western United States—which sources they may or may not use is entirely inappropriate and completely inconsistent with settled water law. *See e.g. Cal. Or. Power Co. v. Beaver Portland Cement Co.*, 295 U.S. 142 (1935) (confirming that states, not Congress or federal agencies, maintain jurisdiction over appropriation of water in the state).

In fact, the federal government seems to be moving aggressively forward with regulations and permit terms that will allow it to take over control of water rights. This is an unacceptable usurpation of states' rights guaranteed by the 10th Amendment, and it cannot be allowed to move forward unchecked.

We ask that BLM delay the promulgation of this rule and conduct a full analysis of its impact on the relationship between the many states and the federal government. Executive Order 13132 was implemented, in part, so that when a federal rule or law was proposed, its federalism implications would be analyzed and presented for public scrutiny. BLM provides no such analysis for its proposed rule and no such opportunity for the public to consider and discuss the serious ramifications the proposal will have on our system of government. See section III below for more details on how the rule infringes on state water rights.

D. Impact on Small Businesses

The proposed rule will have a severe negative impact on small businesses operating on federal and tribal lands. The U.S. Small Business Administration classifies any business with 500 employees in the oil and gas extraction subsector – particularly Crude Petroleum and Natural Gas Extraction – as a small business.² Most independent oil and natural gas producers fall within this definition. While independent oil and natural gas producers range in size from one- or-two person private companies up to larger, publicly traded firms, the average independent producer has been in business for 26 years, employs 11 full-time and three part-time people.³ Independent oil and natural gas producers drill 95 percent of the wells in the United States each year.

We are concerned that many small operators cannot endure the added compliance costs associated with proposed BLM rule. BLM has hypothesized that the compliance with the rule will cost \$11,000 per well drilled. More reasonable estimates, which take into account the total aggregate costs, determine the cost of compliance to be much higher. For example, an analysis

² See 13 C.F.R. Section 121.201

³ See *IPAA Profile of Independent Producers 2009*.

conducted by John Dunham & Associates, a respected economics firm, determines the total aggregate cost for new permits and well workovers resulting from this rule would range from \$1.499 billion to \$1.615 billion annually. This is a conservative estimate of the delays and costs associated with the proposed rule which equates to about \$253,800 per well, and \$233,100 per re-fracture stimulation. Given the fact that independent producers drill the majority of wells on public and tribal lands each year, these companies – most of whom are small businesses – will bear the brunt of these unduly burdensome compliance costs.

Coupling the crushing compliance costs associated with this rule with the time delays and uncertainty in the federal leasing process, will make federal and tribal lands even less appealing for development. The ultimate result of the proposed BLM rule is that the small businesses making up America's oil and natural gas industry will stop exploring for and producing oil and natural gas on federal and tribal lands in the United States. Instead, producers will seek to move their operations to private and state lands that offer more regulatory certainty and more reasonable costs of compliance.

E. Use of *FracFocus* Website for Stimulation Chemical Disclosures

At the outset, we urge BLM to recognize that hundreds of companies throughout the United States already upload a variety of information, including the components of stimulation fluids, to *FracFocus*, and others do so in compliance with applicable state laws. Establishing an entirely new and separate reporting scheme is unnecessary and would be a waste of time and resources.

In the proposed rule's preamble, BLM notes that it is currently in discussion with the Ground Water Protection Council (GWPC) concerning the use of *FracFocus* as the rule's chemical disclosure platform. 77 Fed. Reg. 27698. We strongly support the use of *FracFocus* for disclosure of stimulation chemicals. However, we are very concerned that BLM has not expressed any commitment to actually use *FracFocus*.

Colorado, Montana and North Dakota, among other states, have already adopted regulations requiring the use of *FracFocus* for disclosure of chemical components of hydraulic fracturing fluid, and the Natural Gas Subcommittee of the Secretary of Energy Advisory Board expressed its support for the use of *FracFocus* as the disclosure platform. BLM must recognize that creating a new reporting platform would be a waste of time and money. Further, implementing a separate reporting platform for federal and Indian lands would result in additional, unnecessary costs for operators who must learn and utilize a dual reporting system requiring submittal to separate websites for stimulation activities.

Assuming BLM eventually recognizes that using *FracFocus* as the chemical disclosure platform for this rule will help to harmonize state and federal disclosure rules and help to reduce duplication, we are concerned that the website is incompatible with certain of the proposed rule's requirements. For instance, the proposed rule's trade secret and confidential business information (CBI) submittal requirement is incompatible with *FracFocus* because that system is not set up to handle trade secrets or CBI. BLM must tailor the rule accordingly so it is consistent with the existing *FracFocus* platform in order to avoid unnecessary expense, delay, or confusion.

Additionally, as structured, the proposed rule will require operators to submit their information to BLM, and BLM staff will be required to upload the information to a public disclosure website. This approach will require BLM to commit significant staff time to the upload process, which is remarkably inefficient. BLM simply does not have the staff to perform this requirement in a timely manner, thereby forcing BLM to redirect resources from permitting

F. Economic Impacts are Underestimated and the Economic Analysis is Grossly Flawed

The proposed rule grossly underestimates the economic impact this regulation will cause. On June 11, 2012, the Alliance addressed this issue in detailed comments submitted to the Office of Management and Budget (courtesy copy attached). As such, we only touch briefly on this issue in these comments. Regardless, based on an impact analysis conducted by John Dunham & Associates, a respected economics firm, the total aggregate cost for new permits and well workovers alone resulting from this rule would range from **\$1.499 billion to \$1.615 billion annually** in just thirteen western states. The cost would be even higher if including Indian lands in Oklahoma and federal lands across the entire country. Our estimate is a conservative estimate of the delays and costs associated with the proposed rule which equates to about \$253,800 per well, and \$233,100 per re-fracture stimulation. Obviously, this is a large additional cost per well that would be particularly onerous for small operators, who are the majority of operators on federal lands. In a further analysis completed on September 7th, JDA found an additional \$3,550 in administrative costs per new well, or \$17,971,074 for the 5,058 wells currently estimated to be undergoing permitting.

The high cost to the industry in the aggregate and to the individual producer calls into question many assumptions in the proposed rule. The BLM claims that the rule will not have a significant economic impact and therefore several statutes and executive orders do not apply. This includes the Paperwork Reduction Act, the Small Business Regulatory Enforcement Fairness Act, the Unfunded Mandates Reform Act, the Regulatory Flexibility Act, the Small Business Regulatory Enforcement Fairness Act, and Executive Order 12866. To the contrary, the scope of the rule is substantially broad, and the costs exceed the \$100 million threshold that triggers the applicability of these statutes. For these reasons, the current rulemaking should be suspended while BLM conducts the comprehensive economic analysis required by these statutes and regulations. Failure to conduct adequate analysis makes the proposed rule susceptible to legal challenge.

Further, these impacts, while substantial and dramatic in their own right, do not take into account the undeniable economic ripple effects that implementing the rule will have. If implemented, the proposed rule will discourage exploration and production on federal lands, costing the federal government and state governments' royalty income and decreasing the availability of American energy. The exodus from federal and Indian lands by operators will also have a chilling effect on job creation. Energy production on federal lands has a history of driving job creation in rural communities across the West. At a time when jobs, national security, and affordable energy are all serious questions facing the citizens of this country, introducing this rule is unwise.

G. Unfettered Discretion

The discretion of the “authorized officer” to seek additional information as part of the stimulation application, or to impose mitigation requirements related to recovered fluids⁴ is a great concern for our members. While also addressed below in the rule-specific comment sections, we must vigorously protest the authority this proposed rule gives to BLM staff without limit and with no process for appealing a decision, request, or requirement. In fact, nowhere in the proposed rule does BLM qualify this discretion to require that the information sought, or the mitigation required, even be “reasonable.”

One of the reasons for developing a federal rule under the Administrative Procedure Act’s notice and comment rulemaking process is so that stakeholders who will be affected by the rule will have the opportunity to comment on the rule’s potential impacts. *See* 5 U.S.C. § 553. If one BLM staff member can require submission of *any* information as part of a stimulation proposal application, or can require *any* mitigation requirements he see fit related to recovered fluids, it is impossible for the regulated community to anticipate and comment on potential impacts since the universe of required information and mitigation is infinite. These provisions must be revised and limited, and an appeal process must be established. Until these revisions occur, this comment process lacks credibility.

H. NEPA Issues

The environmental analysis prepared in conjunction with the proposed rule is inadequate under the National Environmental Policy Act (NEPA) for several reasons. First, BLM failed to notify the public that it was preparing a NEPA analysis. BLM’s failure to notify the public that it was preparing an environmental assessment (EA) and its failure to circulate the draft EA precluded the public from providing any meaningful input before the EA was finalized. BLM should have provided proper notice and should have circulated the draft EA. Failure to do so is contrary to NEPA’s mandate of public participation.

Second, BLM failed to analyze adequately the socioeconomic and environmental justice impacts of the proposed rule. Indeed, BLM’s analysis relied on incorrect data. Given the gross disparity between BLM’s economic impact analysis and the analysis submitted by the Alliance, the EA’s socioeconomic impacts analysis falls woefully short of NEPA’s “hard look” standard. Moreover, given the broad scope of the proposed rule and its catastrophic economic impacts, a finding of no significant impact (FONSI) was completely unsubstantiated and improper. BLM should have prepared an environmental impact statement (EIS) instead of an EA. BLM’s FONSI was biased, arbitrary and unwarranted. Similarly, given the additional equipment and ground-disturbing activities that will be required under the Proposed Rule, the EA did not adequately consider the adverse impacts the Proposed Rule will have on the environment. The lack of an impacts discussion directly conflicts with the disclosure and analysis requirements of NEPA.

Third, by considering only a no action alternative and two almost identical alternatives, BLM, in essence, analyzed only one “true” alternative and failed to consider additional,

⁴ *See* proposed sections 43 C.F.R. § 3162.3-3(c)(7) and 43 C.F.R. § 3162.3-3(f).

reasonable alternatives. Had BLM provided the public with notice of its intent to conduct a NEPA analysis, the public could have proposed, and BLM could have analyzed, additional, reasonable alternatives.

Finally, we also ask that BLM clarify whether a separate NEPA analysis is required for approval of stimulation plans. The proposed rule establishes an application process that will require BLM approval of various plan and well elements before an operator may stimulate a well. We understand that BLM has stated that it expects that approval of certain elements, such as the cement bond log, will be considered federal actions triggering NEPA. In addition to the delays inherent in the NEPA process, we are concerned that each approval may be subject to challenge in federal court, which will result in even greater delays and added costs. BLM must explain its intent and clarify why BLM's approval of a stimulation proposal will not be subject to NEPA.

