



May 30, 2014

Mr. Steven Wells, Division Chief
Fluid Minerals Division
Bureau of Land Management
20 M Street, S.E.
Washington, DC 20003

**Re: Venting & Flaring from Oil and Gas Operations on BLM-Managed Leases
Submitted Electronically to blm_wo_og_comments@blm.gov**

Dear Mr. Wells:

With this letter, API provides its comments to the Bureau of Land Management (“BLM”) in response to BLM’s public outreach on venting and flaring from BLM-managed oil and gas operations.¹ API is a national trade association representing over 600 member companies involved in all aspects of the oil and natural gas industry. API’s members include producers, refiners, suppliers, pipeline operators, and marine transporters, as well as service and supply companies that support all segments of the industry. Many of API’s individual member companies operate or perform work on oil and gas leases on lands administered by BLM.

API and its members are dedicated to environmental protection, while economically developing and supplying energy resources for consumers. We are concerned, however, by several aspects of BLM’s public outreach materials regarding the potential promulgation of redundant, burdensome, and premature requirements on API’s members. BLM should ensure that it regulates within the scope of its authority, integrates its efforts with existing rules and efforts by federal and state authorities with jurisdiction over air quality, and upholds longstanding principles governing the economic operation of oil and gas leases. Moreover, in considering venting and flaring options, BLM should adopt a sufficiently comprehensive view that recognizes and addresses permitting delays and other fundamental challenges that currently preclude the installation of pipelines and infrastructure that could further reduce the need for venting and flaring.

¹ See BLM Venting and Flaring Public Outreach (March 19, 2014) (“BLM Outreach Materials”), *available at* http://www.blm.gov/pgdata/etc/medialib/blm/wo/MINERALS__REALTY__AND_RESOURCE_PROTECTION_/energy/oil_and_gas.Par.72011.File.dat/VFoutreach.pdf.

BLM must act within the scope of its existing authority.

- a. BLM has a statutory mandate to provide for the prevention of waste, conservation of oil and gas resources, and assurance of payment of the proper royalty share to the federal government, but not to regulate methane emissions or air quality.

BLM does not have plenary authority to regulate the venting and flaring of gas on federal leases. Pursuant to the Mineral Leasing Act (“MLA”), 30 U.S.C. §§ 181-287, and the Mineral Leasing Act for Acquired Lands, 30 U.S.C. §§ 351-359, BLM has the authority to ensure conservation of the oil and gas resource, prevent waste, and obtain a fair return to the government, including ensuring that the United States receives proper royalties on production from federal leases. *See* 30 U.S.C. §§ 187, 359. This is the basis of BLM’s authority to regulate venting and flaring of natural gas on BLM-managed leases. *See* United States Geological Survey Conserv. Div. Manual, 644.5.1, .2, Waste Prevention, Beneficial Use (“USGS Division Manual”) (June 23, 1980); Notice to Lessees (“NTL”)-4A “Royalty or Compensation for Oil and Gas Lost” (Jan 1, 1980).²

It is a longstanding principle at common law and under the MLA that a lessee commits “waste” if it vents or flares gas that is otherwise economically recoverable. *See* 30 U.S.C. § 225; USGS Division Manual at 1-3. Accordingly, BLM’s longtime standard has been whether it is economic for the lessee to recover the gas. *See, e.g.*, NTL-4A.³ If not, the loss is considered “unavoidable” and the lessee has no royalty or other obligation with respect to the vented or flared gas. *See id.*; *Texaco, Inc.*, 135 IBLA 112 (1996). BLM has reiterated this key economic principle in prior notices, instruction memoranda, and guidance on venting and flaring. *See, e.g.*, NTL-4A. BLM’s latest outreach materials also acknowledge this concept.

Despite this longstanding and consistent interpretation of the statutory standard for “waste,” BLM is now considering whether to change existing standards for determining whether recovery of gas is economic for a lessee, and hence the definition of “waste.” For example, BLM’s presentation materials suggest the creation of a “clear and rigorous economic test” to address venting and flaring of casing head and associated gases. *See* BLM Outreach Materials at 16. BLM cannot interpret the economic standard in a manner inconsistent with its decades-long interpretation and longstanding accepted usage in the regulated community, which involves an assessment of the actual economic conditions relating to an oil and gas operation on a case-by-case basis. *See* NTL-4A; *Maxus Exploration Co.*, 140 IBLA 124 (1997). BLM must continue to factor in the relatively modest profit margins on individual leases or units onshore, the substantial expense of additional controls, and the lack of available and reasonably foreseeable pipeline capacity, and ensure that BLM does not demand capture that renders operations uneconomic. *See* NTL-4A. Contrary to these obligations, BLM’s listed regulatory options modify the longstanding “economic” recovery standard so that venting and flaring controls would be imposed on a greater number of leases and in situations where no “waste,” as historically defined, is occurring.

Relatedly, though BLM has the authority to regulate lease operations to promote the conservation of gas and minimization of waste, potential regulatory options listed by BLM tread on the well-established notion of economic “waste.” Traditional oil and gas law, and the MLA, last amended significantly in 1987, did not contemplate that all gas would be deemed economically recoverable or that all loss would be avoidable. For example, the MLA requires oil and gas lessees to “use all *reasonable* precautions to

² NTL-4A applies broadly to federal and Indian leases. We assume that the terms of any future rule governing venting and flaring would do the same.

³ NTL-4A and subsequent related administrative materials are available at http://www.blm.gov/pgdata/etc/medialib/blm/wo/MINERALS__REALTY__AND_RESOURCE_PROTECTION_/energy/oil_and_gas.Par.50053.File.dat/NTL4A.pdf.

prevent waste of oil or gas developed in the land.” 30 U.S.C. § 225 (emphasis added). Nor is the total prevention of loss economically feasible today. Accordingly, over decades of implementation, BLM has refrained from defining “waste” too broadly, and it must continue to do so to accommodate economic realities and the continuing development of technologies, infrastructure, and markets. The Administrative Procedure Act prevents BLM from straying too far from its decades-long interpretation of “waste” grounded in the MLA. Analogously, prior to NTL-4A, courts prevented BLM from enforcing NTL-4A in a manner that constituted a departure from settled understandings regarding non-payment of royalty on certain production. *See, e.g., Plains Exploration & Production Co.*, 178 IBLA 327, 332-33 (2010) (discussing federal court decisions rejecting NTL-4A requirement that “lessees . . . pay royalty on all oil and gas produced from a lease or unit, . . . reversing the Department’s prior longstanding view”).

- b. BLM needs to assess the effectiveness of the current NTL-4A, identify potential gaps, and analyze how NTL-4A can be amended to fill those gaps.

Although NTL-4A has not been revised in nearly 35 years, it provides a precedent that implements the intent of “prevention of undue waste” of the natural resource as required by MLA § 187, while obtaining “maximum ultimate economic recovery” of the resource as required by 43 C.F.R. §§ 3160 & 3161.

The requirements of NTL-4A achieve regulation of venting and flaring by identifying circumstances under which venting and flaring are permissible, requiring reporting, documentation, and consultation with the BLM Supervisor, empowering the Supervisor to require installation of additional measuring equipment, and providing that an operator’s failure to comply will result in compliance being secured by such actions as are provided by law and regulation.

API recommends the following approach as an alternative to the proposals to implement controls on drilling and production operations that BLM representatives discussed during the four public outreach sessions held earlier this spring.

Similar to the Conservation Action Plan in NTL-4A, under Onshore Order No. 3 BLM has allowed for the operator’s development of a site security plan to address how the facility will be inspected and maintained, how reports will be submitted, and other requirements for the security of the well site, instead of establishing prescriptive and specific requirements. In a similar manner, and as an alternative, BLM could allow operators to submit a venting and flaring reduction plan that could detail:

- A review of venting and flaring emissions from the area from the EPA’s Greenhouse Gas Reporting Rule effort;
- Mitigation methods used to reduce the highest emissions sources from venting and flaring; and
- Pipeline evaluations for areas where gas pipelines currently do not exist, including whether or not, and if so when, pipelines are technically, economically, and otherwise feasible.

Such a plan would allow companies to address the highest volume sources of venting and flaring. Operators could determine the most practicable method to reduce venting and flaring appropriate to, and effective for, particular operations. Operators could include EPA and state requirements that are already required as part of their mitigation methods.

- c. The authority to regulate air quality resides exclusively with EPA, states, and Tribes.

BLM cannot promulgate new venting and flaring rules premised on the protection or regulation of air quality. As noted above, BLM’s administration of oil and gas leases is limited to oil and gas resource conservation, waste prevention, and fair economic return to the government. By contrast, the regulation of air quality is solely within the purview of EPA and EPA-authorized state or tribal programs under the

authority granted by Congress in the Clean Air Act (“CAA”), 42 U.S.C. §§ 7401-7671q. *See, e.g.*, 42 U.S.C. § 7410 (providing for State Implementation Plans (“SIPs”) for the attainment and maintenance of established National Ambient Air Quality Standards (“NAAQS”)).⁴

The CAA is not fashioned like some environmental statutes where Congress vests authority in the President and leaves to the President the task of delegating responsibilities to implementing agencies. *See, e.g.*, Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. §§ 9601-9675; Oil Pollution Act of 1990, 33 U.S.C. §§ 2701-2761. In the case of the CAA, Congress vested program authority in the EPA Administrator and the states. Any exceptions to this general rule are clearly called out and limited. *See, e.g.*, H. Rep. No. 95-1474, at 86 (1978) (explaining that Section 8(a) of the Outer Continental Shelf Lands Act (“OCSLA”) was intended to grant jurisdiction over Outer Continental Shelf (“OCS”) air emissions to DOI, but expressly disclaiming an intent to disturb the responsibilities of the EPA over onshore air quality under the CAA); S. Rep. No. 101-228, at 78 (1989) (explaining that Section 328 of the CAA, which transferred authority over OCS air regulation from the DOI to EPA, was intended to “supersede” section 8(a) of OCSLA for regulating OCS emissions to ensure consistent implementation of air quality laws and regulations); Consolidated Appropriations Act, 2012, H.R. 2055, Pub. L. No. 112-74 (expressly transferring authority over OCS air emissions offshore of the North Slope Borough of Alaska from EPA back to DOI, exempting offshore operators from EPA’s emissions permit requirements). Apart from these limited and explicit exceptions, Congress’ residual expectation of agencies other than EPA was certain: to follow EPA’s lead and direction “to the same extent as any nongovernmental entity.” 42 U.S.C. § 7418.

Neither the CAA nor any other superseding statute grants BLM the authority to regulate air quality and emissions. This omission is both conspicuous and plain in its import: that authority resides exclusively with EPA and the states and tribes. Any attempt by BLM to regulate in this arena would contravene clear Congressional intent.

Congress’ choice not to give BLM this authority is not surprising in view of the fact that BLM lacks the capacity – both technically and legally – to administer an expansive onshore air pollution control program. Air quality protection is neither BLM’s mission nor an area of BLM technical strength. Moreover, as discussed above, BLM is constrained by its long-standing and well-considered views regarding economic natural gas recovery and waste. In view of these constraints, as well as EPA’s technical depth in this area, Congress rationally looked to EPA – and not to BLM – to regulate emissions and air quality on BLM-managed lands. BLM must respect that choice.

d. Exceeding its authority creates risks that BLM is duplicating regulatory action.

Onerous new BLM venting and flaring requirements would duplicate and may even conflict with existing EPA or state rules. The MLA prohibits BLM from promulgating regulations “in conflict with the laws of the State in which the leased property is situated.” 30 U.S.C. § 187. As BLM recognizes in its public outreach presentation, “EPA NSPS require new actions to minimize venting and flaring.” BLM Outreach Materials at 23. Many state environmental agencies also impose their own independently enforceable requirements for minimizing venting and flaring. These existing federal and state requirements will continue to minimize emissions and maximize capture as they are implemented across existing and new leases – the very issues BLM seeks to address in its new planned rule.

⁴ *See also* EPA Order 1110.2 (Dec. 4, 1970) (making EPA’s Air Pollution Control Office responsible for “the conduct of programs for the definition, prevention, and control of air pollution,” and developing a “systematic Federal-state-local regulatory program for stationary source emissions supported by research and development activities, combined with Federal-state-local air quality monitoring, Federal grants to air pollution control agencies, technical assistance, and manpower training”).

Existing rules already impose significant economic and operational burdens on lessees. At best, the anticipated new rule runs the risk of imposing an additional layer of regulatory burden without meaningful benefits; at worst, the rule could lead to contradictory requirements or interpretations among the multiple agencies involved. That is a reason to defer to EPA and states, rather than a “reason for considering the various options” for BLM action as suggested in BLM’s outreach materials. *Id.* at 3.

BLM should also consider how its new rule would interact with other aspects of the President’s methane strategy, particularly EPA’s consideration of directly regulating methane as a greenhouse gas. EPA is still in the fact-finding phase, with the April 2014 release of several white papers for peer review and public comment. Any EPA final methane rule is not due until 2016. *See* White House, *Climate Action Plan Strategy to Reduce Methane Emissions* (March 2014). Given the inchoate state of EPA’s science and technology review, any BLM prescription of specific steps to reduce gas (and thus methane) emissions would be premature.

- e. Amending long-established standards could unlawfully deprive current lessees of valid existing rights.

BLM must consider that agency actions may not deprive operators of valid existing lease rights. For existing leases, any BLM option that would render uneconomic an operation that otherwise would be economic under existing standards could result in an unconstitutional taking of private property rights. Onshore oil and gas leases confer recognized development rights (hence the relatively greater scope of NEPA review required for onshore leasing decisions than for offshore leasing decisions). *See Conner v. Burford*, 848 F.2d 1441, 1449-51 (9th Cir. 1988); *Sierra Club v. Peterson*, 717 F.2d 1409, 1411, 1414-15 (D.C. Cir. 1983). BLM may subsequently impose reasonable conditions on the lessee’s development rights, but cannot change the standards in effect when the lease was issued and render development economically infeasible. *See, e.g., Conner*, 848 F.2d at 1449-51. If new BLM venting and flaring requirements render operations on existing leases uneconomic, those lessees may have takings claims against the United States for significant compensation. *See Century Exploration New Orleans, Inc. v. United States*, 103 Fed. Cl. 70 (Jan. 24, 2012); *Devon Energy Corp. v. United States*, 45 Fed. Cl. 519 (Dec. 21, 1999). While BLM may have greater latitude to impose more restrictions on leases issued after adoption of a new rule since lessees would be taking their leases with notice of any new requirements, such restrictions may lessen interest in leasing of federal lands and could reduce bonus bids in future lease sales.

Additionally, every oil and gas lease is an enforceable contract between BLM and the lessee, and is subject to all of the same legal constraints as a private contract. *See, e.g., Mobil Oil Exploration & Producing Southeast, Inc. v. United States*, 530 U.S. 604 (2000); *Century Exploration New Orleans, LLC v. United States*, 110 Fed. Cl. 148, 163 (2013); *Amber Res. Co. v. United States*, 68 Fed. Cl. 535 (2005), *aff’d*, 538 F.3d 1358 (Fed. Cir. 2008). For the reasons described above for takings, existing lessees may have an alternate claim that BLM breached the lease contracts by taking action that prevented the lessees from enjoying the benefits of their existing leases. *See Amber Res. Co. v. United States*, 87 Fed. Cl. 16 (2009); *see also* Sec. 701(h) of Pub. L. 94-579 (Oct. 21, 1976) (Federal Land Policy and Management Act enabling statute) (“All actions by the Secretary concerned under this Act shall be subject to valid existing rights.”).

BLM should not impose rules that would render production operations uneconomic, thus depriving the federal government of royalty revenue. By processing permits for pipeline rights-of-way and construction in a more timely manner, BLM could optimally reduce venting and flaring.

As noted above, BLM has a longstanding “economic” recovery standard that is also referenced in NTL-4A:

The Supervisor may approve an application for the venting or flaring of oil well gas if justified either by the submittal of...[] an evaluation report supported by engineering, geologic, and economic data which demonstrates to the satisfaction of the Supervisor that the expenditures necessary to market or beneficially use such gas are not economically justified and that conservation of the gas, if required, would lead to the premature abandonment of recoverable oil reserves and ultimately to a greater loss of equivalent energy than would be recovered if the venting or flaring were permitted to continue.

BLM should not impose rules that would render operations uneconomic, in particular taking into account the relatively modest profit margins on individual leases, the substantial expense of additional controls, and the lack of available and reasonably foreseeable pipeline capacity that currently exists in many areas where operators produce oil or natural gas from leases administered by the BLM. For example, any insistence on closer audits or re-verifications could result in substantial time delays and additional expense which could reduce or eliminate the economic value of the lease. Similarly, the application of a new economic “test” would increase the burden on BLM employees tasked with reviewing detailed economic information for each individual lease, increasing costs and potentially adding another layer of bureaucracy to the lease administration process.

The presence or absence of pipeline infrastructure significantly affects the timing of production and an operator’s decision whether to seek approval to vent or flare natural gas associated with crude oil production. The BLM proposals to capture nearly all methane emissions from production operations appear to assume it is as simple as laying a pipeline or installing a small compressor, but this is not the case. Collection and treatment of methane or natural gas production generally involves midstream companies which seek permits for and install gathering lines to collect, separate (e.g., hydrocarbon liquids and produced water), treat (e.g., removal of CO₂, H₂S and other impurities), and compress gas to meet transportation pipeline specifications for the sale of such gas. In addition to the remoteness of leases with oil and gas production or their distance from existing pipeline infrastructure, the timing and sequence of pipeline projects to deliver production from such leases can be affected by operational concerns such as the gathering pipeline’s operating pressure, pressure of the gas source (e.g., the wellhead pressure, the high and/or low-pressure separator pressure, and pressure of tank vapors typically at ounces), and volumes/quality of total gas in the area to justify the economics of gathering and transportation pipeline location(s). Existing gas plants and gathering systems in legacy areas may be at or near capacity, and completion of a distribution system may therefore require construction of a new gas plant(s) as well as new pipelines. Finally, delays that may be experienced in the process of securing permits to install gas pipelines for gathering or for transmission can delay pipeline hook-ups to producing wells, resulting in additional flaring and in deferral of revenue both for the operator and for the federal government or other royalty owner.

In some circumstances, venting and flaring on federal and Indian lands may occur more often or at higher volumes than on adjacent private and state lands because of the delay from the federal government in approving rights-of-way for gas gathering lines over these lands. The North Dakota Petroleum Council Flaring Task Force estimates that 40% of natural gas production is flared at oil wells on the Fort Berthold Indian Reservation, versus 27% on state and private land. Rather than promulgating new regulations, BLM could make a significant difference in quickly capturing methane from new oil wells by simply processing permits for pipeline rights-of-way and construction in a more timely manner.

EPA and the states regulate emissions for the benefit of public health and the environment. There is no need for BLM to develop additional regulations to address methane.

With respect to addressing emissions from exploration and production operations for oil and natural gas, EPA and states have exercised their jurisdiction over environmental protection of air, water and waste

resources. Regulations developed under these authorities apply to operations within BLM's geographical boundaries and jurisdiction; thus, there is no need for BLM to develop regulations concerning environmental impacts as would be suggested by the information that has been shared by BLM in the recent public forums on the subject of venting and flaring. For example, in the presentation offered at the public forums, BLM discussed best available control technology ("BACT"), which has a specific definition in air quality rules and requires analysis of the public health and environmental benefits along with economic costs. As noted above, regulation of emissions for the benefit of public health and the environment falls within the purview of EPA and state programs, typically under the authority granted by Congress in the CAA. EPA's New Source Performance Standards for oil and natural gas ("NSPS OOOO") already require further reductions in methane emissions along with reductions in volatile organic compounds ("VOCs"). Operators must comply with these rules on BLM-managed lands, and there is considerable risk of duplicative regulation if BLM adds its own requirements that may conflict or be redundant with existing EPA rules and state requirements such as NSPS OOOO. As also noted above, BLM is prohibited from developing provisions which "conflict with the laws of the State in which the leased property is situated." 30 U.S.C § 187.

Even if BLM had the requisite authority to regulate directly on the basis of environmental protection, there would be no need for BLM to exercise such authority since both EPA and the states are charged with this responsibility and are currently re-analyzing the need for additional environmental protection measures in conjunction with venting and flaring. For BLM to divert its attention and the efforts of its staff professionals to address emissions from exploration and production operations as an environmental matter would represent a duplication of effort. In addition, such efforts would be particularly troubling since BLM lacks EPA's authority to consider minimum standards and environmental benefits required by the CAA to economically justify new controls in other arenas.

The operators of BLM-managed leases must comply with the requirements of the CAA; thus, there is no gap that BLM needs to fill, as explained above. EPA is actively pursuing emission controls for the oil and gas industry. The NSPS provisions in Subpart OOOO were proposed in August 2011, were finalized in September 2012, and have already added emission control requirements for oil and gas operations where sufficient information is available to demonstrate that such controls are economic considering the benefit of VOC reductions. The continuing efforts to revise NSPS OOOO have been ongoing since the Second Quarter of 2010, are expected to continue into 2015, and have required substantial resources and expertise by both EPA and the regulated community.

Methane reductions are co-benefits of these VOC emission reductions. EPA is developing white papers to inform the policy discussion on whether additional emission controls are justified to further reduce methane emissions below the level already obtained by the current NSPS OOOO. As stated above, many of the emission controls BLM is considering either (1) are already required by NSPS OOOO, or (2) have been considered and rejected because of either insufficient data or lack of economic benefit (as determined by EPA with reference to statutory authority BLM does not possess). BLM must take into consideration the operational complexities and, subsequently, the difficulties and inherent inflexibility associated with attempting a "one-size-fits-all" approach to mitigating emissions from the sources identified within the public forum presentation. The attachment to this letter describes source-specific issues of concern in response to BLM's request for comment on the public outreach materials concerning the various sources and options being considered.

Environmental protection measures for existing facilities have diminished marginal value in terms of controlling emissions relative to those installed on new facilities due to the following:

- a. The CAA has provided environmental protection since the early 1970s. When a new protection measure is added, any equipment installed subsequent to such additional protection measure

being in place is considered “new” and must comply with the new CAA air quality protection measure.

- b. Oil and gas well production begins to deplete (i.e., the production rate begins to decline) immediately when placed in service. As a result, emissions from storage vessels are primarily dependent on the production rate. Therefore, if the production rate decreases 50%, these emissions will generally decrease proportionately (i.e., roughly 50%, as well).
- c. Existing facilities that predate emission control standards are unlikely to be economically controlled even considering environmental benefits. In BLM’s case, adding controls may make production uneconomic resulting in the plugging and abandonment of the well and an overall shorter life of the well.
- d. Under the CAA, States are required to create SIPs that (1) protect areas that meet the NAAQS (a.k.a. “attainment areas”) and (2) contain the measures necessary (such as emission controls and offsets) in order to bring areas that do not meet the NAAQS (nonattainment) into attainment.
- e. As part of their SIP to protect attainment areas, most states with oil and gas production require operators to meet emission threshold levels to qualify for permit exemptions or obtain permits for these small sources (a.k.a minor new source review (“NSR”). Some states also have rules similar to NSPS, but with additional stringency (i.e., Colorado Reg. 7). These rules are reviewed frequently to assure that air quality and public concerns are met.
- f. SIPs for nonattainment areas are more stringent and cover new and existing facilities, and regulations for new facilities do not have the same type of economic constraints that other regulations must consider. Criteria for stringency are entirely based on the level necessary to bring the area into attainment with the NAAQS. The NAAQS are reviewed every 5 years and is typically revised to a more stringent standard in an effort to improve air quality. The ozone NAAQS level is currently under review, and a lower standard is being considered by EPA. The deadline for the new proposal is December 1, 2014, with a final rule by October 1, 2015.

The regulatory structure described above is adequate justification to defer BLM’s consideration of any type of command and control regulatory structure to reduce emissions. This type of regulation already exists and reductions in emissions are being achieved. If BLM decides to move forward with additional requirements, then, at a minimum, the agency should not do so at least until current efforts by EPA (including NSPS, Subpart OOOO, methane white papers, ozone NAAQS review, and the oil and gas emission estimate tool) and state rulemaking efforts (including NAAQS SIP revisions) are completed. The completion of the following efforts, pending significant modification following industry feedback to improve each, will allow the BLM rulemaking to be better informed on both its scope and necessity:

- a. The proposed development of the oil and gas emissions tool which was requested by EPA’s Office of Inspector General as a result of the existing National Emissions Inventory and greenhouse gas data having known inaccuracies
- b. The EPA’s finalization of and responses to comments on multiple methane white papers which review the current knowledge and identify knowledge gaps concerning the regulation of the same sources BLM is considering, and
- c. Potential Subpart OOOO amendments which will include economic assessments of control options, if additional controls, which could achieve further methane reductions as a co-benefit, are recommended;

Additionally, allowing this effort to progress will result in the following

- a. Prevent duplication and likely conflicts with the new regulations resulting in the obligation to revise conflicts (*see* 30 U.S.C § 187);
- b. Likely eliminate the need for BLM to revise their requirements (since the EPA and state requirements will most likely be sufficient); and

- c. Overall, provide more efficient and effective use of federal resources due to elimination of overlapping regulatory processes.

Thank you for considering these comments. API or its members may supplement these comments as BLM's process progresses.

Very truly yours,

A handwritten signature in black ink that reads "Richard Ranger". The signature is written in a cursive, flowing style with a large initial "R".

Richard Ranger
American Petroleum Institute

Attachment – Source-Specific Comments

BLM must take into consideration the operational complexities and, subsequently, the difficulties and inherent inflexibility associated with attempting a “one-size-fits-all” approach to mitigating emissions from the sources identified within the public forum presentation.

Well Completions

There are important differences between oil wells and gas wells that make oil well reduced emissions completions (RECs) infeasible in many situations. Two key operating requirements that have the most impact on the feasibility of a doing an REC on an oil well are:

- A field-wide gas gathering system with sufficient capacity to handle the initial gas production surge must be in place.
- The oil reservoir must have sufficient pressure and a sufficient volume of associated gas.

A REC is not possible for any hydraulically-fractured oil well that does not meet *both* of these conditions. And, in many cases, flaring is not feasible if the reservoir yields insufficient gas to either operate a separator or operate a combustion device.

Before natural gas production can be sent to a natural gas gathering line, all of following must be done:

- A natural gas gathering line/system must be permitted, installed and operational in the area.
- A contractual right to flow into the gas gathering system with the company that owns the gathering line must exist.
- Acquire necessary permits and right(s)-of-way for the pipeline from the well site to the natural gas gathering system.
- There must be a gas plant to receive the gas for processing.
- The natural gas must meet the specifications of the natural gas gathering line, which often requires treatment (e.g., dehydration and removal of other impurities).
- There must be adequate reservoir pressure to overcome the natural gas gathering line pressure and flow with sufficient velocity to clean up the well and avoid reservoir damage.
- The natural gas gathering line must be operational at the time of the completion.

Furthermore, there are many reasons to complete a well and flow it back *without* a natural gas gathering line or production equipment in place, including, but not limited to:

- Avoiding lease jeopardy by establishing production in paying quantities.
- Excessive waiting time for the necessary permits for installing the pipeline or the production equipment.
- Not yet having all the surface rights secured for installing production equipment.

When each stage of a stimulation program is initially completed, the pressure of the gas may not be sufficient to overcome pipeline pressure and maintain adequate velocity to clean-up the well and reservoir. When this occurs, the well must be flared or vented until enough flowing pressure is available to send gas to the sales pipeline (i.e., the flowing pressure exceeds the pipeline pressure of the system to which it is routed/to enter). This allows clean-up of the well bore and is critical to minimize the potential for formation damage and, therefore, the long-term recoverable reserves from the reservoir. It is possible that sensitive zones can lose productivity due to increased clean-up time required if the line pressure creates a “backpressure” which the well must overcome. Once fracture stimulation is performed,

flowback and clean-up must proceed regardless of whether or not sufficient pressure exists to enable sales; otherwise, severe and permanent reservoir damage is likely, effectively reducing the overall recoverable reserves from the well. Adding compression to overcome line pressure on low energy wells has been attempted several times and found to be infeasible for technical reasons. Furthermore, it adds additional air emissions from the engines used to power the compressors while greatly increasing the cost.

Many oil reservoirs have pressure that is insufficient for wells to naturally flow on their own even after hydraulic fracturing, or they have insufficient pressure to overcome the backpressure of the gas gathering system. This can be evidenced by the prevalence of artificial lift such as rod pumps and the associated pump jacks that are visible across the landscape of many oil producing areas. Also, many reservoirs produce insufficient gas volumes to operate a separator during flowback, which makes both REC and flaring infeasible. Examples of this include reservoirs in the Permian basin in which horizontal drilling is used to extend the life of existing producing formations. Other examples include reservoirs in the north central East Texas basin which produce heavy black oil, also called “dead oil” because there is no associated gas produced with the oil. In this area, gas to operate separation equipment must be purchased as it is not available from well production.

In the Permian Basin of West Texas, many oil wells that are hydraulically fractured do not have sufficient reservoir pressure to flow back on their own, and there is insufficient gas to flare. Instead, following a hydraulic fracture, rod pumps are installed on the wells to artificially lift the fracture fluids where they are routed either to frac tanks or storage vessels. No flowback separators are installed since there is insufficient gas to operate them.

Like gas wells, oil well candidates for REC must be capable of flowing on their own even against the backpressure of the gathering system. Where new plays, such as oil shale plays, meet these criteria RECs are already being practiced where feasible and gas infrastructure exists. For instance, in the Eagle Ford shale in south Texas, RECs are already being conducted where both the required parameters of infrastructure and high reservoir pressure are present. Gas gathering infrastructure is in place for much of the area (due to previous production from non-shale/conventional wells), and sufficient reservoir pressure and gas volumes exist to make a REC feasible.

Reservoirs characterized by the prevalence of artificial lift systems are not good candidates for REC, and flaring is dependent on sufficient gas being present to be separated and combusted.

Where a REC is not feasible, flaring or combusting associated gas that can be separated from the liquids is still the only and best technology to reduce emissions when sufficient gas volumes exist. In certain situations, operators may use a Joule-Thomson skid-mounted processing plant to collect natural gas liquids from stranded gas, but, while this may reduce VOC emissions, flaring is still necessary to control gas emissions.

Only wells with sufficient reservoir pressure to flow against the gathering system backpressure and capable of producing saleable quantities of natural gas are candidates for REC. Without a gas gathering system, flaring is still the next best option to control gas emissions during flowback assuming the gas can be separated from the liquids. While high-pressured oil shales are in the public focus, hydraulic fracturing also occurs in many low-pressure formations that rely on artificial lift to assist flow. These wells are not good candidates for REC. When REC is not feasible, flaring during flowback is the next best option, provided sufficient gas is available.

EPA is currently undergoing an effort, through the development and expert review of white papers, to inform how best to address emissions from these various sources including oil well completions. As

such, BLM should refrain from further regulation of oil well completions until the EPA has completed that effort.

Liquids Unloading

Deliquification of gas wells is a highly complex and technical subject with many approaches and technologies in use. Venting of wells is one technique that is often used in combination with other techniques that depend on reservoir pressure (e.g., plunger lifts) used to assist unloading. Liquid loading of well bores occurs when the gas production rate (velocity) up the well bore is not sufficient to carry liquids up the well bore. When a vertical liquid column builds up in the well bore, the weight of the column (i.e., its hydrostatic head) puts back-pressure on the producing formation, and the production rate declines to the point where the well can no longer flow. Low-rate wells are either impaired by liquids accumulation or are using some deliquification method in order to produce. As the reservoir energy depletes and the production rate declines, a well will reach the stage where liquid-loading begins to be a problem, and one of a portfolio of technologies or techniques will become necessary to help lift liquids using the reservoir's energy. As a well continues to produce and the reservoir energy declines further, a well will reach the stage where the reservoir's energy is insufficient to lift liquids, and artificial lift energy, in the form of pumps, gas lift, etc., will have to be added to continue producing. When the expected production from a well cannot support the investment required to enable deliquification, it will reach the end of its economic life.

The production rate of a well, consequential velocity up the well bore (also determined by the diameter of the production string), and, hence, the ability to lift liquids, is mostly a function of the differential pressure between the reservoir and the flow-line/collection system and the reservoir's sensitivity to backpressure. In order to flow, the total reservoir pressure must be greater than the total resistance to flow. This resistance is comprised of (1) fluid friction and fluid interference across the reservoir, (2) the flowing friction up the well bore, (3) the weight of the vertical fluid column in the well-bore, (4) surface equipment and piping pressure losses, and (5) the collection system/flow-line back-pressure. Opening a well bore to atmospheric pressure removes the effect of the surface equipment/piping pressure loss and the backpressure from the collection line, thus increasing the differential pressure available to increase flow rates and velocities, which may enable the well to lift the liquid from the wellbore (unload the well) "on its own." Venting of wells is a common practice in low-rate gas well deliquification and is not restricted to wells without deliquification assist technologies (i.e., it may be used on wells with deliquification assistance such as plunger lifts).

There are various reservoir-driven techniques operators use in wells experiencing liquids loading to assist in deliquification, which also helps reduce the need/occasions for venting. Each of these techniques may be the *best* solution, but only during a particular phase of the life of a reservoir. There are several misconceptions related to the "best technique." For example, it is a misconception that plunger-lift systems are the single or best emission control action for wells where venting for liquids unloading occurs. This misconception is further exacerbated by a lack of understanding (even among those purporting plunger lift systems as *the* solution to liquids unloading) of liquids loading and/or plunger lift systems and their appropriate uses, limitations, and efficacy. Plungers work by providing a mechanical barrier between a small volume of water and the gas that is used to transport it up the well bore. The mechanical barrier isolates the gas from the liquids, prevents gas from moving up through the liquids, hence making better use of the gas energy, and helps prevent liquids from falling back into the well bore. If the gas could flow faster, then that mechanical barrier would not be necessary or helpful. Plunger capacity is limited by well depth, differential between reservoir pressure/surface pressure, and the gas/liquid ratio that the well produces. Even plunger-lifted wells reach a point where they lack the reservoir pressure to run a plunger against backpressure with adequate frequency to lift the liquids present. At that point, the operator has the choice of replacing the plunger with a lift method that adds

energy to the system or plugging the well. Operators analyze these wells and have to make the decision to spend capital and operating expense on a pump versus drilling a new well.

Based on available estimates of emissions attributable to liquids unloading, wells with plunger lifts are responsible for more emissions per venting well than wells without plunger lifts. Wells with plunger lifts account for around 70% of emissions attributed to liquids unloading but only represent about 36% of the gas well population. Quite simply, considering plunger lifts to be a venting/emission control technology is not supported by fact or the data. The following table illustrates this dichotomy between assertion and fact.

Well Venting for Liquid Unloading Methane Emission Estimates							
Name	Methane MT's	Total # of Venting Wells	# Venting With Plunger Lift	# Venting Without Plunger Lift	MT's per year per Venting Well	MT's per Venting Well per year with Plunger	MT's per Venting Well per year w/o Plunger
Greenhouse Gas Reporting Program - 2012	276,378	58,663	32,448	26,215	4.711	6.158	2.959
U.S. Inventory of Greenhouse Gas Sources and Sinks - 2013 (2011 Emission Year)	258,667	60,810	23,503	37,307	4.254	4.618	4.024
API/ANGA Report - 2011 data	319,664	65,669	36,806	28,863	4.868	5.207	4.584
UT/EDF Phase 1 Study	162,619			35,828	4.539	not measured	4.539
ICF/EDF Report	277,307	75,399	44,286	31,113	3.678	4.430	2.607
<p>Note: With the exception of the UT/EDF Phase 1 Study this table is U.S. Totals</p> <p>Note 2: The UT/EDF Phase 1 results should be viewed with an abundance of caution. Only 9 well venting instances, all without plunger lift, were measured which is much too small of a population to extrapolate to a national or even sub-national level. Also, the supplemental information for this study indicates that venting may have been triggered on at least some of the wells measured solely to enable measurement. If this is correct, the wells were not liquid loaded, the flow volumes and dynamics would be very different from a liquid loaded well, flow would likely exceed normal production flow of the well, and flow would not be representative of an actual venting to assist unloading.</p> <p>Note 3: The different data sources/studies used different methane concentrations to arrive at methane emission estimates. See the individual studies for information on methane content that was used.</p>							

Although plungers are among the most common tools used in middle-stage deliquification, there is a misconception that plungers eliminate the need to vent to atmosphere. In many cases, wells equipped with plunger lifts are vented to atmosphere to generate the differential pressure necessary to lift the plunger and liquid column up the well bore. While this can be controlled and minimized, it *cannot* be eliminated.

EPA is currently undergoing an effort, through the development and expert review of white papers, to inform how best to address emissions from these sources including liquids unloading. As such, BLM should refrain from further regulation of liquids unloading until the EPA has completed that effort.

Casing Head and Associated Gas

The issues of casing head gas venting/flaring and flaring/venting of associated gas where infrastructure is not present are two very distinct issues. The issue of “stranded gas” is simply lack of infrastructure that provides an outlet for gas while venting of casing head gas is predominately an economic issue related to low-volume/low-pressure gas recovery.

Gas that is produced from an oil well that cannot be sold due to the fact that the pipeline infrastructure needed to gather and transport the gas for processing is not available is known as “stranded” gas. Unlike gas fields, where infrastructure may be unavailable in *only limited* situations such as exploration, delineation, or some leasehold wells, gas gathering infrastructure can be unavailable for oil wells across *an entire field or area*. Lack of available infrastructure occurs for various reasons. For instance, associated gas production volumes may be insufficient to make gathering, processing, and ultimately selling the produced gas economic. Or, economic gas gathering infrastructure construction may lag behind the start of new well production, as currently occurs in the Bakken oil shale formation of the Williston Basin in North Dakota. During flowback and continuing into production, stranded gas from high-pressure wells such as those in the Bakken is flared for reasons of both safety and VOC emissions reduction. Without a gas gathering infrastructure, an oil well REC is not possible. If stranded gas were not allowed to be flared, these oil wells would have to be shut-in/be unable to produce.

Before natural gas production can be sent to a natural gas gathering line, all of following must be done, as discussed in the oil-well completions section:

- A natural gas gathering line/system must be permitted, installed and operational in the area.
- A contractual right to flow into the gas gathering system with the company that owns the gathering line must exist.
- Acquire necessary permits and right(s)-of-way for the pipeline from the well site to the natural gas gathering system.
- There must be a gas plant to receive the gas for processing.
- The natural gas must meet the specifications of the natural gas gathering line, which often requires treatment (e.g., dehydration and removal of other impurities).

Venting of casing head gas is practiced in some areas to remove annular pressure from oil wells that are being pumped and increase the flow of oil from the formation to the well-bore. Recovery or flaring of this gas is predominantly an economic challenge rather than a lack of infrastructure although there may be some overlap. Casing head gas vents are typically near atmospheric pressure and recovery requires installation of a very low pressure collection system routed to a VRU type compressor which then discharges to either a low pressure gas system or the suction side of a larger gas compressor. Recovery is rarely economic for these very low volumes of gas. Flaring of casing head gas rather than venting requires the same low pressure collection system to either maintain sufficient back pressure against the casing to enable operation of a flare/combustion device or a VRU style compressor discharging to flare. Such an installation is never economic. Prohibiting venting of casing head gas will decrease oil production in many marginal wells and may render them uneconomic to continue production. EPA is currently undergoing an effort, through the development and expert review of white papers, to inform how best to address emissions from these sources including casing head and associated gas. As such, BLM should refrain from further regulation of this source until the EPA has completed that effort.

Combustion Efficiency Standard

Setting a numeric combustion efficiency standard for flaring during flowback is technically infeasible and impractical. During flowback, liquids are mixed with the gas stream, even during separation, which will prevent a specific combustion efficiency from being achieved. As such, EPA did not include combustion efficiency requirements in the flowback control requirement of NSPS OOOO (40 CFR 60, Subpart OOOO). Section 60.5375(a)(3) contains the following requirement:

You must capture and direct flowback emissions to a completion combustion device, except in conditions that may result in a fire hazard or explosion, or where high heat emissions from a completion combustion device may negatively impact tundra, permafrost or waterways. Completion combustion devices must be equipped with a reliable continuous ignition source over the duration of flowback.

In the preamble to the proposed NSPS OOOO⁵ EPA further explained:

We believe that, based on the analysis above, REC in combination with combustion is BSER for subcategory 1 wells. We considered setting a numerical performance standard for subcategory 1 wells. However, it is not practicable to measure the emissions during pit flaring or venting because the gas is discharged over the pit along with water and sand in multiphase slug flow. Therefore, we believe it is not feasible to set a numerical performance standard. Pursuant to section 111(h)(2) of the CAA, we are proposing an operational standard for subcategory 1 wells that would require a combination of REC and pit flaring to minimize venting of gas and condensate vapors to the atmosphere, with provisions for venting in lieu of pit flaring for situations in which pit flaring would present safety hazards or for periods when the flowback gas is noncombustible due to high concentrations of nitrogen or CO₂. The proposed operational standard would be accompanied by requirements for documentation of the overall duration of the completion event, duration of recovery using REC, duration of combustion, duration of venting, and specific reasons for venting in lieu of combustion.

Installation of a gas-gathering line in an oil field requires more than an economic analysis to determine whether to install it or not. It requires a gas-gathering system with sufficient capacity be in place, sufficient reservoir pressure, and a sufficient volume of gas. Regulations must accommodate for such realities and cannot be based solely on an economic analysis.

Storage Vessel/Tank Emissions

EPA already requires new, modified, or reconstructed storage vessels with greater than 6 tons per year (TPY) of VOC emissions to be controlled by 95% (including capture and destruction efficiency). Most of the states have adopted these rules or even stricter requirements for storage vessels. Existing tanks have lower emissions due to the decline in production that occurs over time, and very few existing tanks will exceed emissions of even 6 TPY. Controls below the 6 TPY threshold were determined not to be cost effective for *new* storage vessels, and retrofitting *existing* tanks with controls would cost far more. As such, BLM should refrain from control requirements for storage vessels.

⁵ 76 Fed. Reg. 52,758 (Aug. 23, 2011).

Pneumatic Devices

BLM must be clear on the type of controllers that they are reviewing/considering. The presentation mentions neither the type(s) of controller nor the service of such controller(s). From an emissions perspective, pneumatic controllers that emit can be classified by a combination of their design type and the type of service they perform. The two types of controllers are: “continuous-bleed” and “intermittent-vent.” The two types of service are: “on/off” and “throttling.”

Combining the type and service yields the following matrix:

		Type of Service	
		On/Off	Throttling
Type of Controller	Intermittent	Vents on de-actuation with emissions near zero between de-actuation cycles	Vents some gas pressure when valve needs to move towards closed
	Continuous	Bleeds continuously, rate slows while process is “on”, but average rate is ~constant	Bleeds continuously, rate varies with actuation, but average rate is ~constant

Types: As stated above, the two types of controllers are “continuous-bleed” controllers and “intermittent-vent” controllers. Continuous-bleed controllers are designed to bleed gas to the atmosphere on a continuous basis and send a pressure signal to an end device (valve with actuator) by fully or partially blocking the bleed port. Intermittent-vent controllers are typically designed with a small 3-way valve (pilot) that sends a pressure signal to an end device on demand and vents actuation gas to reverse the action on demand. Between actuation/de-actuation cycles intermittent-vent controllers are designed for near zero emissions.

Service: As stated above, the two types of service under which pneumatic controllers operate are “on/off” and “throttling.” The defining characteristic of an on/off controller is that the controller is not required to hold an end-device in an intermediate position (i.e., at the end of a control cycle the control-gas pressure to the end-device goes to zero). The defining characteristic of a throttling controller is that the controller is required to control an end-device in an intermediate position (i.e., the control-gas pressure to the end device is maintained at a pressure between atmospheric and supply pressure).

As shown in the table, both continuous-bleed or intermittent-vent controllers can be either *snap-acting* or *proportional*. However, snap-acting or proportional action is not a defining function of a controller for the purposes of determining emissions.

EPA has defined high-bleed pneumatic controllers in NSPS OOOO and the Greenhouse Gas Mandatory Reporting Rule Subpart W to be those that vent greater than or equal to 6 scf/hr. Continuous low-bleed pneumatic controllers and intermittent pneumatic controllers emit less than 6 scf/hr of gas.

EPA, within NSPS OOOO, already requires that any continuous-bleed pneumatic devices constructed, modified, or reconstructed after 10/15/2013 have a bleed rate of ≤ 6 scfh from the well head to the gas plant and a bleed rate of 0 scfh at the gas plant (achieved by using instrument air). Based on the definition of reconstructed, most existing high-bleed pneumatic devices will be phased out over time.

Sometimes high-bleed pneumatic devices are required due to the response time, safety, or positive actuation as discussed above. In order to modify a high-bleed device to function as a low-bleed device, the pilot orifice must be reduced which reduces the rate that gas is available to actuate the device. With a smaller orifice, however, plugging will be a major concern as will controller response time. EPA provides allowance for the use of high-bleed pneumatic devices under NSPS OOOO under 60.5390(a):

(a) The requirements of paragraph (b) or (c) of this section are not required if you determine that the use of a pneumatic controller affected facility with a bleed rate greater than 6 standard cubic feet per hour is required based on functional needs, including but not limited to response time, safety and positive actuation.

EPA is currently undergoing an effort, through the development and expert review of white papers, to inform how best to address emissions from these sources including pneumatic devices. As such, BLM should refrain from further regulation of pneumatics until the EPA has completed that effort.

Leak Detection and Repair (LDAR)

Defining what a leak *is* and *is not* must be done carefully for any regulation. Examples of what should be considered “leaks” include those VOC/methane emissions from:

- Equipment components traditionally included in the LDAR program as prescribed in the NSPS and NESHAP regulations, such as, valves, connectors, pump seals, sampling connections, compressor seals, pressure relief devices, and open-ended lines. Leaks from such components are typically caused by the failure of a seal, gasket, packing, O-ring, etc., due to normal wear, improper installation, improper maintenance, or other reasons.
- Thief hatch seals on an oil/condensate/produced water storage tank that are found leaking, *if* the tank is connected to a control device via a closed vent system.

Examples of what should not be considered “leaks” include VOC/methane emitted from:

- All cases where a piece of equipment is operating properly and as designed, such as:
 - Pneumatic devices;
 - Thief hatches and vents on oil/condensate/produced water storage tanks when open as designed (e.g., thief hatch during sampling or gauging operations, vents to atmosphere on tanks that are not tied to a control device via a closed vent system);
 - Enardo and pressure relief devices when opening at the pre-set pressure as designed (including weighted thief hatches designed for pressure relief);
 - Truck vents during loading; and
 - Vents or exhaust stacks on process equipment, such as heaters, engines, glycol dehydrators, amine units, sulfur recovery unit tail gas thermal oxidizers, etc.
- All cases of equipment malfunction. Historically, emissions associated with equipment malfunction have been addressed under the “malfunction” or similar provisions in various permitting, NSPS and NESHAP programs when emissions from the process equipment are normally controlled or the process equipment operates normally in a closed system without an emissions point.
- Compressor seals. Traditionally, compressor seals are included in EPA’s LDAR regulations for the chemical and refining industry. However, in EPA’s current effort addressing VOC/methane emissions from the O&G industry, a separate technical white paper is being developed for compressors. Additionally, in EPA’s latest regulation on the oil and gas industry, namely, NSPS

Subpart OOOO, compressors are not included in the LDAR provisions. Rather, they are addressed in separate sections which require emission controls, and/or maintenance practices that are different from the traditional LDAR program. Therefore, emissions from compressor seals should not be included as part of leaks.

There are several different ways to detect leaks from components. Each method has a different cost, level of detection, gas detected, deployment method, ease of use, and ease of logging the data. Audio, Visual, Olfactory (AVO) monitoring is one of the simplest and most effective methods for leak detection and does not require a monitoring device. Most leaks at natural gas and oil production sites can be easily found using one's senses. This type of LDAR program does not require the purchase or rental of equipment nor the training of personnel on the equipment. It can be done by the operators that are already at the well sites, and the repairs can be made by the operators at the time the leak is found unless it requires replacement of equipment or a more extensive repair is needed.

Infrared cameras such as the forward-looking infrared (FLIR) camera are another method used to detect leaks. However, the equipment is expensive and requires training for proper use and interpretation of the results. The cameras cost is approximately \$100,000 plus the costs for required training, calibration, and maintenance. Well sites can be greater than an hour apart which will require some operators to purchase multiple cameras to monitor all of their sites. As such many smaller operators will not be able to afford the cost of the cameras and associated training. Few LDAR companies exist who are qualified to perform monitoring in the remote areas of the BLM lands, which would pose a problem when attempting to contract such work.

Most LDAR programs have been historically required at discrete locations such as refineries and chemical plants. These operations typically fulfill LDAR requirements using EPA's Method 21 in conjunction with a VOC monitoring instrument such as an Organic Vapor Analyzer (OVA) or Toxic Vapor Analyzer (TVA). This method is not very practical for dispersed oil and gas facilities. Method 21 typically requires third-party contractors who are specially trained. Each fugitive component must be tagged and monitored separately. It can take a day to analyze only 500 components. Method 21 monitoring is far more expensive than FLIR monitoring and does not easily identify the source of the leak (when compared to FLIR monitoring). In addition, for components in close proximity to one another, it may be difficult to identify which component is actually leaking. EPA concluded that fugitive monitoring of well pads using Method 21 was not cost effective. In the Technical Support Document for the NSPS OOOO Proposal, EPA included costs for well pads for Method 21 on Table 8-13 showing the cost is as high as \$267,386/ton of VOCs. Therefore, this method is not recommended by API for use at oil and gas production sites.

Many well sites are remotely located, and most are unmanned facilities. Inspection and maintenance visits may occur anywhere from weekly to twice per month (as a typical average), depending on the location and time of year. In some areas, winter weather makes it difficult to visit sites resulting in extended periods between site visits. Sites can be as far as an hour apart, which can limit the number of locations that can be monitored each day. Historical LDAR programs using Method 21 have typically been at refineries and chemical plants where contracted LDAR monitoring teams are located on-site to do the leak detection. Subsequent work orders are then created on a daily basis for the necessary repairs by the on-site operators. Drive time is not a factor in these refinery/chemical plant programs as it would be for dispersed, unmanned oil and gas sites.

The recordkeeping requirements of most LDAR programs are the most laborious part of the program. For the traditional EPA Method 21 monitoring, each component must be individually tagged and noted in a system that tracks the readings, the repairs, and the re-readings of the component. For dispersed, unmanned sites, keeping tags on components and tracking all the records of readings, repairs, and re-

readings would be extremely burdensome. Furthermore, the cost of such an effort would be extremely high. Recordkeeping for leak detection and repairs at oil and gas production sites needs to be minimal and simple.

As mentioned previously for other sources, EPA is currently undergoing an effort, through the development and expert review of white papers, to inform how best to address emissions from various sources including equipment leaks. As such, BLM should refrain from further regulation of equipment leaks until the EPA has completed that effort.



Flaring and Venting Proposal Comments

1 message

Kyle Alpers <kalpers@armstrongenergycorp.com>

Mon, Jun 9, 2014 at 7:00 PM

To: blm_wo_og_comments@blm.gov

Good afternoon,

I was in attendance at the Air Quality Workshop in Albuquerque, NM on 6/2/14-9/3/14 put on by the Independent Petroleum Association of New Mexico. I was told that those in attendance would be given an extra 10 days to make comment on the proposals presented at the workshop. Below are my comments in bold:

Topics:

1. Well Completions – Currently there is no BLM policy regarding well completions.

a. It is my opinion that the Federal Regulations (Quad O) already cover well completions, and as such additional BLM regulations would only duplicate these. Operators are still required to adhere to Quad O when operating on BLM lands. The addition of BLM regulations will only make it less desirable to develop BLM lands, further reducing royalty revenue to the American Taxpayer and increasing workload on the BLM.

2. Production Tests – Currently the BLM policy authorizes venting and flaring for 30 days or 50MMCF during production tests. It was proposed that the BLM could maintain the 30 day authorization but enact a separate volumetric limit for gas (20MMCF) and oil (10MMCF) wells, with the requirement that the operator be on site during all tests.

a. Reducing the volumes allowed could have the unintended consequence of hindering cleanup of the well, which can hamper production and further reduce royalties paid.

3. Liquids Unloading – Currently the BLM policy allows for 24 hours, but has no cumulative duration limits. It was proposed that the BLM could require unloading without venting, record keeping of unloading events, establish a low cumulative duration limit, and for new wells, something other than purging must be employed for unloading.

a. For many smaller operators, with already marginal wells, utilization of any other form of liquids unloading carries with it the possibility of making the well uneconomic. Artificial lift requires energy, either in the form of electric or gas powered pumps. Many locations are without electrical power due to trouble obtaining rights-of-way for power lines. Solar power is unreliable and would require backup, and fuel gas would be considered used on lease and not royalty bearing (not to mention increased combustion emissions).

4. Casinghead and Associated Gas – Current BLM policy requires operators to obtain a permit to flare. I believe it was proposed to require gas capture within a specific rate of return or discount rate, or define a specific payout of the project..

a. The economics of gas capture will depend on gathering system infrastructure. If the operator has not had a gathering line built to the well yet, it is more than likely an issue of right-of-way or economics. Operators are in the business of selling their product. This

proposal seems unnecessary.

5. Gas Conservation Plan – Current BLM policy requires an action plan that will eliminate venting or flaring of gas within one year from the date of the application, with gas not royalty bearing during implementation of plan. It was proposed to authorize flaring with operator's commitment to install gathering infrastructure, restrict the number of extensions allowed for flaring approval, allow flaring under approved GCP in certain cases (uneconomic gathering), refine definition of unavoidably lost gas to fixed time period (royalty bearing thereafter), or to conditionally approve APD's based on potential gathering.

a. The biggest issue with these proposals with respect to a gas conservation plan is that operators are at the mercy of third party gatherers, who are at the mercy of BLM approval of rights-of-way for pipelines. This would need careful consideration to its wording in order to prevent the operator from being penalized for something they have no control over. Again, operators are in the business of selling their products, and if it is economic to sell the gas, infrastructure will be built and it will be sold. This is why they drill wells. Adding further regulation to this is redundant and unneeded and only adds to the workload of the BLM.

6. Storage Vessel and Tank Emissions – Current BLM policy considers gas vapors released from storage tanks to be unavoidably lost and not royalty bearing.

a. Quad O already requires capture or control above a certain threshold. If it is captured, it is sold (royalty bearing) or used as fuel (used on lease). Again, this proposal is redundant and unnecessary.

7. Pneumatic Devices – Gas used to power these devices is considered used on lease and not royalty bearing. Potential options included NSPS controls for new or replacement devices, replacement of existing devices considering economics.

a. Again, this is already required under existing regulations. Redundant and unnecessary. The only thing this would add is workload and paper usage by operators and the BLM.

8. Leak Detection and Repair – BLM does not currently have a policy regarding LDAR. Proposal includes the possible requirement of periodic inspections by operators to identify and repair leaks.

a. LDAR is prohibitively expensive for operators. Gas plants and compressor stations are considerably different from well sites in the number of connections and valves present. If an operator has a connection or valve that is leaking on a well site, it is fixed as soon as possible as a matter of safety. Implementation of an LDAR policy by the BLM on operators will make additional wells uneconomic, further reducing the royalty to the taxpayer. It would be unnecessary to regulate an action already performed by operators.

Thank you for your time.

Kyle Alpers

Field Engineer

kalpers@armstrongenergycorp.com

PO Box 1973

Roswell, NM 88202

(O) 575-623-2999 Ext. 305

(C) 575-626-2727

(F) 575-622-2512



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C. William Giraud
Executive Vice President

VIA EMAIL: blm_wo_og_comments@blm.gov

June 10, 2014

U.S. Department of the Interior
Bureau of Land Management

Re: COMMENTS ON BUREAU OF LAND MANAGEMENT VENTING AND
FLARING PUBLIC OUTREACH (NTL-4A)

Dear Sir or Madam:

Concho Resources Inc. (Concho) appreciates the opportunity to comment in response to the Bureau of Land Management's (BLM) Venting and Flaring Public Outreach. Concho is an oil and gas exploration and production company operating in the Permian Basin. It is the largest oil producer in New Mexico. Concho, through its operating entities, owns an interest in more than 250,000 acres of land subject to BLM regulation. This investment means any proposed new rules for venting and flaring at production sites on lands administered by BLM are critically important to Concho.

Background

The materials presented in the outreach sessions identify three reasons for BLM's consideration of changes to its policies addressing venting and flaring of gas at oil and gas well sites. Those reasons are: (1) NTL-4A does not reflect current best management practices; (2) recent OIG/GAO reports suggest progress can be made to minimize waste and promote conservation of produced gas through better management of venting and flaring; and (3) Environmental Protection Agency (EPA) New Source Performance Standards (40 C.F.R. §60.5360 *et seq.* (NSPS Subpart OOOO)) require new actions to minimize venting and flaring. The outreach materials identify a number of possible options for addressing venting and flaring. Those options range from no new requirements to substantial new requirements for limiting emissions from various operations at production sites. The materials address options related to (1) well completions; (2) production tests; (3) liquids unloading – well purging; (4) casing head and associated gases; (5) gas conservation plans; (6) storage vessel/tank emissions; (7) pneumatic devices; and (8) leak detection and repair.

Overall Comments

Before Concho addresses specific proposals identified in the outreach materials, Concho urges BLM to review all proposals to see if they survive three major tests: (1) The proposal does not invade the authority of the EPA by duplication or conflict; (2) The proposal does not impose new duties on BLM without additional funding for staff; and (3). BLM is not duplicating state laws and rules that already prohibit the waste of oil and gas.

1. Leave air quality issues to EPA.

Concho understands that BLM has an obligation under federal law to effectively manage the resources under its jurisdiction for the benefit of the public. Concho notes, however, that protection of air resources as a result of activities under BLM control has been left to EPA and to the States under the federal Clean Air Act and various state air quality statutes and regulations. Some of the options identified in the materials and being considered by BLM would significantly alter that relationship and place BLM in a duplicative, or potentially conflicting, situation with those agencies. In the presentation, BLM representatives stated it is not the intent of BLM to overlap EPA requirements. In that case, BLM should remove from consideration any proposed requirements that are aimed at air quality issues. Those should be left to EPA, the federal agency charged with responsibility for air quality, in order to promote efficiency. BLM should consider only measures that relate to its responsibilities for the resources it manages.

Concho is unaware of any justification for altering the current regulatory regime. EPA, through its adoption and implementation of NSPS Subpart OOOO, and the various States through their air quality regulations and permitting requirements, are effectively controlling emissions from all aspects of the oil and gas industry, including production operations. Pursuant to NSPS Subpart OOOO, Concho already is subject to requirements to reduce air emissions from pneumatic devices and storage tanks located at production sites. Concho has aggressively installed and is continuing to install emission control equipment such as vapor recovery units, combustors and flares, to comply with the NSPS Subpart OOOO requirements.

Concho notes that a number of states are addressing the air quality impacts from venting and flaring at production sites, including requirements for oil production sites developed before gas gathering infrastructure can be extended to those sites. In New Mexico, Concho is working with the New Mexico Oil and Gas Association and the New Mexico Environment Department's Air Quality Bureau to address air quality issues. The first in what is likely to be a suite of flaring rules relates to delays experienced in extending natural gas gathering lines to production sites. Concho expects that New Mexico will adopt requirements for flaring at production sites that currently do not require permitting, that will apply only until gathering lines are available. These requirements are expected to include requirements that apply only when the gas is

under contract, but the gathering and pipeline are not yet in place. It will limit the length of time for flaring as well as the total emissions. Other flaring issues will be addressed in separate proposals.

If BLM believes that additional controls on air emissions from oil and gas production operations are necessary, a position with which Concho disagrees, it is incumbent on BLM to work with EPA and the States under the federal Clean Air Act and state air quality legislation to effectuate requirements to implement those controls. This approach is consistent with the role reserved for federal land managers under the Clean Air Act major source permitting program. Congress never intended for BLM or other land managers to exercise independent regulatory authority over air resources.

2. Do not add new duties for existing BLM staff.

If BLM creates a new venting and flaring program or creates additional requirements on the lands it manages, it also creates new duties for the BLM staff. Currently, BLM field offices in New Mexico are overworked and cannot timely perform the tasks they have. New staff cannot be hired because of the sequestration measures in place. In addition, funding for the Carlsbad Field Office is expected to abruptly decrease in 2015, as the pilot project office program ends. Concho understands that the loss of that special funding mechanism will cause the elimination of 42 positions in the Carlsbad Field Office alone. Moreover, BLM has already promised to add more duties for its employees with new rules regulating hydraulic fracturing expected later this year. No new duties should be imposed unless BLM has funding for adequate staff for both the current duties and the new tasks.

Concho is concerned that the imposition of additional duties on an already stressed staff will further delay BLM reviews and approvals that are vital to Concho's ability to develop the oil and gas resources in Southeast New Mexico. The heavy burden on BLM staff already contributes to the problem BLM is seeking to remedy. If there were not significant delays in gaining rights-of-way for gathering lines and pipelines, gas would not need to be flared and much of the problem sought to be remedied would not exist. If BLM added staff for the right-of-way reviews, BLM would significantly decrease the amount of gas to be flared or vented.

Many of the environmental commentators urged BLM to take action because of the loss of royalty payments from vented or flared gas. In making these arguments they ignore BLM's role in causing the infrastructure delays and do not acknowledge the fact that duplicative or conflicting requirements will have a negative effect on oil and gas development on BLM land. There are already operators who choose not to acquire federal mineral leases because of the regulatory burdens and delays associated with oil and gas development on federal lands. Adding new requirements will make development on BLM land even less attractive to producers. The costs and burdens associated with meeting those requirements are a factor in company decision making over the allocation of funds for future development. As a company makes decisions

based on the rate of return, all costs are considered. Adding costs on federal lands is a disadvantage to their development.

Decreased development means less revenue to both the federal and state governments. New Mexico currently receives approximately a third of its general fund budget from oil and gas revenues. Decreasing those receipts impacts all of the State's operations, but has the most direct impact on public school operations and facilities.

In conclusion, BLM could diminish the concerns over venting and flaring by streamlining its right-of-way review procedures so that gathering lines and pipelines can be developed more quickly. This will reduce the need for venting and flaring. No operator wants to vent or flare gas if it can reasonably be avoided. No gas gatherer or pipeline operator will build new or expand the infrastructure to take away the gas until sufficient information is known about a field or area to justify the investment. Once the decision is made to reach an area with gathering systems and pipelines the delays encountered in gaining rights-of-way due to inadequate staffing levels contribute to the need to vent or flare. Adding more duties to overworked staff completes the downward spiral of creating more wait time for gathering the gas. Streamlining procedures instead of adding more requirements is a more effective means of resolving BLM's concerns.

3. Do not duplicate state law programs preventing waste of oil or gas

Finally, to the extent that BLM believes that additional measures are necessary to prevent wasting the natural gas resource, Concho notes that those concerns are already effectively addressed under New Mexico law. The New Mexico Oil and Gas Act, NMSA 1978, § 70-2-2 (1949), prohibits "[t]he production or handling of crude petroleum oil or natural gas of any type or in any form . . . in such manner or under such conditions or such amounts as to constitute or result in waste." Further, the New Mexico Oil Conservation Commission (OCC) has adopted regulations to address a number of the issues identified by BLM. For example, 19.15.18.12.A NMAC provides that "[a]n operator shall not flare or vent casinghead gas produced from a well after 60 days following the well's completion." The form allowing an exception to the no-flare rule requires an estimate of the volume and the value of the gas to be flared, the costs of connecting to the nearest gathering facility, and the reason for the exception. There is no need for BLM to adopt requirements that differ from the state rules when both BLM and New Mexico have the same prohibition against wasting gas.

Comments on Specific Proposals

Well Completions – EPA already regulates air quality issues related to completion activities on natural gas wells and more stringent requirements take effect in 2015. These are sufficient. Basically these rules stop venting. In addition, the Oil Conservation Division (OCD) implements the OCC rules preventing waste so no new action by BLM is required. In analyzing the need for new rules, Concho requests that BLM keep in mind the economic issues in the oil field. If operators can capture natural gas and sell it economically they will do so. If not, the best solution to the emissions

issue is combustion. BLM should not want to increase costs with regulations aimed at increasing the royalty received by the federal government when the costs exceed the anticipated return.

Production Tests -- BLM and the OCD both currently control production or evaluation tests and can limit the length of time for conducting such tests and can require combustion of the gas where there is no infrastructure in place to sell the gas. No new rules are needed.

Liquids Unloading – This activity is predominantly associated with gas wells. BLM may want to require other efforts before allowing venting. It should not be difficult to record information related to venting.

Casinghead and Associated Gases – BLM and OCD currently require approval for flaring casinghead gas. Reporting certain economic information is already part of the approval process. Again, operators would prefer to sell these gases if the necessary infrastructure was in place to allow such sales. BLM should not want to be in the position of second guessing that decision, nor should it adopt a field-wide approach because the costs for each operator are different. Such an approach may work against operators with only one or two wells in an area. In addition, EPA already provides guidelines for achieving acceptable combustion levels based on the BTU content of the gas and the rate of flow. BLM should not adopt any inconsistent measure.

Gas Conservation Plan – Currently, most OCD and BLM approvals for flaring are done on a well by well basis. The proposal states that BLM would allow an operator to flare gas for a year if the operator was going to commit to install gas gathering infrastructure. It is not clear what the term “commit” means. Does the operator have to own and build the system? Is it sufficient to have a gas sales agreement in place? How will BLM determine what is economic? That is a detailed analysis that will be time consuming and will show that the operator will act in the most economic manner. Setting a limit on extensions for flaring is arbitrary. Similarly, adding a fixed time period to the definition of “unavoidably lost gas” is arbitrary, with no appreciation of existing conditions or how much BLM has contributed to the delays in building gas gathering infrastructure. Adding a conditional approval on APDs will only delay the building of the infrastructure. Pipelines will not be built in an area until it has been proven that substantial production is available. Pipelines cost hundreds of millions of dollars and no company will take that risk without significant evidence of production. Putting a hold on drilling until gathering infrastructure is in place will effectively stop drilling.

Storage Vessels/Tank Emissions – These emissions are already covered by NSPS Subpart OOOO administered by the EPA and state air quality agencies. The threshold for requiring controls should equal the level set by EPA of six tons of VOC a year per tank. Any other approach will cause confusion. Concho is meeting the current requirements and is using vapor recovery units to capture gas from oil tanks following separation and selling the gas when infrastructure development allows. The decision to

use vapor recovery units should be controlled by the economic conditions existing at the site. Otherwise, the EPA combustion requirements should control. .

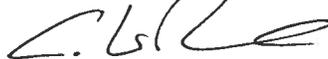
Pneumatic Devices – Again, NSPS Subpart OOOO administered by the EPA controls these devices for air quality reasons. Changes to existing equipment require the site to be considered a new site that must meet the EPA requirements. EPA does not allow high bleed units. Over time Concho expects that the EPA rules will handle all these emissions.

Leak Detection and Repair -- Operators inspect the sites on a regular basis and no leak is allowed to continue because leaks are costly to the operator. Most operators have informal leak detection programs in place. Pumpers and lease operators who visit the sites regularly are taught to use their olfactory, visual and acoustic skills to smell, observe and listen for leaks. This practical approach is effective. No additional rules are needed.

Conclusion

Again, Concho appreciates the opportunity to comment on possible approaches for additional rulemaking before the rule is proposed. Concho especially appreciates the extension of time afforded for comments because its employees attended the meeting organized by the Independent Producers Association of New Mexico on June 2 and 3, 2014, in Albuquerque, New Mexico. Concho firmly believes BLM does not need to take any new action in controlling gas emissions. EPA and the states are already effectively regulating the air quality issues. Furthermore, BLM does not have adequate staff to handle new tasks. And finally, New Mexico law and rules already prohibit wasting the natural gas resource. New rules would only duplicate, confuse or conflict and should be avoided.

Very truly yours,



C. William Giraud



Maria Pica Karp
Vice President &
General Manager

Chevron Government Affairs
1401 Eye Street, NW
Suite 1200
Washington, DC 20005
Tel 202 408 5800
Fax 202 408 5845
mpica@chevron.com

May 30, 2014

Transmitted Via Email: blm wo og comments@blm.gov

Mr. Michael Nedd
Assistant Director
Minerals and Realty Management
Bureau of Land Management
1849 C Street NW
Washington, DC 20240

Dear Mr. Nedd:

Chevron U.S.A. Inc. ("Chevron") is an integrated energy enterprise involved in all aspects of the energy business: exploration, production, manufacturing, transportation, marketing, and research. Chevron is committed to conducting our operations safely and in a manner that protects the environment. Chevron is an active operator of onshore oil and gas leases on federal and tribal lands, primarily in New Mexico, Wyoming, Colorado and California.