I. Operator Certification Issues

We urge BLM to clarify its intentions as to the new certification requirements described in the proposed rule. Those relating to the compliance of "treatment fluids" with all applicable laws can be read to require operators to certify the compliance of other entities with legal obligations unrelated to the use of the treatment fluids at the well site. This would be a large and unworkable departure from BLM's current certification requirements. We believe that such a departure, in addition to being unworkable, is also unnecessary. The existing certification that accompanies the Application for Permit to Drill (APD) provides BLM with adequate assurances, and if additional certification is needed for hydraulic fracturing proposals that do not accompany the APD, we suggest that BLM incorporate the language of the APD certification into the filing.

J. Labor Issues

In the proposed rule, BLM estimates that in order to meet additional operation and administrative needs, operators will be required to add 15-18 employees across the entire industry in each of the next three years after rule implementation. 77 Fed. Reg. 27703. BLM states no basis for the estimate, or the scope of the estimate. We urge the Bureau to clarify how it reached this estimate.

In the absence of that information, we decided to fill that data gap. John Dunham & Associates, an economics firm that completed our overall economic analysis, conducted a survey of companies and determined that industry would have to hire 160 employees just to complete the permitting for the 5,058 wells currently undergoing the permitting process in just thirteen western states. The additional administrative cost is \$3,553 per well, for a total of \$17,971,074. These numbers would increase as more APDs are submitted to BLM. This is in addition to the \$253,800 per well and \$1.499 billion to \$1.615 billion in total annual cost from our economic analysis, as detailed in Section I.K above and attached. The administrative cost analysis is also attached.

II. Proposed Rule-Specific Comment

This section of our comments addresses specific elements of the proposed rule.

(§ 3160.0-5) Definitions

Well Stimulation

We are concerned with, and confused by, BLM's decision to expand the scope of the proposed rule significantly beyond hydraulic fracturing. The definitional change for "well stimulation" results in a proposed rule that covers hydraulic fracturing, acidizing, and probably numerous other activities that, until now, were not governed by federal regulations. There is no known or expressed reason to include the additional practices under this rule.

For instance, BLM has provided no basis for why this rule is intended to cover acidizing jobs. Acid jobs are small and routine, and there is no evidence of environmental impact from this technique. There are two basic acidizing processes – "matrix" and "acid wash." Neither process is designed, or uses sufficient pressure, to cause a vertical fracture of the rock formation and is generally considered a maintenance operation. There is no reason to incorporate these processes under this rule, and we urge the Bureau to scale back the final rule back based on its original intention that the rule apply to newly developed wells and not those being re-worked or where acid procedures are incorporated.

Similarly, the proposed rule presumably covers minor fracturing activities where a small amount of fluid and proppants are injected into a zone that has already been stimulated, in addition to "water only" re-working of an already-stimulated well.

Further, we believe the rule could be interpreted to regulate cyclic steaming thermally enhanced oil recovery (TEOR), which is widely used in the State of California. We believe cyclic steaming should not be included in the breadth of this rule.

Without a strong basis for inclusion of acidization and other similar activities under the rule, these activities should be exempted from the final rule. Additionally, BLM must clarify precisely which practices are covered by the rule. As written, the definition of what qualifies as a regulated stimulation activity will be interpreted extremely broadly.

Based on our discussions with BLM and Department of Interior (DOI) officials, it is our understanding that it was not the intention of BLM to develop a proposed rule that governs acidization. At best, the result will be significant extra paperwork with no tangible benefit.

Useable Water

The proposed rule incorporates a definition of useable water as water with 10,000 ppm total dissolved solids (TDS) or less. Aside from stating that the standard is incorporated to make the proposed rule consistent with other regulations, it does not explain the basis for this TDS level as "useable." BLM must provide more of a basis than is incorporated in the proposed rule.

Additionally, BLM must take into consideration that adopting a 10,000 ppm standard may put it at odds with existing state groundwater standards. If a specific limit is adopted, it should be consistent with existing state standards applicable to the area where the well is located.

We address the “protection” of useable water requirement of the rule in Section II.J., below.

(§ 3162.3-3(b)) Requirement that a Well Stimulation Proposal be Submitted to BLM for Approval

Under the rule, BLM staff will review pre-stimulation plans and a well’s physical properties prior to approving an operator’s application to stimulate the well. Regardless of what is implied in the rule’s preamble, or what has been stated publicly by BLM and DOI officials, stimulation activities must be pre-approved under this rule.

We question whether BLM has the expertise to adequately review a proposed stimulation activity, and whether the rule affords BLM staff the right to ‘reject’ a proposal or to require revisions to a proposal. None of these potential outcomes is acceptable to the industry.

BLM further suggests that since the stimulation approval process may coincide with the approval of an APD, the review will not result in any additional delay. 77 Fed. Reg. 27695. We find this assertion by BLM remarkably difficult to believe. The current APD approval process already takes an average of 298 days, well beyond the time limits established in Onshore Orders. It is unrealistic for BLM to assert that the review and analysis of the additional data required to be submitted by this rule will not cause additional delay and significant increased costs to operators while rigs stand idle awaiting federal approval to act. This fact is exacerbated by the authority of BLM staff to seek *any* additional information as part of the application process, regardless of cost, technical feasibility, or relevance to the proposed activities.

Since most stimulation design work is completed with information gained during and after drilling, even if approval is granted with the APD, operators will still have to submit changes via sundry based on what is actually found during drilling, resulting in additional delay. BLM has provided no details as to when additional submittals are required based on new geologic information or other new information that arises as well construction and stimulation processes move forward. Requiring additional submittals based on every tidbit of newly acquired information, regardless of significance, will add delays, costs, and operator uncertainty.

At the very least, if approval is ultimately required, BLM must impose a specific action time limit for granting such an approval. We suggest a limit similar to that established in other federal permit programs; namely, that if the approval is not denied in 30 days, it can be considered approved by the applicant. If BLM is sincere in its assertions that the approval process will not be time consuming, then it should not object to imposing an action requirement upon itself.

Further, in the interest of efficiency for all parties, we suggest that BLM allow operators to submit one general stimulation proposal for an entire resource play, rather than require separate submissions for each well. This will allow the operator to reference the general plan and refine it as necessary, as part of the APD process. Similarly, in areas where other wells have already been drilled, information from the existing well logs should be made available so as to avoid unnecessary and duplicative surveys and tests.

Finally, BLM must explain the appeal process if a stimulation plan is denied, and the extent to which it can dictate the terms of a proposal such as requiring mitigation, an alternative water source, or operators to take action not incorporated in the original application. Additionally, BLM must address whether third parties will have standing to appeal an approval under the rule.

(§ 3162.3-3(c)) Pre-Stimulation Information Submission Requirements

In addition to our opposition to requiring pre-stimulation approval, we take issue with a number of the information data points that must be submitted to BLM as part of the stimulation plan.

(§ 3162.3-3(c)(2)) Requiring submission of Cement Bond Log (CBL)

A CBL submission requirement is unreasonable, unnecessary, impractical, will result in increased costs for operators, and will cause delay.

We agree that operators have a responsibility to protect groundwater resources, and the industry has been doing so for decades. Requiring CBLs to establish that a well was properly cemented, however, is unnecessary. States regulate this area of the process effectively, and BLM should defer to effective state programs. In fact, hydraulic pressure testing of the surface casing string and confirming that the cement properly circulated to the surface confirms the integrity of the surface casing. States have long regulated the integrity of cement jobs in this manner, which is perhaps the reason there is no evidence of stimulation activities resulting in water contamination due to improperly constructed well casings. As explained below, running a surface casing CBL does not offer a clear advantage over traditional methods employed by states such as requiring proper cement specifications, ensuring good cement returns to surface, pressure testing the casing shoe and production casing prior to stimulation activities, and monitoring pressure in annular space during operations.

The requirement is also problematic because of its focus on surface casing versus the production casing. The rule's preamble states that the running of a CBL on surface casing would be required and that many operators routinely perform CBLs for the zones of interest. In fact, a CBL on the surface pipe has no protective value against failures during a stimulation treatment, and for a well with an intermediate casing, the surface casing is not exposed to stimulation pressure even in the event of the failure of the fracking string. Furthermore, CBLs on surface casings are not the norm. No states require a CBL on surface casings because it is unnecessary. This distinction is reflected in Colorado's rule, which requires operators to submit CBLs for production casing—not surface casing—in the post-completion report.

Further, BLM simply does not have the expertise to determine if a CBL should be "approved." The rule does not explain how long this CBL review process will take and what will happen if a log is deemed unacceptable. In fact, interpreting a CBL takes specialized expertise, and inexperienced reviewers will misinterpret the data, requiring unnecessary or even dangerous remediation activities. For instance, BLM states that operators may be asked to perforate and squeeze cement into any areas with inadequate cement bonding. However,

perforating surface casings may impact wellbore integrity and prevent an operator from reaching a total depth if pressure issues arise.

The BLM must recognize that the cost of running a CBL on a surface casing would include the cost of putting the rig on standby while testing is conducted. Costs could run anywhere from \$30,000 to \$146,000 per well depending on which casings fall under the rule. At the very least, operators should be provided with CBL alternatives, including waivers if the surface casing was installed in accordance with recognized industry standards and accepting alternative evidence of satisfactory well construction.

BLM must also recognize that the rule will create a *de facto* two-step approval process since a CBL is typically run during or after drilling. The approval will be further delayed while the CBL is run and reviewed. If BLM CBL approval delays force operators to put completion crews on standby, it could cost as much as \$100,000 per day.

Finally, BLM must acknowledge in the rule that not all operations are identical and must provide sufficient variance options for companies that, for instance, employ liners that isolate zones using inflatable packers instead of cement. In such cases, isolation cannot be tested using CBLs.

Ultimately, since Onshore Order No. 2 already requires pressure testing of the surface casing shoe, it is unclear why additional regulation of this sort is necessary.

(§ 3162.3-3(c)(3)) Requiring information on water supply source, access route and transportation method.

This element of the pre-stimulation information submittal requirement raises a red flag for our members. The requirements in this subsection appear duplicative of the requirements established in Onshore Order #1. We ask BLM to explain why it is seeking information in this proposed rule that is already provided under the Onshore Order. There is no practical point in reporting the water supply source prior to actual stimulation because it might change based on market factors such as price or haul truck availability.

Jurisdictional questions aside, what will BLM do with the information? Will BLM attempt to use its self-imposed application approval authority as a means to reject an application if it does not approve of the water source to be used at a stimulation site? Will BLM attempt to require operators to change sources, or impose mitigation requirements in order for the proposed stimulation to be approved? Any of these outcomes is absolutely unacceptable to the regulated community, and would presumably be distasteful to states and the EPA. BLM must fully explain its intentions under this area of the proposed rule.

(§ 3162.3-3(c)(4)) Requiring certification statements

There are numerous certifications required under the proposed rule. Section 3162.3-3(c)(4) requires a certification that the stimulation fluid proposed to be used complies with all laws, section 3162.3-3(g)(8) requires a certification statement that the fluid actually used complied with all laws, and section 3162.3-3(g)(9) requires a certification statement that well bore integrity was maintained during operations.

BLM's proposal would require the operator to certify prior to conducting hydraulic fracturing operations that "the proposed treatment fluid complies with all applicable permitting and notice requirements as well as all applicable Federal, tribal, state, and local laws, rules and regulations." The operator would also be required to certify that the "treatment fluid used" complied with "all applicable" laws as well. To the extent this requirement expands operators' liability under existing regulations; the requirement exceeds BLM's regulatory authority and intrudes on the jurisdiction of the state regulatory authorities.

Practically speaking, we have already raised our concern that operators or service companies may be unable to certify on behalf of manufacturers. BLM should clarify that the provision does not require operators or service companies to certify information outside their knowledge or controlled by other parties. Additional liability for information beyond the operators' control would be inconsistent with existing certification requirements. Further, BLM must address the fact that similar certification requirements are already incorporated in the APD and explain the need for further duplication.

(§ 3162.3-3(c)(5)) Requiring submission of detailed engineering design

We question the practical value of submission of detailed engineering design. Is BLM suggesting that it has the authority under the rule to deny a stimulation proposal in order to require an operator to change elements of its well design? If so, BLM must explain where the source of this authority comes from and upon whose expertise the Bureau will rely in order to require such a change. If not, BLM must explain why it needs the information in the first place.

Ultimately BLM should not interfere with the well design process. It does not have the expertise to analyze such things as rock formation above and below the stimulation zone.

(§ 3162.3-3(c)(5)(i)) Requiring estimate of fluid flowback

We presume that BLM is seeking this estimate to ensure that the necessary equipment is available at the site to handle flow volumes. This issue is already fully addressed at the state level.

(§ 3162.3-3(c)(5)(iv)) Requiring the submission of estimated or actual fracture lengths and height

This requirement appears to have dubious value, at best. Even with sophisticated simulators, fracture geometry cannot be estimated with certainty, and even simple modeling efforts to determine the actual height and length of fractures would be expensive and beyond the capability of small operators. Additionally, stimulation jobs are already designed to stay within production zones, and there is plenty of data showing that fractures do not come anywhere near aquifers or leave the intended zones.

If this provision is maintained in the rule, which it should not be, the period that is subject to this requirement should be clarified, and BLM must explain why reporting of flowback fluid's anticipated chemical composition is relevant to flowback volume. Ultimately, this requirement should be struck because it is impossible to accurately estimate the chemical composition of flowback before well completion. "Estimates" of such information have no value.

(§ 3162.3-3(c)(7)) Allowing BLM to require submittal of any additional information

We have raised the disturbing level of discretion granted to BLM staff under the proposed rule above. It is worth reiterating, however, that this provision alone could be grossly abused by BLM staff seeking to delay stimulation activities. The “additional information” BLM is authorized to request does not even have to be “reasonable.” Further, we note our members’ experience that different BLM offices throughout the country have different requirements based on “best practices.” Our members are very concerned that the discretion authorized in this proposed rule will allow different offices to require entirely different tests or paperwork for approval.

There must be a rational qualification of this provision or it must be struck entirely.

(§ 3162.3-3(d)) Pre-Stimulation Mechanical Integrity Test Requirement

We presume that Mechanical Integrity Tests (MITs) will be required to ensure that there are no problems with the casing and cementing that would allow breaching during stimulation operations. While we appreciate the intent of the requirement, there are existing state regulations that address this concern that BLM should consider adopting in lieu of this requirement. Further, there are practical concerns with requiring MITs on all wells,

Having to perform a pre-stimulation MIT means significant delay and costs for which BLM has provided no basis on existing producing wells that are being refractured. At a minimum, this requirement will necessitate that the operator kill the well, set a bridge plug, perform the MIT, remove the bridge plug, and restore the well to production. This process could easily cost \$30,000 to \$40,000 per well, not to mention the costs associated with an idle rig and costs of repair if the well is damaged.

At most, the requirement should only apply to wells that are five years old or older. There is insufficient evidence of casing failures to justify an MIT for every well. Further, there is no basis to apply this requirement to an acidization job, and requiring an MIT prior to any steam job is unjustified and would make production infeasible.

If the provision is maintained in the final rule, BLM must recognize that not all wells are identical. For instance, there should be an exception to the mandated use of a fracture string. Not all wells are equipped with seven-inch casings that easily accommodated a smaller fracture string. It is not practical to run fracture strings in wells with smaller long-string casings. Exceptions should be granted when an additional intermediate string has been run and cemented, such that an additional barrier is present in the well, when 4.5-inch or 5.5-inch casing is run as the long string such that all fracture treatments would be pumped down this string, or when the anticipated fracture-treatment pressures are less than 50 percent of the burst rating of the weakest casing grade. Likewise, the use of open floats and hydraulic actuated sleeves will not allow for completion of the test envisioned under the rule. The final rule must take into account alternative constructs.

(§ 3162.3-3(e)) Monitoring and Recording Requirements

While we understand the importance of well monitoring, we ask BLM for clarification on the monitoring and recording requirements of the proposed rule. Monitoring at the bradenhead involves monitoring the annulus between the surface casing and the production casing. But if there is an intermediate casing set, monitoring the annulus between the intermediate and the production casing is required. In this case, the rule needs to be clarified as to whether monitoring between the surface and intermediate casing is also required.

Similarly, the final rule should include a more encompassing description of a casing breach, including rapid pressure change accompanied by verified fluid movement in the annular gap behind the treatment string.

Additionally, in states that require monitoring, BLM should allow operators to submit the state completion report to document annulus pressure to avoid duplication.

(§ 3162.3-3(f)) Recovered-Fluid Storage Requirement

This section is another that causes our members grave concern. Specifically, the proposed rule states “[t]he authorized officer may require additional measures to protect the mineral resources, other natural resources, and environmental quality from the release of recovered fluids.”

We ask BLM to what extent this discretion may be carried. In fact, the breadth of the discretion granted in this one sentence could be taken to the extreme of banning all stimulation activities in order to prevent the release of recovered fluids. Clearly, this section must be limited or struck altogether.

Additionally, flowback water is already stored in steel tanks or lined pits. Fluids from lined pits are hauled to an approved disposal site. Reporting to BLM where the fluid is to be disposed is an unnecessary duplicative burden on the operating company, as such reporting is already required under existing law and is effectively regulated at the state level. This reporting requirement should be struck from the rule.

(§ 3162.3-3(g)) Submission of Post-Stimulation Information Requirements

At the outset, we find the duplication of information required to be submitted under this section and § 3162.3-3(c) to be entirely unnecessary. Asking a party to provide detailed information on what it “plans” to do, and then asking for virtually the same information to confirm it did what was “planned” is at best overkill and at worst insultingly paternalistic.

The proposed rule does not explain the repercussions of a significant difference between the information provided pre- and post-stimulation. In reality, pre-stimulation information can only be based on estimates, and the nature of the business means that plans change due to events or factors that are beyond the control of the operators. We urge BLM to reconsider the pre- and post-reporting duplication and settle on one set of simple reporting requirements that will allow operators to do their jobs without drowning in a sea of unnecessary paperwork and bureaucratic oversight.

Post-Stimulation reporting requirements duplicate pre-stimulation reporting requirements

Again, we urge BLM to revise the proposed rule to streamline the reporting requirements. The current pre- and post-stimulation scheme is unworkable and unnecessary. BLM must also explain, in detail, what will happen if differences are reported pre- and post-stimulation, and what the agency will consider a “slight” difference that is acceptable.

The reality is there are many scenarios that would require modification of activities after submittal of the pre-stimulation report. BLM must recognize this reality and explain how it will address inconsistencies between pre- and post- stimulation activities. One alternative the Bureau should consider is to allow operators to conduct stimulation activities within acceptable deviation ranges based on the pre-stimulation reporting. This would allow operators to submit standard completion reports, and would limit additional post-stimulation reporting to upset or change situations.

BLM must recognize that changes will occur for myriad reasons, none of which will ultimately affect health or the environment. If every minor change requires an additional reporting element, operators will be buried in unnecessary paperwork and potentially be subject to enforcement actions for any minor, insignificant change that is not adequately reported. This is simply unacceptable.

Chemical Disclosure

Chemical disclosure is addressed in multiple sections of these comments, particularly the section below concerning the protection of trade secrets and confidential business information. For the purposes of the reporting requirement incorporated in § 3162.3-3(g), however, we are concerned that BLM is asking for information that goes significantly beyond the scope of information sought by the states and information that will require operators to incur significant costs with no resulting public health or environmental benefit.

Unlike state requirements, the proposed federal rule requires reporting on the “complete chemical makeup” of stimulation fluids, and the “percentage by mass” of chemicals in fluid. This will require the testing of all fluids to determine if any trace chemicals are present or any unintentionally-added chemicals are present.

We ask BLM to revise the language in this section of the rule to limit required disclosure to intentionally-added chemicals, and “maximum concentration” for each chemical. This will make the reporting requirements more consistent with state reporting requirements, and it will prevent operators from being required to test the fluids used at every site for any unintentionally added chemical or any trace chemical.

Additionally, BLM should recognize that some chemicals do not have assigned CAS numbers, so it is not necessarily possible to provide CAS numbers for all chemicals. Additionally, the proposed rule would require reporting on the total volume of fluids including water, proppants, and chemicals. However, proppants are measured by weight. BLM should clarify whether it is seeking information on the total volume of the slurry, or the weight of the proppants, or both.

(§ 3162.3-3(g)(6)) Submission of actual, estimated or calculated fracture length and heights

Similarly, pre- and post-submission of fracture length and height is unnecessary and duplicative. We already have expressed our concerns relating to the viability of the requirement, and the associated additional costs. Here we ask BLM what it intends to do with this information, and what the repercussions will be if there are differences between the pre- and post-stimulation estimates.

(§ 3162.3-3(g)(8)) Certification Statement that Fluid used complied with all laws and regulations

We have expressed our concerns with the multiple certification statements required by this rule. We again raise our concern here to ask BLM to explain why pre-stimulation and post-stimulation certification statements that are entirely duplicative are necessary. If certification statements are ultimately necessary, only one is needed.

(§ 3162.3-3(g)(10)(i)) Requiring flow back amounts, handling process used, and disposal method

Again and again, BLM is seeking duplicative pre- and post-stimulation information. We repeat our questions here as to why BLM needs this information, why it needs the information pre- and post-stimulation, and what it will do if there are discrepancies between the pre- and post-stimulation reports.

The reporting requirements of this proposed rule, given the number of wells that will be subject to the rule, will result in reams of paper being submitted to BLM staff for review. We see no way for BLM staff to not only read these reports, but also to compare post-stimulation reporting detail to pre-stimulation planned activities, without causing dramatic delays. BLM simply does not have the staff to meet its current workload. It will not be able to meet the additional workload this proposed rule will add.

Again, as previously noted, the period of recovery is not identified. Recovery can take months. Additionally, existing Onshore Order requirements already address produced water disposal. Finally, the rule should clarify how BLM intends to verify wellbore integrity after the stimulation operations are completed.