Chevron appreciates the opportunity to initiate a constructive dialogue with the Bureau of Land Management (BLM) on the issues presented at the venting and flaring public outreach workshops held this spring. We would like to acknowledge the efforts made by BLM to conduct the four workshops and allow for an open discussion of these complex issues. Chevron is committed to work with BLM, industry, and States to provide the information and understanding that we believe will be needed to adequately address this important inquiry on flaring and venting.

We welcome the dialogue with industry stakeholders beyond these workshops to understand the complexities related to conservation of natural gas resources through emission reductions. This dialogue should consider the following factors, among others:

- Differences in the geologic, regional, operational and economic characteristics of operations;
- Need to clarify the authorities and approaches among BLM, the EPA and States to regulate control of air emissions to protect the environment;
- Recognition of how BLM's Notice to Lessee 4A and existing and pending air pollution reduction regulations from EPA and States affect the industry;
- Calculation of the impact of existing and pending federal and state regulatory actions on future production, investment, and royalties;
- Consideration for the current state of industries' management of federal natural gas resources, which has continued to improve through innovation in production practices and technology;
- Recognition of the increased market pressures to monetize gas resources;
- Need for greater development of, and removing barriers to, infrastructure required to capture natural gas into the marketplace; and

- Recognition of improved understanding of emissions from new reporting requirements, which will provide a more accurate measure of the level of industry activity, and other studies, which will soon help us better understand the emissions factors associated with these activities.

Industry is actively working to reduce fugitive emissions in the natural gas value chain through innovation, deployment of best practices, and research into technology. Best practices around the use of Reduced Emissions Completions and low bleed controllers are currently in use because of industry collaboration with EPA under the Natural Gas STAR program. Chevron is participating in the first and second phases of the UT-EDF methane study to better understand emissions from the oil and gas sector. We are also working with national labs to develop better sensors. The results of these collaborative scientific studies are critical to informing good policy-making.

Chevron supports appropriate regulations that are technically based and operationally sound. We believe that current drilling and producing operations are well covered on a technical basis by existing federal and state regulations. These regulations, coupled with sound industry standards, have established a solid track record of safe and responsible development of oil and natural gas.

We look forward to continued engagement with BLM on this issue. If you have any questions about our comments, please contact Judy Blanchard in our Washington, DC office at (202) 408-5831 or Dan Jernigan in our corporate headquarters at (925) 790-6414.

Sincerely,

A handwritten signature in black ink, appearing to read "Dan Jernigan", followed by a long horizontal flourish line.



1800 GLENARM PL.

SUITE 1100

DENVER, CO 80202

Phone 303.861.0362

Fax 303.861.0373

WWW.COGA.ORG

May 30, 2014

Mr. Tim Spisak
Senior Advisor, Conventional Energy
Bureau of Land Management
Electronic Submittal: www.blm.gov/live and tspisak@blm.gov

Re: Comments on Flaring and Venting Public Outreach Sessions

Dear Mr. Spisak:

The Colorado Oil and Gas Association (“COGA”) submits the following comments on the Bureau of Land Management (“BLM”) public outreach sessions concerning “consideration of various options for addressing venting and flaring of gas and the loss of gas through fugitive emissions from onshore Federal and Indian oil and gas operations”.

COGA’s mission is to foster and promote the beneficial, efficient, responsible and environmentally sound development, production and use of Colorado oil and natural gas. COGA member companies operate throughout Colorado, including on lands administered by the BLM. Presentations from the outreach sessions suggest the BLM intends to develop new air rules “to minimize waste and promote conservation of produced gas through better management of venting and flaring”. While our members share this goal, and have an economic incentive and a regulatory mandate to do so, we are concerned that BLM is inappropriately considering use of resource conservation and royalty payment requirements to require air quality controls. COGA encourages the BLM to consider the comprehensive state and federal air regulations on the oil and gas industry prior to proposing new rules.

While BLM has the authority under the Mineral Leasing Act to ensure conservation of oil and gas resources, prevent waste, and obtain fair return to the government, the BLM must be cognizant of its limited authority to regulate air quality emissions. BLM does not have broader authority to regulate venting and flaring any manner it chooses nor does the BLM have direct authority over air quality or air emissions under the Clean Air Act (“CAA”). Under the express terms of the CAA, the Environmental Protection Agency (“EPA”) has the authority to regulate air emissions. In Colorado, the EPA has delegated its authority to the Colorado Department of Health and Environment (“CDPHE”).

Colorado recently adopted new rules governing many of the same air quality issues BLM is suggesting to be managed for royalty payments. (See attached Fact Sheet). COGA believes the state is the most appropriately situated to maintain regulation of air quality on all lands as they

have the personnel, budget and expertise necessary to efficiently and effectively implement the rules. Furthermore, state regulators are familiar with the unique geologic and geographic conditions in Colorado. COGA is concerned that BLM could impose regulations slightly different yet on the same sources as CDPHE and EPA resulting compliance complications for our members.

BLM's proposal to change the current NTL4A is premature and may cause additional delays in permitting, production and revenue to federal, state and local governments. Colorado's economy is very dependent on mineral revenues and disruptions in revenue flow will certainly impact the state's economy on numerous levels. COGA believes BLM should stay within the parameters of its existing regulatory authority; conservation of resources, prevention of waste and assuring a fair royalty return to the U.S. government – while not conflicting with the laws of the State in which the leased property is situated. Therefore, COGA encourages BLM to continue to work with the regulated community and consider the new state and EPA rules before embarking on a rulemaking.

Thank you for your consideration. If you have any questions, please do not hesitate to contact me at via e-mail at Andrew.Casper@COGA.org.

Sincerely,



Andrew Casper
Regulatory Counsel



Donald G. Hrap
President
Lower 48

P.O. Box 2197, 3WL 4036 (77252-2197)
Physical Address:
550 Westlake Park Boulevard
Houston, TX 77079
Phone 832.486.2683
Fax 832.486.2800

May 30, 2014

By Email and Overnight Delivery

Mr. Michael Nedd
Assistant Director Minerals and
Realty Management
Bureau of Land Management
1849 C St. N.W.
Washington, D.C. 20240
Email: Michael_nedd@blm.gov

Mr. Tim Spisak
Deputy Assistant Director Minerals and
Realty Management
Bureau of Land Management
1849 C St. N.W.
Washington, D.C. 20240
Email: Tim_spisak@blm.gov

Mr. Steven Wells
Division Chief – Fluid Minerals Division
Bureau of Land Management
20 M St. S.E., 4th Floor
Washington, D.C. 20003
Email: Steven_wells@blm.gov

Re: Venting and Flaring from Oil and Gas Operations on Public and Indian Trust Lands

Gentlemen:

ConocoPhillips Company appreciates the public outreach that BLM is conducting and in particular the opportunity to provide initial feedback regarding flaring and venting from oil and gas operations on public and Indian Trust lands.

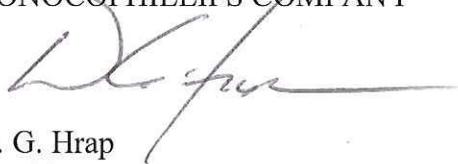
We understand from the outreach to date that it is the BLM's intent to develop regulations in due course and that detailed proposals will follow. ConocoPhillips would be pleased to continue its constructive collaboration with the BLM but until more details are available for our legal and technical review, our comments must remain at the level of principle. In that light we would make the following initial comments.

- We prefer regulations that are transparent and practical to implement in the field. A mosaic of regulations - sometimes duplicative or even contradictory - by various federal agencies and state agencies can create unnecessary complexities in implementation without additional environmental protection or elimination of waste.
- EPA is in the process of considering various approaches (regulatory and voluntary) as discussed later to regulate oil and gas emissions. We believe that BLM should wait for EPA's actions prior to proposing any regulatory requirements with an environmental focus. At a minimum, we would like any measures proposed by the BLM governing the production of oil and natural gas on public and Indian Trust lands to be aligned and common with similar provisions by EPA and state regulatory bodies for private land.
- We particularly point the BLM to the EPA's recently promulgated NSPS subpart OOOO requirements and its publication of draft technical white papers which serve to inform EPA as they decide whether and how to pursue further emissions reduction. EPA has also recently launched a voluntary program, the EPA Gas Star Gold, which companies can join by voluntarily agreeing to some methane reduction programs. ConocoPhillips strongly recommends that BLM should align with EPA in formulating its path forward on additional regulations and/or voluntary programs.

We would be pleased to make our subject matter experts available to consult with the BLM on more detailed proposals before or after they are made public and continue to build our strong working relationship with the BLM. In the meantime if you have any questions regarding ConocoPhillips' initial comments, please feel free to contact me at (832) 486-2683.

Sincerely,

CONOCOPHILLIPS COMPANY



D. G. Hrap
President, Lower 48



**COLORADO PETROLEUM
ASSOCIATION**

1700 Lincoln Street, Suite 2545

Denver, Colorado 80203

Tel: 303/860-0099

E-Mail: stan@coloradopetroleumassociation.org

June 3, 2014

Mr. Tim Spisak
Senior Advisor, Conventional Energy
Bureau of Land Management
Electronic Submittal: blm_wo_og_comments@blm.gov and tspisak@blm.gov

Re: Comments on Flaring and Venting Public Outreach

Dear Mr. Spisak,

The Colorado Petroleum Association (CPA) welcomes this opportunity to provide comments to the United States Interior Department's Bureau of Land Management (BLM) concerning the potential flaring and venting regulatory changes being considered for oil and gas operations subject to BLM regulatory authority. CPA is a non-profit trade association organized to operate in Colorado. CPA members are involved in all aspects of oil and gas exploration, production, refining, marketing, and transportation. In Colorado, CPA represents its members before local, state, and federal government entities on policy, factual, and legal issues. Colorado's 8.3 million acres of BLM public lands, along with 27 million acres of mineral estate, are concentrated primarily in the western portion of the State. Oil and natural gas development on public land and the mineral estate provides an economic driver for Colorado's economy, with 44,978 Colorado jobs supported by energy and mineral development on Colorado's public lands, generating \$9.5 billion in economic activity last year.¹

CPA has concerns about BLM's proposed air quality control regulations and/or policies being implemented under its resource conservation and royalty payment authority, thus usurping state and federal regulation authorized by the Clean Air Act and state equivalents.

¹ http://www.blm.gov/co/st/en/BLM_Programs/oilandgas.html

The Colorado Department of Public Health and Environment (CDPHE) has existing and recently adopted rules in place to manage oil and gas development air quality issues. Recently adopted Colorado Air Quality Control Commission Regulation No. 7 (Reg. 7) established many of the same requirements under consideration by BLM. CDPHE is in the best position to maintain regulation of air quality on all lands as it has the personnel, budget and expertise necessary to efficiently and effectively implement the rules. Also, CPA does not believe that Colorado BLM field offices have the same level of staffing, budget or air quality expertise to efficiently and effectively implement such a large undertaking as described in BLM's PowerPoint presentations.

In addition, the United States Environmental Protection Agency (EPA) has additional, almost identical, requirements currently in place or being considered for rulemaking during the same time period that BLM proposes to develop these regulations. CPA has serious concerns that BLM could impose slightly different regulations on the same sources as CDPHE and EPA, resulting in compliance complications for our members.

The Mineral Leasing Act (MLA) prohibits conflict with laws of the state: "None of such provisions shall be in conflict with the laws of the State in which the leased property is situated." 30 USC §187; *Ventura County v. Gulf Oil Corp.*, 601 F.2d 1080, 1085 (9th Cir. 1979) *aff'd* 445 U.S. 947 ("such provisions" means only provisions of preceding sentence, which lists, among other things, the prevention of undue waste and the safeguarding of the public welfare). It assures that BLM shall observe those state standards when drafting lease terms. *Id.* BLM also has a longstanding rule requiring that a decision to allow venting or flaring of gas from an oil well must be supported by engineering, geologic, and economic data; however, this rule does not require the consideration of environmental costs in such decision. *See* NTL-4a. BLM should not impose rules that would render operations uneconomic, in particular when taking into account the relatively modest profit margins on individual leases given the substantial expense of additional controls and the lack of available and reasonably foreseeable pipeline capacity. BLM's proposal does not appear to be aimed solely at waste reduction but rather at efforts to regulate and reduce emissions to the environment – a task that must be left to the relevant state and federal agencies (namely CPDHE and EPA).

The MLA also only requires oil and gas lessees to "use all reasonable precautions to prevent waste of oil or gas developed in the land." 30 U.S.C. § 225. Many of BLM's proposals would go beyond reasonable precautions to prevent waste of oil or gas.

CPA is also concerned that implementation of the proposed changes may exacerbate the current decline in oil and natural gas production on federal lands. According to the Institute for Energy Research, federal regulation increases have resulted in a 40 percent decline in oil production on federal lands since the year 2000. Oil and natural gas wells need to be continually drilled or state and national production will continue to decline. Introducing redundant regulations that cause unnecessary delays in the permitting process will only cause further declines of both oil and natural gas production on federal lands. Such declines

will have a severe impact on Colorado's tax revenue and citizen employment, will increase the costs for energy to all consumers, and will increase this country's reliance on imports from less-than-friendly nations.

BLM's approach necessarily and incorrectly presumes that oil and gas activities pose some unidentified significant risk that is not addressed by existing state and federal regulations. As discussed further in these comments, CPA questions the basis for the presumption and the essential nature of BLM's action. CPA firmly believes BLM's proposal to revise NTL-4a is premature and is potentially counterproductive. CPA therefore submits the following more detailed comments regarding the proposed changes.

I. WELL COMPLETIONS

BLM has not demonstrated a need to revise NTL-4a to eliminate Supervisor approval of venting and or flaring during completions. BLM's proposal to require capture, injection, use, combustion or flaring during well completion will result in shut in wells.

Specifically, in the event that no transportation options are available, and the Supervisor no longer allows for flaring, the only remaining option is to shut in. Such a drastic result is not warranted in light of the existing Colorado and federal authorities to reduce emission and eliminate waste. CPA describes these authority in more detail below.

A. Colorado

CDPHE requires that gas coming off of a separator, whether from an oil well or gas well, either be: routed to a gas line, controlled or sold:

Well Operation and Maintenance: On or after August 1, 2014, gas coming off a separator, produced during normal operation from any newly constructed, hydraulically fractured, or recompleted oil and gas well, must either be routed to a gas gathering line or controlled from the date of first production by air pollution control equipment that achieves an average hydrocarbon control efficiency of 95 percent. If a combustion device is used, it must have a design destruction efficiency of at least 98 percent for hydrocarbons.

Regulation 7 XVII.G.

COGCC also regulates waste of natural gas. C.R.S. §§ 34-60-101, *et seq.*; 2 CCR §§ 404-1, *et seq.* More specifically, COGCC prevents waste which includes:

[T]he escape, blowing, or releasing, directly or indirectly into the open air, of gas from wells productive of gas only, or gas in an excessive or unreasonable amount from wells producing oil, or both oil and gas ...in such manner as... unreasonably diminishes the quantity of oil or

gas that ultimately may be produced, excepting gas that is reasonably necessary to the drilling, completing, testing, and in furnishing power for the production of wells.

C.R.S. §§ 34-60-103(11) (2014).

B. EPA

EPA similarly regulates flaring and venting. Under New Source Performance Standard (NSPS) OOOO (40 CFR 60 Subpart OOOO), EPA requires that hydraulically fractured gas wells on or after January 1, 2015 must comply with the following:

(1) For the duration of flowback, route the recovered liquids into one or more storage vessels or re-inject the recovered liquids into the well or another well, and route the recovered gas into a gas flow line or collection system, reinject the recovered gas into the well or another well, use the recovered gas as an on-site fuel source, or use the recovered gas for another useful purpose that a purchased fuel or raw material would serve, with no direct release to the atmosphere. If this is infeasible, follow the requirements in paragraph (a) (3) of this section.

(2) All salable quality gas must be routed to the gas flow line as soon as practicable.

(3) You must capture and direct flowback emissions that cannot be directed to the flow line to a completion combustion device, except in conditions that may result in a fire hazard or explosion, or where high heat emissions from a completion combustion device may negatively impact tundra, permafrost or waterways. Completion combustion devices must be equipped with a reliable continuous ignition source over the duration of flowback.

(4) You have a general duty to safely maximize resource recovery and minimize releases to the atmosphere during flowback and subsequent recovery.

40 CFR §§ 60.5375(a) (1)-(4). In addition, EPA is currently evaluating whether to expand these requirements to oil wells. Comments on EPA's white paper evaluating this issue will reflect the technical limitations to expanding the requirements to oil wells. Because EPA is already evaluating these issues, however, BLM should defer deciding whether to impose potentially redundant and/or unnecessary regulations until after EPA completes its process.

C. Technical Limitations

If BLM elects to further evaluate reductions of emission from oil well completions, BLM must consider those same technical limitations considered by CDPHE and being further considered by EPA.

Specifically, there are three criteria which must be satisfied in order to capture the gas from completed wells: 1) gas-gathering infrastructure (flare-less completions cannot be performed without pipelines); 2) the gas must be capable of flowing at pressure equal to or greater than the gas pipeline system; and 3) the gas must be of adequate quality to meet the pipeline specification (*i.e.*, no CO₂ or N₂ present).

When an operator hydraulic fractures a gas well, the primary flowback fluid is natural gas as opposed to oil. Green completions often make economical and technical sense for natural gas wells because it reduces the amount of recoverable natural gas vented or flared into the atmosphere. For oil wells, however, the primary fluid flowing back is oil. In fact, in some cases, the well produces little to no gas and any natural gas produced may not be seen during the flowback process. In other cases, oil wells can be prolific and a substantial amount of gas is produced during the flowback process. No “one size fits all” standard is appropriate for oil wells.

Specialized equipment and trained personnel are also required to safely and effectively flowback and test wells. The equipment currently being used consists of a large, four phase separator (four phases - gas, condensate, water and sand). The separator equipment can handle large amounts of water and solids (frac. sand) during the flowback stimulation and cleanouts. After the fluids are initially separated, the water and oil are piped to production storage tanks and gas is usually piped through the normal production facilities to an additional stage of separation and any treating that may be required (*e.g.* dehydration) prior to sales. Sand is periodically discarded to the reserve pit. Without the use of the flowback equipment, the production separator and dehydrator facilities would have to be oversized in order to hand the fluid flow rates. The flowback equipment requires careful engineering, construction, maintenance and testing to perform the flowback safely. It also requires trained personnel who, along with the equipment, are in limited during periods of high industry activity.

Costs associated with green completions are also considerably higher than other completion techniques. The cost of the green completion flowback equipment is greater than the typical flowback piping that is commonly used. If all flaring or venting of gas during completion operations were to be eliminated, the only option for completions would be to shut the well in during the times when the gas cannot be put into the sales line.

Pipeline location relative to the well is critical to the viability of green completions. A no flaring/venting regime during completions necessarily requires that a “sales line” be near enough to be economically feasible to connect to the well prior to the

completion of the well. In typical high-density infill projects, existing infrastructure and certainty of production make this technique more feasible. In other circumstances, however, the drilling parties or third parties will not lay pipeline to a well unless the anticipated well production will justify the costs of building the line. The gas line must also be permitted and installed which takes a considerable amount of time after it is determined to be economic. If the gathering system is constructed by a third party, the drilling party will also need to negotiate the contractual right to flow into the gas gathering system, which takes additional time. The parties must then obtain the necessary permits and rights-of-way to lay pipeline to the gathering system from the well site. Furthermore, the gas gathering company must have a gas plant permitted, built, and operational to send the gas for processing and sales.

There are additional complications. First, the reservoir needs to be of a quality and pressure to flow back with a full column of water, and have enough wellhead pressure to flow into the sales line, in order to flow a well to a sales line during flowback after fracture stimulation. An over-pressurized interval with good deliverability will usually flow at a high enough pressure to flow back to sales. Overly tight, normally pressured, naturally under-pressured or partially depleted reservoirs will not flow back against line pressure at a rate necessary to clean the gel from the frac stimulation. This is also true if the reservoir is depleted or of poor quality in general. This becomes problematic because the longer the fracture fluid is left downhole, the greater the likelihood that reservoir production will be permanently impeded. If the gas contains impurities (such as sand, free water, too much water vapor, or significant amounts of carbon dioxide or nitrogen) it cannot be placed in a sales line. Typical equipment used during green completions is capable of separating out the condensate, water and solids from the production stream; however the equipment does not remove carbon dioxide or nitrogen. Carbon dioxide and nitrogen are commonly used to assist with flowback and to reduce the likelihood of reservoir production impediment on a partially depleted or under-pressurized zone. The carbon dioxide and nitrogen must be removed from the flowback gas in order to render it pipeline quality.

Cold temperatures can complicate operations on high-pressure gas wells due to hydrate formation freezing off flow lines. The additional piping and equipment necessary for green completions can aggravate this situation. Flowing back to a sales line usually precludes the possibilities of reducing flowing pressures below the hydrate point (which is a function of temperature and pressure). Equipment and design must account for this phenomenon. Control of pressure drops, liberal applications of heat, and generous additions of methanol are all requirements for successful cold weather green completions. Under extreme cold weather conditions, flow back to a flare is usually more prudent as connections are generally less complicated and less prone to freeze up.

Only wells with sufficient reservoir pressure to flow against the gathering system back pressure and capable of producing saleable quantities of natural gas are candidates for green completions. Without a gas gathering system, flaring is still the next best option to control gas emissions during flowback. For all these reasons, BLM should not eliminate the option of venting and flaring, with Supervisor approval, on BLM managed lands.

II. PRODUCTION TESTS

The need to determine if a well will be successful through production testing is essential to oil and gas operations and BLM should not take any actions that would reduce the efficacy of such production tests.

A. Colorado

The need to flare during production testing is acknowledged in COGCC Rule 912.b.:

COGCC Rule 912. VENTING OR FLARING NATURAL GAS

....

b. Except for gas flared or vented during an upset condition, well maintenance, well stimulation flowback, purging operations, **or a productivity test**, gas from a well shall be flared or vented only after notice has been given and approval obtained from the Director on a Sundry Notice, Form 4, stating the estimated volume and content of the gas. The notice shall indicate whether the gas contains more than one (1) ppm of hydrogen sulfide. If necessary to protect the public health, safety or welfare, the Director may require the flaring of gas. (Emphasis added).

See also C.R.S. §§ 34-60-103(11) (2014).

Current BLM production testing policy permits venting and flaring authorized for up to 30 days or 50 million cubic feet (MMcf) of gas, with such test not to exceed 24 hours. BLM's proposal to reduce the amount of vented or flared gas by more than 50 percent for gas wells and by 80 percent of oil wells significantly impairs an operator's ability to meaningfully determine whether a well economically justifies the contemplated green completions. BLM should allow for production testing as managed by the COGCC, who has the staffing, budget and expertise necessary to promptly assess these issues.

III. LIQUIDS UNLOADING

Liquids unloading is a complicated and nuanced issue which varies on a well-by-well basis dependent upon a myriad of variables, such as geology, depth, formation characteristics, infrastructure, and production flow and characteristics, among others. CPA once again submits that BLM has not demonstrated a need to revise NTL-4a to impose command and control requirements on a process which should instead remain fit for purpose.

A. Colorado

CDPHE already regulates venting during liquids unloading under Reg. 7. Due to the complicated nature of liquids unloading, CDPHE is taking a deliberate and measured approach to identifying potential best management practices:

XVII.H. (State Only) Venting during downhole well maintenance and liquids unloading events

XVII.H.1. Beginning May 1, 2014, owners or operators must use best management practices to minimize hydrocarbon emissions and the need for well venting associated with downhole well maintenance and liquids unloading, unless venting is necessary for safety.

XVII.H.1.a. During liquids unloading events, any means of creating differential pressure must first be used to attempt to unload the liquids from the well without venting. If these methods are not successful in unloading the liquids from the well, the well may be vented to the atmosphere to create the necessary differential pressure to bring the liquids to the surface.

XVII.H.1.b. The owner or operator must be present on-site during any planned well maintenance or liquids unloading event and must ensure that any venting to the atmosphere is limited to the maximum extent practicable.

XVII.H.1.c. Records of the cause, date, time, and duration of venting events under Section XVII.H. must be kept for two (2) years and made available to the Division upon request.

B. EPA

EPA is also taking a deliberate and measured review of venting emissions during liquids unloading. EPA recently issued a draft white paper discussing these complex technological issues. Again, BLM risks duplication or inconsistency with CDPHE requirements and potential EPA programs if it adopts regulation related to liquids unloading.

C. Technical Limitations

BLM must understand that deliquification of gas wells is a highly complex and technical subject with many approaches and technologies. Venting of wells is one

such technique, often used in combination with other techniques that depend on reservoir pressure - such as plunger lifts used to assist unloading. Liquid loading of well-bores occurs when the gas production-rate (velocity) is insufficient to carry liquids up the well-bore. When a vertical liquid column builds up in the well-bore, the weight of the column puts back-pressure on the producing formation and the production rate declines to the point where the well stops flowing. Low rate wells are either impaired by liquids accumulation or utilize some deliquification method to encourage production. As the reservoir energy depletes and the production-rate declines, a well will reach the stage where liquids-loading is necessary. Operators often will implement one of a portfolio of technologies or techniques to help lift liquids using the reservoir's energy. As a well continues to produce and the reservoir energy declines further, a well will reach the stage where the reservoir's energy is not sufficient to lift liquids and artificial lift energy, in the form of pumps, gas lift, etc., will have to be added to continue producing. When the expected production from a well cannot support the investment required to enable deliquification, it will reach the end of its economic life and be abandoned.

Liquids unloading venting cannot be eliminated. The production rate of a well, consequent velocity up the well-bore, and hence, the ability to lift liquids, is mostly a function of the differential pressure between the reservoir and the flow-line/collection system, and the reservoir's sensitivity to backpressure. In order to flow, the total reservoir pressure must be greater than the total resistance to flow. This resistance is comprised of fluid friction and fluid interference across the reservoir; the flowing friction up the well-bore; the weight of the vertical fluid column in the well-bore; surface equipment and piping pressure losses; and the collection system/flow-line back-pressure. Opening a well-bore to atmospheric pressure (venting a well) removes the effect of the surface equipment/piping pressure-loss and the back pressure from the collection line and increases differential pressure to increase flow rates and velocities, which may enable the well to lift the liquid from the well-bore (unload the well). There are various reservoir-driven techniques operators use in wells experiencing liquids loading to assist in deliquification, which also helps reduce the need for venting. Each of these may be the best solution for a particular time in the life of a reservoir. However, it is a misconception that certain systems (e.g., plunger-lift systems) are the single emission control action for wells where venting for liquids unloading occurs.

BLM should not regulate liquids unloading. CDPHE already regulates liquid unloading in Colorado. EPA is also considering expanding NSPS OOOO to cover liquids unloading.

IV. CASINGHEAD AND ASSOCIATED GASES

BLM appears to believe the reason that operators flare oil wells instead of building gas gathering systems is purely a function of economics. BLM misunderstands that there are several non-economic reasons why oil wells are flared instead of building a gas gathering system, including inability or time sensitivities with obtaining permits and other necessary approvals. As discussed under the Well Completions section and below, there are many factors which drive the decision to build a gas gathering system.

Natural gas produced from an oil well that cannot be sold is known as “stranded” gas. It is stranded because the pipeline infrastructure needed to gather and transport the gas for processing is unavailable. Unlike natural gas fields where infrastructure may be unavailable in limited situations such as exploration, delineation, or some leasehold wells, gas gathering infrastructure can be unavailable for oil wells across an entire field or area. Lack of available infrastructure occurs for various reasons. For instance, insufficient associated gas production volumes may make it uneconomic to gather, process, and sell the produced gas. Or, economic gas gathering infrastructure construction may lag behind the start of new well production. During flowback and continuing into production, stranded gas from high pressure wells is flared for safety and VOC emissions reduction. Without gas gathering infrastructure, green completions are not possible. Because the oil cannot be produced without the casinghead gas or associated gas, a refusal to permit flaring of that gas which is stranded results in the wells being shut-in. This negatively impacts federal, state and local economies. Moreover, and as already discussed above, the process for evaluating whether to build a gathering system, the building of the system, and the associated legal issues such as permitting, rights-of-way, negotiating gas gathering agreements, etc . . . is lengthy.

Installation of a gas gathering line in an oil field requires more than an economic analysis to determine whether to install it or not. It requires a gas gathering system with sufficient capacity in place and sufficient reservoir pressure and volume of gas. Regulations must accommodate these issues and cannot be just based on an economic analysis. BLM should not require recovery of casing head and associated gas.

V. GAS CONSERVATION PLAN

BLM proposes to require an action plan which would eliminate or minimize venting or flaring from oil wells. It is unclear how BLM would determine when it believes a gas gathering system would be economic. Moreover, the potential requirement that flaring be allowed only when an operator commits to the installation of a gas gathering system puts the proverbial cart before the horse. Venting and flaring are vital to the completion and testing phases of a given well, both of which are part of the process utilized to determine whether a gas gathering system should be built. It also more often the case that companies other than operators control gas gathering systems and such systems, along with pipeline infrastructure, are the last piece of equipment put into place in the production system. How

does BLM plan to gather operator commitments when the operator has no control over whether or how soon the infrastructure will be constructed? What exactly constitutes a gas conservation plan?

It appears as though this action plan will only cause delays and less drilling in the future. By requiring commitments from an operator who has no control over the process essentially prevents the operator from producing. Without replaced production, oil and gas development and production will decline from federal properties, and thus, impact Colorado's economy. CPA also again respectfully submits that such plans are unnecessary given the existing Colorado and EPA regulatory regimes.

VI. STORAGE VESSEL/TANK EMISSIONS

BLM should not propose control requirements for storage vessels as they are already regulated by CDPHE Reg. 7 and NSPS OOOO. Existing tanks have lower emissions and controlling existing tanks cost far more than new tanks.

A. Colorado

CDPHE Reg. 7 has already expanded the requirements of NSPS OOOO to all tanks greater than 6 TPY VOC with a 95 percent control efficiency and 95 percent destruction efficiency for combustion devices (Reg. 7 XVII.C.1.b). CDPHE also added extensive inspection requirements for storage vessels with greater than 6 TPY of VOCs.

B. EPA

Under 40 CFR 60 Subpart OOOO, EPA already requires that new, modified, or reconstructed, or re-hydraulically fractured wells with greater than 6 TPY of VOC emissions must meet a 95 percent capture and destruction efficiency. Furthermore, EPA determined that requiring controls below 6 TPY would not be cost effective. API used EPA's Cost Manual to determine that tanks with emissions less than 12 TPY were not cost effective to control. Using the method prescribed in the EPA Cost Manual, the annual cost of controls is \$55,207 for a new storage vessel. Controlling an existing tank costs far more. In order to control an existing tank, retrofits are required in order to keep the vapors from exiting the tank and entering the vapor control system. The thief hatches and pressure relief devices typically have to be replaced with thief hatches with lower inherent leak rates and different seals. New piping must also be installed requiring the well site to be shut in. If piping must be routed underground, this can add further cost for installation. Furthermore, depending on the pressure rating of the tank itself, the entire tank may have to be replaced in order to route it to a vapor control system. The production rate of a well, including the condensate production, also declines over time. For example, the decline of a Bakken well and a Three Forks well shows that production

decreases by 70-71 percent over the first year. The 3-year decline is 85-86 percent. The existing wells that are not covered by NSPS OOOO have already had significant production declines which would typically yield emissions below 6 TPY. The second main driver of flash emissions from storage vessels is the pressure of the gas in the separator prior to the tank. The separator pressure is typically driven by the reservoir pressure. Just as the production declines, the reservoir pressure declines as the resources are removed requiring lower separator pressures that also result in lower emissions over time. There is no demonstrated need for additional regulation.

VII. PNEUMATIC DEVICES

BLM should be clearer on the type of controllers it intends to regulate and how. From an emissions perspective, pneumatic controllers can be classified by a combination of their design type and the type of service they perform. The types of controllers are continuous bleed and intermittent vent. The two types of service are on/off and throttling.

A. Colorado

CDPHE already regulates continuous high bleed pneumatic controllers under Reg. 7, which states:

XVIII.C.2.a. All pneumatic controllers placed in service on or after May 1, 2014, must:

XVIII.C.2.a.(i) Emit VOCs in an amount equal to or less than a low-bleed pneumatic controller, unless allowed pursuant to Section XVIII.C.2.c.; or

XVIII.C.2.a.(ii) Utilize no-bleed pneumatic controllers where on-site electrical grid power is being used and use of a no-bleed pneumatic controller is technically and economically feasible.

XVIII.C.2.b. All high-bleed pneumatic controllers in service prior to May 1, 2014, must be replaced or retrofitted by May 1, 2015, such that VOC emissions are reduced to an amount equal to or less than a low-bleed pneumatic controller, unless allowed pursuant to Section XVIII.C.2.c.

XVIII.C.2.c. All high-bleed pneumatic controllers that must remain in service due to safety and/or process purposes must have Division approval and comply with Sections XVIII.D. and XVIII.E.

XVIII.C.2.c.(i) For high-bleed pneumatic controllers in service prior to May 1, 2014, the owner/operator shall submit justification for high-bleed pneumatic controllers to remain in service due to safety and/or process purposes by March 1, 2015. The Division shall be deemed to have approved the justification if it does not object to the owner/operator within 30-days upon receipt.

XVIII.C.2.c.(ii) For high-bleed pneumatic controllers placed in service on or after May 1, 2014, the owner/operator shall submit justification for high-bleed pneumatic controllers to be installed due to safety and/or process purposes prior

to installation. The Division shall be deemed to have approved the justification if it does not object to the owner/operator within 30-days upon receipt.

B. EPA

NSPS OOOO already requires that any continuous bleed pneumatic devices constructed, modified, or reconstructed after October 15, 2013 must have a bleed rate of <6 scfh at well head to the gas plant and a bleed rate of 0 scfh at the gas plant. Based on the definition of reconstructed, most existing high bleed pneumatic devices will be phased out over time. With the amount of gas lost from high bleed pneumatic devices, many companies have voluntarily replaced them. Sometimes high bleed pneumatic devices are required due to the response time, safety, or positive actuation as discussed above. In order to convert a highbleed device to a low bleed device, the pilot orifice must be reduced. With a smaller orifice, plugging of the orifice opening will be a major concern as will controller response time. Also, if the controller is part of a pneumatic system where the valve actuator requires a higher pressure to operate than the advertised supply pressure for low bleed rate performance, the “low bleed” controller operating at a lower pressure than required could very well result in sluggish end-device performance and increase the risk of liquid spills and uncontrolled gas releases

EPA provides allowance for the use of high bleed pneumatic devices under NSPS OOOO, 40 CFR § 60.5390(a):

(a) The requirements of paragraph (b) or (c) of this section are not required if you determine that the use of a pneumatic controller affected facility with a bleed rate greater than 6 standard cubic feet per hour is required based on functional needs, including but not limited to response time, safety and positive actuation.