(§ 3162.3-3(h)) Trade Secret Identification and Protection Requirements

Initially, BLM must recognize that service companies and vendors often hold the rights to fluid trade secrets, even though it is apparently the operator who BLM envisions will be required to make the claim for protection. The final rule must recognize that in many cases operators do not have access to proprietary and trade-secret information. The rule should incorporate protections for service companies and vendors.

Our members also have expressed serious concern that, as written, the proposed disclosure process is flawed and subjects protected information to disclosure. Companies will be required to submit trade secrets and CBI to BLM along with a request that the information be

protected from disclosure. BLM subsequently will make a determination as to whether it agrees to protect the submitted information. This approach raises a number of red flags for our members.

First, operators submitting post-stimulation chemical information will not know if their request that information remain protected is granted until *after* the fluid has been used. Operators will be much less likely to use innovative mixtures for fear that their requests for protection of the information will be denied.

Second, the rule does not explain on what basis the Bureau will determine whether information is a trade secret. It must explain the standard on which the determination will be based.

Third, submission of trade secrets or CBI to BLM exposes information to inadvertent disclosure.

Fourth, it is not uncommon for industry to permit and install wells in a confidential manner. Would this type of CBI also be protected?

Fifth, BLM states that it will only provide a party with ten days to appeal a denial of protected status. This notice time frame is unrealistic and must be extended to a minimum of 60 days.

Furthermore, BLM's rule is inconsistent with regulations enacted in Colorado, Montana, New Mexico, and North Dakota which allow companies to withhold trade secrets for routine reporting, but require reporting of trade secret information in the event of a spill or incident. There is no reason BLM should not incorporate state regulations that have proven effective.

Finally, BLM must address the fact that service companies and contractors may conduct the stimulation activities, and that operators and service companies alike may rely on chemical suppliers for information regarding the chemical content of the stimulation fluids used on a site. As a general proposition, operators are not in a position to provide information about chemical formulations and related matters arising from hydraulic fracturing operations. Without stronger assurances of protection and clearer determination of how and by whom such protections would be implemented, operators and service providers will not be in a position to utilize up-to-date technologies on federal lands.

(§ 3162.3-3(j)) Requesting a Variance

The variance process at the state level is effective and is used, in part, to encourage innovation. States provide the flexibility necessary to allow operators to stimulate wells safely, effectively, and efficiently. BLM should provide for a flexible and vigorous variance process. However, the current rule appears only to apply to operational activities and not to the approval process. BLM must incorporate a better explanation of what the variance process will entail, and how it will be applied to ensure that operators are given the full opportunity to use innovative stimulation techniques.

Additionally, BLM should consider providing a variety of approved technologies from which an operator can select. Regardless, however, operators need certainty, so variances should not be subject to rescission.

(§ 3162.5-2(d)) Protection of “useable water”

This provision requires operators to protect useable water as defined in § 3162.0-5. It requires surface casing depths sufficient to isolate useable water, but does not establish a maximum depth for the requirement.

While we understand the intent of this section of the proposed rule, as written it raises a number of concerns that BLM must address. For instance, there is insufficient data available as to where useable water is currently located, so in many cases the rule will require operators to incur the expense of drilling test wells to determine the depth and location of the useable water. Additionally, BLM must address how it will treat oil and gas bearing zones that also have useable water within the zone.

Initially, we ask BLM to set a maximum depth for formations subject to this provision to provide operators with certainty. Additionally, BLM should consider exempting from this rule the protection of useable water that is located in hydrocarbon-bearing zones, or at the very least deferring to existing state water protection standards. Finally, the rule must require BLM to defer to determinations by state water boards or other state agencies with applicable expertise as to where useable water is located in a given state.

We also note that the cost of additional and deeper protective casings could run as much as \$250,000 per well depending on the depth of the useable water. This cost was never addressed in the proposed rule’s cost analysis, but it clearly should have been. BLM must delay the promulgation of the rule until a full, thorough, and realistic economic impact assessment can be conducted.

Finally, we suggest that since states already regulate groundwater within their boundaries, even on federal lands, states have jurisdiction to determine the definition and protection of usable ground water. While some states may recognize the 10,000 TDS definition of usable groundwater, they also may require that, to be ‘usable’ groundwater must be economically treatable to human or agriculture water quality standards. Water from a hydrocarbon bearing formation would not be usable to this higher standard. The Bureau needs to take applicable state regulations into account and amend the final rule accordingly.

III. Water Issues

A. Water Requirements Infringe on State Water Rights

1. BLM lacks authority to impose water requirements

BLM claims the proposed rule is necessary to provide information to the public and to assure fracturing is done in a way that protects the environment. BLM intends to “protect all usable waters during drilling operations....” Well Stimulation, Including Hydraulic Fracturing,

on Federal and Indian Lands, 77 Fed. Reg. 27,691, 27,695 (May 11, 2012). In so doing, BLM either seeks to create a federal “super” water right or to impose riparian law on the western states. Neither is tenable under BLM’s statutory authority and Congress’ long-standing deference to state water allocation systems.

BLM would also require that the operator “disclose specific information about the water source to be used in the fracturing operation, including the location of the water that would be used as the base fluid.” *Id.* at 27,696. Estimates of the volume of water recovered during flow back, swapping and recovery from production would also be required to “ensure that the facilities needed to process or contain the estimated volume of fluid will be available on location.” *Id.* Section 3162.3-3(c)(7) “would require the operator to provide, at the request of the BLM, additional information pertaining to any facet of the well stimulation proposal” to “ensure that operations are consistent with applicable laws and regulation.” *Id.* at 27,696 – 697 (emphasis added). Among other things, this information could include the water quality of water to be used as the base fluid.

Such requirements could create a parallel federal permitting or adjudication system in conflict with the state-administered priority system. This would render existing water rights and the States’ authority over water allocation meaningless. Water rights and water use in the western states would then face chaos and uncertainty wherever federal and tribal lands are concerned.

According to BLM, this information is necessary to determine the impacts associated with operations and the need for any mitigation applicable to Federal and Indian lands.” *Id.* at 27,698 (emphasis added). Absent clear and specific congressional authorization, BLM has no authority to impose conditions or mitigation requirements on state water uses. So long as water is used consistent with state water laws, BLM has absolutely no authority to require “mitigation” for alleged “impacts.” Consistent with state water laws, operators should be able to use, reuse, store or otherwise dispose of produced water free from federal interference as BLM proposes.

As authority, BLM cites the Federal Land Policy and Management Act (FLPMA), “[i]n managing the public lands, the Secretary shall, by regulation or otherwise, take any action necessary to prevent unnecessary or undue degradation of the public lands.” 43 U.S.C. 1732(b). BLM also cites 43 CFR 3161.2, “all operations be conducted in a manner which protects other natural resources and the environmental quality.” But, as discussed below, FLPMA does not authorize BLM to unilaterally impose water quality standards on water use or otherwise interfere with water use on public lands.

In short, BLM has proposed a tremendous roadblock to water use related to oil and gas production on federal lands. Contrary to longstanding deference to the states, BLM seems to seek veto power over whether water can be used for drilling and, if so, how it may be stored and disposed of.

BLM’s proposed rule has no legitimate foundation in federal statute or caselaw. Two major statutes authorize management of the public domain by the BLM: the Taylor Grazing Act and FLPMA. Neither reserved water rights to the BLM. *See Federal Water Rights of the National Park Service, Fish and Wildlife Service, Bureau of Reclamation and the Bureau of Land Management*, 86 Int. Dec. 553, 592 (June 25, 1979).

There is no congressional intent to preempt state control in the instances discussed in the proposed rule. See *California v. United States*, *infra*, and *United States v. New Mexico*, 438 U.S. 696 (1978). BLM has no specific statutory directive authorizing this intrusion into the realm of state water laws. Neither the application of state water law, nor the use of water for industrial purposes, frustrates BLM's ability to manage the public domain lands consistent with the purposes established by Congress.

The proposed rule contradicts FLPMA savings provisions that protect water rights as "valid existing rights." FLPMA provides:

(g) Nothing in this Act shall be construed as limiting or restricting the power and authority of the United States or—(1) as affecting in any way any law governing appropriation or use of, or Federal right to, water on public lands; (2) as expanding or diminishing Federal or State jurisdiction, responsibility, interests, or rights in water resources development or control; ...[and] (h) All actions by the Secretary concerned under this Act shall be subject to valid existing rights.

43 U.S.C. § 1701 note (2000) (emphasis added). Decreed water rights, permitted water rights and appropriative rights to place water to beneficial use are valid existing rights under FLPMA.

Without clear congressional authorization, federal agencies may not use their administrative authority to "alter the federal-state framework by permitting federal encroachment upon a traditional state power." *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers*, 531 U.S. 159, 172-173 (2001). Here, BLM may not use its permitting authority to require any such provisions contained in the proposed rule. Congress has not delegated to the BLM the authority to require operators relinquish a part of their existing water supplies or transfer their water rights to the BLM as a condition of approvals. Nor can BLM use its permitting authority to reallocate or otherwise obtain water from non-federal water rights that have been or will be recognized in McCarran proceedings.

FLPMA land use authority cannot be used to control the use of water allocated to and owned by non-federal water users under state law, or to interfere with state water allocation and administration systems. The provisions contained in the proposed rule could act like a *de facto* reallocation of water. BLM may not interfere with the exercise of water rights nor may it coerce transfers of water rights through its proposed rule.

The proposed rule is also contrary to BLM's own policies on water. For example, the BLM Manual (BLM 7520) recognizes that states have the authority and responsibility for the allocation and management of water resources within their boundaries, except as specified by Congress. Moreover, in 2005 BLM entered into a Memorandum of Understanding (MOU) with the Colorado Department of Natural Resources to formalize a cooperative framework on water issues on BLM lands in Colorado. There, BLM agreed to recognize, "the authority of the State to allocate water available for appropriation and respect[s] valid water rights that are granted, exercised and managed in accordance with state law." While the terms of the MOU may have expired, BLM's proposed rule certainly runs counter to its purpose.

2. Water is held by the states subject to appropriation by the public

Throughout the West, water is held by the states for the benefit and use of the public. The doctrine of prior appropriation generally governs water rights in the 19 western states.⁵ *United States v. City and County of Denver*, 656 P.2d 1, 6 (Colo. 1982) (citing to *California v. United States*, 438 U.S. 645 (1978)). BLM cannot seek to impose requirements of riparian water law systems in the West.

Colorado's constitution provides that the right to appropriate unappropriated waters shall never be denied. Colo. Const. art. XVI, § 6. The doctrine of prior appropriation is adopted in Colorado's constitution and provides that the water of every natural stream in Colorado is public property, which shall be dedicated to the use of the people by diversion and application to beneficial use, subject to the rights of prior appropriators. Colo. Const. art. XVI, § 5. Nothing more than diversion and application of water to beneficial use is necessary to create a water right in Colorado. See *Coffin v. Left Hand Ditch Co.*, 6 Colo. 443, 447 (1882). Similar provisions have been enacted in other western states.

For the other producing states of the West, similar provisions govern. Article VIII of Wyoming's constitution provides, "the water of all natural streams, springs, lakes or other collections of still water, within the boundaries of the State, are hereby declared to be the property of the State." Wyoming also explicitly protects priority of appropriation for beneficial uses and the right to appropriate waters. Wyo. Const. art. VIII, § 3. In Wyoming, one has a prescriptive right to water upon registration of a claim. But legal title does not vest until the projected works are constructed and water is put to beneficial use. John W. Shields, *Elwood Mead's Establishment of the Constitutional Foundations of Wyoming's Water Law*, at 2 (2012) (citation omitted).

North Dakota provides that streams and watercourses "shall forever remain the property of the state" subject to appropriation for beneficial use. N.D. Const. art. XI, § 3 and N.D. Century Code, 61-01-01. New Mexico provides that the "unappropriated water of every natural stream...is hereby declared to belong to the public and to be subject to appropriation for beneficial use, in accordance with the laws of the state." N.M. Const. art. XVI, § 2.

In Montana, "[A]ll surface, underground, flood and atmospheric waters within the boundaries of the state are the property of the state for the use of its people..." Mont. Const. art. IX, § 3(3). Finally, Utah states that, "[A]ll the waters in this state...are hereby declared to be the property of the public, subject to all existing rights to the use thereof." Utah Code, § 73-1-1 (1), (3).

Likewise in the western states, the authority for the administration and distribution of waters of the states rests with the state engineers. See Wyo. Stat. § 41-3-503; Colo. Rev. Stat. § 37-92-501; Mont. Code § 85-1-204(4); Utah Admin. Code, § 73-2-1(3)(a); N.D. Cent. Code § 61-02-14(1); and N.M. Stat. § 72-2-9.1(A). The proposed rule clearly interferes with the right to appropriate and distribute water in the West.

⁵ Alaska, Arizona, California, Colorado, Hawaii, Idaho, Kansas, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota, Texas, Utah, Washington, and Wyoming.

Even requirements to report information to the BLM create the potential for a competing federal water rights system. Requirements for federal mitigation clearly interfere with the notion that water is held in trust by the state for use by the public in perpetuity.

3. Congress Defers to the states on water issues

For over 150 years, Congress has deferred to the States in matters related to the appropriation and administration of water. BLM cannot undo this with the stroke of a pen. Beginning with the Mining Act of 1866, 43 U.S.C. § 661 (2000), Congress recognized the local laws of the states and territories governed the use of water on federal lands

Whenever, by priority of possession, rights to the use of water for mining, agriculture, manufacturing or other purposes have vested and accrued, and the same are recognized by local customs, laws, and the decisions of the courts, the possessors and owners of such vested rights shall be maintained and protected in the same.

Id. In the Desert Land Act of 1877, Congress further recognized:

[All] surplus water over and above such actual appropriation and use, together with the water of all lakes, rivers and other sources of water supply upon the public lands and not navigable, shall remain and be held free for the appropriation and use of the public for irrigation, mining and manufacturing purposes subject to existing rights.

43 U.S.C. § 321. All nonnavigable waters became part of the public domain subject to plenary control of the states. *See United States v. City and County of Denver*, 656 P.2d 1, 8 (Colo. 1982).

In 1952, Congress established a unified method to allocate the use of water between federal and non-federal users in the McCarran Amendment. 43 U.S.C. § 666. The McCarran Amendment waives the sovereign immunity of the United States for adjudications for all rights to use water. *See Colorado River Water Conservation District v. United States (Mary Akin)*, 424 U.S. 800, 819 (1976). It also is evidence of congressional recognition of the primacy of western states' interests in regulating and administering water rights. *City and County of Denver*, 656 P.2d at 9. As the Federal Water Rights Task Force aptly summarized:

Congress has addressed this issue repeatedly, and each time the issue has been resolved in favor of deference to the ability of the states to decide who has a water right, how much it is and how and when it may be exercised....

Report of the Federal Water Rights Task Force Created Pursuant to Section 389(d)(3) of P.L. 104-127, p. 1 (Aug. 25, 1997).

BLM does not hold, and is not authorized to hold, a “super” federal water right beneath the public lands. While the agency could potentially apply for water rights underneath BLM

lands, it lacks specific statutory authority to do so. Similar filings have occurred in Colorado—but only with express Congressional direction.⁶ Because the proposed rule does not suggest this possibility, we have not explored these issues.

Congress intended the use of water on federal lands to be governed by the law of those states. “[E]xcept where the reserved rights⁷ or navigation servitude of the United States are invoked, the State has total authority over its internal waters.” *California v. United States*, 438 U.S. 645, 662 (1978). “The history of the relationship between the Federal Government and the States in the reclamation of the arid lands of the Western States is both long and involved, but through it runs the consistent thread of purposeful and continued deference to state water law by Congress.” *Id.* at 653. These protections were expressly preserved in the enactment of FLPMA some 100 years later. *See* FLMPA Section 701(g).

In the “Colorado doctrine” states (Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah and Wyoming), the courts have held that the United States never acquired any interest in water: the transfer of sovereignty upon statehood transferred all authority to control the disposition and use of those waters to the states. Memorandum for Carol E. Dinkins, Assistant Attorney General, Land and Natural Resources Division, Office of Legal Counsel, U.S. Department of Justice, *Federal “Non-Reserved” Water Rights*, by Theodore B. Olson, Assistant Attorney General, Office of Legal Counsel (Jun. 16, 1982) at 13.⁸

Through this proposed rule, BLM would upset the time-honored preeminence of State water law. The federal government historically has acquiesced to comprehensive state control over the appropriation of water, including water on federal lands, at least with respect to rights that could be asserted by private appropriators. *United States v. City and County of Denver*, 656 P.2d at 8; *see also California v. United States*, 438 U.S. at 656. Even federal claims to water are subject to State laws. *See United States v. Idaho*, 508 U.S. 1, 8 (1993). Just this year, the Supreme Court reiterated that the states retain the power to determine the scope of the public trust over waters within their borders—not the federal government. *PPL Montana, LLC v. Montana*, 132 S.Ct. 1215, 1227-28, 1234-35 (2012).

⁶ For example, in creating the Great Sand Dunes National Park, Congress directed the Secretary of the Interior to apply for state-adjudicated water rights to protect unique hydrology and wetlands (including extraordinarily rare pulse-flows at Sand and Medano Creeks). While contested in water court, the U.S. eventually earned a decree for all of the groundwater underlying that national park

⁷ BLM fails to cite to any alleged reserved water right under this proposed rule. In fact, the agency has limited ability to claim reserved water rights for only narrow purposes, including public water holes and springs, mineral hot springs, stock driveways, public oil shale withdrawals, wild and scenic rivers, national monuments and conservation areas, and wilderness areas. *See, e.g.*, “Public Water Reserve No. 107”, 43 CFR § 2321.1-19(a) (1926, Executive Order by President Calvin Coolidge), Wilderness Act of 1964 (16 USC § 1131), Wild and Scenic Rivers Act of 1968 (16 USC § 1271).

⁸ For “California doctrine” states such as North Dakota, however, the federal government had an original property right to non-navigable waters that did not pass to the states upon admission. Olson Memorandum at 13. The use of water on federal land in North Dakota is subject to federal authority to determine such rights. *Id.*

4. Implementation could result in takings without just compensation

In the West, water rights are property rights that are freely transferrable. For example, many operators contract with existing water right holders to supply water used in hydraulic fracturing. To the extent BLM interferes with or reallocates water rights, the operator or water right owner could be entitled to compensation under the Takings Clause of the Fifth Amendment to the United States' Constitution. U.S. CONST. Amend. V. The Takings Clause protects private parties from abuse of government power by requiring just compensation if the government's regulation has the effect of depriving an individual of his, her, or its property. *See Gardner v. Trustees of Newburgh*, 2 Johns. Ch. 162, 167 (N.Y. Ch. 1816); *Boyle v. United States*, 200 F.3d 1369 (Fed. Cir. 2000); *Betterview Inv. V. Public Serve of Colo.*, 198 P3d 1258 (Colo. App. 2008).

While claims under the Takings Clause are factually dependent, they may be successful when regulation prevents productive use or expected economic return. *Argent v. United States*, 124 F.3d 1277 (Fed. Cir. 1997); *Van Wyk v. Public Serv. Co.*, 996 P.2d 193 (Colo. App. 1999); *Cook v. United States*, 1999 WL 36214 (Fed. Cl. 1999). Such could certainly be the case here.

A takings can occur even if the deprivation caused by the government's regulation is temporary or affects only one aspect of the property right, such as its possession or use. *Kaiser Aetna v. United States*, 444 U.S. 164, 176 (1979). The imposition of mitigation requirements on water use could potentially qualify.

In addition, a taking may be found when a certain type of property owner has been singled-out by the government to bear a disproportionate public burden. *Armstrong v. United States*, 364 U.S. 40 (1960). Here, BLM has singled out water use related to industrial development.

5. The proposed rule interferes with interstate compacts and U.S. Supreme Court decrees

Implementation of the proposed rule could also interfere with the allocation of water between states. The rights to interstate waters have been resolved through interstate compacts and equitable apportionment.

Article 1, section 10 of the U.S. Constitution authorized interstate compacts negotiated between the states and ratified by the state legislatures and the U.S. Congress. Much like treaties between the states, the compacts resolved water allocation issues for millions of people in the West. For example, the States of Colorado, Wyoming, Utah, and New Mexico hold sacrosanct the protections in place in the Colorado River Compact of 1923 and the Upper Colorado River Compact of 1948.

States also may bring an original action the doctrine of equitable apportionment before the U.S. Supreme Court to protect their rights to interstate streams within their borders. *See Richard A. Simms, Equitable Apportionment and New Uses*, 29 NAT. RES. J. 549 (1989). Article III, section of the U.S. Constitution provides the authority for such unique jurisdiction. *See James N. Corbridge Jr. and Teresa A. Rice, Vranesh's Colorado Water Law Rev.*, at 528 (1999).

BLM has absolutely no authority to impose conditions or otherwise regulate the interstate allocation of waters by regulatory fiat. Such issues go to the heart of federalism and the U.S. Constitution.

IV. Response to Additional Requests for Comments

In addition to seeking comments on the requirements of the proposed rule, BLM asked for comments on specific issues of interest.

Specifically, within the proposed rule the Bureau has asked: 1) how best it can avoid duplication of state efforts and regulations, 77 Fed. Reg. 27694; 2) whether waste streams other than those discussed in proposed rule should be addressed in the final rule, 77 Fed. Reg. 27696; and 3) whether the proposed rule should require tanks or lined pits for storage of drilling fluid or any other fluid used for stimulation, 77 Fed. Reg. 27697.

At the outset, we find this approach to rule-making to be grossly inconsistent with the intent of the Administrative Procedure Act (APA). Any additional rulemaking related to waste streams or storage of drilling fluid must be addressed in subsequent notice-and-comment rulemakings as required by the APA to allow interested parties and stakeholders to engage.