BLM should not regulate continuous high bleed pneumatic controllers. CDHPE already regulates all continuous high bleed pneumatic controllers. EPA already regulates new, modified, and reconstructed continuous high bleed pneumatic controllers under NSPS OOOO. Both allow legitimate use of continuous high bleed pneumatic controllers where based on functional needs, including but not limited to response time, safety and positive actuation.

VIII. LEAK DETECTION AND REPAIR (LDAR)

BLM should leave leak detection and repair to the state, and under the review and authority of EPA.

A. Colorado

CDPHE already requires and regulates LDAR under Reg. 7 Section XVII.F which includes extensive requirements for LDAR for all compressor stations and well sites. Here is a summary of the requirements because they are too extensive to include in full:

Leak Detection and Repair Program for Well Production Facilities and Natural Gas Compressor Stations

Natural Gas Compressor Stations (XVII.F.3.)

- Beginning 1/1/2015, owners or operators of natural gas compressor stations must inspect components for leaks using an approved monitoring method (XVII.F.3.)
 - Natural gas compressor stations with fugitive VOC emissions $0 < X \leq 50$ TPY, within 90 days after 1/1/2015 or commencing operation if such data is after 1/1/2015. (XVII.F.3.a.)
 - Natural gas compressor stations with fugitive VOC emissions $X > 50$ TPY, within 30 days after 1/1/2015 or commencing operation if such data is after 1/1/2015. (XVII.F.3.b.)
- Owners or operators must continue conducting approved instrument monitoring method inspections in accordance with the inspection frequency in Table 3. (XVII.F.3.c.)

Table 3 – Natural Gas Compressor Station Component Inspections

Fugitive VOC Emissions (tpy)	Inspection Frequency
>0 and < 12	Annually
> 12 and < 50	Quarterly
> 50	Monthly

Well Production Facilities

- Owners or operators of well production facilities constructed on or after October 15, 2014, must identify leaks from components using an approved instrument monitoring method no sooner than 15 days and no later than 30 days after the facility commences operation. (XVII.F.4.a.)
 - This initial test constitutes the first, or only for facilities subject to a one time approved instrument monitoring method inspection, of the periodic approved instrument monitoring method inspections.
 - Approved instrument monitoring method and AVO inspections must be conducted in accordance with the inspection frequencies in Table 4.

Table 4 – Well Production Facility Component Inspections

Thresholds (per XVII.F.4.c.)		Approved Instrument Monitoring Method Inspection Frequency	AVO Inspection Frequency	Phase-In Schedule
Well production facilities without storage tanks (tpy)	Well production facilities with storage tanks (tpy)			

> 0 and < 6	> 0 and < 6	One time	Monthly	January 1, 2016
> 6 and < 12	> 6 and < 12	Annually	Monthly	January 1, 2016
> 12 and < 20	> 12 and < 50	Quarterly	Monthly	January 1, 2015
> 20	> 50	Monthly		January 1, 2015

- Owners or operators of well production facilities constructed before October 15, 2014, must identify leaks from components using an approved instrument monitoring method within (XVII.F.4.b.):
 - 90 days of the Phase-In Schedule in Table 4; or
 - 30 days for well production facilities subject to monthly approved instrument monitoring method inspections; or
 - by January 1, 2016, for well production facilities subject to a one time approved instrument monitoring method inspection.
 - Thereafter, approved instrument monitoring method and AVO inspections must be conducted in accordance with the inspection frequencies in Table 4.
- Estimate the uncontrolled actual VOC emission based on (XVII.F.4.c.):
 - The highest emitting storage tank at the well production facility determines the frequency at which inspections must be performed.
 - If no storage tanks storing oil or condensate are located at the well production facility, owners or operators must rely on the facility emissions (controlled actual VOC emissions from all permanent equipment, including emissions from components determined by utilizing the emission factors defined as less than 10,000 ppmv of Table 2-8 of the 1995 EPA Protocol for Equipment Leak Emission Estimates).

Provisions for Both Compressor Stations and Well Production Facilities

- Details on unsafe, difficult, or inaccessible to monitor requirements are in XVII.F.5

Leak Determination

- For EPA Method 21, for a facility constructed **before 5/1/14**, a leak is any concentration above (XVII.F.6.a.):
 - 2,000 ppm is a leak for compressor stations
 - 500 ppm for well production facilities
- For EPA Method 21, for a facility constructed on or after 5/1/14, a leak is any concentration above 500 ppm. (XVII.F.6.b.)
- For infra-red camera and AVO monitoring, a leak is any detectable emissions (XVII.F.6.c.)
 - For leaks identified using an approved instrument monitoring method or AVO, owners or operators have the option of either repairing the leak in accordance with the repair schedule or conducting follow-up monitoring using EPA Method 21 within 5 working days of the leak detection. If the

follow-up EPA Method 21 monitoring shows that the emission is a leak as defined above, the leak must be repaired and remonitored. (XVII.F.6.d.)

Repair and Remonitor

- First attempt to repair a leak must be made no later than 5 working days after discovery, unless parts are unavailable, the equipment requires shutdown to complete repair, or other good cause exists. (XVII.F.7.a.)
 - If parts are unavailable, they must be ordered promptly and the repair must be made within 15 working days of receipt of the parts.
 - If shutdown is required, the leak must be repaired during the next scheduled shutdown.
 - If delay is attributable to other good cause, repairs must be completed within 15 working days after the cause of delay ceases to exist.
- Within 15 working days of completion of a repair, the leak must be remonitored to verify the repair was effective. (XVII.F.7.b.)
- Leaks discovered pursuant to the leak detection methods shall not be subject to enforcement by the Division unless the owner or operator fails to perform the required repairs. (XVII.F.7.c.)

Recordkeeping

- The following records must be maintained for 2 years (XVII.F.8.):
 - Documentation of the initial approved instrument monitoring method inspection for new well production facilities (XVII.F.8.a.)
 - The date and site information for each inspection (XVII.F.8.b.)
 - A list of the leaking components and the monitoring method(s) used to determine the presence of the leak (XVII.F.8.c.)
 - The date of first attempt to repair the leak and, if necessary, any additional attempt to repair the leak (XVII.F.8.d.)
 - The date the leak was repaired (XVII.F.8.e.)
 - The delayed repair list, including the basis for placing leaks on the list (XVII.F.8.f.)
 - The date the leak was remonitored to verify the effectiveness of the repair, and the results of the remonitoring (XVII.F.8.g.)
 - A list of components that are designated as unsafe, difficult, or inaccessible to monitor, as described in Section XVII.F.5., an explanation stating why the component is so designated, and the plan for monitoring such component(s). (XVII.F.8.h.)
- The owner or operator must submit an annual report on or before 5/31 of each year with the following information for the previous calendar year (XVII.F.9.):
 - The number of facilities inspected (XVII.F.9.a.)
 - The total number of inspections (XVII.F.9.b.)
 - The total number of leaks identified, broken out by component type (XVII.F.9.c.)

- The total number of leaks repaired (XVII.F.9.d.)
- The number of leaks on the delayed repair list as of December 31st (XVII.F.9.e.)

Each report must be accompanied by a certification by a responsible official that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete. (XVII.F.9.f.)

B. EPA

EPA has recently issued and solicited comment upon a white paper evaluating LDAR in consideration of potentially expanding NSPS OOOO. BLM should defer deciding whether to impose potentially redundant and/or unnecessary regulations until after EPA completes its process, which might include nationwide LDAR. Moreover, CDPHE already has extensive LDAR requirements for all compressor stations and well production facilities in Colorado.

IX. CONCLUSION

While recognizing BLM's interest in reducing resource waste, BLM's proposed regulatory actions clearly impose air emissions reduction mandates under the guise of "ensur[ing] a fair [royalty] return to the American taxpayer," and CPA recommends BLM not amend NTL4a. Colorado's oil and gas exploration and production industry air emissions are appropriately regulated and managed by the proper state and federal agencies. Unlike BLM, the State of Colorado and EPA have the proper funding, personnel, and expertise to manage Colorado's air resources effectively and have done so for decades. BLM's proposal to require air quality controls is unnecessary, redundant, and potentially contradictory to the in-place state and federal regulatory structure. The proposals BLM suggests will likely result in additional delays in permitting, production, and revenue delivery to federal, state, and local governments. Colorado's economy greatly depends on mineral revenues, and any disruption in revenue flow is certain to impact the state's economy on numerous levels. Furthermore, the Mineral Leasing Act (MLA), 30 U.S.C. § 187, prohibits conflict with laws of the state, and the state already regulates to prevent waste and protect the public welfare. As CPA clearly articulates herein, the State of Colorado is and continues to appropriately regulate the sources contemplated by BLM's proposal in conjunction with EPA, and BLM's proposal potentially conflicts with Colorado law.

Sincerely,

Stan Dempsey, Jr.

Stan Dempsey, Jr.
President, Colorado Petroleum Association



May 30, 2014

Via email only blm_wo_oq_comments@blm.gov

Mr. Tim Spisak, Senior Advisor - Conventional Energy
Bureau of Land Management
20 M Street, S.E.
Washington, DC 20003

Mr. Steven Wells, Division Chief
Fluid Minerals Division
Bureau of Land Management
20 M Street, S.E.
Washington, DC 20003

Re: Preliminary Comments of Devon Energy Production Company, L.P. Regarding Bureau of Land Management Venting & Flaring Public Outreach

Gentlemen:

Devon Energy Production Company, L.P. (Devon) appreciates the opportunity to submit comments on the Bureau of Land Management's (BLM) preliminary proposal to develop new regulations or policies regarding venting and flaring operations. BLM has indicated its intention to revise or significantly modify Notice to Lessees and Operators of Onshore Federal and Indian Oil and Gas Leases, Royalty or Compensation for Oil and Gas Lost, commonly referred to as NTL-4A (NTL-4A). Devon appreciates the opportunity to submit these comments regarding BLM's proposed new rules or modifications to existing rule or policies, and is concerned that any changes may have significant impact upon Devon's existing and future oil and gas operations on federal lands.

Executive Summary

- The BLM has not justified or sufficiently explained the necessity to develop a new rule or significantly revise the existing regulatory structure. NTL-4A functions effectively in its present form. A new rule or significant revisions to NTL-4A are unnecessary because the Environmental Protection Agency (EPA) has recently adopted new regulations to reduce emissions, and thus waste, from onshore oil and gas operations. Additionally, the BLM's proposal to modify NTL-4A is premature because the EPA is currently revising these regulations, which will likely address many of the BLM's alleged concerns.
- The BLM does not have legal authority over air quality issues under the existing statutory and regulatory framework. BLM also does not have sufficient budget, expertise or personnel to regulate onshore air quality issues.
- To the extent the BLM insists on moving forward with new regulations, BLM must ensure that it is using the most current oil and gas emissions data in which to make reasoned and informed decisions, only update NTL-4A if needed, and consider how it can improve and streamline the reporting and approval process for vented and flared gas.

General Comments

Overall, Devon does not believe BLM should engage in a new rulemaking or make significant modifications to NTL-4A. BLM has not provided any information demonstrating how or why the NTL-4A is insufficient. Oil and gas operators and the BLM have functioned effectively under NTL-4A for the past several decades without significant issues or concerns. Notably, NTL-4A provides the BLM with sufficient authority and flexibility to manage oil and gas operations across a wide variety of differing landscapes and situations. Because oil and gas operations vary widely across BLM-administered lands, the agency should strive to retain as much flexibility as possible if it moves forward with a new rulemaking or revisions to NTL-4A.

Further, Devon believes the BLM's initial proposal to regulate air emissions, at least as described in BLM's public outreach materials, may exceed the agency's authority. Rather than attempting to engage in a new rulemaking effort or significantly modify NTL-4A, Devon encourages BLM to defer to the authority of the various states which are currently exercising primacy under the Clean Air Act (CAA). Each of the oil and gas producing states which contain BLM-managed lands within their borders presently regulate air quality. Several states, including Colorado and Wyoming have recently issued additional regulations to specifically reduce methane emission from oil and gas operations. The BLM should also defer directly to the authority of EPA under the CAA. As the BLM is aware, the EPA recently promulgated comprehensive regulations regarding emissions from oil and gas production operations. These regulations will significantly curtail emissions from oil and gas operations across the nation which also serve to minimize waste and methane emissions which directly accomplishes the intent of NTL-4A and the President's Climate Action Plan: Strategy to Reduce Methane Emissions (March 2014). Finally, given the progress already made by the agencies which have been given legislative authority to regulate air quality, there are no "gaps" for oil and gas air emission regulations that BLM needs to fill and there is simply no significant justification to engage in a broad rulemaking effort at this point in time.

I. A New Rule or Significant Modifications To NTL-4A Are Unnecessary

The BLM need not develop a new rule or significantly revise NTL-4A. The existing NTL-4A has created a framework that has functioned effectively for over 30 years. Prior to engaging in a new rulemaking effort, the BLM must explain how and why revisions to NTL-4A are required at this time. The BLM should particularly explain why new regulations are needed given the fact BLM already has promulgated regulations designed to minimize waste and control venting and flaring. See e.g., 43 C.F.R. 3162.7-1; NTL - 4A. The agency should also explain why it believes more stringent control measures are needed now. As the BLM is aware the existing regulatory framework under NTL-4A provides the BLM Authorized Officer significant authority and flexibility to require additional mitigation measures if appropriate. See NTL-4A, V. Thus, if the BLM believes additional controls are necessary under certain circumstances, it has the authority to require such measures.

Additionally, any BLM effort to issue new rules regarding venting and flaring are unnecessary at this point in time because the EPA is still working through the process of revising the NSPS OOOO standards. Shortly after the NSPS OOOO rules were issued, the EPA announced its intention to potentially revise and update some of the new regulations. See 78 Fed. Reg. 58,414 (Sep. 23, 2013); 78 Fed. Reg. 22,216 (Apr. 12, 2013). EPA has also communicated its intent to continue working through potential revisions of the NSPS OOOO standards between now and 2016. Further, as part of the President's Climate Action Plan: Strategy to Reduce Methane Emissions (March 2014), the EPA again signaled its intention to issue additional modifications and regulations. As part of this process the EPA is soliciting peer reviews on a number of "white-papers" that will inform its rulemaking efforts. The BLM should not consider issuing emission-related regulations because the EPA is completing its own rulemaking process.

Devon also questions the accuracy of the information presented by the BLM suggesting there is a significant problem with vented and flared gas from federal leases. The pie chart presented in Slide five of the BLM's outreach materials was drawn from information provided by the EPA Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990 - 2011 report. The EPA's assumptions in this regard are not accurate and have been widely criticized. In response to this criticism, the EPA revised its estimates for methane emissions from natural gas production, resulting in a significant decrease of overall emissions, and specifically a decrease in emissions associated with venting and flaring. For example, overall methane emissions decreased between the 2011 and 2012 inventories by 12 percent. BLM should rely on only the most recent emissions estimates and data when determining if new rules are even necessary. As the 2012 inventory notes:

“Natural gas systems were the second largest anthropogenic source category of CH₄ emissions in the United States in 2012 with 127.1 Tg CO₂ Eq. of CH₄ emitted into the atmosphere. Those emissions have decreased by 25.8 Tg CO₂ Eq. (16.9 percent) since 1990. The decrease in CH₄ emissions is largely due to the observed decrease in emissions from production and distribution. The decrease in production emissions is due to increased voluntary reductions, from activities such as replacing high bleed pneumatic devices, regulatory reductions, and the increased use of plunger lifts for liquids unloading...CH₄ emissions from field production decreased by 25.6 percent from 1990 through 2012; however, the trend was not stable over the time series - emissions from this source increased by 24.9 percent from 1990 through 2006 due primarily to increases in hydraulically fractured well completions and workovers, and then declined by 40.4 percent from 2006 to 2012. Reasons for the 2006-2012 trend include an increase in plunger lift use for liquids unloading, increased voluntary reductions over that time period (including those associated with pneumatic devices), and RECs use for well completions and workovers with hydraulic fracturing.” (emphasis added)

II. EPA and States Are Already Addressing Air Emission Issues

Although Devon does not believe a new rule or significant modifications to NTL-4A are warranted, to the extent BLM elects to continue with a new rulemaking effort or significantly modify NTL-4A, the BLM should defer to the authority of the EPA and states and not attempt to overlap or complicate the implementation of EPA's NSPS OOOO standard or regulations issued by the states. It is particularly important for the BLM to avoid creating potentially conflicting or competing regulatory requirements. Devon is concerned an additional layer of potentially conflicting emission requirements would create an untenable situation.

Accordingly, BLM should carefully review the EPA's recently released New Source Performance Standards and National Emissions Standards for Hazardous Air Pollutants for the Oil and Natural Gas Sector. These recently promulgated rules significantly curtail emissions from oil and gas activities. These rules, commonly known as NSPS OOOO, introduce state-of-the-art restrictions on emissions from oil and gas production operations. 77 Fed. Reg. 49490 (Aug. 16, 2012) (to be codified at 40 C.F.R. parts 60 and 63); *see also*, 78 Fed. Reg. 58416 (Sep. 23, 2013) (to be codified at 40 C.F.R. part 60). These new regulations will significantly reduce emissions and thus waste from onshore oil and gas operations.

The new NSPS OOOO regulations impose a wide variety of obligations and requirements on operators including reduced emission completions, flaring requirements, and low-bleed pneumatic devices. The rules additionally impose obligations on operators to reduce emissions from storage vessels and inspect equipment for leaks. The new NSPS OOOO requirements largely curtail emissions from the exact sources identified in BLM's public outreach materials and will significantly reduce potential waste. The BLM should rely upon the NSPS OOOO regulations to reduce emissions rather than engaging in an unnecessary rulemaking procedure. In addition, each oil and gas producing state which contains BLM-managed lands within their borders presently regulates air quality. Several states including Colorado and Wyoming have taken additional efforts to reduce emissions from oil and gas

operations. The Wyoming Department of Environmental Quality (WDEQ) developed and strictly enforces a broad set of requirements to minimize emissions from oil and gas operations across the State. Wyo. Air Quality Stds. & Regs. (WAQSR) Chs. 1 - 14. The State of Colorado also recently promulgated new regulations designed to reduce emissions from oil and gas operations and specifically developed regulations regarding methane emissions. See CDPHE, Air Quality Control Division, Regulation No. 3, 5 CCR 1001-5 (2014); Regulation No. 6, 5 CCR 1001-8 (2014); Regulation No. 7, 5 CCR 1001-9 (2014).

To the extent the BLM proceeds forward with a new rule or determines that revisions to NTL-4A are necessary to prevent waste, BLM should simply update the NTL-4A rather than initiating a full and formal rulemaking process that will be lengthy and onerous. Of course, regardless of which option the BLM elects to proceed with, it must provide operators and members of the public an opportunity to submit comments on any proposed new rule or changes to the NTL-4A.

To the extent modifications to NTL-4A are considered, Devon encourages the agency to carefully develop guidelines, definitions, and other standards to provide more clarity to the BLM staff regarding the treatment of flared and vented gas. Devon has experienced significant consistency problems not only when dealing with various field offices, but even inconsistency between individual BLM employees in the same field office. It is important for the BLM to create reliable standards that can be easily applied and implemented by BLM field offices across the nation.

The BLM should also carefully review existing State requirements regarding venting and flared gas. Often the states and the BLM have very different reporting, tracking, and filing procedures which creates additional confusion and hardships for operators.

Finally, the BLM should take this opportunity to streamline reporting procedures between BLM and the Office of Natural Resources Revenue (ONRR) as these agencies often employ different standards and reporting requirements, thus complicating matters further. Streamlining and coordinating the reporting processes will improve BLM's and individual operator's ability to recognize, regulate, and curtail waste when and if it is occurring.

III. BLM Does Not Have Authority Over Air Quality

The BLM has proposed new regulations regarding the venting and flaring of gas under the guise of reducing waste and increasing revenue. Upon review of the public outreach materials and the information presented at the various forums, however, it is apparent the BLM is considering additional restrictions in an effort to improve air quality. In fact, it is telling the BLM's efforts to reduce venting and flaring was announced in conjunction with the White House Climate Action Plan: Strategy to Reduce Methane Emission, not as part of a revenue effort. Many of the concepts and situations described in BLM's public outreach materials extend well beyond revenue and waste issues and extend to measures designed to reduce emissions. Further, many of proposals presented in the BLM's outreach materials are either already addressed by NSPS OOOO or simply will have little benefit to the environment.

As discussed in detail below, the BLM does not have direct authority over air quality and cannot regulate such matters directly. The BLM does not have direct authority over air quality or air emissions under the CAA. 42 U.S.C. §§ 7401 - 7671q; 40 C.F.R., parts 50 - 99. Under the express terms of the CAA, the EPA has the authority to regulate air emissions. In most states, the EPA has delegated its authority to state agencies such as the WDEQ. The Secretary of the Interior, through the Interior Board of Land Appeals (IBLA), has unequivocally determined that states and not the BLM, has authority over air emissions:

In Wyoming, ensuring compliance with Federal and State air quality standards, setting maximum allowable limits (NAAQS and WAAQS) for six criteria pollutants CO (carbon monoxide), SO₂ (sulfur dioxide), NO₂, ozone and particulate matter (PM₁₀ and PM_{2.5}), and setting maximum allowable increases (PSD Increments) above legal baseline concentrations for three of these pollutants (SO₂, NO₂, and PM₁₀) in Class I and Class II areas is the responsibility of WDEQ, subject to EPA oversight.

Wyoming Outdoor Council, et al., 176 IBLA 15, 26 (2008). Decisions of the IBLA are binding upon the BLM and have the same force and effect of a Secretarial decision. 43 C.F.R. § 4.1 (noting that the Office of Hearings and Appeals, which includes the IBLA, may decide matters as fully and finally as the Secretary of the Interior); *see also IMC Kalium Carlsbad, Inc. v. Interior Bd. of Land Appeals*, 206 F.3d 1003, 1009 (10th Cir. 2000) (holding that IBLA has *de novo* review authority over the decisions of subordinate agencies such as the BLM). Given previous determinations by the Secretary, the BLM must not attempt to regulate air quality. *Wyoming Outdoor Council, et al.*, 176 IBLA at 26.

With respect to potential visibility impacts, the BLM's authority is also limited by existing federal law. Under the CAA, a federal land manager's authority is strictly limited to considering whether a "proposed major emitting facility will have an adverse impact" on visibility within designated Class I areas. 42 U.S.C. § 7475(d)(2)(B). Oil and gas operations do not meet the definition of a major emitting facility.¹ Further, under the CAA, the regulation of potential impacts to visibility and authority over air quality in general, rests with the states or the EPA. 42 U.S.C. § 7407(a). The goal of preventing impairment of visibility in Class I areas will be achieved through the regional haze state implementation plans (SIPs) that were recently approved. 42 U.S.C. § 7410(a)(2)(J). Although federal land managers with jurisdiction over Class I areas may participate in the development of regional haze SIPs, the BLM cannot affirmatively regulate air quality in these areas. 42 U.S.C. § 7491. Accordingly, the BLM has no authority over air quality and cannot impose emissions restrictions, either directly or indirectly, on oil and gas operations, particularly if the overall goal is to reduce potential visibility impacts.

The BLM should also recognize that the agency does not have the authority to implement, regulate, or enforce the prevention of significant deterioration (PSD) increment. The BLM's lack of authority regarding PSD increment analysis was recently recognized in the MOU issued by the Department of the Interior, Department of Agriculture, and the EPA which indicates that BLM NEPA documents relating to oil and gas activities will model PSD increment consumption for informational purposes only. *See Memorandum of Understanding Among Department of Agriculture, Department of the Interior and the EPA Regarding Air Quality Analyses and Mitigation for Federal Oil and Gas Decisions Through the National Environmental Policy Act Process (Air MOU), Section V.G (June 23, 2011).*

Further, the Federal Land Policy and Management Act of 1976 (FLPMA) does not authorize the BLM to regulate air quality. Section 202(c)(8) of FLPMA does not require or authorize the BLM to enforce air quality controls. Instead, the cited section of FLPMA provides: "In the development and revision of land use plans, the Secretary shall— . . . (8) provide for compliance with applicable pollution control laws, including State and Federal air, water, noise, or other pollution standards or implementations plans." 43 U.S.C. § 1712(c)(8). The very language of the statute demonstrates BLM is required to "provide for compliance," not independently regulate air emissions. *Id.* So long as the BLM is not interfering with the enforcement of State and Federal pollution laws, the BLM has satisfied its obligations under FLPMA. FLPMA simply does not authorize the BLM to independently regulate air quality control measures.

¹ Major emitting sources are those that emit or have the potential to emit 250 tons per year of any regulated pollutant, or any of the 28 listed industrial sources that have the potential to emit 100 tons per year of any regulated pollutant. 42 U.S.C. § 7479(1); 40 C.F.R. §§ 51.166(b)(1), 52.21(b)(1).

From a NEPA perspective, the BLM may analyze air quality impacts, but NEPA does not authorize the BLM to impose air emissions regulations. As the BLM is aware, NEPA is a procedural statute intended to produce informed decision making by federal agencies. *United States Dep't of Trans. v. Public Citizen*, 541 U.S. 752, 756-57 (2004); *Lee v. United States Air Force*, 354 F.3d 1229, 1237 (10th Cir. 2004). While NEPA mandates that agencies follow specific procedures when reaching decisions that significantly affect the environment, NEPA does not impose any requirement on agencies to reach a particular decision. *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350-51 (1989); *Lee*, 354 F.3d at 1237. Moreover, NEPA does not require agencies "to elevate environmental concerns over other valid concerns." *Lee*, 354 F.3d at 1237. Once the agency adequately identifies and evaluates environmental concerns, "NEPA places no further constraint on agency actions." *Pennaco Energy, Inc. v. United States Dep't of the Interior*, 377 F.3d 1147, 1150 (10th Cir. 2004).

The Mineral Leasing Act (MLA) also does not provide the BLM authority to regulate air quality. BLM only has authority under the MLA to ensure the conservation of oil and gas resources, prevent waste, and obtain a fair return to the government. 30 U.S.C. § 187. BLM does not, however, have broad authority to regulate venting and flaring using this authority. Creating additional unnecessary regulations may create situations where operators are subject to conflicting or contradictory requirements under the BLM's regulations as compared to the states. The MLA makes it clear that the agency should not develop provisions or regulations contrary to the laws of the State in which the BLM lands are located. 30 U.S.C. § 187. The creation of potentially conflicting regulations to govern air emissions may violate this provision of the MLA.

Finally, BLM itself must acknowledge that it does not have the personnel or expertise to attempt to regulate air quality. BLM budgets are already decreasing and attempting to place air quality experts in each field office would be simply impossible. BLM's limited air quality staff, usually located only in state BLM offices, is already overworked. BLM should simply allow the agencies with actual authority under the CAA, the EPA and individual states, to regulate air quality.

IV. Suggestions and Considerations

NTL-4A has always included a very important "economic" recovery standard that is that is critical for oil and gas operations. As currently drafted, NTL-4A states that the "Supervisor may approve an application for the venting or flaring of oil well gas if justified either by the submittal of (1) an evaluation report supported by engineering, geologic, and economic data which demonstrates to the satisfaction of the Supervisor that the expenditures necessary to market or beneficially use such gas are not economically justified and that conservation of the gas, if required, would lead to the premature". See NTL-4A, IV. BLM should not impose rules that would render oil and gas operations uneconomic, and must consider the relatively modest profit margins on individual leases, the substantial expense additional controls would require, and the lack of available and reasonably foreseeable pipeline capacity in many areas where operators produce oil or natural gas from leases administered by the BLM. Requiring significant additional controls on oil and gas operations may makes such operations uneconomic, particularly as oil and gas production rates decline over time. In particular, the BLM must avoid making "field wide" economic evaluations when considering whether additional controls should be required. Instead, determinations should be made on an individual lease basis. Not only is this practice consistent with past BLM precedent and existing lease rights, it is the only method practically by which operators could reasonably assess and pass costs on to other working interest owners. After all, oil and gas interest are not owned on a field-wide basis in most cases, they are owned as individual leases.

To the extent the BLM decides to revise NTL4-A, the BLM should also be very careful not to impose so many requirements that operations are no longer economic. The MLA itself does not contemplate that all loss would be avoidable and only requires an oil and gas lessee to use all reasonable precautions to prevent waste of oil and gas. 30 U.S.C. § 225. BLM incorporated this

economic recovery standard into existing NTL4-A. BLM must ensure this economic consideration is included in any newly issued regulation (if BLM proceeds with such efforts). Absent such consideration, newly issued rules may actually lead to reduced revenues as oil and gas operations may become uneconomic. Additionally, courts have recognized that once BLM has issued an oil and gas lease conveying the right to access and develop the leasehold, the BLM cannot later impose unreasonable mitigation measures that take away those rights. See *Connor v. Burford*, 84 F.2d 1441, 1449-50 (9th Cir. 1988); 43 C.F.R. § 3101.1-2 (BLM can impose only “reasonable mitigation measures . . . to minimize adverse impacts . . . to the extent consistent with lease rights granted.”).

The BLM should consider the fact that much of the flaring occurring on federal lands is a result of delays in securing rights-of-way (ROWs) from the BLM to install appropriate infrastructure to transport natural gas. The BLM typically requires between 45 and 160 days to approve ROWs and infrastructure, which in turn requires operators to flare natural gas for longer periods of time. If the BLM wants to improve its timeline for ROW approvals, flaring would be reduced and additional revenue would flow to the federal government. Rather than adopting new regulations that may further exacerbate BLM’s processing approval times, the BLM should attempt to streamline and simplify the ROW approval process. As demonstrated by the Government Accountability’s Office’s report of May of this year, the BLM is already under enormous pressure to complete assigned tasks. See Government Accountability Office, *Oil and Gas Updated Guidelines, Increased Coordination, and Comprehensive Data Could Improve BLM’s Management as Oversight*. (May 2014) (GAO Report). Creating additional reporting and approval requirements will only create further delays. In addition, BLM is expected to finalize its Hydraulic Fracturing rule in the near future that will further encumber its staff.

The presence or absence of pipeline infrastructure significantly affects the timing of production and an operator’s decision whether to seek approval to flare natural gas associated with crude oil production. The BLM proposals to capture nearly all methane emissions from production operations appear to assume it is as simple as laying a pipeline or installing a small compressor, but this is not the case. Collection and treatment of methane or natural gas production generally involves a midstream companies which seek permits for and install gathering lines to collect, separate (e.g. hydrocarbon liquids), treat (e.g. removal of carbon dioxide, and hydrogen sulfide, hydrocarbon liquids), and compress gas to meet transportation pipeline specifications for the sale of such gas. In addition to the remoteness or distance of leases with oil and gas production from existing pipeline infrastructure, the timing and sequence of pipeline projects to deliver production from such leases can be affected by operational concerns such as the gathering pipeline’s operating pressure, pressure of the gas source (high-pressure separator or tank vapors at ounces), volumes/quality of total gas in the area to justify economics of gathering and transportation pipeline location. Existing gas plants and gathering systems in legacy areas may be at or near capacity, and completion of a distribution system may require construction of a gas plant(s) as well as pipelines. Finally, delays that may be experienced in the process of securing permits to install gas pipelines for gathering or for transmission can delay pipeline hook-ups to producing wells, resulting in additional flaring and in deferral of revenue for the operator and for the federal government as royalty owner.

The BLM should also attempt to streamline and simplify the process by which BLM approves the flaring of natural gas. Often there is significant lag between a verbal approval to vent or flare gas and written authorization. This creates uncertainty for operators. Further, as noted above, the BLM must understand that many times operators are required to flare gas because of matters beyond their control such as gathering system pipeline operating pressure, gas plants operating at a near capacity, and upset conditions at processing facilities.

Finally, Devon encourages the BLM not to create additional or unnecessary approval requirements for its own staff. The recently released United States Government Accountability Office report demonstrated that BLM staff cannot currently keep up with existing regulatory requirements and

Mr. Tim Spisak and Mr. Steven Wells
Bureau of Land Management
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inspection obligations. See GAO Report. Creating significant additional work for BLM personnel through unnecessary regulations and approval requirements will only further exacerbate this difficult situation.

Conclusion

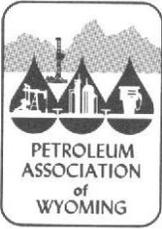
Given the existing regulatory framework and the utilization of BLM resources, Devon encourages the BLM not to conduct a new rulemaking at this time. If BLM chooses to move forward with additional regulations, Devon believes that simply updating provisions and requirements of the NTL4-A could significantly improve the current process. Additional controls on emissions from oil and gas operations should not be imposed by the BLM because the EPA and states have adopted new regulations to reduce emissions, and thus waste, from onshore oil and gas operations. It would also be inappropriate for the BLM to attempt to regulate air quality as the BLM does not have legal authority over air quality issues under the existing statutory and regulatory framework, and furthermore, it would not be efficient or effective as BLM does not have the staff, budget or expertise to take on such an effort. Finally, to the extent the BLM elects to revise NTL-4A, the agency must take into account how it can update and streamline the reporting and approval requirements for vented and flared gas.

To the extent you have questions regarding these comments please do not hesitate to contact me at Darren.Smith@dvn.com. Please also include myself and Randy Bolles (Randy.Bolles@dvn.com) on any future communications regarding this process.

Sincerely,

A handwritten signature in black ink that reads "Darren Smith". The signature is written in a cursive, flowing style with a long horizontal stroke extending to the right.

Darren Smith, Manager
Corporate EHS Policy



PETROLEUM ASSOCIATION OF WYOMING

951 Werner Court, Suite 100
Casper, Wyoming 82601
(307) 234-5333

fax (307) 266-2189
e-mail: paw@pawyo.org
www.pawyo.org

May 29, 2014

Mr. Steven Wells, Division Chief
Fluid Minerals Division
Bureau of Land Management
20 M Street, S.E.
Washington, DC 20003

Re: Venting & Flaring from Oil and Gas Operations on Public and Indian Trust Lands Submitted Electronically to blm_wo_og_comments@blm.gov

Dear Mr. Wells:

The Petroleum Association of Wyoming (PAW) would like to take this opportunity to provide comments to the United States Interior Department's Bureau of Land Management (BLM) concerning the potential regulatory changes being considered for oil and gas operations subject to BLM regulatory authority. PAW is Wyoming's largest oil and gas trade association. PAW members produce over 90% of the natural gas and 80% of the crude oil in the state and have a vested interest in the policies, rules and regulations administered by the BLM.