Further, as we note in the opening sections of these comments, the best way for the agency to avoid duplication of state efforts is to not duplicate state efforts. The Bureau's analysis of existing state regulation is clearly insufficient and has resulted in a proposed rule that contains numerous, unnecessary provisions that directly overlap with existing state regulation.

V. Conclusion

America's oil and natural gas professionals remain dedicated to supporting and promoting the safe and responsible development of the nation's oil and natural gas resources. However, this proposed rule is unnecessary and infringes on the current system of state regulation of hydraulic fracturing and other exploration and production activities that has served the nation well. In addition, the rule goes far beyond disclosure of hydraulic fracturing fluids and includes wellbore construction standards and water regulations that directly encroach upon the individual states. The time delays and uncertainty this rule imposes will only further cloud the leasing process on federal lands that is rapidly becoming untenable for America's small oil and natural gas operators. At a time when the federal government should be looking for ways to spur and encourage innovation for oil and natural gas exploration on federal lands, the proposed rule simply adds another layer of regulation on a system that is already overwhelmed. We urge the BLM to withdraw this rule and begin working with the states to address any issues the agency feels need to be clarified regarding oil and natural gas exploration activities.



Kathleen Sgamma
Vice President, Government and Public Affairs
Western Energy Alliance



Daniel T. Naatz
Vice President, Federal Resources
IPAA

MEMORANDUM

TO: Kathleen Sgamma, VP of Government & Public Affairs, Western Energy Alliance
FROM: John Dunham, Managing Partner
DATE: June 11, 2012
RE: Business Impact of Proposed Changes to Well Completion Regulations

As per your request, we have examined the impact of a proposal that would require that companies drilling new wells for the extraction of petroleum products submit a plan outlining the details of well completion operations for approval prior to performing them. The proposed regulation is being promulgated by the US Department of Interior's Bureau of Land Management (BLM) and as currently written would apply only to federal wells on or impacting Federal and Indian lands, or split estate lands. However, this definition is remarkably broad and could potentially be applied to companies drilling on private lands in the western states.¹

In fact, assuming a best case scenario, where the BLM approves 100 percent of all applications and assuming capital costs of only 7 percent, these regulations – if applied to all projects in the western states – would cost at least \$1.226 billion annually based on the carrying costs of the project. Based on the discounted lost value of petroleum output, the proposed regulations would cost about \$1.342 billion annually. Averaging these two methods together suggests that a reasonable estimate for the cost of this proposed rule as applied to drilling in the western states is just over \$1.284 billion. The average cost per well is estimated at \$253,800. This figure does not even include the cost of the regulations for existing wells that will require re-work or re-stimulation. A conservative estimate of this cost is upwards of \$233,100 per well or about \$273 million per year. **Total aggregate annual costs for new permits and workovers would be at least \$1.499 billion and as high as \$1.615 billion.**

Proposed Regulation and Background:

The US Department of the Interior, Bureau of Land Management (BLM) recently proposed amendments to current regulations (43 CFR 3160.0-3) that would require significantly more permitting and operational expenses for companies drilling and completing oil and gas wells on federal lands.² While BLM claims that the amendments would not constitute a major change in existing regulations, the new rules would add a large number of new requirements for companies exploring for, and producing, oil and natural gas on federal and Indian lands. This rule change would among other things require operators to:

- Provide additional information and meet new requirements for all well stimulation (completion) activity when applying for a permit to drill (APD). A similar application would need to be filed prior to performing additional stimulation on an existing well. The BLM would have to review and verify the additional completions requirements when approving these permits.
- Submit additional cement bond logs for review and approval prior to completing the well.

¹ For the purpose of this analysis the western states include: Arizona, Colorado, Idaho, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oregon, South Dakota, Utah, Washington, and Wyoming

² Bureau of Land Management proposed rule RIN 1004-AE26: Oil and Gas; Well Stimulation, Including Hydraulic Fracturing, on Federal and Indian Lands

- Report the specific source of water used in well completion operations.
- Submit a detailed engineering design and other information related to well stimulation operations to the BLM for approval.
- Submit detailed information related to how they will handle or treat all recovered fluids from well stimulation activities.
- Perform a successful mechanical integrity test prior to commencing any well completion activities.
- Store detail to the agency how recovered fluids are disposed of.

While many of the requirements are simply clarifications or minor additions to the existing permitting process, other components may add significantly to the cost of drilling and completing an oil or gas well. Obviously there will be additional costs to both operators and to the government simply due to the increase in the administrative burden contemplated by these rules. The potential for delay resulting not from any direct operational activity, but rather from waiting for permits and paperwork to be processed, could lead to significant financial costs for both operators and investors.³ While any additional costs would reduce drilling activity (since marginal wells would no longer be financially practical to develop), were these costs to be high enough they could preclude companies from developing any additional resources on BLM-controlled or impacted land. This is particularly true for wells requiring some sort of workover or retreatment in order to continue to maximize their output. Since the new regulations will also apply to these wells, operators maintaining many of the current 90,452 producible and service drill holes on Federal leases will also experience greatly increased costs over time.⁴

Currently, once a company has obtained a lease for mineral extraction on Federal lands, and once it has completed a lengthy environmental analysis under the National Environmental Policy Act (NEPA) process, it must apply for a permit to actually begin drilling. The Energy Policy Act of 2005 specifies that BLM must approve Applications for Permit to Drill (APD) within thirty days, yet according to Bob Abby, the Director of the Bureau of Land Management, the average permit time is 298 days,⁵ and depending on the field office, it is not that uncommon for APDs to take years.⁶ In addition, data on the number of actual permits outstanding is not generally available in a timely fashion from BLM, making it difficult to estimate the actual amount of time needed to currently process a permit; however, the agency expects to process 5,500 APDs in fiscal year 2012 under the existing regulatory structure.⁷

Estimated Number of Wells Impacted by the Proposed Regulation:

³ BLM already takes about 10 months to approve an APD and there is a substantial backlog.

⁴ See: US Bureau of Land Management, *Well Stimulation Proposed Rule: Economic Analysis and Initial Regulatory Flexibility Analysis*, at: www.regulations.gov/#!documentDetail;D=BLM-2012-0001-0003.

⁵ Cappiello, Dina, *New process to expedite drilling on public lands*, Associated Press, April 3, 2012. On-line at: www.newsvine.com/_news/2012/04/03/11002223-new-process-to-expedite-drilling-on-public-lands

⁶ Sgamma, Kathleen, Vice President of Government & Public Affairs, Western Energy Alliance, *Testimony Before the House Natural Resources Committee Subcommittee on Energy and Mineral Resources Legislative Hearing on H.R. 4381, H.R. 4382 and H.R. 4383*, April 26, 2012.

⁷ *Secretary Salazar Visits North Dakota's Oil Boom; Unveils Initiatives to Accelerate Drilling Permits and Leases on Federal Lands*, US Department of Interior, Bureau of Land Management, [Press Release](http://www.blm.gov/wo/st/en/info/newsroom/2012/april/nr_04_03_2012.html), April 3, 2012, available at: www.blm.gov/wo/st/en/info/newsroom/2012/april/nr_04_03_2012.html

The Bureau of Land Management does not release detailed statistics on pending permits, however, a good estimate of the number of wells impacted by this proposed rule can be developed based on state permitting information. This analysis examines the impact of the proposed rule in 13 Western states.⁸ Based on data from state regulatory authorities, there are approximately 12,300 oil wells, and 14,100 gas wells currently in the process of receiving a permit, or permitted but not yet drilled. Only some of these wells are on Federal or Indian lands, so not all would be required to go through the extra permitting process. In addition, at the present price for oil and natural gas, not all of the wells are economically viable. In fact, in many areas natural gas wells in particular are being capped because the actual cost of production exceeds the price of gas.

This analysis examines these wells as individual units at the state level. It estimates the number on federal permit lands based on a linear estimate of the number of permits issued over the past 24 years. In addition, the analysis assumes that no wells will be drilled in states where the average profits from either oil or gas plays are less than zero. Based on these limiting assumptions, the proposed regulation would impact about 1,800 currently proposed oil wells, and about 3,250 gas wells. Table 1 below outlines the number of wells currently waiting for permits or for drilling to commence by state, along with an estimate of impacted wells.

Table 1
Estimated Oil and Gas Wells Waiting to Be Permitted or Drilled

State	Estimated Total			Estimated Impacted		
	Oil Wells	Gas Wells	Total Wells	Oil Wells	Gas Wells	Total Wells
Arizona	3	1	4	-	-	-
Colorado	3,187	5,718	8,905	212	380	592
Idaho	-	5	5	-	-	-
Montana	398	240	638	63	-	63
Nebraska	106	11	117	-	-	-
Nevada	14	14	27	-	-	-
New Mexico	4,519	2,564	7,083	700	-	700
North Dakota	1,993	6	1,999	99	-	99
Oregon	-	6	6	-	-	-
South Dakota	22	2	24	1	-	1
Utah	1,392	2,098	3,490	252	380	632
Washington	-	3	3	-	-	-
Wyoming	685	3,461	4,146	491	2,480	2,971
Total	12,318	14,129	26,447	1,818	3,240	5,058

This of course represents only one moment in time. Were natural gas prices to rise above their current low levels, the resulting number of wells that could be impacted would increase substantially. In addition, were the Federal government to open more areas for oil and gas

⁸ Arizona, Colorado, Idaho, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oregon, South Dakota, Utah, Washington, and Wyoming.

exploration and leasing the number could also increase well beyond what is currently considered in this analysis. In fact, according to a report by the Congressional Research Service oil production on federal on-shore leaseholds was down slightly between 2007 and 2011.⁹

According to the BLM in its cursory examination of the benefits and costs of these proposed regulations, approximately 3,100 wells would be impacted each year. This analysis examines only the current impact of the proposed rules – in that they will impact 5,058 existing permits. No assumptions are made as to future permits on either existing or future leases or costs incurred on existing wells that may need future stimulation or acidization. Recent research conducted for the American Petroleum Institute suggests that about 93 percent of gas wells are completed with hydraulic fracture, and of these about 1.6 percent require some sort of work-over in a given year.¹⁰ Based on these figures, and the number of wells on Federal leases, it is estimated that as many as 1,346 wells per year will need some sort of rework that falls under these regulations

Model Data and Assumptions:

This model was developed for the Western Energy Alliance by John Dunham and Associates (JDA), a New York City based economic consulting firm. It is based on a wide range of data sources and assumptions, each of which impacts the final results. JDA has strived to ensure that the assumptions are as cautious as possible leading to what is likely a low estimate of the overall cost of the proposed rule. Each of these assumptions, along with the data used in the development of the models in detailed below:

Average Drilling Costs are estimated based on data derived from the US Department of Commerce, Bureau of Economic Analysis, by the Minnesota IMPLAN Group in 2010. These data come from the Input/Output accounts of the United States. These data present detailed figures on the input costs for oil and gas well drilling including wages, capital costs, leasing costs, and costs of various materials and services used in the drilling and completion of oil and gas wells. The data are from 2010. The figures used in this model are based on the average cost per dollar of output (basically sales) multiplied by the estimated sale of oil and natural gas as the wellhead in each state as of 2011 which are the latest data available. Annual average prices and production volumes by state are gathered from the US Department of Energy.¹¹ Costs are divided between exploration/leasing/permitting, drilling and completion based on the type of input and labor costs are divided based on input commodity and service costs with about 52.4 percent of the drilling/completion cost assumed to be for drilling and the rest for completion.¹²

Production Costs are estimated based on data derived from the US Department of Commerce, Bureau of Economic Analysis by the Minnesota IMPLAN Group in 2010. These data come

⁹ Humphries, Marc, *U.S. Crude Oil Production in Federal and Non-Federal Areas*, Congressional Research Service, March 20, 2012, at: <http://cnsnews.com/sites/default/files/documents/CRSreport%20Oil%20Production.pdf>

¹⁰ Shires, Terri and Miriam Lev-On, *Characterizing Pivotal Sources of Methane Emissions from Unconventional Natural Gas Production*, prepared by URA Corporation and the LEVON Group for the American Petroleum Institute and American's Natural Gas Alliance, June 1, 2012.

¹¹ See for example: *Domestic Crude Oil First Purchase Prices by Area*, US Department of Energy, Energy Information Administration, at: www.eia.gov/dnav/pet/pet_pri_dfp1_k_a.htm

¹² The model is based on average costs and revenues. These can vary greatly by play, product and individual well.

from the Input/Output accounts of the United States. These data present detailed figures on the input costs for oil and gas production including wages, capital costs, leasing costs, and costs of various materials and services used in the exploration/leasing/permitting, production, infrastructure development and reclamation of oil and gas plays. The data are from 2010. The figures used in this model are based on the average cost per dollar of output (basically sales) multiplied by the estimated sale of oil and natural gas as the wellhead in each state as of 2011 which are the latest data available. Annual average prices and production volumes by state are gathered from the US Department of Energy.¹³ Costs are divided between different activities based on the type of input and labor costs are divided based on input commodity and service costs.

Anticipated Revenues are based on data from the US Department of Energy. It is simply equal to the annualized price of either oil or natural gas at the wellhead (by state) multiplied by annual production.¹⁴ Revenues per well cannot be derived simply by dividing this by the number of producing wells since oil and gas wells tend to have either a hyperbolic or an exponentially declining production trend. Based on discussions with industry principles, a well will generally not be drilled and put into production unless it can recoup at least the direct drilling costs in the first year after completion. Using this assumption and a simple declining exponential function, the model suggests that about 97 percent of the production occurs in the first 4 years after drilling. The four year production total (multiplied by the current price of either oil or gas) was used to estimate total revenue per well. Operating costs were then multiplied by 4 to reflect the economic life of each well.

The Number of Wells To Be Drilled is estimated based on data from individual state permitting authorities. Each authority uses different methods to identify whether wells are gas or oil (or both) and the wells' stage in the production process. While complete standardization between the states is not possible, in general it is possible to label a well as oil or gas, and as in some stage of pre-production. These are aggregated for each state and the summary results are shown on Table 2 on the following page.

The Number of Producing Wells is also estimated based on data from individual state permitting authorities. Again, each authority uses different methods to identify whether wells are gas or oil (or both) and the wells' stage of production. While complete standardization between the states is not possible, in general it is possible to label a well as oil or gas, and that it is in some stage of production. Water wells, disposal wells, capped wells, injection wells, and other operations not directly used to extract petroleum are not included. A summary of these wells is also included in Table 2 on the following page.

The Number of Wells on Federal Land is estimated based on a linear trend of permits issues by state. These data come directly from the Bureau of Land Management.¹⁵ Based on a linear trend, the BLM will approve 5,841 drilling permits on all Federal land in 2012, of which 87 percent (5,058) will be in the 13 subject states.

¹³ See for example: *Domestic Crude Oil First Purchase Prices by Area*, US Department of Energy, Energy Information Administration, at: www.eia.gov/dnav/pet/pet_pri_dfp1_k_a.htm

¹⁴ Ibid.

¹⁵ *Number of Drilling Permits Approved by Fiscal Year on Federal Lands*, US Department of the Interior, Bureau of Land Management, November 9, 2011. Available on-line at: www.blm.gov/wo/st/en/prog/energy/oil_and_gas/statistics.html

The Number of Wells requiring Rework: is estimated by multiplying the 90,452 existing wells on Federal leases by 87 percent (the estimated percentage in the 13 subject states) and then by 93 percent (the percentage completed using hydraulic fracture) and then by 1.6 percent or the annual rework rate in a given year.¹⁶ Under these assumptions 1,171 wells in the subject states will require re-work in a given year.

Table 2
Summary of Wells Included in The Cost Analysis

	Estimated Number of Wells in			
	Production	Permitting Process	Federal Permit Process	Impacted
Oil	108,753	12,318	1,818	1,818
Gas	92,915	14,129	3,675	3,240
Total	201,668	26,447	5,493	5,058

The Number of Impacted Wells is calculated by taking the number of estimate permits on Federal lands (see above) and dividing them into oil or gas wells based on the overall number of oil versus gas wells in each state that are currently in the permitting process. These figures are then adjusted downward to remove all wells in states where the average oil or gas well would be unprofitable. While this does not mean that individual wells would not be profitable, and therefore subject to this new rule, it does ensure that the estimated costs calculated as part of this analysis are conservatively estimated.

The Discount Rate used in this analysis is 7 percent based on the rate used in the BLMs cursory analysis of the benefits and costs of these regulations.¹⁷ The Federal government recommends that significantly lower discount rates be used in internal analyses; however, the cost of capital for government projects is significantly lower than that for risky ventures like oil and gas exploration, drilling and production. Industry sources have suggested to JDA that a discount rate of 12 to 15 percent is generally standard in the financial decision-making process;¹⁸ however, this could not be independently substantiated. Therefore, this analysis assumes a cost of capital equal to the coupon of non-investment grade corporate bonds as of April 23, 2012.¹⁹

The Number of Delay Days is invariably difficult to predict since the permit in question currently does not exist. The proposed rule does not propose a limit on the number of days that the BLM can take to either approve or reject the permit. Currently the agency is taking about 10 months to approve a drilling permit, and there is already a substantial backlog. No additional funds to enforce the proposed rule could be found in the FY 2012 Federal Budget, so the agency

¹⁶ Shires, Terri and Miriam Lev-On, *Characterizing Pivotal Sources of Methane Emissions from Unconventional Natural Gas Production*, prepared by URA Corporation and the LEVON Group for the American Petroleum Institute and American’s Natural Gas Alliance, June 1, 2012.

¹⁷ See: US Bureau of Land Management, *Well Stimulation Proposed Rule: Economic Analysis and Initial Regulatory Flexibility Analysis*, at: www.regulations.gov/#!documentDetail;D=BLM-2012-0001-0003.

¹⁸ John Dunham and Associates interviews with various industry principles and staff of drillers, operators, service companies and leaseholders.

¹⁹ From Bloomberg.com at: www.bloomberg.com/markets/rates-bonds/corporate-bonds/

will be required to process at least 5,000 expanded permit applications with its current staffing levels. As such it is probably not unreasonable to assume that the approval time for these permits with the additional requirements to add about a third of that of approving the existing drilling permits, and will likely be much longer. In this analysis, it is assumed that the additional permitting time will be about 49 days. This is based on a Monte Carlo analysis using a log-normal function and assuming an average increase in permitting time of 47 days, with on outside change of either zero additional days or 99 additional days (which is one-third of the current permitting time). In addition to this, it is assumed that about 13.5 additional days will be needed in between the drilling of a well and the stimulation process. Again, a Monte Carlo analysis is used which assumes a median of 7 additional days and an outside chance of either zero or 30 days.

Additional Casing Costs will be required under the provision that requires casing to protect the “usable groundwater” where this is defined as water containing 10,000 parts per million of total dissolved solids. This change in definition of usable ground water will require operators to run deeper surface casing, two stage cementing on the production casing or the addition of an intermediate string of casing. Currently this casing is brought down to an average depth of about 2,000 feet, but may now have to be brought down to a depth of 4,000 or even 7,500 feet or deeper depending on conditions. It costs about \$37 per foot for casing of this type. Again, using a Monte Carlo simulation it is estimated that each well will require approximately 2,350 feet of additional casing.

Additional Cement Bond Log: The new regulations will require operators to maintain an additional Cement Bond Log for all pipes and other surface operations. This is an analysis which provides a representation of the integrity of the cement job on pipes and is generally only required or used on drill casings. According to the BLM this will be required on about \$9,000 per well and will be required on 97.5 percent of covered wells.²⁰ However, on top of the cost of the CBL, operators will need to ensure that all drilling and field equipment is maintained at the site while the cement cures. Cost estimates provided by companies operating in the Williston, Piceance and San Juan basins suggest that on average the hourly cost for maintaining this equipment on-site (and idle) is as much as \$1,950. Costs can be even higher in areas where deep, horizontal wells are being drilled. Assuming that 72 hours of additional delay time is required for the cement to cure this would mean that each well would require an additional \$140,400 expense simply to cover the down time for the rig while the operator is completing the CBL, meaning that the total cost for this requirement will be \$145,665 per well.

Mechanical Integrity Tests are assumed to be required on 20 percent of wells prior to commencing stimulation operations, and that these tests are assumed to cost approximately \$10,000 as per the BLM.²¹

The Permit Approval Rate is assumed to be 100 percent. This ensures that the estimated cost generated by the model will be the lowest possible. A lower approval rate would result in a

²⁰ See: US Bureau of Land Management, *Well Stimulation Proposed Rule: Economic Analysis and Initial Regulatory Flexibility Analysis*, at: www.regulations.gov/#!documentDetail;D=BLM-2012-0001-0003.

²¹ Ibid.

higher cost of the proposed rule. The administrative cost to operators is assumed to be only \$495 per well as per the BLM.²²

Detailed Results – Cost of the Proposed Regulations:

Based on the data and assumptions presented in the prior section it is possible to calculate the anticipated cost of the proposed rule on the oil and natural gas industry. There are two potential ways to calculate this cost. The first assumes that development stops for a period of time while the permitting/verification process takes place. The capital already tied up in the development of the well during this time can be discounted at a reasonable rate of interest which would represent the direct cost to the driller/producer. This method assumes that the well development would continue unabated following the completion of the regulatory process and that production from the well would occur at the same rate and with the same revenues as would have occurred 62.5 days earlier. In such, this model simply represents the additional cost of capital to the producer.