PAW is concerned that BLM is considering use of resource conservation and royalty payment requirements to require air quality controls, thus usurping state and federal regulation authorized by the Clean Air Act. WDEQ and the Wyoming Oil and Gas Conservation Commission (WOGCC) already have rules in place to manage air quality issues, that BLM is suggesting need to be managed for royalty payments. The WDEQ already has a document requiring best available control technologies (Chapter 6, Section 2 Oil and Gas Production Facilities Permitting Guidance (Guidance)). WDEQ has the authority to manage air quality in Wyoming, and as BACT is a moving target and as such is constantly changing, WDEQ is the proper agency to require BACT, not BLM. In addition, the US Environmental Protection Agency (EPA) has additional, almost identical, requirements currently in place. PAW believes the state is in a perfect position to maintain regulation of air quality on all lands as they have the personnel, budget and expertise necessary to efficiently and effectively implement the rules. PAW does not believe that Wyoming BLM field offices have the same level of staffing, budget

or expertise to efficiently and effectively implement such a large undertaking as described.

PAW is concerned that implementation of the proposed changes may exacerbate the current decline in oil and natural gas production on federal lands. According to the Institute for Energy Research, federal regulation increases have caused a 40% decline in oil production on federal lands since the year 2000. Oil and natural gas wells need to be continually drilled or state and national production will continue to decline. Introducing redundant regulations that cause unnecessary delays in the permitting process will only cause further declines of both oil and natural gas production on federal lands. Such declines will have a severe negative effect on Wyoming's tax revenue and employment numbers, will increase the costs for energy to all consumers, and will increase this country's reliance on imports from less than friendly nations.

Wyoming's economy is heavily dependent on mineral revenues and employment. In 2008, the Wyoming Business Alliance requested a study by the firm of Booz, Allen and Hamilton to analyze the level of importance of the oil and gas extraction industries, in terms of revenue and employment, to the state. The study was authored by three Ph.D.'s including one from the University of Wyoming. The study focused on four oil and gas activities to estimate the economic contribution to the state. They included drilling, completing and recompleting wells, extraction operations, mineral royalty payments for access to private minerals, and extraction taxes paid to the state and counties of Wyoming. Other capital investments, pipeline investments and refinery impacts were not considered.

The analysis indicated that there was an estimated \$15.5 billion in total economic output (i.e. both direct and downstream economic impacts) as a result of drilling, completion, recompletion, and extraction activities in 2007, 77% of which is attributed to extraction activities. Royalty, lease payments and extraction tax payments totaled approximately \$18.6 billion. Oil and gas activities within the state employed over 73,000 people in direct and indirect jobs. In Wyoming, roughly 50% of the surface estate and 66% of the mineral estate is owned by the federal government. Oil and gas activities that do not require federal approval will be rare given the amounts of surface and mineral estate. If delays and extra expenses caused by redundant regulations are not prevented, Wyoming economies will suffer.

BLM's approach necessarily presumes that oil and gas activities pose some significant risk that is not addressed by existing state and federal regulations. As discussed in the comments above, we question the basis for the presumption and the essential nature of BLM's action. PAW believes BLM should stay within the parameters of its existing regulatory authority; conservation of resources, prevention of waste and assuring a fair royalty return to the U.S. government. While we firmly believe BLM's proposal to change the current NTL4A is premature and is potentially counterproductive in a number of respects, including considerable increased costs and delays, particularly in light of successful state and other federal efforts to regulate oil and gas development

generally, we understand BLM may choose to move forward. In that spirit, PAW submits the following additional comments regarding the proposed changes.

Well Completions

Changes to the current NTL4A which allows for Supervisor approval for venting and or flaring during completions is unwarranted. BLM's proposal to require capture, injection, use, combustion or flaring during well completion may result in shut in wells. In the event that no transportation options are available, and the Supervisor no longer allows for flaring, the only remaining option is to shut in. Royalties and taxes cannot be assessed on a product that has no value as defined in Wyoming statutes, and if no options for use, flaring or capture/injection are available the proposed policy will result in shut in wells, which in turn result in loss of economic benefits to all entities involved.

As mentioned previously, Wyoming currently has several aspects of law and rules which specifically outline what the state will determine as waste and how said determinations are taxed. Wyoming's revenue statute declares:

§39-14-205. Exemptions. (j) Natural gas which is vented or flared under the authority of the Wyoming oil and gas conservation commission and natural gas which is reinjected or consumed prior to sale for the purpose of maintaining, stimulating, treating, transporting or producing crude oil or natural gas on the same lease or unit from which it was produced has no value and is exempt from taxation.

In addition the WOGCC outlines what is allowed for flaring and venting of gas in rule:

Chapter 3; Section 39. Authorization for Flaring and Venting of Gas.

(a) Venting or flaring under the following circumstances has not and does not constitute waste and is authorized by the Commission:

(i) Emergencies or upset conditions: During temporary emergency situations, such as compressor or other equipment failures, relief of abnormal system pressures, or other conditions which result in the unavoidable short-term venting or flaring of gas at a lease, gas plant or other facility;

(ii) Well purging and evaluation tests: During the unloading or cleaning up of a well during routine purging or drill stem, producing, or evaluation tests;

(iii) Production tests: During initial or recompletion evaluation tests not exceeding a period of fifteen (15) days, unless a longer test period is authorized by the Supervisor;

(iv) The Commission encourages the Owner or Operator to employ technologies that minimize or prevent the venting and flaring of gas during drilling and completion operations.

(b) Low rate casing head gas. Unless it is determined by the Supervisor or the Commission that waste is occurring, up to sixty (60) MCF of gas per day is

authorized to be vented or flared from individual oil wells. Venting or flaring is authorized either at the well or at a lease facility which serves several wells.

(c) Unless flaring or venting is authorized under subsection (a) or (b) of this section, an Owner/Operator must apply for retroactive or prospective venting or flaring authorization under subsection (c) or (d) of this section. Authorization may be granted upon review of an application, provided that the venting or flaring does not constitute waste. An application to vent or flare shall contain the following items as a minimum:

- (i) A statement of reason for venting or flaring;
- (ii) The estimated duration of venting or flaring;
- (iii) The estimated daily volume of gas in thousands of standard cubic feet per day (MCFD);
- (iv) The estimated daily volume and type of associated produced fluids, gas or plant products in barrels, MCFs, gallons or tons per day, as applicable;
- (v) A compositional analysis of the gas if hydrogen sulfide is present or if the gas stream has a low BTU content;
- (vi) A legal description of the well(s), plant or facility and distance to the nearest potential sales point or pipeline(s); and,
- (vii) A discussion of applicable safety factors and plans such as use of a constant flare igniter, facility pressure release, or emergency protection practices.

(d) The Supervisor may grant temporary authorization of verbal requests, including plant start-up/shut-down. Follow-up documentation of the request may be requested of the applicant containing, at a minimum, the items set forth in subsection (c) of this section above within fifteen (15) days of the initial request.

(e) All operations shall be conducted in a safe and workmanlike manner. If the gas stream is sour or venting would present a safety hazard, a constant flare igniter system or other Commission approved method to safely manage sour gas may be required.

(f) Venting of gas containing a hydrogen sulfide content in excess of 50 PPM is not allowed. Venting does not include emissions associated with fugitive losses from valves, fittings, surface piping, pneumatic devices, and other production equipment, including the wellhead. Supervisor approval is required for venting of gas containing a hydrogen sulfide content in excess of 50 PPM for specific job tasks in controlled environments, such as well repairs, pipeline purging, well failures, decommissioning of facilities, etc., or where necessary as a safety measure where flaring would be dangerous due to the introduction of an ignition source at the work site or when the operation is conducted under the authority and regulations of the Department of Environmental Quality.

In regards to requiring "green completions", PAW suggests that while already required by WDEQ when possible, there has to be equipment in place along with proper pressures to ensure success. Three things are required to complete a well with the flare-less completion process: 1). Gas-gathering infrastructure (flare-less completions cannot be performed without pipelines.) 2). The gas must be capable of flowing at

pressure equal to or greater than the gas pipeline system. 3). The gas must be of adequate quality to meet the pipeline specification (no CO₂ or N₂ present).

When a gas well is hydraulically fractured, its primary flowback fluid is natural gas. For this reason, green completions make sense to reduce the amount of natural gas vented or flared into the atmosphere. For oil wells, however, the primary fluid is oil. In some cases, little to no gas is made and may not be seen during the flowback process. In other cases, oil wells can be very prolific and a substantial amount of gas can be seen during the flowback process. No “one size fits all” standard is appropriate for oil wells.

Specialized equipment and trained personnel are required to safely and effectively flowback and test wells. The equipment that is currently being used effectively consists of a large, 4 phase separator (4 phases - gas, condensate, water and sand). The separator equipment can handle large amounts of water and solids (frac sand) during the flowback stimulation and cleanouts. The supply of equipment and trained personnel has been limited during periods of high industry activity.

After the fluids are initially separated, the water and oil are piped to production storage tanks, gas is usually piped through the normal production facilities for an additional stage of separation and any treating that may be required (dehydration) prior to sales, and sand is periodically discarded to the reserve pit. Without the use of the flowback equipment the production separator and dehydrator facilities would have to be oversized in order to handle the fluid flow rates. The flowback equipment used requires careful engineering, construction, maintenance and testing to perform the flowback safely.

Costs associated with green completions will be considerably higher than other completion techniques. The cost of the flowback equipment is greater than the typical flowback piping that is commonly used. Experienced, well-trained personnel are required. If all flaring or venting of gas during completion operations were to be eliminated, the only option for completions would be to shut the well in during the times when the gas cannot be put into the sales line. Coil tubing and snubbing equipment may need to have a higher-pressure rating if required to work in a higher-pressure condition of shut-in and therefore become more expensive. If the well would need to be shut-in during a critical point of the flowback or completion as a result of not being able to flare, reservoir damage may occur as a result of frac fluids remaining on the formation longer than necessary. This could lead to a loss of recoverable gas. Due to higher costs for the technology, marginal wells may not be economic.

Location of pipelines relative to the well is critical to the viability of green completions. A “sales line” must be near enough to be economically feasible to connect prior to the completion of the well. In typical high-density infill projects, the infrastructure and certainty of production make this technique feasible. This fact will most likely preclude a step out or wildcat as typically no lines will be available. Companies will not lay pipeline to a well unless it is determined the well is productive. It is worthy of note that not all open-hole logs give a definitive answer as to the productivity of the well.

To flow a well to a sales line during flowback, following frac stimulation, the reservoir needs to be of a quality and pressure that it will flow back with a full column of water, and have enough wellhead pressure to get into the sales line with the gas. An over-pressurized interval with good deliverability will usually flow at a high enough pressure to flow back to sales. Overly tight, normally pressured, naturally under-pressured or partially depleted reservoirs will not flow back against line pressure at a rate necessary to clean the gel from the frac stimulation. This is also true if the reservoir is depleted or of poor quality in general. This becomes problematic because the longer the frac fluid is left down hole, the greater the likelihood that damage will occur to the reservoir. If the gas contains impurities (such as sand, free water, too much water vapor, or significant amounts of carbon dioxide or nitrogen) it cannot be placed in a sales line. Typical equipment used during green completions is capable of separating out the condensate, water and solids out of the production stream; however the equipment does not remove carbon dioxide or nitrogen. The use of carbon dioxide and nitrogen is commonly added to a frac on a partially depleted or under-pressurized zone to assist with flowback and reduce the chances for reservoir damage. Due to the addition of these gases, in partially depleted or under-pressurized zones, the flowback gas cannot be deemed pipeline quality.

In certain instances drillable plugs are utilized to isolate intervals between fracs during the stimulation process. After all fracs are complete, the plugs are drilled out, either with a coiled tubing unit, a snubbing unit or a combination of service rig and snubbing unit. Drill out procedures is done with the well in an under-balance condition so not to damage the zones that were just stimulated. Nitrogen or Air is commonly used to create a foam for these drill outs and clean outs. During this procedure the well has to flow up the casing to remove plug cuttings, frac fluid and water. The rate and pressure of the returns on the casing is constantly changing, which makes meeting the marketable gas requirements extremely difficult. Typically in multiple zone areas, the lower zones will show higher pressures than in upper zones. These pressure differences can be magnified by the presence of partially depleted intervals. Where high differential pressures exist between intervals, it becomes difficult, if not impossible to clean the wells enough to go to a sales line. The additional backpressure required to flow to sales can cause a situation where the high-pressured zones flow to the low-pressure zones instead of up the casing. This situation can cause addition problems with pipe becoming stuck at perforations or the need to add nitrogen, which eliminates saleable gas. Retrievable bridge plugs are also utilized for isolation of intervals. A common way to retrieve these bridge plugs is circulating nitrogen or foam to clean them and snub out of the hole. This usually precludes the ability to sell gas during these operations.

In high-pressure instances, due to minimizing flaring and the restrictions on flowback equipment and pipelines, pressures can buckle tubing. This instance could result in a hazardous well control situation. A common way to reduce pressure is to send some gas to flare. Either differential sticking or buckled tubing can result in expensive fishing job or possibly the loss of the well. Each well should be evaluated prior to drill out to determine the operational viability of drilling out to sales. Wells without significant

depletion, wells of average productivity, and low pipeline pressures are preferred for the flare-less completion technique.

Cold temperature can complicate operations on high-pressure gas wells due to hydrate formation freezing off flow lines. The additional piping and equipment that is necessary for green completions can aggravate this situation. Flowing back to a sales line usually precludes the possibilities of getting flowing pressures below the hydrate point. Equipment and setup must be designed to take this phenomenon into consideration. Control of pressure drops, liberal applications of heat, and generous additions of methanol are all requirements for successful cold weather green completions. Under extreme cold weather conditions, flow back to flare is usually more prudent as hookups are generally less complicated and less prone to freeze up.

Only wells with sufficient reservoir pressure to flow against the gathering system back pressure and capable of producing saleable quantities of natural gas are candidates for green completions. Without a gas gathering system, flaring is still the next best option to control gas emissions during flowback.

PAW suggests the BLM retain the current policy and place no new requirements on well completions.

Production tests

The need to determine if a well will be successful through production testing is essential to oil and gas operations. Wyoming has addressed this issue in WOGCC rule.

Chapter 3; Section 39. Authorization for Flaring and Venting of Gas.

(iii) Production tests: During initial or recompletion evaluation tests not exceeding a period of fifteen (15) days, unless a longer test period is authorized by the Supervisor;

The suggestion to extend well completion requirements to production tests is unsupported and unnecessary as discussed above. To limit the initial well evaluation tests without allowing for an option to increase, as is currently allowed, is imbalanced. BLM should allow for production testing as it's allowed through the appropriate State Oil and Gas Conservation Commission. Again, the states have appropriate staffing, budgets and expertise necessary to make determinations without additional delays.

Liquids Unloading

The WDEQ's Guidance has addressed the issue of blowdowns and venting. This proposal essentially kills the use of the WDEQ Guidance. BLM should instead be using the Guidance program as the model for its own policies, rather than terminate an existing program that works. The Guidance program allows for the wide variability in the dynamics of oil and gas production. Working together with industry in its development, WDEQ has implemented a cost effective, common sense permitting program to lower emissions to equivalent standards desired by the EPA and now it appears the BLM.

The “Guidance applies to surface oil and gas production facilities where hydrocarbon fluids are produced, processed and/or treated prior to custody transfer from the facility.” Therefore, it applies to all oil and gas production facilities regardless of surface or mineral ownership.

Chapter 6, Section 2 Oil and Gas Production Facilities Permitting Guidance Blowdown and Venting

Best Management Practices (BMP) and information gathering requirements will be incorporated into permits for new and modified facilities.

BMP: During manual and automated blow down/venting episodes associated with liquids unloading, wellbore depressurization in preparation for maintenance or repair, hydrate clearing, emergency operations, equipment depressurization, etc., associated VOC and HAP emissions shall be minimized to the extent practicable. During manual blow down/venting, personnel shall remain on site to ensure minimal gas venting occurs.

Information Gathering: Specific recordkeeping and reporting requirements will be established during the permitting process and will include estimates of associated regulated air pollutants, reasons for episodes, durations of episodes, steps taken to minimize emissions and descriptions of emission estimation methods.

Casinghead and Associated Gases

It appears BLM believes the reason that oil wells are flared and a gas gathering system is not put in place for all wells is a factor of economics. BLM is missing the fact that there are several reasons that oil wells are flared and a gas gathering system is not put into place. As discussed under the Well Completions section and below, there are many factors that help the installation of a gas gathering system

Natural gas that is produced from an oil well but can't be sold is known as “stranded” gas. It's stranded because the pipeline infrastructure needed to gather and transport the gas for processing is unavailable. Unlike gas fields where infrastructure may be unavailable in limited situations such as exploration, delineation, or some leasehold wells, gas gathering infrastructure can be unavailable for oil wells across an entire field or area. Lack of available infrastructure occurs for various reasons. For instance, insufficient associated gas production volumes may make it uneconomic to gather, process, and sell the produced gas. Or, economic gas gathering infrastructure construction may lag behind the start of new well production. During flowback and continuing into production, stranded gas from high pressure wells is flared for safety and VOC emissions reduction. Without gas gathering infrastructure, green completions are not possible. If stranded gas were not allowed to be flared, wells would have to be shut-in and unable to produce, thus negatively impacting federal, state and local economies.

Several steps must be completed before natural gas production can be sent to a natural gas gathering line. A natural gas gathering line/system must be permitted, installed and operational in the area. Permits are required for right-

of-way, installation, compressor site air quality, etc. for the natural gas gathering line/system before it is installed which may take much longer than getting a permit to drill a well. Designing and installing a natural gas gathering system (including a pipelines, compression, gas plant to send the gas to, etc) takes considerable time and money. Furthermore, designing and installing a gas gathering line depends on having enough natural gas production to justify the exceptional cost and burden for the gas gathering system.

A contractual right to flow into the gas gathering system with the company that owns the gathering line must be in place. In most cases the company owning the well is different from the company that owns the gathering system. Therefore, contracts must be put in place to allow for flow to the gathering system. The company owning the gas gathering system must determine if the pipeline has the capacity to accept the additional well or wells being added. This also adds time and costs to the equation.

Companies must acquire the necessary permits and rights-of-ways for the pipeline from the well site to the natural gas gathering system. Permits and rights-of-ways are required for installation of the pipeline to connect to the natural gas gathering system. Sometimes obtaining the necessary rights-of-ways can be difficult and may require a court decision, adding time and costs.

The quality of the natural gas must meet the specifications of the natural gas gathering line. Contracts with the gathering company include specifications for entering the gas gathering line including concentrations of inert gases such as carbon dioxide or nitrogen, and H₂S. Carbon dioxide and nitrogen are often used to energize well stimulations to assist with flowback and cleanup. The carbon dioxide and nitrogen used in flowback cannot be routed to the pipeline because the additions of inert gasses cause the gas to become undesirable and unsaleable. The natural gas gathering system operator ultimately controls when an operator can send gas to the sales lines. In addition, there must be adequate reservoir pressure to flow into the natural gas gathering line.

When each stage of a stimulation program is initially completed, the pressure of the gas may not be high enough to overcome the current pipeline pressure and maintain adequate velocity to clean-up the well and reservoir. Any time this occurs, the well must be flared or vented until enough flowing pressure is available to send gas to the sales pipeline. This allows clean-up of the well bore and is critical to minimize the potential for formation damage. It is possible that sensitive zones can lose productivity due to increased clean-up time required if back pressure is added to the well because of the sales line pressures. Once fracture stimulation is pumped, flowback and clean-up must proceed regardless of sufficient pressure to enable sales or severe and permanent reservoir damage is likely. Adding compression to overcome line pressure on low energy wells has been attempted in the past and was found to be unfeasible for technical reasons. Furthermore it adds

additional air emissions for engines to power the compressors while greatly increasing the cost.

Many oil reservoirs have pressure that is insufficient for wells to naturally flow on their own even after hydraulic fracturing; or they have insufficient pressure to overcome the backpressure of the gas gathering system. In addition, many reservoirs produce insufficient gas volumes to operate a separator during flowback which makes both green completions and flaring infeasible.

Gas Conservation Plan

PAW does not understand how BLM plans to define “economic” as used in this section. How can a product that has no value until it is produced, processed and sold be deemed “economic”? Often times, companies other than operators control gas gathering systems and such systems, along with pipeline infrastructure, is the last piece of equipment put into place in the production system. How does BLM plan to gather operator commitments when the operator has no control over how soon the infrastructure is in place? What exactly constitutes a gas conservation plan?

It appears as though this system again will only cause delays and less drilling in the future. By requiring commitments from an operator that has no control over the process essentially prevents the operator from producing. Without replaced production, oil and gas development and production will decline from federal properties, and thus, impact Wyoming’s economy.

Storage Vessel/Tank Emissions

As stated previously, this proposal also essentially kills the use of the Guidance. BLM should instead be using the Guidance program as the model for its own policies, rather than terminate an existing program that works. The Guidance program allows for the wide variability in the dynamics of oil and gas production. Working together with industry in its development, WDEQ has implemented a cost effective, common sense permitting program to lower emissions to equivalent standards desired by the EPA and now it appears the BLM.

The value of the Guidance program is that it allows the operator to begin startup of new well production and essentially have a 2 month grace period before installing an emissions control on a storage vessel. Since initial production of a new well can frequently decline significantly in the first few weeks of production, establishing a stabilized production rate allows an operator to more accurately assess emissions potential to determine if a control is needed. More importantly, a more accurate assessment of emissions potential allows the operator to properly select and size the control device that will operate most reliably and efficiently for the actual production rate at a site.

Operators need time to evaluate the emission or throughput before the controls must be installed. The WDEQ bases control on the first 30 days of production multiplied by a

decline factor then control must be installed 60 days later. The Wyoming approach could be a model, with adjustment made to the 'decline factor' such that it is more representative of an individual basin or fields average decline rate.

As the Guidance has addressed the issue of tank emissions, PAW suggests the BLM review the guidance which allows for Wyoming to manage air quality. The "Guidance applies to surface oil and gas production facilities where hydrocarbon fluids are produced, processed and/or treated prior to custody transfer from the facility." Therefore, it applies to all oil and gas production facilities regardless of surface or mineral ownership.

Chapter 6, Section 2 Oil and Gas Production Facilities Permitting Guidance Flashing

For the purpose of determining flashing emissions all vapor streams containing VOC or HAP components from all storage tanks (e.g., oil, condensate, produced water with oil or condensate carryover) and all separation vessels (e.g., gun barrels, production and test separators, production and test treaters, water knockouts, gas boots, flash separators, drip pots, etc.) at a facility which are or may be vented to the atmosphere shall be considered.

New Facilities

Within 60-days of the First Date of Production (FDOP), flashing emissions containing greater than or equal to 10 TPY VOC shall be controlled by at least 98%.

Modified Facilities

Within 60-days of modification, new and existing flashing emissions containing greater than or equal to 10 TPY VOC shall be controlled by at least 98%.

New and Modified Facilities

Condensate and oil tanks that are on site for use during emergency or upset conditions, such as spare tanks at facilities connected to liquids gathering systems, are not subject to the 98% control requirements.

The removal of flashing emissions control devices may be allowed upon approval after one year if VOC flashing emissions have declined to less than, and are reasonably expected to remain below 8 TPY.

Pneumatic Devices

As the Guidance has addressed the issue of pneumatic devices, PAW suggests the BLM review the guidance forwarded by WDEQ and allow for Wyoming to manage air quality. The "Guidance applies to surface oil and gas production facilities where hydrocarbon fluids are produced, processed and/or treated prior to custody transfer from the facility." Therefore, it applies to all oil and gas production facilities regardless of surface or mineral ownership.

Pneumatic Pumps

New Facilities

PAD Facilities

Upon FDOP, VOC and HAP emissions associated with the discharge streams of all natural gas-operated pneumatic pumps shall be controlled by at least 98% or the pump discharge streams shall be routed into a closed loop system (e.g., sales line, collection line, fuel supply line).

Single Well Facilities

Within 60-days of FDOP,

At sites with combustion units installed for the control of flash or dehydration unit emissions:

VOC and HAP emissions associated with the discharge streams from natural gas-operated pneumatic pumps shall be controlled by at least 98% by routing the pump discharge streams into the combustion unit or the discharge streams shall be routed into a closed loop system.

At sites without combustion units installed for the control of flash or dehydration unit emissions:

Pneumatic pumps (other than those for heat trace/heat medium/hot glycol circulation) shall be solar, electric or air-driven pumps in lieu of natural gas-operated pneumatic pumps. Wherever possible, heat trace/heat medium/hot glycol circulation pumps shall be solar-operated, electric or air-driven.

Modified Facilities

Requirements are the same as above except include all new and existing pneumatic pumps and use the date of modification in place of FDOP.

New and Modified Facilities

At sites where pneumatic pump emissions are controlled by a combustion unit used for the control of flash or dehydration unit emissions, control of the pneumatic pump emissions will be evaluated upon request for removal of the combustion unit. (See Flashing, Page 6)

Leak Detection And Repair (LDAR)

The Guidance is segregated into specific areas of the state. The following is applied only to the Upper Green River Basin area (UGRB), which also happens to be in non-attainment for ozone levels. The Guidance has addressed the issue of leak detection and repair (LDAR) in this area of the state only. The "Guidance applies to surface oil and gas production facilities where hydrocarbon fluids are produced, processed and/or treated prior to custody transfer from the facility." Therefore, it applies to all oil and gas production facilities regardless of surface or mineral ownership. In this instance, LDAR is only required where it will best be utilized. PAW does not agree that LDAR should be implemented as a state wide requirement.

Fugitives

For new and modified facilities where fugitive emissions are greater than or equal to 4 TPY of VOCs, operators shall submit a Leak Detection and Repair (LDAR) Protocol. The fugitive emission monitoring in the LDAR Protocol shall be no less frequent than quarterly, and may consist of Method 21, infrared camera, audio-visual-olfactory (AVO)

inspections, or some combination thereof and must be approved by the Division. A proposed LDAR Protocol consisting of only AVO inspections will not be accepted by the Division.

Examples of what should be considered “leaks” include those VOC/methane emissions from equipment components traditionally included in the LDAR program as prescribed in the NSPS and NESHAP regulations, such as, valves, connectors, pump seals, sampling connections, compressor seals, pressure relief devices, and open-ended lines. Leaks from such components are typically caused by the failure of seal, gasket, packing, O-ring, etc. due to normal wear, improper installation, improper maintenance, or other reasons.

Also included may be the thief hatch seal on an oil/condensate/produced water storage tank that was found leaking, if the tank is connected to a control device via a closed vent system. However, thief hatches and pressure relief devices are designed with an inherent leak rate. No thief hatch or pressure relief devices is 100% leak free since it is not welded completely closed. The manufacturer specifies the leak rate depending on the gaskets or seals that are used. Inherent leak rates should be considered normal operation and not a leak or venting.

Other examples of what should not be considered “leaks” include VOC/methane emitted from all cases where a piece of equipment is operating properly as designed. Such as Pneumatic devices; Thief hatches and vents on oil/condensate/produced water storage tanks when open as designed (e.g., thief hatch during sampling or gauging operations, vents to atmosphere on tanks that are not tied to a control device via a closed vent system); Enardo and pressure relief devices when opening at the pre-set pressure as designed (including weighted thief hatches designed for pressure relief); Truck vents during loading; and Vents or exhaust stacks on process equipment, such as heaters, engines, glycol dehydrators, amine units, sulfur recovery unit tail gas thermal oxidizers, etc. In addition, all cases of equipment malfunction.

Historically, emissions associated with equipment malfunction have been addressed under the “malfunction” or similar provisions in various permitting, NSPS and NESHAP programs when emissions from the process equipment are normally controlled or the process equipment operates normally in a closed system without an emissions point. They do not fit the definition of a leak and are not included in any program intended for reducing leaks. One such example at a production facility is a separator dump valve which malfunctioned and stuck open. Emissions resulting from a stuck dump valve typically coming out of the thief hatch or vent on the storage tank, are malfunction emissions and should not be considered a leak. Additionally, a malfunctioning stuck dump valve is usually discovered by an operator hearing the sound of gas going through the liquid valve, hearing or seeing excessive venting from a storage tank, or noticing low or no liquid in the separator. Only occasionally is a stuck dump valve discovered by the use of an IR camera. Another example is a vapor recovery unit (VRU) connected to the still vent of a glycol

dehydrator which recycles vapors back to the process. During a power outage, the VRU may go down resulting in temporary venting of still vent vapors.

Compressor seals have been included in EPA's LDAR regulations for the chemical and refining industry. In EPA's latest regulation on the oil and gas industry, namely, NSPS Subpart OOOO, compressors are not included in the LDAR provisions. Rather, they are addressed in separate sections which require emission controls, and/or maintenance practices that are different from the traditional LDAR program. Therefore, emissions from compressor seals should not be included as part of leaks.

There are several different ways to detect leaks from components. Each method has a different cost, level of detection, gas detected, deployment method, ease of use, and ease of logging the data.

In the nonattainment area in Wyoming, oil and gas production sites are using an infrared camera such as the FLIR camera to detect leaks. However, the equipment is expensive and requires training to know how to properly use it. Many smaller operators will not be able to afford the cost of the cameras and training. Few LDAR companies exist and do monitoring in the remote areas of the BLM lands which poses a huge problem for contracting such work. An infrared camera is faster at checking for leaks being able to scan 3000 components per day versus 500 for Method 21 but that is still roughly 1 well site per day. For many operators wells sites can be spread out over large distances which require significant drive time between locations. Therefore, operators with many well sites would need multiple cameras and camera operators in order monitor all their existing wells sites in one year. FLIR monitoring however does not quantify the leak or leak concentration. It only provides a visual image of the gas leaking. It does make it easier however to identify the source or cause of the leak.

Most historical LDAR programs have been done using EPA's Method 21 using a VOC monitoring instrument such as an Organic Vapor Analyzer (OVA) or Toxic Vapor Analyzer (TVA) to detect leaks at refineries and chemical plants. This method is not very practical for dispersed oil and gas facilities. Method 21 typically requires the third party contractors who are specially trained in doing the monitoring. Each fugitive component must be tagged and monitored separately. It can take a day to analyse 500 components. Method 21 monitoring is far more expensive than FLIR monitoring. It does give a concentration for the leak. Method 21 monitoring however does not help to easily identify the source of the leak. With components in close proximity to one another, it is hard to tell what its leaking. EPA concluded that fugitive monitoring of well pads using Method 21 was not cost effective. In the Technical Support Document for the NSPS OOOO Proposal EPA included cost for well pads for Method 21 on Table 8-13 showing the cost is as high as \$267,386/ton of VOCs. 40 CFR 60 Subpart OOOO only requires AVO monitoring monthly of a storage vessels cover, closed vent system, and control device if the tank is subject to the regulation at productions sites. Method 21 at a well site is clearly

unreasonable from a cost perspective but also from the work involved. Method 21 typically requires the third party contractors who are specially trained in doing the monitoring. Each fugitive component must be tagged and monitored separately. A single separator could have as many as 200 individual components. Furthermore it takes a considerable amount of time to monitor each individual component. With production facilities the time it takes to travel between each well site must be factored as well. Having enough trained monitoring staff to do this work for the thousands of wells will be problematic. This method is not recommended by PAW for use at oil and gas production sites.

Time must be given to repair leaks especially considering the dispersed, unmanned nature of the facilities found in Wyoming. If the component must be replaced or hot work is required, the well will have to be shut in and the equipment blowdown so that it is safe to work on. In some instances, hot work permits will be required, thus adding additional time delays. Shutting in the well will result in lost production and revenue for federal, state and local governments. Shutting in of the well should be allowed to be deferred until such time as other scheduled maintenance work can be completed. For operations where wells are sometimes great distances apart, requiring more time to go back and repair a leak is essential. Furthermore, getting components to repair the leak may take more than a week to receive and additional time is required to schedule and make the repair.

The recordkeeping requirements of most LDAR programs are typically the most laborious part of the program. For the traditional EPA Method 21 monitoring, each component must be individually tagged and noted in a system that tracks the readings, the repairs, and the re-readings of the component. For dispersed, unmanned sites, keeping tags on components and tracking all the records of readings, repairs, and re-readings will be extremely onerous and difficult. Furthermore, the cost of such a monumental effort would be extremely high. Recordkeeping for leak detection and repairs at oil and gas production sites needs to be minimal and simple.

Infrared camera monitoring requires an investment which can reach as high as \$120,000 for each camera, not to mention training of technicians to properly use the camera, technicians to do the monitoring, additional cost to maintain the records and manage reporting, and additional personnel to fix any leaks that are found within the time limit that is given. The infrared camera training is about \$2000 per level (<http://courses.infraredtraining.com/>). An infrared camera is faster at checking for leaks being able to scan 3000 components per day versus 500 for Method 21 but that is still just about 1 well site per day.

Conclusion

PAW believes there is ample regulation on the state and federal levels to control emissions from oil and gas production sites. The directive of BLM does not include requiring air quality controls, despite suggesting doing so is only in response to

ensure proper royalty payments. BLM should leave control of air quality to the agencies currently managing emissions, primarily EPA and WDEQ. In Wyoming the WOGCC also has control over many of the proposed actions that BLM is suggesting. PAW believes Wyoming has the proper funding, personnel and expertise to continue to manage Wyoming's air resources effectively. The proposals BLM is suggesting may cause additional delays in permitting, production and revenue to federal, state and local governments. Wyoming's economy is very dependent on mineral revenues and disruptions in revenue flow will certainly impact the state's economy on numerous levels. To require air quality controls that are already managed by the state and in some cases the federal EPA is unnecessary and redundant. PAW believes BLM should stay within the parameters of its existing regulatory authority; conservation of resources, prevention of waste and assuring a fair royalty return to the U.S. government. 30 USC §187 states none of such provisions shall be in conflict with the laws of the State in which the leased property is situated. As we have clearly stated Wyoming is already regulating these sources.

PAW recommends BLM not amend NTL4-A at this time as Wyoming's oil and gas industry's air quality is already highly regulated and managed by appropriate state and federal agencies.

If you have any questions, please do not hesitate to contact me at via e-mail at john@pawyo.org.

A handwritten signature in black ink, reading "John Robitaille", is centered on a light gray rectangular background.

John Robitaille
Vice President



Independence Plaza
1050 17th Street, Suite 500
Denver, CO 80265
Tel: 303.672.6900
Fax: 303.294.9632

May 30, 2014

Tim Spisak
Senior Advisor-Conventional Energy
Bureau of Land Management
1849 C Street NW
Washington, D.C. 20240
202-912-7311

Sent via E-mail to: blm_wo_og_comments@blm.gov

Re: Bureau of Land Management Venting and Flaring Public Outreach

Dear Mr. Spisak,

QEP Resources, Inc. (QEP) thanks you for the opportunity to provide our initial feedback regarding the Bureau of Land Management (BLM) Venting and Flaring Public Outreach slideshow. QEP is a leading independent natural gas and crude oil exploration and production company with significant production from federal lands and Indian lands. We had representatives at your public sessions in Denver and Dickinson and appreciate the opportunity to be involved in the initial process of developing possible revisions and expansions to this policy. We welcome the chance to provide some comments and concerns to consider as the BLM moves forward.

One of QEP's biggest concerns currently is the uncertainty and lack of specificity regarding the direction that the BLM plans to take with revising the NTL-4A. We certainly expect that once a formal proposal is developed we will be given the opportunity to review and comment on any specific changes proposed. The BLM's new policy has the potential to go beyond its authority to regulate resource conservation and royalty stewardship and enters the realm of air quality regulations. As you know, industry has just begun to implement the Environmental Protection Agency's (EPA) NSPS OOOO rules (Quad O). The BLM's change in policy for the NTL-4A could result in the BLM not only exceeding its authority, but also could lead to overlapping and conflicting regulations among various agencies. One example of the potential for overlapping regulations is the option discussed on slide 14 where BLM states it may "consider gas combustion efficiency standards." EPA already has control efficiency standards in place under Quad O. Various states have standards or guidance as well. There certainly is no reason for BLM to create its own efficiency standards which would be duplicative and possibly in conflict with these existing standards. Another example is on slide 20 under new wells, where BLM lists as one potential option to "require the capture or combustion of gas vapors from certain tanks." Again, the EPA already requires the control of tanks under the Quad O rules. Given the potential for duplication and inconsistencies, and the significant existing federal and state regulations governing air quality and venting and flaring, QEP questions whether significant changes to NTL-4A are required. However,

should the BLM move forward with possible changes in policy, QEP would offer some additional considerations.

QEP generally has concerns with any policy that requires retrofitting of equipment, such as the replacement of existing pneumatic devices (slide 22) and installing combustors or an equivalent device for storage vessels (slide 20). In many cases, with older production, this requirement would be uneconomic and would lead to the premature plugging and abandonment of marginal wells. Any changes BLM proposes should apply prospectively. Additionally, the BLM must include variance language within any policy change. Conditions can vary from area to area, as does the type of development taking place, therefore flexibility needs to be built into the policy to provide for these varying conditions. Furthermore, there are some unnecessary or burdensome requirements under consideration, like at slide 12 where the BLM references requiring an operator to be on site during treatment. This would be very difficult for operators to accomplish and provides no ancillary benefit.

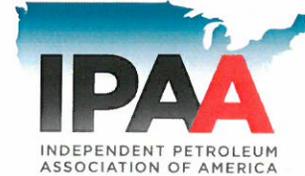
QEP asks that the BLM reconsider the need for any significant changes to the NTL-4A policy, and incorporates herein the comments from the Petroleum Association of Wyoming, and the joint comments from AXPC and IPAA. Should changes be proposed, QEP looks forward to participating in that effort as well.

Sincerely,



Mike Smith

Director of Regulatory Policy



May 30, 2014

Mr. Tim Spisak
Senior Advisor – Conventional Energy
Bureau of Land Management
Washington, D.C.

RE: Comments of IPAA on Bureau of Land Management Venting & Flaring Public Outreach (NTL-4A)

Dear Mr. Spisak:

The Independent Petroleum Association of America (“IPAA”) appreciates this opportunity to comment on the information provided during the four Venting & Flaring Public Outreach meetings held by the Bureau of Land Management (“BLM”) in March and May of this year.¹ This comment letter supplements preliminary comments jointly filed by IPAA and the American Exploration & Production Council (“AXPC”) on May 2, 2014.

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. IPAA submits these comments along with the following organizations:

The Texas Independent Petroleum & Royalty Owners Association
American Exploration and Production Council
Petroleum Association of Wyoming
North Dakota Petroleum Council
Independent Oil Producers Agency
Public Lands Advocacy
The California Independent Petroleum Association
Montana Petroleum Association

Our members question the need for new or amended venting and flaring rules because the U.S. Environmental Protection Agency (“EPA”) and the states have already promulgated

¹ Golden, Colorado (March 19, 2014); Albuquerque, New Mexico (May 7, 2014); Dickinson, North Dakota (May 9, 2014); and Washington DC (May 15, 2014).

emissions control regulations for oil and gas operations. Several states have recently passed even more stringent requirements, others are poised to do the same, and the EPA is currently seeking comments on five methane reduction strategy white papers. In light of the preceding, we believe that this rulemaking initiative is unnecessary, premature, and would very possibly result in duplicative or inconsistent regulatory requirements.

We also note that, although the sudden rush to revise or replace NTL-4A is very clearly part of the White House's Methane Reduction Strategy, any rulemaking must be conducted under the Mineral Leasing Act ("MLA") and must be based on waste prevention and royalty issues. Some commenters have suggested that the federal Clean Air Act ("CAA") and the Federal Land Policy and Management Act ("FLPMA") provide the BLM with general rulemaking authority over air quality and greenhouse gas ("GHG") standards. These contentions are inaccurate and misplaced because Congress reserved this authority to the EPA and the states.

In addition to these statutory issues, IPAA notes that a venting and flaring rulemaking may prove counterproductive—reducing royalties by driving capital investments away from federal lands. Oil and gas production involves very large capital expenditures and several of the BLM's proposed measures would further increase capital requirements and could even strand investments by imposing retroactive requirements. In particular, our members are concerned that periodic reevaluation of infrastructure requirements could lead to the shut-in and abandonment of wells. IPAA believes that an alternative approach, such as streamlining the permitting process for gas gathering infrastructure, would prove more effective.

In the sections below, we more fully explore the fundamental jurisdictional concerns raised by the information provided during the public outreach process. We also briefly address several of the more significant policy and technical concerns raised by our members.

Under the MLA, Rulemaking is Limited to the Prevention of Waste

We understand that the venting and flaring rulemaking would be an update to NTL-4A, which was last revised on January 1, 1980. In light of pending EPA methane reduction white papers, the ongoing implementation of NSPS Subpart OOOO, and the likelihood of additional EPA rules, and state emissions control regulations, we believe that revising or replacing NTL-4A is unnecessary and premature. If the BLM nevertheless proceeds with a proposal, the proposed regulations must adhere to the intent and limitations of the MLA.

NTL-4A, titled "Royalty or Compensation for Oil and Gas Lost" and issued pursuant to what is now 43 CFR Part 3160 (Onshore Oil and Gas Operations), addresses whether produced

natural gas not captured for sale is royalty-bearing. The MLA was the primary authority for these regulations and limits the BLM's authority to revise or replace NTL-4A.²

Section 16 of the MLA states that oil and gas permits and leases must require that oil and gas operators "use all *reasonable* precautions to prevent waste of oil or gas."³ When the MLA was passed in 1920, the term "waste" meant the unreasonable loss of mineral resources and associated economic benefits. Accordingly, reasonableness is assessed using an economic cost-benefit analysis, with "waste" generally understood to mean a preventable loss, the value of which exceeds the cost of avoidance.⁴

As required by the MLA, the BLM's current regulations for the prevention of waste incorporate both reasonability and economic considerations. The BLM has defined "waste of oil or gas" as including "avoidable surface loss of oil or gas," meaning venting or flaring of produced gas resulting from negligence, a failure to take "all *reasonable* measures to prevent and/or control the loss," or a failure to comply with applicable regulations and orders.⁵ Operators must market hydrocarbons, but only if doing so is "economically feasible."⁶

NTL-4A further clarifies whether natural gas venting and flaring is avoidable (and therefore royalty-bearing). In general, royalties do not attach if the gas is used for beneficial purposes, vented or flared pursuant to BLM or state agency authorizations, or unavoidably lost. For example, venting or flaring is authorized for certain well purging and well testing activities and storage tank emissions are recognized as an unavoidable loss.

There are two provisions in 43 CFR Part 3160 that address environmental quality. 43 CFR § 3161.2 directs the BLM to require that operations be conducted in a manner which protects environmental quality and 43 CFR § 3162.5-1 imposes corresponding obligations on operators. We anticipate that the BLM will receive comments portraying these regulatory provisions as a mandate for the BLM to stray beyond waste minimization and royalty issues.

² 43 CFR § 3160.0-3 sets forth the statutory authorities for 43 CFR 3160. Although the National Environmental Policy Act ("NEPA") is also one of the listed authorities, we note that NEPA is a procedural statute and does not provide federal agencies with the authority to issue substantive environmental quality regulations.

³ Emphasis added.

⁴ See WILLIAMS AND MEYERS, OIL AND GAS LAW vol. 8 at 1133 (2013) (citing McDonald, *Petroleum Conservation in the United States: An Economic Analysis* (1971)).

⁵ 43 CFR § 3160.0-5 (emphasis added).

⁶ *Id.* § 3162.7-1(a).

However, the BLM has explained that these provisions merely require compliance with other applicable laws, such as the Safe Drinking Water Act, that are not themselves statutory authorities for the 43 CFR Part 3160 regulations.⁷ Accordingly, these provisions are not based on some hypothetical general authority in the MLA pursuant to which the BLM may promulgate sweeping environmental quality regulations. Quite the opposite, these provisions are part of a regulatory structure in which the BLM must condition oil and gas authorizations on compliance with environmental programs (including air quality) over which it does not have jurisdiction.

In sum, the MLA, and the BLM's implementing regulations do not prohibit all oil and gas waste—they require only *reasonable* and *economic* measures for the prevention of waste. If the BLM proceeds with a regulatory proposal, the agency must ensure, pursuant to the MLA, that the rule is based on (and limited to) the reasonableness and economic feasibility of preventing and minimizing the waste of oil and gas resources.

The BLM Cannot Establish Air Quality Standards and Implementation Plans

In its public outreach sessions, the BLM communicated that, if a venting and flaring rule is proposed, its scope would be based, not on air quality, but on waste minimization and royalty concerns. As discussed above, IPAA believes that any rules proposed must be based on the MLA and that statute's narrow focus on the reasonable and economically feasible minimization of waste.

However, numerous commenters have urged the BLM to focus its rulemaking efforts on ambient air quality and climate change concerns, on grounds that certain provisions in FLPMA and the CAA provide the requisite authority. These allegations are incorrect—FLPMA and the CAA require the BLM to condition oil and gas approvals on compliance with CAA requirements established by the EPA and the states, but otherwise limit the BLM to an advisory role. As discussed below, any rulemaking based on air quality concerns would trespass on the express jurisdictions of the EPA and the states, contrary to Congressional intent.

The CAA Reserves Air Quality Jurisdiction to the EPA and the States

The CAA "creates a complex regulatory regime designed to protect and enhance the quality of the Nation's air resources."⁸ The essential structure of the modern CAA emerged in 1970, when Congress amended the statute to require that the EPA establish primary and

⁷ 47 Fed. Reg. 47,758, 47,759 (Oct. 27, 1982).

⁸ *Sierra Club v. Jackson*, 648 F.3d 848, 851 (D.C. Cir. 2011) (citing 42 U.S.C. § 7401(b)(1)).

secondary National Ambient Air Quality Standards (“NAAQS”)⁹ and that the states develop State Implementation Plans (“SIPs”)¹⁰ designed to bring nonattainment areas into compliance with the NAAQS.

The CAA ensures nationwide consistency through the establishment of air quality standards and oversight by the EPA, while also promoting flexibility by allowing the states to determine the nature and scope of the emissions control measures best suited, based on their separate circumstances, to achieving and maintaining compliance with the NAAQS.¹¹ Significantly, Congress assigned each state the “primary responsibility for assuring air quality *within the entire geographic area comprising such state . . .*”¹² This structure does not provide a jurisdictional role for the BLM.

The CAA Provides Only Limited, Advisory Roles for Federal Land Managers

In 1977, Congress amended the CAA to establish the Prevention of Significant Deterioration permitting program and provisions addressing visibility at “Class I” areas, such as national parks. Congress assigned the EPA responsibility for promulgating a list of Class I areas for which visibility is an important value and assigned the states responsibility for revising their SIPs to include measures to make reasonable progress towards national visibility goals.¹³

Significantly, Congress provided only a very limited role for federal land managers, such as the BLM. Most relevant here, 42 U.S.C. § 7475(d)(2) states that federal land managers must consult with the EPA regarding whether certain proposed major stationary sources could have an adverse impact on air quality related values within a Class I area and may file notices alleging that these sources may cause or contribute to a change in air quality.¹⁴

⁹ The primary NAAQS are established based on the protection of public health. The secondary NAAQS are set based on “public welfare,” meaning a wide set of potential concerns, including visibility impacts and impacts on wildlife and vegetation. *See* 42 U.S.C. § 7409(b).

¹⁰ Under certain circumstances, such as a state’s failure to submit an approvable SIP, the EPA may backfill by promulgating a Federal Implementation Plan (FIP). 42 U.S.C. § 7410(c). The CAA does not provide for the issuance of FIPs by other federal agencies.

¹¹ “The Congress finds that air pollution prevention . . . and air pollution control at its source is the primary responsibility of States and local governments . . .” 42 U.S.C. § 7401(a)(3).

¹² 42 U.S.C. § 7407(a) (emphasis added).

¹³ 42 U.S.C. §§ 7491(a)(2) & (b)(2).

¹⁴ Federal land managers were also required to consult with the EPA regarding the EPA’s promulgation of a list of Class I areas for which visibility is an important value and to consult with the states on proposed revisions to SIPs. 42 U.S.C. §§ 7491(a)(2) & (d).

The above provision states that federal land managers “have an affirmative responsibility to protect the air quality related values (including visibility) of any such lands within a class I area” Some commenters have cited this language, without context, to incorrectly assert that it provides the BLM with general authority to pass air quality standards and to otherwise base revisions to NTL-4A on air quality concerns.

To counteract any misperception, we note that this language is buried in the air permitting provisions. Read with the surrounding text, the “affirmative responsibility” of federal land managers is merely to consult with the EPA and to provide notice where a proposed major stationary source may cause a change in air quality. As acknowledged by other federal land managers, this provision does not provide a basis for the BLM or other federal land managers to issue air quality standards or implementation plans.¹⁵

Other than the advisory role described above, the CAA includes “conformity” provisions that prohibit the BLM and other federal agencies from engaging in, supporting, or approving any activity which does not conform to a CAA implementation plan (i.e., a SIP or FIP).¹⁶ These provisions were primarily passed to force federal agencies to meet the same requirements as industry and other sources of air emissions and do not provide a basis for the BLM to pass air quality standards.¹⁷

BLM Regulation of Air Quality Would Infringe the Jurisdiction of the EPA and the States

Based on the above, it is exceedingly clear that Congress did not intend for federal land managers, including the BLM, to function as air quality agencies. Those roles were assigned exclusively to the EPA and the states, with other agencies serving as consultants in narrowly-defined areas. This structure was already clear in 1970, was reinforced by the dearth of air quality provisions in FLPMA (1976), and was reaffirmed by the 1977 CAA Amendments.

¹⁵ In a 2010 report, the U.S. Forest Service, the National Park Service, and the U.S. Fish & Wildlife Service all stated that “[federal land managers] have no permitting authority under the Clean Air Act, and they have no authority under the Clean Air Act to establish air quality-related rules or standards.” *Federal Land Managers’ Air Quality Related Values Work Group (FLAG): Phase I Report—Revised (2010)* at xii (Oct. 2010), available at http://www.nature.nps.gov/air/pubs/pdf/flag/FLAG_2010.pdf.

¹⁶ 42 U.S.C. § 7506(c).

¹⁷ Of note, the conformity provisions do not allow federal agencies the discretion to determine when and how to make conformity decisions—Congress assigned even that level of authority to the EPA. 42 U.S.C. § 7506(c)(4)(A) (“The Administrator shall promulgate, and periodically update, criteria and procedures for determining conformity . . .”).

Our members have expressed strong concerns that the BLM intends to regulate venting and flaring from oil and gas operations based on air quality goals, and not the MLA, despite Congressional intent that jurisdiction over these issues be reserved to the EPA and the states. Our members are also concerned that the BLM will impose regulations which duplicate and/or conflict with EPA and/or state requirements.

In support, we note that many of the venting/flaring reduction options included by the BLM in the materials presented during the four public outreach sessions were clearly based on air quality measures, in particular the EPA's NSPS Subpart OOOO standards and certain state oil and gas emissions control regulations.

When promulgating air quality regulations, the EPA and the states must make numerous "line-drawing" decisions, such as identifying the emissions sources for which controls are needed, specifying the stringency of controls, and determining whether controls should apply to existing sources. These EPA and state regulations are already effective and the BLM already requires compliance with these regulations as a condition of leases and drilling permits.

Therefore, the only reasons for the BLM to pass regulations based on air quality would be to duplicate EPA and state requirements, which would be unnecessary, or to implement different or more stringent air quality measures. For example, the BLM's venting and flaring slide presentation appears to contemplate extending NSPS Subpart OOOO requirements for gas wells to oil wells and extending requirements for new sources to existing sources. These actions would constitute the BLM impermissibly replacing the regulatory considerations of the EPA and the states with its own contrary judgments.

The end conclusion is simple: to avoid trespassing on the air quality jurisdiction of the EPA and the states, the BLM must restrict its assessment of how and whether to revise or replace NTL-4A to the concerns jurisdictionally permitted under the MLA—waste prevention and royalties.

The BLM Does Not Have Jurisdiction to Regulate GHGs

During the four public outreach meetings, our members heard repeated comments regarding the need for stringent venting and flaring regulations as a means to reduce greenhouse gas (GHG) emissions. We also understand that the sudden rush to rulemaking on this issue is largely driven by the White House's pan-agency methane reduction initiative.

Our comments above regarding the CAA apply equally to the BLM's lack of jurisdiction to regulate GHGs. In addition, we note that the United States Supreme Court has already weighed in on the issue of regulatory jurisdiction over GHG emissions and concluded in *American Electric Power Co. v. Connecticut* that such authority is vested in the EPA and the states.¹⁸ The Court stated the following:

- “The critical point is that Congress delegated to EPA the decision whether and how to regulate carbon-dioxide emissions from power plants”
- “The appropriate amount of regulation in a particular greenhouse gas-producing sector requires informed assessment of competing interests. The Clean Air Act entrusts such complex balancing to EPA in the first instance, in combination with state regulators.”

FLPMA Does Not Grant the BLM Jurisdiction to Promulgate Air Quality Standards

Section 108(a)(8) is a Non-Jurisdictional Policy Statement

As discussed above, the CAA prohibits the BLM from independently regulating air quality. However, certain commenters have asserted that Section 101(a)(8) of FLPMA nevertheless provides the BLM with broad and independent authority over air quality issues. Accordingly, we are also providing comments regarding the lack of BLM authority to pass air quality rules pursuant to FLPMA.

Section 101(a)(8) of FLPMA is very clearly a policy statement and is not a mandate or a jurisdictional grant—assertions that this provision provides the BLM with broad authority over air quality issues are either mistaken or a deliberate attempt to mislead. Properly quoted, Section 101(a)(8) states:¹⁹

The Congress declares that it is the policy of the United States that . . . the public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values

¹⁸ 131 S. Ct. 2527 (2011). This case did not present an ideological split. The majority opinion was delivered by Justice Ginsburg, who was joined by Justices Roberts, Scalia, Kennedy, Breyer, and Kagan. Justice Alito filed a concurring opinion and was joined by Justice Thomas. Justice Sotomayor took no part in the consideration or decision of the case.

¹⁹ 43 U.S.C. § 1701(a)(8). The BLM cites this provision in the “Authority” section of its Air Resource Management Program Manual, but properly notes that this language is a Congressional policy objective and does not explicitly state that this language confers a jurisdictional grant upon the agency.

To forestall any interpretations that the above language is no more than aspirational, Congress also stated that “[t]he policies of this Act shall become effective only as specific statutory authority for their implementation is enacted by this Act or by subsequent legislation”²⁰

Despite clear and express drafting by Congress, commenters often cite Section 101(a)(8) as a mandate, arguing that the BLM must manage the public lands in a manner that protects air and atmospheric values. For example, sixteen organizations made this exact assertion in a joint letter submitted to Secretary Sally Jewell in January 2014.²¹

FLPMA speaks for itself on this issue—the statute’s policy goals are not a grant of regulatory authority. We comment here only to spotlight language (regarding policy) that is commonly omitted by others and to counteract the egregious mischaracterization of the statute as a Congressional mandate for BLM regulations concerning air quality.

FLPMA Requires Only that the BLM Provide for Compliance with Air Quality Regulations Promulgated by Other Federal Agencies and the States

Section 202(c)(8) is the only clear statutory command in FLPMA regarding air quality. It states that, when developing land use plans, the BLM must “provide for compliance with applicable pollution control laws, including State and Federal air, water, noise, or other pollution standards or implementation plans.”²²

This provision is clear evidence that Congress did not consider the BLM to be an air quality agency. Instead of directing that the BLM develop air emissions standards for federal lands, Congress simply required that the BLM condition land use approvals on compliance with the air quality standards and implementation plans developed by other federal agencies and the states.²³

The above assessment is consistent with and reinforced by the conformity provisions and limited role for federal land managers established under the CAA Amendments of 1977, as previously discussed.

²⁰ 43 U.S.C. § 1701(b).

²¹ The letter faithfully reproduced the language in Section 101(a)(8), but omitted text from the beginning of Section 101(a) declaring the subsequent language to be policies. The letter is available at:

http://www.eenews.net/assets/2014/03/20/document_gw_01.pdf.

²² 43 U.S.C. § 1712(c)(8).

²³ See *WildEarth Guardians v. Salazar*, 880 F. Supp. 2d 77, 94 (D.D.C. 2012) (concluding that the BLM satisfied its FLPMA obligations by preparing an oil and gas lease requiring compliance with air and water quality standards).

Normal Oil and Gas Emissions are Not Unnecessary or Undue Degradation ("UUD"); UUD is Determined on a Case-By-Case, Location-Specific Basis

As a final consideration, we note that FLPMA includes a requirement that, in managing the public lands, the Secretary shall "take any action necessary to prevent unnecessary or undue degradation of the lands."²⁴ When it comes to air quality, UUD must be read in conjunction with the CAA and Section 202(c)(8) of FLPMA as being applied on a case-by-case basis to ensure compliance with the air quality standards passed by the EPA and SIP provisions promulgated by the states.

For mining operations the BLM has defined UUD as including activities not "reasonably incident" to prospecting, mining, or processing operations.²⁵ Although UUD has not been defined for oil and gas exploration and production activities, the preceding definition indicates that impacts which are normal and typical are not UUD. In fact, this is the exact position adopted by the Interior Board of Land Appeals ("IBLA"). In *Biodiversity Conservation Alliance* (IBLA 2004-316, 2005-3), the IBLA recognized that the approval of oil and gas development does not constitute UUD and that UUD must be something more than the usual effects anticipated from such development.²⁶

Regardless, how UUD applies to air emissions should be determined in the context of the CAA and the other provisions in FLPMA and the CAA. As discussed elsewhere, the CAA established an elaborate system of combined federal-state jurisdiction, but assigned federal land managers no more than an advisory role. We have also noted that there is only one clear statutory command in FLPMA regarding air quality and that provision limits the BLM's role to ensuring compliance with air quality requirements passed by other federal and state agencies.

In light of the preceding, it is difficult to imagine that Congress intended UUD (an undefined term) to provide the BLM with the authority to set nationwide air quality standards, much less standards different or more stringent than those established by the EPA and the states. In other words, to read such general language as giving the BLM extensive national air quality powers, powers that bypass the entire structure of the CAA, just doesn't make sense.

Lastly, we note that the multiple-use mandate imposed by FLPMA necessitates that, when it comes to air emissions, the BLM assess UUD issues on a case-by-case basis, and not as part of a nationwide rulemaking. For example, in a 2010 case concerning the scope of the BLM's

²⁴ 43 U.S.C. § 1732(b).

²⁵ 43 CFR § 3809.5.

²⁶ 174 IBLA 1 (2008).

UUD obligations, the District Court for the District of Columbia held that “the BLM was not required, under FLPMA, to adopt the practices best suited to protecting wildlife, but instead to balance the protection of wildlife with the nation’s immediate and long-term need for energy resources and the lessee’s right to extract natural gas.”²⁷

The competing needs associated with various land parcels will vary from place to place, but this is especially the case for air quality, for which a nationwide system of air monitoring stations has been established and for which site-specific air dispersion modeling is commonplace in permit applications. This means that the BLM’s assessment of air quality UUD issues, associated with the balancing of interests required by FLPMA, must be location specific and cannot provide the basis for a nationwide air quality rule.

Other Considerations and Comments

As previously noted, this comment letter is focused primarily on communicating our members’ substantial jurisdictional concerns. However, we are also providing brief comments regarding several other significant issues.

“Best Practices” Must be Identified Based on Waste Prevention Criteria

The BLM’s presentation materials note that NTL-4A no longer reflects best management practices and that the agency will consider Federal, tribal, and state rules and industry best practices as part of the venting and flaring public outreach process. These statements provide no insight into the criteria that the BLM will use to identify the new best practices that would be incorporated into a revised NTL-4A or a replacement rule.

Many of the venting and flaring practices currently required by EPA and state rules were identified and selected based on a cost-benefit analysis for the reduction of air pollutants, such as volatile organic compounds and hazardous air pollutants and not for waste minimization. These best practices for air quality control are not necessarily best practices for waste minimization.

The issue is that the metrics for pollution control are very different than the metrics for waste prevention. In the air quality world, best practices may result in a net cost of thousands or even tens of thousands of dollars per ton of emissions reduction and yet be deemed cost-effective. In contrast, the economic analysis for waste prevention is based on

²⁷ *Theodore Roosevelt Conservation Partnership v. Salazar*, 744 F. Supp. 2d 151, 157–58 (D.D.C. 2010). See also *Biodiversity Conservation Alliance v. BLM*, No. 09-CV-08-J (D. Wyo. 2010) (noting in the context of whether UUD obligations were met that the BLM is required to balance interests pursuant to its multiple use mandate).

conservation of a valuable resource and therefore considers whether the prevention costs exceed the value gained—a net zero metric.

If the BLM proceeds with a rule proposal, best practices cannot be selected on grounds that they are already widely-employed because the very reason they have become commonplace is for purposes of air quality. Instead, the BLM must choose best practices based on an independent assessment of waste minimization principles, such as an analysis of the value of the resources preserved and the associated costs.

Infrastructure Expectations Should Not Change Over Time

The installation of additional infrastructure, which we understand to mean requirements to install gas collection pipelines, was included in the BLM's public outreach materials as one of the measures that could be included in a possible venting and flaring rule. These same materials note the possibility of periodic economic reevaluations.

As a result, our members are very concerned that the BLM will approve flaring during the early stages of field development, but may then revoke or deny renewal of those approvals and at some undetermined point require the shut-in of existing wells pending the permitting and installation of gas collection pipelines.

Oil and gas leasing, exploration, well drilling, and well completion involve very large capital expenditures. Accordingly, before drilling commences, operators need assurances that wells will not be shut-in and the associated capital will not be stranded. In addition, given the significant delays and difficulties in obtaining permits for infrastructure projects on public lands, shut-ins could last for several years. Due to time discounting, production delays would result in a net loss of value, even if the same volume of reserves were ultimately recovered.

If BLM rulemaking increases uncertainty with regard to the long-term viability of capital investments, many operators will reduce or eliminate their capital investments on federal lands. This would have the counterproductive effect of reducing production on federal lands and reducing net royalties received by the federal government, the states, and the tribes. Therefore, infrastructure requirements, if any, should not be retroactively imposed.

Streamlining Infrastructure Permitting Would More Effectively Meet the BLM's Goals

Regulatory obstacles to obtaining timely permits have significantly inhibited the construction of natural gas collection infrastructure, which in turn has resulted in flaring. This phenomenon is particularly significant on federal lands, due to overly lengthy and arduous permitting requirements.

We believe that a command-and-control rule that mandates controls and/or imposes one-size-fits-all venting and flaring restrictions is the wrong way to address venting and flaring, as it will dis-incentivize capital investments on public lands. Instead, we believe that efforts to streamline the siting, permitting, and construction of natural gas infrastructure on federal lands would better achieve the BLM's policy goals.

We appreciate the opportunity to provide these comments regarding venting and flaring under NTL-4A. Please feel free to contact me at dnaatz@ipaa.org if you have any questions regarding the issues discussed herein.

A handwritten signature in black ink that reads "Dan Naatz". The signature is written in a cursive, flowing style.

Dan Naatz
Vice President, Federal Resources
Independent Petroleum Association of America



May 30, 2014

Tim Spisak
Office of the Administrator
Bureau of Land Management
1200 Pennsylvania Ave., NW
Washington, DC 20460

Re: Comments on BLM's Venting and Flaring Outreach Sessions and Presentation

Dear Mr. Spisak:

Western Energy Alliance along with Montana Petroleum Association, New Mexico Oil and Gas Association, North Dakota Petroleum Council, and Utah Petroleum Association submit the following comments on BLM's Venting and Flaring public outreach sessions held in March through May, 2014. Our associations do not believe that BLM is headed in the right direction, as existing and planned state and federal initiatives and regulation are already addressing the issue, while redundant BLM regulations are likely to be counterproductive to the larger climate change goals of the country.

Increased natural gas electricity generation is the primary reason the United States has reduced greenhouse gas (GHG) emissions more significantly than any other industrialized country. Making natural gas more expensive with more red tape could decrease that climate change success over time, as increased prices result in less natural gas power generation.

In addition, the oil and natural gas industry has delivered significant GHG reductions through voluntary means, and is no longer the largest source of U.S. methane emissions. The industry voluntarily reduced methane emissions by 40% between 2006 and 2012, according to EPA's most recent GHG inventory, a success story accomplished without a federal mandate. Oil and natural gas companies developed green completions and other technologies that have reduced emissions significantly, and as adoption rates continue to climb, we anticipate even more emissions savings. Our success shows that new red tape is not necessary. Overly prescriptive regulation can actually be counterproductive to technical innovation. A, industry reduced methane emissions by 40% between 2006 and 2012 without federal regulation.

Western Energy Alliance represents over 480 companies engaged in all aspects of environmentally responsible exploration and production of oil and natural gas across the West. The majority of our members are independent producers—small businesses with an average of fifteen employees—many of which operate on federal lands. Our members take significant efforts to reduce their natural gas emissions and have an economic incentive to do so.

General

The presentation given at the March 19th meeting in Denver, CO indicates BLM intends to develop new air rules to “minimize waste and promote conservation of produced gas through better management of venting and flaring,” a goal shared by our members. However, within the details of the presentation BLM discusses ambient air quality control requirements that are outside of BLM’s jurisdiction and do not pass a strictly economic feasibility test. We are concerned that BLM intends to promulgate duplicative and possibly conflicting air quality regulations of sources that are already heavily regulated by EPA and the states. We encourage BLM to acknowledge the state and federal air regulations with which the oil and natural gas industry must already comply before proposing new rules.

The Clean Air Act (CCA) gives EPA and the states responsibility for regulating air quality. BLM may include conditions in leases and drilling permits that require operators to comply with CCA provisions, but it does not have the authority to set emission standards for ambient air quality. Nor is there justification for BLM to implement standards or control requirements given the regulation of oil and natural gas air emissions by both EPA and the states, including on federal lands.

BLM gives as a reason for proposing new venting and flaring rules EPA’s recent New Source Performance Standards (NSPS) for Oil and Gas. The exact opposite should be the case. Because EPA’s new rules already regulate industry methane emissions, BLM should not engage in duplicative regulation, and, lacking jurisdiction over air quality, BLM does not have the authority to require controls such as Best Available Control Technology (BACT).

BLM lists several emission sources in its presentation on venting and flaring:

- Well completions
- Production tests
- Liquids unloading
- Casing head and associated gas
- Storage tanks
- Pneumatic devices
- Leaks.

We show below that many of these sources are already regulated by multiple agencies. On the other hand, casing head gas and production tests are an extremely small source of emissions and do not merit regulation. They are not included in EPA’s Greenhouse Gas Inventory, and regulation of such small sources would not be cost effective.

Well Completions

Natural gas well completions are regulated by EPA’s NSPS OOOO and state regulations in Colorado and Wyoming. Reduced emissions completions, or “green completions” were

developed and have been used by industry for several years. EPA's rules also capture a large proportion of oil well completions. ANGA/AXPC estimates that 92% of all wells are covered under NSPS OOOO well completion rules.

Companies have an economic incentive to capture and sell as much natural gas as possible during well completion operations. If the field is mature enough to contain pipeline access, companies will make every effort to route natural gas to them. Where infrastructure is not yet in place, flaring may need to proceed for a period of time to allow for the gas gathering and pipeline build out.

Liquids Unloading

BLM limits its discussion of liquids unloading to well purging, or blow downs, but there are many other methods and technologies that are used to unload liquids from wells, such as velocity tubing, shut-in cycles, soap or foam injections, and plunger lifts. The method used and timing of well unloading depend on the reservoir pressure at each particular well throughout its lifetime. Companies blow down the well as a last resort when attempts to unload liquids from the well bore using other methods and technology fail. If liquids cannot be removed from the well, that well will cease to produce hydrocarbon and will be permanently shut in, therefore companies need the option to blow down a well as a last resort. Companies have an economic incentive to capture any emissions from unloading events and do not vent natural gas, if at all possible.

BLM also suggests requiring an operator to be onsite during unloading operations, but we fail to see how this will appreciably reduce emissions. Many companies use automated systems that rely on well pressure or timers to unload liquids using plunger lifts. More recent technology allows companies to use well data to optimize liquids unloading, sometimes called "smart" automation. These "smart" systems reduce unnecessary unloading events. Automated systems, whether "smart" or more conventional, are particularly useful for wells located in remote areas, typical of BLM lands. Requiring an operator to be at a well site is neither cost effective nor more effective than automated systems for reducing emissions in a large majority of cases.