Table 3
Summary of Estimated Costs by State

	State	Method 1	Method 2	Average
AZ	Arizona	\$ -	\$ -	\$ -
CO	Colorado	\$ 140,597,918	\$ 144,944,919	\$ 142,771,418
ID	Idaho	\$ -	\$ -	\$ -
MT	Montana	\$ 15,676,353	\$ 17,450,231	\$ 16,563,292
NE	Nebraska	\$ -	\$ -	\$ -
NV	Nevada	\$ -	\$ -	\$ -
NM	New Mexico	\$ 167,170,616	\$ 169,003,720	\$ 168,087,168
ND	North Dakota	\$ 25,147,180	\$ 33,310,119	\$ 29,228,649
OR	Oregon	\$ -	\$ -	\$ -
SD	South Dakota	\$ 253,752	\$ 286,759	\$ 270,256
UT	Utah	\$ 150,566,431	\$ 159,886,215	\$ 155,226,323
WA	Washington	\$ -	\$ -	\$ -
WY	Wyoming	\$ 726,475,894	\$ 817,064,564	\$ 771,770,229
Total	Total 13 States	\$ 1,225,888,144	\$ 1,341,946,527	\$ 1,283,917,335

A second method can be used to calculate the cost to the industry. Under this method, it is assumed that the overall cost of completing a well would remain the same; however, there would be a delay to the producer in realizing a return. Under this model, the value of production over the delay period is discounted back representing a lost return on capital.

While either method can produce a reasonable assumption for the overall cost of the regulations, the magnitude of the difference between them would be impacted by the current market price of petroleum products and capital. In a market where prices are high, the lost return on capital would produce a higher figure, where in a market where interest rates are relatively high, the cost of capital method would produce a more substantial loss estimate. As such, the average value between these two approaches should serve as a good estimate of the cost of the proposed rule.

²² Ibid.

Based on the first approach and the assumptions outlined above, the total cost of the proposed rule would be just over \$1.225 billion, with nearly 60 percent of that coming from operations located on Federal lands in Wyoming. The second approach, which examines the lost value of production, leads to a forecast loss of about \$1.342 billion, with Wyoming again accounting for the bulk of this cost. Table 3 on the prior page shows the estimated losses by state based on the two approaches.

The arithmetic average of these estimates is \$1,284 billion which is John Dunham and Associates' estimate of the overall cost to the oil and gas industry of the proposed rule based on the existing wells in the regulatory pipeline. As the rule will impact future operations, it may also have significant costs as long as the industry continues to operate on Federal leases. This analysis does not examine future costs nor does it examine costs incurred for additional well stimulation efforts on existing – and either currently producing or capped wells.

Table 4
Cost Component Comparison

	BLM	Percent	JDA	Percent	Difference
Initial Delay Costs	\$ -	0.00%	\$ 56,404,007	4.39%	\$ 56,404,007
Pre Completion Delay Costs	\$ -	0.00%	\$ 38,326,948	2.99%	\$ 38,326,948
Administrative Costs	\$ 3,798,558	6.52%	\$ 2,503,710	0.20%	\$ (1,294,848)
Enhanced Casing Costs	\$ -	0.00%	\$ 439,793,100	34.25%	\$ 439,793,100
Cement Bond Log Costs	\$ 44,383,950	76.13%	\$ 736,773,570	57.38%	\$ 692,389,620
Mechanical Integrity Test Costs	\$ 10,116,000	17.35%	\$ 10,116,000	0.79%	\$ -
Total Costs	\$ 58,298,508	100.00%	\$ 1,283,917,335	100.00%	\$ 1,225,618,827

Table 4 above presents these costs in comparison with those documented by the BLM in its cursory analysis of the benefits and costs of the proposed rules. As the table shows, the bulk of the additional costs (about 36 percent) come from the additional well casing that the new rules would require and 56.5 percent from the additional cement bond log. However, the costs related to delays are so substantial that even eliminating the additional casing expense and accepting the government's estimates for Mechanical Integrity Tests and administrative costs as given, the total cost to drillers and operators will still exceed \$107 million even if the casing and cement bond log costs were not included.

On a per well basis the regulations will cost about \$253,800. Obviously this is an average as the costs for a deep horizontal oil well on the Bakken will be significantly higher than that of a shallower vertical gas well drilled on the San Juan Basin. However, the actual per well costs could rise if the regulations were to eliminate the economic incentive for drilling marginal wells. Were that to happen, only deep, horizontal plays with high expected returns may be drilled on federal lands, and more marginal natural gas leases may simply lie fallow. Table 5 below outlines the costs of the proposed rule based on an average oil/gas well.

Table 5
Cost Component Comparison per Well

	BLM Estimate		JDA Estimate	
Initial Delay Costs	\$	-	\$	11,151
Pre Completion Delay Costs	\$	-	\$	7,577
Administrative Costs	\$	751	\$	495
Enhanced Casing Costs	\$	-	\$	86,950
Cement Bond Log Costs	\$	8,775	\$	145,665
Mechanical Integrity Test Costs	\$	2,000	\$	2,000
Total Costs	\$	11,526	\$	253,839

Costs from Reworking Existing Oil and Gas Wells:

Since the new regulations will also apply to maintenance stimulation of existing wells, operators maintaining many of the current 90,452 producible and service drill holes on Federal leases will also experience greatly increased costs over time.²³ Assuming that wells require stimulation in line with figures recently calculated for the American Petroleum Institute, as many as 1,171 wells in the subject states will require re-work in a given year.²⁴

Assuming that re-work can be scheduled to minimize the costs and delays that will come about due to the proposed rules, and that operators already perform integrity tests prior to re-stimulation, these projects will incur additional costs related only to:

- Administration and permitting (\$495 per well);
- Additional costs to ensure that casings meet the new requirements (\$86,950 per well);
- Additional Cement Bond Log costs to ensure that all pipes and surface infrastructure conforms to the new requirements (\$145,665 per well);

Based on the assumptions above, operators will incur additional costs equal to over \$233,100 per well for the first re-stimulation event for all existing wells. Since it is difficult to determine the actual number of wells on federal lands that will be cost effective to maintain once these regulations are in effect, this analysis examines the costs for only one year. Assuming, therefore, that 1,171 wells on federal leaseholds will require re-work, the cost of the regulations for just workovers will be almost \$273.0 million. This figure will only increase as wells require re-work or new stimulation activities over time.

In sum, the above analysis suggests that these proposed regulations will have a significant impact on the oil and gas production industry even without considering future discounted costs.

²³ See: US Bureau of Land Management, *Well Stimulation Proposed Rule: Economic Analysis and Initial Regulatory Flexibility Analysis*, at: www.regulations.gov/#!documentDetail;D=BLM-2012-0001-0003.

²⁴ Shires, Terri and Miriam Lev-On, *Characterizing Pivotal Sources of Methane Emissions from Unconventional Natural Gas Production*, prepared by URA Corporation and the LEVON Group for the American Petroleum Institute and American's Natural Gas Alliance, June 1, 2012.

About John Dunham and Associates:

John Dunham and Associates is a leading New York City based economic consulting firm specializing in the economics of fast moving issues. JDA is an expert at translating complex economic concepts into clear, easily understandable messages that can be transmitted to any audience. Our company's clients include a wide variety of businesses and organizations, including some of the largest Fortune 500 companies in America, such as:

- Altria
- Diageo
- Feld Entertainment
- Forbes Media
- MillerCoors
- Verizon
- Wegmans Stores

John Dunham is a professional economist with over 25 years of experience. He holds a Master of Arts degree in economics from the New School for Social Research as well as a Masters of Business Administration from Columbia University. He also has a professional certificate in Logistics from New York University. Mr. Dunham has worked as a manager and an analyst in both the public and private sectors. He has experience in conducting cost-benefit modeling, industry analysis, transportation analysis, economic research, and tax and fiscal analysis. As the chief domestic economist for Philip Morris, he developed tax analysis programs, increased cost-center productivity, and created economic research operations. He has presented testimony on economic and technical issues in federal court and before federal and state agencies.

Prior to Phillip Morris John was an economist with the Port Authority of New York and New Jersey, the Philadelphia Regional Port Authority and the City of New York.

MEMORANDUM

TO: Kathleen Sgamma, VP of Government & Public Affairs, Western Energy Alliance
 FROM: John Dunham, Managing Partner
 DATE: September 7, 2012
 RE: Administrative Impact of Proposed Changes to Well Completion Regulations

As per your request, we have performed a detailed examination of the administrative costs that companies developing oil and natural gas fields would incur if the Bureau of Land Management’s proposed rules on well stimulation were enacted.¹ The proposal rule includes 30 new administrative tasks that companies would have to perform as part of drilling and completing new wells on Federal and Indian lands, or split estate lands. These administrative tasks would require industry to hire 160 people to comply with the increased administrative overhead, whereas BLM estimated only 15–18 employees would be hired over each of the next three years for the entire industry. BLM failed to provide any basis for its estimate. In addition, the BLM estimated that the administrative costs of the new rules borne by private stakeholders would be about \$495 per well.² Our analysis, as outlined below, shows that the actual cost will be closer to \$3,550 per well, for a total administrative burden of nearly \$18 million.

Methodology:

John Dunham & Associates identified 30 separate administrative tasks required by the proposed regulation and distributed a survey to Western Energy Alliance member companies to determine the type of employee necessary to comply with each component of the rules, and the labor burden in man-hours per well.

JDA received eight usable responses from stakeholders and was able to determine the average labor hours required by occupational category. By using average wage data from the Bureau of Labor Statistics for different occupations,³ and applying a benefits multiplier of 1.3 to the hourly wage rates, JDA determined that the average *administrative compliance* cost per well to be closer to \$3,553 (see table below).

Estimated Administrative Costs Associated with Proposed Rule

	Hours	Wage + Benefits (Per Hour)	Cost	Number of People
Administrator	12.8	\$ 20.37	\$ 260.37	31.1
Completions Manager	1.1	\$ 79.55	\$ 89.49	2.7
Drilling Site Manager	4.9	\$ 59.83	\$ 291.65	11.9
Engineer	28.1	\$ 80.44	\$ 2,262.49	68.4
Engineering Tech	0.9	\$ 31.38	\$ 29.42	2.3
Geologist	1.2	\$ 61.18	\$ 72.65	2.9
Project Manager	2.9	\$ 59.83	\$ 172.00	7.0
Regulatory Specialist/Analyst	13.8	\$ 27.24	\$ 374.48	33.4
Total	65.7		\$ 3,552.55	159.7

An earlier analysis estimated that 5,058 wells currently undergoing the permitting process would be impacted in the thirteen states represented by the Western Energy Alliance.⁴ At \$3,553 per well, regulatory

¹ See: US Bureau of Land Management, *Well Stimulation Proposed Rule: Economic Analysis and Initial Regulatory Flexibility Analysis*, at: www.regulations.gov/#!documentDetail;D=BLM-2012-0001-0003

² Ibid. This number was presented as a given with no explanation of the methodology or assumptions used to derive it.

³ US Bureau of Labor Statistics, *Overview of BLS Wage Data by Area and Occupation*, available at: <http://www.bls.gov/blswage.htm>

⁴ Arizona, Colorado, Idaho, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oregon, South Dakota, Utah, Washington, and Wyoming.

compliance costs of the BLM rule are likely to amount to \$17,971,074 in those thirteen states alone. This means that companies developing oil and natural gas wells would be required to hire an additional 160 people simply to comply with the increased administrative overhead.