Associated Gas and Gas Conservation Plans

Companies flare associated gas when there is no pipeline infrastructure to capture and sell the natural gas. In many cases, the exploration and production company drilling wells is not the same company that will build pipelines to take natural gas out of the field and to the market.

Our members prefer to sell natural gas from oil wells and are working with states and pipeline companies to build infrastructure along with oil field development, but they have little control. Pipelines will only be built once a field is developed enough to provide a long-term source of natural gas for the pipeline company to transport. Pipeline permitting, rights of way and regulations all slow down or halt the process of siting and

building pipelines, and each of these is not within the control of oil and natural gas production companies.

Ironically, flaring and venting on federal and Indian lands may be higher than on adjacent private and state lands because of the delay from the federal government in approving rights of way for gas gathering lines. The North Dakota Petroleum Council (NDPC) Flaring Task Force estimates that 40% of natural gas production is flared at oil wells on the Fort Berthold Indian Reservation, versus 27% on state and private land. Rather than promulgating new regulations, BLM could make a more immediate and significant difference in increasing methane capture from oil wells by simply processing Rights of Way in a timelier manner.

NDPC formed the Flaring Task Force to try to overcome obstacles to pipeline infrastructure. The task force has developed a gas conservation plan with the goal of capturing 85% of associated gas by 2016. We suggest BLM give this effort time to achieve its goals before developing new rules for associated gas and gas conservation plans.

Storage Tanks

Storage tanks are also regulated by EPA's NSPS OOOO and NESHAP HH along with more stringent state rules. For example, Colorado's rule for hydrocarbons and volatile organic compounds (VOC) emissions from the oil and natural gas industry requires tank controls in many areas across the state, storage tank emissions management (STEM) plans, and a comprehensive leak detection and repair (LDAR) program. Another layer of federal regulation for storage tanks would be completely redundant.

Pneumatic Devices

EPA's NSPS OOOO regulations require the installation of low-bleed pneumatic devices at new and modified sites. BLM suggests in its presentation that existing pneumatic devices should be replaced if it is cost effective to do so. Oil and natural gas companies do replace existing pneumatic devices when it is consistent with economic operation. They also use air driven or mechanical systems when technologically feasible and access to electricity exists at their sites. We suggest that BLM does not need to add another rule covering pneumatic devices as industry must already comply with EPA and state rules.

Leak Detection and Repair

BLM states in its presentation that it has no current policy on leak detection and repair (LDAR), indicating that since there's no policy, it is not being done. On the contrary, companies routinely use audio, visual and olfactory (AVO) surveys and other methods to locate any leaks and repair them. Any cost evaluation of a new LDAR program must not assume that no leak detection is currently taking place.

Several states now require LDAR programs, including Colorado, Utah and Pennsylvania. These programs require optical gas imaging along with AVO surveys and a substantial

amount of recordkeeping. However, far from being an effective model for future regulation, these new LDAR programs often are not cost effective. Several recent studies claiming cost effectiveness rely on poor assumptions such as that leaks are only found with infrared cameras and use overly optimistic evaluations of Optical Gas Imaging (OGI) technology. They do not take into account false readings of emissions leaks or costs to repair camera malfunctions. Also, they do not consider that IR cameras cannot distinguish between water vapor, heat signatures and actual methane emissions. We do not believe that rigid LDAR programs are justified because the cost is not commensurate with the emissions reductions benefits.

We thank BLM for holding the Venting and Flaring Outreach sessions and encourage it to continue to work with our industry. Our members share BLM's goals of minimizing waste and conserving the resources we produce, but adding another layer of regulation to our industry is not an effective way to achieve those goals. The oil and natural gas industry has significantly reduced methane emissions over the past several years while significantly contributing to the overall U.S. reduction in GHGs. We encourage BLM to consider that success has been accomplished without further federal regulation. A larger regulatory burden on BLM lands will further discourage production on federal lands while reducing the revenue return to the taxpayer from the energy that all Americans own.

Sincerely,



Kathleen M. Sgamma
Vice President of Government & Public Affairs

Montana Petroleum Association
New Mexico Oil and Gas Association
North Dakota Petroleum Council
Utah Petroleum Association

STATE OF COLORADO

John W. Hickenlooper, Governor
Larry Wolk, MD, MSPH
Executive Director and Chief Medical Officer

Dedicated to protecting and improving the health and environment of the people of Colorado

4300 Cherry Creek Dr. S.
Denver, Colorado 80246-1530
Phone (303) 692-2000
Located in Glendale, Colorado
www.colorado.gov/cdphe



Colorado Department
of Public Health
and Environment

May 28, 2014

Submitted electronically May 28, 2014, via
blm_wo_og_comments@blm.gov

U.S. Department of the Interior
Bureau of Land Management
1849 C Street NW Room 2134LM
WO-630
Washington, DC 20240-0001

RE: State of Colorado Comments
1004-AE23

The Bureau of Land Management (“BLM”) recently conducted outreach to consider existing federal, tribal, state rules, and industry best practices concerning oil and gas venting and flaring. As part of that outreach, BLM indicated that the minimization of waste and conservation of produced gas through best management practices may not be reflected in current BLM policy. Therefore, BLM solicited comments on how to better address various aspects of oil and gas development on federal lands, including well completions, production tests, liquids unloading, casing head and associated gases, gas conservation plans, storage tank emissions, pneumatic devices, and leak detection and repair (“LDAR”). The State of Colorado Department of Public Health and Environment, Air Pollution Control Division (“Division”) appreciates the opportunity to submit the following comments on BLM’s venting and flaring outreach.

As BLM and others mentioned in the public outreach presentations, Colorado recently promulgated significant oil and gas emission regulations that relate to several of BLM’s venting and flaring outreach topics.¹ Notably, Colorado established a six ton per year threshold for new and existing storage tanks based on the uncontrolled actual emissions from the tank battery. This threshold is more stringent than the Environmental Protection Agency’s (“EPA”) NSPS OOOO six ton per year threshold, as EPA’s threshold is based on the controlled actual emissions from a single tank. Colorado also established a LDAR program for well production facilities and natural gas compressor stations with inspection frequencies based on facility volatile organic compound (“VOC”) emissions. Colorado’s LDAR program is also more stringent than current EPA regulations. In addition, Colorado strengthened its existing requirements for storage tanks and pneumatic devices,

¹ Colorado Air Quality Control Commission, Oil and Gas Rulemaking Hearing
<http://www.colorado.gov/cs/Satellite/CDPHE-AQCC/CBON/1251647985820>

and promulgated new regulations designed to minimize emissions from liquids unloading.

The Division estimates that the new strategies will reduce VOC emissions in Colorado by 93,500 tons per year and methane/ethane emissions by 64,000 tons per year, while promoting greater beneficial use of clean-burning natural gas. Colorado's new regulations go beyond current EPA regulations and are cost-effective. The regulations were developed after an extensive stakeholder process, and were supported by significant members of the oil and gas industry and environmental community.

In addition to considering Colorado's recently promulgated oil and gas air regulations, the Division also suggests that BLM review the Colorado Oil and Gas Conservation Commission's requirements for, among other things, reduced emission completions, reservoir pressure tests, mechanical integrity tests, and prohibiting natural gas waste. Taken as a whole, Colorado's comprehensive oil and gas regulations protect public health and the environment while ensuring responsible energy development.²

The Division believes it is very important that state and federal regulations work together and do not create duplicative or contradictory requirements. To that end, Colorado believes that the States, BLM, EPA, and Federal Land Managers must work together to create complementary regulatory programs that address oil and gas emissions in a cost-effective manner. The Division notes that EPA is currently investigating issues similar to those under consideration by BLM.³ The Division encourages the federal agencies to work together to craft programs that recognize state expertise and rules, and avoid unduly burdensome, confusing, or redundant requirements at the federal level.

Thank you for the opportunity to submit these comments concerning BLM's venting and flaring outreach.

Sincerely,



William C. Allison V,
Director, Air Pollution Control Division
Colorado Department of Public Health and Environment

cc: Martha Rudolph, CDPHE
Mike Silverstein, AQCC

² Colorado Oil and Gas Conservation Commission regulations, sections 805.b.(3), 315, 316B, 326, and 912, available at <http://cogcc.state.co.us/>

³ EPA is soliciting comments on a series of five white papers concerning the oil and gas industry, <http://www.epa.gov/airquality/oilandgas/whitepapers.html>



Revisions to Colorado Air Quality Control Commission's Regulation Numbers 3, 6, and 7 Fact Sheet

Rulemaking Summary:

On February 23, 2014, Colorado's Air Quality Control Commission ("Commission") fully adopted EPA's Standards of Performance for Crude Oil and Natural Gas Production, Transmission, and Distribution found in 40 C.F.R. Part 60, Subpart OOOO ("NSPS OOOO") into Regulation Number 6, Part A; adopted corresponding revisions to its emissions reporting and permitting framework in Regulation Number 3, Parts A, B, and C; and adopted complementary oil and gas control measures in Regulation Number 7. This rulemaking was the culmination of the Commission's October 2012, directive to consider full adoption of EPA's NSPS OOOO. These oil and gas control measures revisions focus on identifying and repairing leaks in the oil and gas sector, but also contain some recordkeeping and reporting requirements. This rulemaking received support from environmental groups and some companies within the oil and gas industry. In addition to extensive VOC reductions, the Regulation Number 7 revisions also regulate methane emissions from the oil and gas industry.

These oil and gas control measures are estimated to reduce VOC emissions by approximately 93,500 tons per year and methane/ethane emissions by approximately 65,000 tons per year, at a cost of approximately \$42.5 million per year.

Discussion of Revisions:

Regulation Number 3

- The revisions remove the so-called catchall provisions from Part A., Section II.D.1., and Part B, Sections II.A.5. and II.D. Sources subject to a federal New Source Performance Standard ("NSPS") or National Emission Standard for Hazardous Air Pollutants ("NESHAP") incorporated into Regulation Numbers 6 or 8 are no longer subject to reporting and permitting solely due to being subject to that NSPS or NESHAP. These sources now only trigger reporting and permitting if the source's emissions exceed the reporting and permitting thresholds.
- The revisions set a 250 lb/year reporting threshold for non-criteria reportable pollutants, replacing the complex matrix in Part A, Appendix A.
- The revisions remove the crude oil storage tank permitting exemptions in Part B, Section II.D.1.n., and Part C, Section II.E.3.ddd., and correct an error in the crude oil truck loading equipment permitting exemption in Part B, Section II.D.1.l.

Regulation Number 6, Part A

- The revisions fully adopt NSPS OOOO.

Regulation Number 7, Sections II., XVII., and XVIII.

Revisions regulate hydrocarbon emissions from oil and gas on a state-only, state-wide basis.

General Provisions (Section XVII.B.)

- The revisions expand the requirement to use good air pollution control practices to minimize hydrocarbon emissions from hydrocarbon liquid collection, storage, processing, and handling.
- The revisions expand the requirement to use auto-igniters. Combustion devices installed on or after May 1, 2014, must utilize an auto-igniter upon installation. Combustion devices installed before May 1, 2014, must utilize auto-igniters beginning May 1, 2016.



Revisions to Colorado Air Quality Control Commission's Regulation Numbers 3, 6, and 7 Fact Sheet

- Beginning January 1, 2015, the revisions require that open-ended valves or lines be sealed or become subject to leak detection and repair (“LDAR”) requirements, centrifugal compressors reduce hydrocarbon emissions by 95%, and reciprocating compressors at natural gas compressor stations replace rod packing every 26,000 hours of operation or every 36 months.
- The revisions also require storage tanks to comply with both applicable federal control requirements (NSPS OOOO) and Regulation Number 7, Section XVII. The revisions similarly require glycol natural gas dehydrators and internal combustion engines to comply with both applicable federal control requirements and Regulation Number 7, Section XVII.F. leak detection and repair requirements.

Storage Tanks (Section XVII.C.)

- The revisions require storage tanks with uncontrolled actual VOC emissions ≥ 6 tons per year (“tpy”) to control hydrocarbon emissions by 95% (and if using a combustion device, the device must be designed to achieve 98% control). The revisions require all storage tanks, except temporary frac tanks, utilized during the first 90 days of production to control emissions by 95% (and similarly meet a 98% design control efficiency) unless projected emissions during those 90 days are < 1.5 tons.
 - The revisions require controlled tanks to conduct audio, visual and olfactory (“AVO”) and additional visual inspections at the frequency of liquids loadout (not more than every 7 days, and at least every 31 days).
 - The revisions require controlled tanks to operate without venting during normal operation.
- The revisions require storage tanks subject to system-wide controls in Section XII.D.2., and storage tanks with VOC emissions ≥ 6 tpy to develop and employ Storage Tank Emission Management (“STEM”) plans to meet the “operate without venting” standard, which includes Approved Instrument Monitoring Method (“AIMM”) inspections. Storage tanks constructed on or after May 1, 2014, must comply with STEM and implement AIMM inspections within 90 days after the storage tank commences operation, or within 30 days of the phase-in schedule for facilities subject to monthly AIMM, and thereafter in accordance with Table 1. Storage tanks constructed before May 1, 2014, must comply with STEM by May 1, 2015, and implement AIMM inspections within 90 days of the phase-in schedule in Table 1.

Threshold: Storage Tank Uncontrolled Actual VOC Emissions (tpy)	Approved Instrument Monitoring Method Inspection Frequency	Phase-In Schedule
≥ 6 and ≤ 12	Annually	January 1, 2016
> 12 and ≤ 50	Quarterly	July 1, 2015
> 50	Monthly	January 1, 2015

- The revisions do not require AVO/visual inspections or AIMM inspections where it is unsafe, difficult, or inaccessible to monitor.
- The revisions require STEM records be made available to the Division upon request. The revisions also require monitoring records be kept for 2 years and also be made available to the Division.
- The revisions do not require storage tank reporting.



Revisions to Colorado Air Quality Control Commission's Regulation Numbers 3, 6, and 7 Fact Sheet

Glycol Natural Gas Dehydrators (Section XVII.D.)

- The revisions require glycol natural gas dehydrators constructed on or after May 1, 2015, with uncontrolled actual VOC emissions greater than 2 tpy, to control emissions by 95% (and if using combustion device, the device must be designed to achieve 98% control). The revisions require glycol natural gas dehydrators constructed before May 1, 2015, with VOC emissions greater than 6 tpy, or 2 tpy if located within 1,320 feet of a building unit or designated outside activity area, to control by 95% (and similarly meet a 98% design control efficiency).

LDAR (Section XVII.F.)

- The revisions require owners/operators to inspect components at natural gas compressor stations and well production facilities for leaks.
 - Natural gas compressor stations must be inspected beginning January 1, 2015. The frequency of inspections is based on fugitive VOC emissions, calculated using Table 2-4 of the 1995 EPA Protocol for Equipment Leak Emission Estimates, as provided in Table 3.

Fugitive VOC Emissions (tpy)	Inspection Frequency
> 0 and ≤ 12	Annually
> 12 and ≤ 50	Quarterly
> 50	Monthly

- Well production facilities constructed on or after October 15, 2014, must be inspected 15-30 days after the facility commences operation, and thereafter in accordance with Table 4. Well production facilities constructed before October 15, 2014, must be inspected within 90 days of the phase-in schedule in Table 4, or within 30 days of the phase-in schedule for facilities subject to monthly AIMM, and also thereafter in accordance with the frequencies in Table 4. The frequency of inspections is based on the uncontrolled actual VOC emissions from the highest emitting storage tank, or the total controlled actual VOC emissions from all permanent equipment and components for well production facilities without oil or condensate storage tanks.

Thresholds (per XVII.F.4.c.)		Approved Instrument Monitoring Method Inspection Frequency	AVO Inspection Frequency	Phase-In Schedule
Well production facilities without storage tanks (tpy)	Well production facilities with storage tanks (tpy)			
> 0 and ≤ 6	> 0 and ≤ 6	One time	Monthly	January 1, 2016
> 6 and ≤ 12	> 6 and ≤ 12	Annually	Monthly	January 1, 2016
> 12 and ≤ 20	> 12 and ≤ 50	Quarterly	Monthly	January 1, 2015
> 20	> 50	Monthly		January 1, 2015

- The revisions do not require AVO or AIMM inspections for components that are unsafe, difficult, or inaccessible to monitor.



Revisions to Colorado Air Quality Control Commission's Regulation Numbers 3, 6, and 7 Fact Sheet

- The revisions set different thresholds for leaks requiring repair based on the method used to detect the leak. The leak thresholds do not apply to leaks associated with normal equipment operation, such as pneumatic device actuation and crank case ventilation. The leak threshold for leaks detected with an IR camera or AVO is any detectable emission. The leak thresholds for leaks detected with EPA Reference Method 21 are:
 - > 2,000 ppm hydrocarbons for compressor stations constructed before May 1, 2014;
 - > 500 ppm for well production facilities constructed before May 1, 2014; and
 - > 500 ppm for compressor stations and well production facilities constructed on or after May 1, 2014.
 - Leaks detected using AIMM or AVO may be remonitored with EPA Method 21 prior to repair for comparison to the leak thresholds specified for EPA Method 21 monitoring.
- The revisions require a first attempt to repair within 5 days, unless parts are unavailable, shutdown is required, or for other good cause, and remonitoring within 15 days of repair.
- The revisions require LDAR records be kept for 2 years, and made available to the Division.
- The revisions require an annual LDAR report be submitted to the Division by every May 31.

Well Operation

- Beginning August 1, 2014, the revisions require gas from newly constructed, hydraulically fractured, or recompleted wells be routed to a gas gathering line or controlled by 95% (and if using combustion device, the device must be designed to achieve 98% control).

Well Maintenance and Liquids Unloading

- Beginning May 1, 2014, the revisions require best management practices to minimize hydrocarbon emissions and the need for well venting during well maintenance and liquids unloading. The revisions also require records be kept for 2 years, and made available to the Division upon request.

Pneumatic Controllers

- The revisions expand the low-bleed pneumatic controller requirement statewide, beginning May 1, 2014. The revisions also require no-bleed pneumatic controllers where on-site electrical grid power is used and the no-bleed pneumatic controller is technically and economically feasible.

For More Information:

Revisions to Regulation Number 3 (5 CCR 1001-5), Regulation Number 6 (5 CCR 1001-8) and Regulation Number 7 (5 CCR 1001-9) will become effective on upon publication by Colorado's Secretary of State, and will be posted at: <https://www.sos.state.co.us/CCR/Welcome.do>

Unofficial regulatory text and related documents associated with the rulemaking hearing may be found at: <http://www.colorado.gov/cs/Satellite/CDPHE-AQCC/CBON/1251647985820>

Implementation tools, guidance and other compliance assistance tools are currently being developed and will be posted on the Division's website at: <http://www.colorado.gov/cdphe/airoilandgas>

Finally, please submit questions or comments to: comments.apcd@state.co.us



OG_Comments, BLM_WO <blm_wo_og_comments@blm.gov>

Venting and Flaring Comments

1 message

Mathern, Tim <tmathern@nd.gov>

Thu, May 22, 2014 at 11:29 AM

To: "blm_wo_og_comments@blm.gov" <blm_wo_og_comments@blm.gov>

Department of the Interior

May 22, 2014

Bureau of Land Management

Neil Kornze, Director 1849 C Street NW, Rm. 5665

Washington, D.C. 20240

Sent by mail and submitted electronically to: blm_wo_og_comments@blm.gov

Re: Comments on Venting and Flaring of Gas Produced from Onshore Federal Lands

Dear Director Kornze,

My thanks to BLM leadership and staff as well as Department of Interior Deputy Secretary Mike Connor for holding the listening session in Dickinson earlier this month. Many North Dakotans took the opportunity to provide comments on the importance of reducing natural gas flaring and venting in our state.

I urge BLM to issue new guidelines and regulations to reduce flaring and methane emissions on public and tribal lands in North Dakota. Due to the serious economic and environmental impacts of flaring and venting of natural gas, BLM should address this issue immediately.

In December, North Dakota set a new record for natural gas flaring with 36 percent of the gas produced flared off into our air. Natural gas flaring rates are even higher on the Mandan Hidatsa Arikara Nation, where nearly 48 percent of the gas produced was flared in the first 11 months of 2013.

My primary concern is that flaring and venting of natural gas poses environmental issues. Methane, the main ingredient in natural gas, is a powerful and short-lived climate pollutant that accelerates the rate of climate

change, causing more frequent and more intense extreme weather events and seriously impacting the public health and welfare of North Dakotans.

The oil and gas and associated industries could significantly reduce methane emissions from the transport of oil and gas production by implementing inexpensive emission-control technologies that are currently available and by adopting better operating practices that address leak detection and repair. A recent report from ICF International found that the oil and gas industry could reduce methane emissions by **40 percent, using existing technologies at a total cost of \$0.01 per Mcf of natural gas produced.**

Your office reported that oil and gas leasing, exploration and production on public lands in North Dakota contributed nearly \$6 billion of economic activity in 2012. Royalties from oil and gas production on Native American lands have risen to \$250 million in 2013, up from \$106 million in 2011.

U.S. taxpayers are losing out on royalty payments — \$23 million annually — from the gas that is flared on public lands. Individual mineral rights owners in North Dakota are also losing out. Capturing and utilizing the flared natural gas will provide additional revenue to oil companies, payments to royalty owners and revenue for government. Natural gas capturing technologies are economical and available today. In a recent issue of *The Bakken Magazine*, oil and gas industry officials said that the “unique qualities and value of the gas makes the notion that flaring occurs because capturing is uneconomical untrue.”

Again, I thank BLM for your consideration of this important issue and outreach to North Dakotans. I implore BLM to issue new guidelines and regulations to reduce flaring and venting of methane emissions on public and tribal lands in North Dakota and across the country. I have tried to accomplish this through the legislature with only small change being accepted. There is some hope, however, as the public is now raising significant concerns with wastefulness and demanding more restrictions. I toured the Bakken field last week and heard the anguish and concern of the citizens. The governor stated yesterday he is now supportive of more restrictions.

Now is the time to act on your level, and I will keep working on these issues in the next legislative session.

Sincerely,

Senator Tim Mathern
Appropriations Committee
North Dakota Senate
429 16th Ave S
Fargo ND 58103
tmathern@nd.gov

Badlands Conservation Alliance
Field Office
801 North 10 Street
Bismarck, ND 58501
701-255-4958 badlandsconservationalliance.org

May 27, 2014

US Department of the Interior
Bureau of Land Management
Forum on Venting & Flaring of Gas Produced from Onshore Federal

To whom it concerns:

Badlands Conservation Alliance (BCA) is a North Dakota based non-profit organization focused on public lands and public natural resources in western North Dakota, particularly Theodore Roosevelt National Park and the Little Missouri National Grassland. The majority of our members, and certainly the charter members, live in or originated in the small communities and rural landscapes surrounding these public lands. Members hold significant familiarity with these lands and value them for a host of ecological, heritage and personal reasons, frequently through multiple generations.

BCA appreciates that the BLM held one of its three public outreach sessions on Venting and Flaring of Gas Produced from Onshore Federal in Dickinson, ND on May 9, 2014. While this is a national issue with concerns throughout the United States, North Dakota should be a priority in efforts to control and regulate the flaring of natural gas.

Having attended the May 9th forum, BCA recognizes and supports the concerns for tribal, health, public safety, waste, and economic issues brought forth in that setting.

In addition, BCA's mission focuses in on the 1 million-acre multiple use lands of the Little Missouri National Grassland and the 70,467 acres which make up the three non-contiguous units of Theodore Roosevelt National Park.

The ND Department of Mineral Resources (DMR) estimates full Bakken development at 18,000 square miles of western North Dakota. This does not include the broader extent of the Three Forks, Tyler, Spearfish and revitalizing Red River formations. The scope and scale of development and the proliferation of associated infrastructure is dramatic; to say nothing of the speed with which this industrializing transformation is taking place.

Ninety-five percent of the Little Missouri National Grassland is open to oil and gas development and less than 5% of that 95% remains un-leased. Due to the longer 10-year term on federal leases, operators have focused on drilling and holding private-surface leases first, but we can expect increased federal development in the near term.

Hydraulic fracturing of the Bakken shale has introduced a method of oil and gas extraction dissimilar to previous plays. We find it is more equivalent to mining than historic oil and gas

production, and in that manner, it requires new and comprehensive regulation across all stages of development.

It is certain that when Regional Forester for the USFS Northern Region, then Brad Powell, signed the Record of Decision for the Dakota Prairie Grasslands Land and Resource Management Plan in July 2002, he had no idea what the Bakken would mean to the Little Missouri National Grassland. It is equally so with the Dakota Prairie Grasslands Oil and Gas Leasing Record of Decision signed in June of 2003.

The in-progress Dakota Prairie Grasslands' new Reasonably Foreseeable Development Scenario and Supplemental Environmental Impact Statement must address the drastically different technology and resulting impacts on the Little Missouri National Grassland, and account for needed mitigation strategies on both established and new leases. This includes natural gas gathering methodologies in rough terrain and restriction of flaring.

Comprehensive oil and gas planning has proved nearly non-existent in the state of North Dakota and is the direct cause of the societal and environmental problems we face today. North Dakota could have chosen to enforce a stellar, planned approach in development of its oil and gas resources, but instead has out-paced itself and its communities - risking air and water quality, quality of life, agriculture, wildlife habitat, public safety, etc.

Badlands Conservation Alliance vigorously requests that the Bureau of Land Management establish the broadest and most stringent regulation, metering and monitoring possible in revisiting venting and flaring on federal lands.

While we acknowledge the benefits oil and gas development brings to the state and the national, we fear the diminishment of western North Dakota communities and landscapes cherished for generations. It is likely only on federal lands that we might still claim some control, and therein maintain some portion as sanctuary and as a template for reclamation in what the DMR estimates at 5 generations from now.

The Bureau of Land Management should not assume that recent efforts of the ND Petroleum Council's Flaring Task Force or new rulemaking by the Oil and Gas Division under jurisdiction of the ND Industrial Commission will satisfy public concerns or nationally acceptable standards. Too often, rulemaking in North Dakota comes at the heels of industry tolerance, not public tolerance or public wellbeing. Too often regulation in North Dakota is determined not by what serves its citizens, but by what industry wills.

BCA staff regularly attends and testifies at the monthly ND Oil and Gas Division hearings. We also routinely attend the Oil and Gas portion of the ND Industrial Commission meetings. It is repeatedly astounding the nonchalance with which industry representatives place responsibility for current exorbitant flaring rates on the back of others – landowners, legislative incentives, midstream companies, ND weather. While all of these do play a part, the simplest truth is that oil production outruns natural gas gathering capacity. Only the oil producer (and the state of North Dakota) is responsible for the punching of each and every new hole.

Therein, BCA offers these recommendations in moving forward with the BLM process:

- Global climate change considerations should be paramount.
- Waste of flared natural gas should be redefined.

- Greatest production of natural gas in the Bakken occurs in the first two years and merits immediate recovery.
- Restricting flaring to a 30-day period for initial production testing should be standard.
- Operators should be required to be on site during all tests.
- Drilling of infill wells should be restricted until natural gas gathering capacity is adequate.
- Consistent, field-wide economic testing and flaring restrictions must be established that take into account environmental and health costs, regardless of number of operators.
- Stringent leak detection and monitoring standards should be mandatory.

Finally, BCA wants to stress the high regard with which North Dakotans have traditionally held the unique beauty, unsurpassed wildlife habitat, recreational value and history of our western North Dakota landscape. Our top three economic contributors are each and all tied to this landscape. Two of these, tourism and agriculture, are currently threatened by the pervasive negative impacts of the third, i.e. uncontrolled energy development.

The three units of Theodore Roosevelt National Park are becoming islands in a sea of development. The small Park units that previously held no visible boundary for Park visitors are increasingly demarcated by rings of flares. We have stood with out-of-state strangers at so-called scenic overlooks within Park boundaries and hung our heads as they queried how North Dakota could allow such rampant, irresponsible oil development to impact a National Park.

Wildlife both within the Park and in the larger Little Missouri Grassland beyond are harassed by new roads, dust, noise, traffic and the strange fires we call flaring. Sage grouse, pronghorn and mule deer populations are at risk with hunting seasons non-existent or sharply curtailed. Bighorn sheep and deer are routinely killed and left at the side of the road. Elk have been poached within the Park and bison shot.

In visiting individually with over 800 legitimate hunters at the Fargo Sportsmen's Show in eastern North Dakota, BCA heard repeatedly that a special hunting spot is "gone." All too often we heard of a hunter's "final trip out west" and that previously frequent visitors to cherished destinations in the Badlands would "have to find something else to do."

Flaring at 36% with increasing volume estimated to double by 2020 is the poster child of what ails us, and our burning night sky shames us to the world. It is prairie skies that define a prairie landscape as well as a prairie inhabitant. Desecration of those skies runs contrary to our conservative character and native quickening.

The Bureau of Land Management has the ability and the authority to cut the legs off this intrusive and wasteful element, if not everywhere, then certainly on the public lands of western North Dakota. Badlands Conservation Alliance asks that you do this with all haste and with the teeth to enforce the strictest regulation. Our and the nation's integrity is at stake.

Respectfully,



Jan Swenson, ED
Badlands Conservation Alliance

BY EMAIL

May 30, 2014

Neil Kornze
Director, Bureau of Land Management
1849 C Street NW, Rm. 5665
Washington, DC 20240

Re: Comments on BLM Forum on Venting and Flaring from Oil and Gas Operations on Public and Indian Trust Lands

Environmental Defense Fund (“EDF”) appreciates the opportunity to submit the following comments to the Bureau of Land Management (“BLM”) in response to the recent Forums on Venting and Flaring of Gas Produced on Public Lands. EDF is a national environmental organization with over 750,000 members, many of whom are deeply concerned about pollution from the oil and natural gas sector. EDF brings a strong commitment to sound science, collaborative efforts with industry partners, and market-based solutions to our most pressing environmental and public health challenges. Minimizing venting and flaring on federal lands is an important part of the President’s Strategy to Reduce Methane Emissions, and EDF welcomes BLM’s continued progress towards issuing rules that comprehensively address this serious problem.

Venting, flaring, and other losses from oil and gas operations on federal lands take place on a large scale, and represent an irresponsible waste of natural resources as well as a serious threat to our climate and public health. Under the Mineral Leasing Act (“MLA”) and the Federal Lands Policy and Management Act (“FLPMA”), BLM is unequivocally charged with conserving oil and gas resources and ensuring that their development benefits taxpayers and the public. Proven, cost-effective technologies and practices exist to mitigate or avoid unnecessary losses of natural gas, and BLM has a mandate to ensure these measures are deployed pursuant to its obligation to minimize waste. At the same time, these statutes just as clearly vest BLM with the responsibility and authority to protect the environment and public health from releases of natural gas – which is largely composed of methane, a potent driver of climate change, as well as a harmful combination of carcinogens, smog-forming compounds, and other deleterious pollutants. Rigorous action to minimize venting, flaring, and other oil and gas emissions on federal lands is equally justified under either of BLM’s mandates to minimize waste of publicly-held natural resources and ensure environmentally responsible use of federal lands.

In addition to underscoring BLM’s authority to act, our comments urge BLM to:

- Ensure consistent and prompt deployment of waste-minimizing measures by directly requiring their use, where feasible;

- Comprehensively address wasted natural gas from: (1) all oil and gas operations on federal lands, including both existing and new facilities; (2) all lands subject to BLM jurisdiction, including not just oil and gas leases but also federal rights-of-way (“ROW”);
- Broadly institute cost-effective capture or control requirements to address emissions from all well completions, including completions of oil-producing wells, and limit the duration of time flaring is allowed for production tests on newly drilled wells;
- Minimize losses of associated gas by requiring feasibility analyses that analyze the true cost of flaring and fully examine alternative options for capture and use of associated gas;
- Effectively utilize Gas Conservation Plans and Conditions of Approval to incentivize the development of adequate infrastructure to capture associated gas prior to commencing drilling operations;
- Minimize natural gas losses from pneumatic controllers through effective replacement or retrofit requirements for high-bleed pneumatic controllers;
- Minimize natural gas losses from pneumatic pumps by requiring use of best available technologies, such as solar and electric-powered pumps, where feasible;
- Minimize losses from storage vessels by requiring capture or control of those emissions, as well as regular leak detection and repair;
- Ensure use of best management practices for minimizing venting during liquids unloading;
- Require new and existing oil and gas facilities to minimize losses from leaking equipment by undertaking rigorous and regularly scheduled leak detection and repair programs, with flexibility to use innovative or advanced leak detection technologies where appropriate; and
- Mitigate losses from compressors at well sites, gathering and boosting facilities, transmission compressor stations, and other facilities on BLM lands by requiring cost-effective maintenance practices and emission control technologies, as well as regular leak detection and repair.

I. BLM’S RESPONSIBILITY TO ADDRESS VENTING AND FLARING ON FEDERAL LANDS

a. Wasted Natural Gas on Federal Lands Is Significant and Damaging, and Can Be Mitigated Through Cost-Effective Measures

The magnitude of emissions from oil and gas sources on federal lands and the associated pollution reduction potential are significant. The Government Accountability Office (“GAO”) found in 2010 that between 4.2 and 5 percent of all natural gas produced onshore on federal lands was vented, flared, or lost to fugitive emissions – enough to heat about 1.7 million homes each year.¹ Of the total gas lost, a large proportion consists of gas that is simply vented or leaked to the atmosphere – a form of waste that causes the greatest harm to the climate and public health. Natural gas is largely composed of methane, a potent climate-destabilizing pollutant which is now believed to be 84-86 times more powerful than carbon dioxide within the first twenty years after it is emitted. As a result of these effects, mitigation of methane and other

¹ Gov’t Accountability Office, GAO-11-34, *Federal Oil and Gas Leases: Opportunities Exist to Capture Vented and Flared Natural Gas, Which Would Increase Royalty Payments and Reduce Greenhouse Gases* (Oct. 2010).

short-lived climate pollutants is an indispensable complement to reductions in carbon pollution.² In addition to methane, upstream oil and gas facilities emit other harmful co-pollutants including carcinogens, such as benzene, and smog-forming volatile organic compounds. Volatile organic compounds contribute to ground-level ozone formation and cause a range of human health issues, including heightened risks of cancer, respiratory disease, and developmental disorders in children.

Further, recent studies suggest that methane emissions in certain production basins could be much higher than even these inventories would suggest. A recent study by the National Oceanic and Atmospheric Administration (“NOAA”), sponsored in part by EDF, found unexpectedly high emissions from oil and gas operations in the Denver-Julesburg basin based on measurements of local methane concentrations.³ According to the NOAA study, between 2.6 and 5.6% of gas produced in the Denver Julesburg basin is lost to the atmosphere – nearly three times the amount estimated using data from EPA inventories. These results are consistent with prior “top down” studies from the Denver-Julesburg and Uinta Basins – which notably include lands under BLM’s jurisdiction – finding that existing inventories are likely underestimating actual emissions from oil and gas development.

Many common-sense and cost-effective technologies are available to reduce methane emissions across the oil and gas supply chain, and many of these technologies would actually save the industry money over time. A recent report that EDF commissioned from the independent consulting firm ICF International shows that approximately 40 percent of methane emissions from the nation’s oil and gas sector could be eliminated by 2018 at a total cost of just one penny per thousand cubic feet of natural gas produced in the United States.⁴ Nearly all of the methane-reducing measures highlighted in the report could be feasibly applied to the thousands of well sites, gathering and processing facilities, and transmission compressor stations on federal leases and rights-of-way under BLM’s jurisdiction.

b. Regulatory Action Requiring Deployment of Waste Minimization Measures Is Necessary

A rule to eliminate routine flaring and venting of federally produced gas and to improve the efficiency of operations on federal leases is urgently needed, and would fulfill a core element of the President’s strategy to reduce methane emissions.⁵ EDF commends BLM for its commitment to commence a rulemaking process to amend existing regulations and address venting and flaring on federal lands. Revising regulations covering surface operations on federal lands to address venting and flaring will facilitate consistent nationwide application of control

² J.K. Shoemaker et al., *What Role for Short-Lived Climate Pollutants in Mitigation Policy?* 342 SCIENCE 1323-24 (2013).

³ Gabrielle Petron et al., *A new look at methane and non-methane hydrocarbon emissions from oil and natural gas operations in the Colorado Denver-Julesburg Basin*, J. GEOPHYSICAL RES. ATMOSPHERES, DOI: 10.1002/2013JD021272 (May 2014).

⁴ ICF Int’l, *Economic Analysis of Methane Emission Reduction Opportunities in the U.S. Onshore Oil and Natural Gas Industries* (Mar. 2014) [hereinafter ICF Report].

⁵ White House, *Climate Action Plan: Strategy to Reduce Methane Emissions* (Mar. 2014), available at http://www.whitehouse.gov/sites/default/files/strategy_to_reduce_methane_emissions_2014-03-28_final.pdf.

requirements and provide operators with clear, enforceable mandates, and ultimately help to further responsible and effective management of our nation's oil and natural gas resources.

EDF also understands that the agency is considering updates to its royalty policies through a proposed Onshore Order 9 that would supersede the current Notice to Lessees 4-A ("NTL-4A"). We agree that NTL-4A is badly outdated, and believe that revisions to that policy represent an important opportunity to incentivize further reductions in waste. However, modernizing NTL-4A is not an effective substitute for regulations broadly requiring the deployment of proven, cost-effective technologies to minimize waste at all oil and gas facilities on federal lands. Such regulatory action is the best way to ensure that venting and flaring is reduced swiftly, consistently, and effectively on all lands subject to BLM jurisdiction. The agency has ample authority to accomplish these goals by requiring the implementation of common-sense, proven technologies that are currently available to reduce methane emissions across the oil and gas supply chain.

c. BLM Has Ample Authority to Prevent Waste of Natural Gas and Protect Human Health and the Environment

BLM has ample authority to prevent waste of oil and gas produced on lands subject to BLM jurisdiction. Federal mineral leases and federal rights-of-way are subject to FLPMA, which contains broad mandates for resource conservation and waste prevention. Under FLPMA, BLM "*shall, by regulation or otherwise, take any action necessary to prevent unnecessary or undue degradation of the lands and to manage those lands using the principles of multiple use and sustained yield.*"⁶ The "sustained yield" management goal in the statute "requires BLM to control depleting uses over time, so as to ensure a high level of valuable uses in the future."⁷ To the extent that wasteful venting and flaring can be avoided through thoughtful and strategic infrastructure and development planning, and the use of cost-effective control measures, these wasteful practices unnecessarily prioritize current production over future use of finite federal oil and gas resources. The agency has substantial discretion to determine how to achieve the sustained yield goal, and may thus require planning and controls as necessary to avoid waste and ensure sustainable development of federal resources.

Like FLPMA, the MLA also provides the Department of the Interior ("DOI") with broad rulemaking authority to administer onshore leases and ROW.⁸ The MLA's mandate to prevent waste is unambiguous.⁹ Legislative history makes clear that one of the primary catalysts for the MLA was Congressional concern over perceived waste of federal oil and gas resources.¹⁰ At the time of its enactment, Congress intended that the MLA "will go a long way toward . . . reserv[ing] to the Government the right to supervise, control and regulate the . . . [development of natural resources], and prevent monopoly and waste, and other lax methods that have grown

⁶ 43 USC §§ 1732(b). (emphasis added).

⁷ Norton v. S. Utah Wilderness Alliance, 542 U.S. 55, 58 (2004); *see also* Theodore Roosevelt Conservation P'ship v. Salazar, 616 F.3d 497, 518 (D.C. Cir. 2010).

⁸ 30 U.S.C. § 189.

⁹ Boesche v. Udall, 373 U.S. 472 (1963).

¹⁰ H. Rept. No. 1138, 65th Cong. 3d Sess. 19.

up in the administration of our public land laws.”¹¹ Prevention of waste through implementation of robust control measures that reflect current and evolving best practice in the industry falls squarely within MLA’s mandate for management and leasing.

Consistent with this goal, the MLA affirmatively requires oil and gas lessees to minimize waste – and underscores the importance of that obligation by providing for forfeiture of the lease:

All leases of lands containing oil or gas, made or issued under the provisions of this chapter, *shall* be subject to the condition that the lessee will, in conducting his explorations and mining operations, *use all reasonable precautions to prevent waste* of oil or gas developed in the land Violations of the provisions of this section shall constitute grounds for the forfeiture of the lease¹²

This provision is reflected in BLM’s current regulations at 43 C.F.R. § 3161.2, which require that the lease owner or operator conduct all operations “in a manner which protects other natural resources and the environmental quality, protects life and property and results in the *maximum ultimate recovery* of oil and gas with minimum waste and with minimum adverse effect on the ultimate recovery of other mineral resources.”¹³

As evinced in the above regulatory language, the statutes also provide BLM with complementary authority to protect the environment. Under FLPMA, BLM has interpreted the phrase “unnecessary or undue degradation” to embrace protection of air quality along with other environmental values.¹⁴ FLPMA further requires that “public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, *environmental, air and atmospheric*, water resource, and archeological values.”¹⁵ In pursuit of this objective, BLM is authorized to issue all regulations necessary for the “management, use, and protection of the public lands, including the property located thereon.”¹⁶

Similarly, MLA clearly directs DOI to “regulate all surface-disturbing activities conducted pursuant to any lease” and “determine reclamation and other actions as required in the interest of conservation of surface resources.” In addition, MLA requires DOI to ensure each lease contains provisions “as [DOI] may deem necessary . . . for the protection of the United States . . . and for the safeguarding of the public welfare.” These broad requirements to protect surface resources and the public welfare easily encompass protection of public health and the environment from uncontrolled oil and gas emissions.

These strong directives to preserve and protect public lands and environmental resources are balanced by the recognition that federal resources serve many valuable public uses, including

¹¹ *Id.*

¹² *Id.* § 225 (emphasis added).

¹³ 43 C.F.R. § 3161.2 (emphasis added).

¹⁴ See 43 C.F.R. §§ 3809.415(a), 3809.420(b)(4) (providing that protection of “air quality” through compliance with federal and state clean air requirements constitutes prevention of “unnecessary and undue degradation”).

¹⁵ 43 U.S.C. § 1701(a)(8) (emphasis added).

¹⁶ 43 U.S.C. § 1733.

the provision of oil and gas to federal agencies and domestic consumers. Reflecting this important service, FLPMA also directs BLM to manage oil and gas leasing so that “the United States receive fair market value of the use of the public lands and their resources”¹⁷ To ensure that the full value of oil and gas produced on federal leases is captured, and received by the United States, BLM cannot allow waste through leaky equipment, excessive on-lease uses, or operational functions that do not minimize natural gas emissions. Accordingly, FLPMA and MLA together provide BLM with broad mandates for resource conservation and environmental protection, together with ample regulatory authority to address one of the most significant sources of methane emissions in the country. Indeed, the agency has previously acted under these authorities.¹⁸

d. BLM’s Rule Should Comprehensively Address Significant Sources of Vented and Flared Emissions

BLM has the responsibility and legal authority to ensure that critical protections to minimize venting, flaring, and other waste are broadly applied. A comprehensive regulatory scope that is necessary to minimize venting and flaring on federal lands extends in several directions: to existing and new facilities, and to federal lands including but not limited to production leases.

First, it is critical that BLM take action to minimize waste of gas from facilities and operations that are already in existence. ICF’s report found that even four years from now, such

¹⁷ 43 U.S.C. § 1701(a)(9).

¹⁸ BLM routinely uses its authority under FLPMA and the MLA to mitigate the deleterious environmental effects of oil and gas development on public lands. The preamble to the agency’s 2013 proposed draft Hydraulic Fracturing Rule states:

FLPMA directs the BLM to manage the public lands so as to prevent unnecessary or undue degradation, and to manage lands using the principles of multiple use and sustained yield FLPMA also requires that the public lands be managed in a manner that will protect the quality of their resources, including ecological, environmental, and water resources. The Mineral Leasing Act and the Mineral Leasing Act for Acquired Lands authorize the Secretary to lease Federal oil and gas resources, and to regulate oil and gas operations on those leases, including surface-disturbing activities.

78 Fed. Reg. 31,636, 31,640 (May 24, 2013).

Instruction Memorandum No. WY-2012-007 (“IM”) establishes minimum standards for management of pits approved by BLM’s Wyoming State Office, outlining five specific “water quality protection measures” to be required in order to minimize the potential for approved activities to result in adverse impacts to human health or the environment. BLM, *Instruction Memorandum No. WY-2012-007* (Nov. 15, 2011), available at <http://www.blm.gov/pgdata/etc/medialib/blm/wy/resources/efoia/IMs/2012.Par.59729.File.dat/wy2012-007.pdf>. The agency’s authority to regulate environmental aspects of oil and gas activities extends equally to air as well as water quality. BLM’s Colorado State Office published its Comprehensive Air Resources Protection Protocol (“CARPP”) in September 2013. BLM Colo. Bureau of Land Mgmt., *Comprehensive Air Resource Protection Protocol* (Sept. 2013), available at http://www.blm.gov/pgdata/etc/medialib/blm/co/field_offices/san_juan_public_lands/land_use_planning/proposed_lrmpp.Par.75621.File.dat/2013-0911%20Comprehensive%20Air%20Resource%20Protection%20Plan.pdf. As authority for the CARPP, BLM Colorado cited FLPMA Section 102(a)(8), and confirmed “[t]he BLM has the authority and responsibility under [FLPMA] to manage public lands in a manner that will protect the quality of air and atmospheric values.” *Id.* at 3. These examples demonstrate that BLM has sufficiently broad authority under the MLA and FLPMA to regulate environmental impacts attributable to oil and gas development on public lands, including impacts to air and atmospheric quality.

sources will continue to be responsible for almost 90 percent of total methane emissions from the oil and gas sector. Further, BLM’s authority to issue regulations requiring best practices at existing oil and gas operations is clear. Since 1936, the granting clause of all oil and natural gas leases has stated that leases are subject to orders and regulations “now and hereafter promulgated.”¹⁹ Section 6 of the modern lease form also obligates oil and gas lessees to minimize adverse impacts to all natural resources, including air resources and subsurface resources, and requires lessees to “take reasonable measures deemed necessary by lessor [the United States] to accomplish the intent of this section.”²⁰ These obligations are also reflected in BLM regulations, which have long required lessees to comply with “such reasonable measures as may be required by the authorized officer” in addition to stipulations and statutes in existence at the time of lease issuance.²¹ Indeed, BLM’s own analysis of its authority to regulate oil and gas facilities, contained in a 2007 Information Bulletin, confirms that federal leases issued during the thirty years in which this regulation has been effective are subject to environmental protections that BLM may subsequently adopt by regulation.²² The Information Bulletin clarifies that “the Secretary’s authority to administer oil and gas leases and mitigate impacts associated with their development is not dependent upon the age or date of lease issuance.”²³

Second, we urge BLM to mitigate product losses not just from facilities located on Federal leases, but also from oil and gas facilities located on other BLM lands – especially ROW granted under the MLA – in order to reduce waste from the gathering, processing, transmission and storage industry segments, and in particular, compressor emissions (discussed more fully below). The MLA specifically vests DOI with broad authority to regulate the “extent, duration, survey, location, construction, operation, maintenance, use, and termination” of facilities on federal ROW and requires DOI to “issue regulations or impose stipulations . . . designed to control or prevent damage to the environment.”²⁴ These provisions vest BLM with authority to promulgate and enforce requirements for curtailing emissions from compressors and boosting stations, as well as other sources of harmful emissions, located on federal ROW.

II. BLM SHOULD REQUIRE OPERATORS TO DEPLOY KEY MITIGATION MEASURES

a. Well Completions and Production Tests

EDF is encouraged to see that BLM is considering requirements addressing completion emissions from wells other than gas wells already regulated under EPA’s Clean Air Act regulations (“Subpart OOOO”). We urge BLM to broadly require capture or control of

¹⁹ BLM, *Legal Authority for Environmental Protection* at 1-2. See also *Coastal Oil & Gas Corp. et al.*, 108 IBLA 62 (1989) (the intent of the “now and hereafter promulgated” language “is to incorporate future regulations, even though inconsistent with those in effect at the time of lease execution, and even though to do so creates additional obligations or burdens for the lessee.”).

²⁰ Form 3100-11, Section 6.

²¹ See 43 CFR § 3101.1-2.

²² See Information Bulletin No. 2007-119 (Sept. 25, 2007).

²³ BLM, *Legal Authority for Environmental Protection Relating to Oil and Gas Operations* (Attachment), available at http://www.blm.gov/pgdata/etc/medialib/blm/wo/Information_Resources_Management/policy/ib_attachments/2007.Par.95724.File.dat/IB2007-119_att1.pdf

²⁴ 30 U.S.C. § 185.

emissions from all well completions where it is feasible to do so – including completions of oil-producing wells, which are not currently covered by Subpart OOOO. Data from the U.S. Energy Information Administration (“EIA”) indicates that over half of new oil wells drilled co-produce natural gas.²⁵ Completions of these co-producing wells produce substantial pollution that can be cost-effectively mitigated using the same clean air measures that have effectively reduced emissions from hydraulically fractured gas wells. A recent EDF white paper examined several recent studies and analyses and found that emissions from uncontrolled co-producing well completions range from 15.7 to nearly 200 metric tons (“MT”) of methane (“CH₄”), with a cost effectiveness of -\$132.7 /MT CH₄ to \$3,578 /MT CH₄.²⁶ At a national level, these emission factors suggest total co-producing well completion emissions between approximately 96,000 to 247,000 MT, comparable to emissions from natural gas well completions (209,000 MT CH₄ in the latest EPA annual inventory).²⁷

Reduced emission completions (“RECs”) have the potential to reduce emissions from hydraulically fractured or refractured wells by 95% or even more. When gathering infrastructure is present, this emission control method routes excess gas to sales and has been shown to be a cost effective reduction strategy. EDF strongly urges BLM to require RECs for *all* fractured and refractured wells whenever feasible, including from wells that co-produce oil (or other liquids) and natural gas. Where RECs are infeasible to carry out, BLM should at least require that methane and other harmful pollutants from the completion be controlled via a combustion device. Both Colorado state regulations and EPA regulations for the Ft. Berthold Indian Reservation include such control requirements for co-producing wells.²⁸

EDF also respectfully urges BLM to limit the duration of time flaring is allowed for production test on newly drilled wells. We recognize that flaring in this initial period allows operators to obtain critical information on a well. However, flaring during the initial test period should not continue past the time required to obtain data to economically evaluate a well and to size conservation equipment. Allowing flaring beyond this period wastes substantial amounts of gas that could otherwise be captured and sold.

b. Casinghead and Associated Gas

We strongly encourage BLM to include in its upcoming rule robust and comprehensive waste reduction regulations that will address the needless loss of casinghead and associated gas. A key conclusion of the ICF report is that the entire projected 4.5 percent net growth in methane emissions from oil and gas operations from 2011 to 2018 can be attributed to the oil sector, largely from flaring and venting of associated gas.

²⁵ EIA, *Drilling often results in both oil and natural gas production* (Oct. 2013) available at, <http://www.eia.gov/todayinenergy/detail.cfm?id=13571>.

²⁶ EDF, *Co-Producing Wells as a Major Source of Methane Emissions: A Review of Recent Analyses* (Mar. 2014), available at <http://blogs.edf.org/energyexchange/files/2014/03/EDF-Co-producing-Wells-Whitepaper.pdf>; see also EPA, *Oil and Natural Gas Sector: Hydraulically Fractured Oil Well Completions and Associated Gas during Ongoing Production* (Apr. 2014), available at <http://www.epa.gov/airquality/oilandgas/pdfs/20140415completions.pdf>.

²⁷ *Id.*

²⁸ See Co. Oil & Gas Conserv. Comm’ n Rule 805(b)(3)(A).

To effectively mitigate this considerable expected growth, BLM must adopt regulations that establish a culture of operation and regulation in which venting is not allowed except as needed for safety, and operators are expected to capture and route to a sales line all gas coming off a separator produced during normal operations from any oil or gas well, unless they can meet a high burden of proof regarding infeasibility of capture. As part of this rulemaking, BLM may revise the way the agency analyzes feasibility of associated gas capture to make the procedure more transparent and rigorous. Each feasibility analysis should be robust and consider the following, in addition to the factors already introduced by BLM at the forums:

- The cost of alternatives to flaring, including installation and operation of a pipeline to sales, fuel use on lease, electrical power generation, and reinjection for pressure;
- Capital costs, avoided costs, opportunity costs, making sure to include the cost of increasing pipeline capacity as well as constructing new gathering lines, an accurate and standardized market value of other captured products, and reasonable cost savings resulting from on lease use and avoided costs of a flare and associated maintenance; and
- If capture is infeasible on a single lease, a secondary consideration of the feasibility of cooperation with other operators within some reasonable radius.

The aim of the feasibility analysis should be to make apparent the true cost of flaring, and to fully explore and make clear alternative options for capture and use of associated gas.

If there are no viable options for capture and conservation, we suggest that flaring may be approved, but must comply with best management practices that minimize harmful effects of combustion. BLM should require 98% destruction rate efficiency on approved flares, and require each combustion device to be equipped with an auto-igniter. Several key oil and gas producing jurisdictions already require these controls.²⁹ Where the agency grants a rare approval to flare associated gas, the operator should be required to demonstrate on regular intervals lasting no longer than every six months the persistence of conditions that make capture infeasible. We strongly urge BLM to proactively address this emissions source and use this rulemaking to prohibit venting, and to adopt rigorous controls for the combustion of casinghead and associated gas.

c. Gas Conservation Plans

During the forum, and in distributed materials, BLM indicated that the agency was considering more expansive use of Gas Conservation Plans (“GCPs”) during early stages of planning and Application for Permit to Drill approvals. We stand with the excellent comments submitted by our environmental colleagues in supporting the earnest use of BLM’s front-end planning and permitting authorities to better align gathering infrastructure availability with well production.

²⁹ See 5 COLO. CODE REGS. § 1001-9 XVII.G (2014); *Approval and Promulgation of Federal Implementation Plan for Oil and Natural Gas Well Production Facilities Fort Berthold Indian Reservation*, 77 Fed. Reg. 48,878 (Aug. 15, 2012).

More effective use of GCPs and Conditions of Approval (“COAs”) that require the installation of gathering lines prior to production would represent a positive improvement in BLM’s effort to minimize waste. However, the presence of a gathering line alone does not guarantee available capacity sufficient to accept deliveries from new wells. North Dakota’s Pipeline Authority estimates that roughly two-thirds of the gas that is flared each month is produced from a well that is connected to a gathering line.³⁰ In order to avoid this problem while employing GCPs and COAs to minimize waste, BLM should consider a COA that requires the installation of not simply gathering lines, but gathering lines with sufficient capacity or capture equipment and facilities before drilling may commence.

d. BLM Should Minimize Natural Gas Losses from Pneumatic Controllers and Pumps

Pneumatic controllers and pumps collectively represent one of the largest sources of wasted natural gas in the oil and gas sector, and emissions from these devices can be mitigated at little or even negative cost. Current BLM policies place no limits on venting of natural gas from pneumatic controllers and pumps, and are in urgent need of reform. EDF strongly urges BLM to adopt broad requirements ensuring that high-emitting pneumatic controllers are replaced with low-emitting models, and subject to regular inspection and maintenance. Where feasible, BLM should also require or incentivize replacement of pneumatic pumps with electrically-driven or solar-powered pumps.

Pneumatic controllers. National inventories of oil and gas emissions uniformly indicate that pneumatic controllers represent one of the single largest sources of wasted natural gas. According to the Annual Inventory, pneumatic controllers across the oil and gas sector emitted a total of over 1 million MT CH₄ in 2012.³¹ Over 75% of that total derived from pneumatic controllers used in natural gas and oil production, which is the segment of the industry that is most prevalent on federal lands. Data collected under EPA’s mandatory greenhouse gas reporting program (“GHGRP”), which covers only a subset of facilities in the oil and gas sector, confirms in the importance of pneumatic controllers. In 2012, entities subject to the GHGRP reported almost 875,000 MT CH₄ emissions from pneumatic controllers, with the vast majority of this total attributable to the production segment.³² Methane emissions from pneumatic controllers were the single largest source of natural gas losses reported from the oil and gas sector in 2012.³³

A substantial portion of this inventory appears to come from a minority of high-emitting controllers, especially high-bleed continuous pneumatic controllers. ICF’s cost curve analysis, for example, concluded from the GHGRP that approximately 10% of pneumatic controllers in the natural gas production segment are high-bleed devices, and that an additional 33% of

³⁰ N.D. Pipeline Auth., May 2014 Monthly Update (May 13, 2014), available at <http://ndpipelines.files.wordpress.com/2012/04/ndpa-may-13-2014-update.pdf>.

³¹ EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2012*, at A-196, A-203 (2014) [hereinafter Annual Inventory].

³² EPA, *Petroleum and Natural Gas Systems: 2012 Data Summary* 7 (2013) [hereinafter EPA Subpart W Summary].

³³ *Id.*

controllers are high-emitting intermittent bleed devices.³⁴ An industry survey of nearly 50,000 well sites carried out by the American Petroleum Institute (“API”) and America’s Natural Gas Alliance (“ANGA”) in 2012 found that 24% of pneumatic controllers in the production segment were high-bleed devices – a much higher share than reflected in the GHGRP.³⁵ The API/ANGA survey also reported a significant number of high-bleed controllers in the gathering and boosting segment,³⁶ which are not accounted for under either the GHGRP or the Annual Inventory.³⁷ According to ICF, high-bleed pneumatic controllers are the second-largest source of natural gas losses in the oil and gas sector, behind fugitive emissions from reciprocating compressors.³⁸

We are pleased to see that BLM is considering requiring replacement of high-bleed pneumatic controllers as part of this proposed rule. Replacing high-bleed pneumatic controllers with low-bleed or instrument air (where feasible) is a cost-effective measure for reducing emissions from high-bleed devices. Even conservative assessments of the costs and benefits of these replacements have found that this is a measure that quickly recoups its own costs. The ICF cost curve study, for example, concluded that replacing a high-bleed controller with a low-bleed equivalent would reduce emissions by 97%, at an overall annual *negative* cost of -3.08/Mcf reduced.³⁹ Similarly, the state of Colorado’s Air Pollution Control Division (“APCD”) has found that pneumatic controller replacements would reduce emissions from each device by approximately 96%, and at a net annual cost of -\$1,084 per device.⁴⁰ The APCD determined that a new pneumatic controller would pay for itself in approximately fourteen months.⁴¹

Notably, APCD has required replacement of high-bleed controllers in the state’s ozone nonattainment area since 2008. This transition appears to have gone smoothly and, to our knowledge, no operators in the nonattainment area have requested a waiver of the requirement (even though the state’s regulations allow for such waivers).

Based on these analyses and state-level experiences, we offer the following recommendations with regard to pneumatic controllers:

- BLM should require prompt replacement of all high-bleed pneumatic controllers (i.e., controllers with a manufacturer-specified bleed rate exceeding 6 scf/h) with low- or no-bleed pneumatic controllers;

³⁴ ICF Report, at 3-15 (2014).

³⁵ Terri Shires & Miriam Lev-On, *Characterizing Pivotal Sources of Methane Emissions from Natural Gas Production* 26 (2012).

³⁶ *Id.* (finding an average of 8.6 pneumatic controllers at each of nearly 2,000 gathering and boosting facilities, of which approximately 7% are high-bleed models).

³⁷ *See* ICF Report, at B-6.

³⁸ *Id.* at 3-7, Table 3-2.

³⁹ ICF Report at 3-22, Table 3-7. Notably, ICF used a very conservative estimate of the capital costs of a new controller (\$3,000 per device).

⁴⁰ Colo. Dep’t of Public Health and Env’t, Air Pollution Control Div., *Regulatory Analysis for Proposed Revisions to Colorado Air Quality Control Commission Regulation Numbers 3, 6 and 7* at 54-55 (2014).

⁴¹ *Id.*

- BLM should also require that high-emitting intermittent pneumatic controllers be replaced with lower-emitting models where doing so is operationally feasible and would result in net emission reductions, as indicated in the ICF report;⁴²
- BLM should not limit such replacements to those meeting a specified economic threshold, as suggested in BLM’s briefing materials. Replacement of pneumatic controllers is widely considered to have an extremely rapid payback period in the majority of cases, and for this reason neither the state of Colorado nor Subpart OOOO provides such an exemption. The process of evaluating case-by-case applications for such an exemption would likely entail significant administrative burdens for BLM, with little compensating benefit; and
- BLM should include regular inspection and maintenance of pneumatic controllers as part of a broad leak detection and repair (“LDAR”) requirement for oil and gas facilities on federal lands (see section II(g) of these comments). Both EPA experience with the Natural Gas STAR program⁴³ and recent field studies⁴⁴ have indicated that pneumatic controllers emit at highly variable rates, and that even low-bleed pneumatic controllers can emit at very high rates if not properly operated and maintained. Regular LDAR at pneumatic controllers, especially if integrated into a broader LDAR program, is an effective way to identify and repair malfunctioning controllers. EPA’s Natural Gas STAR documentation indicates that the cost of maintenance is low and is quickly recouped through reduced losses of natural gas.⁴⁵

Pneumatic pumps. In addition to pneumatic controllers, BLM should also consider adopting policies to incentivize or require use of best technologies for mitigating natural gas losses from pneumatic pumps. Like pneumatic controllers, pneumatic pumps are a significant source of emissions – accounting for approximately 508,000 metric tons of methane in 2012, according to Annual Inventory.⁴⁶ However, neither BLM policies nor Subpart OOOO place limits on emissions from high-emitting pneumatic pumps.

Losses of natural gas from pneumatic pumps can be eliminated using modern technologies. Where grid electricity is available, replacing pneumatic glycol pumps (also known as Kimray pumps) with electric-powered pumps would eliminate emissions from those devices at a *negative* cost of -\$4.05 per Mcf of methane reduced. For purposes of the cost curve study, ICF estimated that emissions from approximately 50% of Kimray pumps could be abated in this manner, for a total reduction in methane losses of approximately 5.8 Bcf (7.25 Bcf of whole

⁴² ICF Report, at 3-15 to 3-16.

⁴³ EPA, *Options for Reducing Methane Emissions from Pneumatic Devices in the Natural Gas Industry* (2006) (noting that proper maintenance and tuning of pneumatic devices can reduce emissions by 5 to 18 scf/h [hereinafter EPA Pneumatics Options]).

⁴⁴ Prasino Group, *Final Report for Determining Bleed Rates for Pneumatic Devices in British Columbia* 15, 19, 35 (Dec. 18, 2013) (showing high variability of emission rates within individual classes and models of controllers, and stating that “Certain controllers can have abnormally high bleed rates due to operations and maintenance . . .”).

⁴⁵ EPA Pneumatics Options, at 1 (repair costs up to \$500, with payback ranging from immediate to 8 months).

⁴⁶ Annual Inventory, at A-193 to A-194, A-203.

gas).⁴⁷ In Pennsylvania, Texas, and other areas of the country, it is already common to use solar-powered electric pumps in lieu of pneumatic chemical injection pumps. ICF's cost curve analysis indicated that deploying this practice broadly through the oil and natural gas production segment would reduce methane losses by approximately 4.8 Bcf per year (about 6 Bcf whole gas), and at a low cost of approximately \$0.57 per Mcf of methane reduced.⁴⁸

In its forthcoming proposed rule, BLM should consider:

- Requiring that new chemical injection pumps use solar power, unless the operator demonstrates that this technology is infeasible for site-specific reasons;
- Requiring the use of electric-powered glycol pumps at new production facilities, where grid electricity is available; and
- Requiring that oil and gas operators replace existing chemical injection pumps and pneumatic glycol pumps with electric or solar-powered models where feasible.

e. BLM Should Require Mitigation of Emissions from Storage Vessels

EDF urges BLM to adopt rigorous standards to minimize the loss of natural gas and associated pollutants from existing storage vessels on BLM lands – modeled on requirements that EPA has already adopted for new storage vessels under Subpart OOOO. Storage vessels are an important source of harmful emissions, and can be cost-effectively controlled using proven technologies that can conserve valuable product.

Condensate and oil-bearing storage vessels are a significant source of both methane and smog-forming VOCs. According to the latest Annual Inventory, venting from condensate tanks without control devices accounts for nearly 190,000 metric tons of methane emissions per year. Methane emissions from oil tanks were estimated to be even greater, at approximately 267,000 metric tons per year.⁴⁹ This data is broadly consistent with the results of the GHGRP, which covers only large emitters of greenhouse gases. Companies subject to the GHGRP recorded emissions of approximately 143,000 metric tons of methane in 2012 from condensate tanks alone.⁵⁰ Vented emissions from condensate tanks tend to be especially rich in VOCs as well as methane – making them a large source of ozone-forming pollutants as well.⁵¹

Furthermore, the national estimates cited above are based on calculations that assume normal operating conditions for storage vessels. As a result, they do not take into account the potential for significant emissions of methane and VOCs resulting from malfunctions or

⁴⁷ ICF Report, at 3-16, 4-4.

⁴⁸ *Id.*

⁴⁹ Annual Inventory, at A-193, A-203.

⁵⁰ EPA Subpart W Summary, at 7.

⁵¹ EPA, *Oil and Natural Gas Sector Standards of Performance for Crude Oil and Natural Gas Production, Transmission, and Distribution: Background Technical Support Document for Proposed Standards* at 7-23 and Appendix A (2011) (average methane to VOC ratio of 0.219 for emissions from storage vessels).

maintenance oversights at poorly controlled storage vessels.⁵² A comprehensive study of 375 well sites commissioned by the City of Fort Worth in 2010, for example, found that leaks from poorly maintained tank thief hatches and vents were the single largest source of fugitive emissions.⁵³ Colorado’s APCD has similarly found that unintentional releases from thief hatches are an important problem that can be addressed through enhanced inspection and supplemental control equipment.⁵⁴

Technologies to mitigate storage vessel emissions have long been available and are cost-effective for high-emitting facilities. As EPA recognized in adopting emission standards for new storage vessels in 2012, there are at least two control devices – enclosed flares and vapor recovery units (“VRUs”) – that have been demonstrated to reduce storage vessel emissions by 95%. Using VRUs has the additional advantage of recovering saleable product, simultaneously promoting BLM’s goal of conserving natural resources while also reducing the cost of controlling emissions. ICF’s cost curve analysis found that installing VRUs at existing condensate and oil tanks that lack such systems would conserve approximately 5.9 bcf of methane per year at a cost of just \$0.21-0.33/mcf reduced.

Accordingly, EDF recommends that BLM adopt requirements for storage vessels that include the following components:

- A requirement that all existing storage vessels with the potential to emit at least six tons VOC per year achieve a 95% reduction in emissions, preferably by means of a VRU (including vessels containing condensate, petroleum, or produced water);
- A requirement – similar to that adopted by the state of Colorado earlier this year – that both new and existing storage vessels undertake regular, instrument-based LDAR to ensure that the 95% reduction requirement is achieved and to assure proper maintenance of thief hatches, closed vent systems, and other potential sources.

⁵² See Memorandum from Nick Parsons, EPA, *Leaks Observed From Fixed Roof and Floating Roof Fittings* (Feb. 6, 2012) (“EPA inspectors have conducted numerous [infrared camera-based] inspections of fittings on fixed and floating roofs where fittings have been found to be leaking In many cases, these vessels have been found to be leaking even when a visual inspection of the rooftop or floating roof fittings indicate that the gaskets, seals, and other elements of closure devices appear to be sound, and the conservation vent is not actively releasing to relieve increased pressure caused by diurnal temperature changes or filling of the storage vessel.”).

⁵³ Eastern Research Group, *Natural Gas Air Quality Study* 3-99 to 3-100 (2011). The study found 252 instances of leaking tank thief hatches, resulting in total organic compound (TOC) emissions of 4,483 tons per year. In addition, improperly maintained storage tank vents were found to result in an additional 2,076 tons of TOC per year.

⁵⁴ Colo. APCD, *Regulatory Analysis for Proposed Revisions to Colorado Air Quality Control Commiaaion Regulation Numbers 3, 6, and 7* at 35-37 (Feb. 11, 2014) (“Field observations using IR cameras and other methodologies indicate that in actuality emissions from controlled storage tanks often escape through the thief hatches and pressure relief valves (PRV) and therefore are not being combusted in the flare. This occurs when the tank cannot adequately contain the flashing emissions that occur when pressurized liquids from the separator are dumped into the atmospheric tank. To address this issue, the Division is proposing new regulatory language clarifying that all emissions from controlled storage tanks must be routed to the control device and that these tanks must be operated without venting emissions from thief hatches, PRVs and other openings, except when venting is reasonably necessary for maintenance, gauging, or safety of personnel and equipment.”).

f. BLM Should Require Mitigation of Natural Gas Losses from Liquids Unloading Operations

EDF is encouraged to see that BLM is considering measures to reduce venting during liquids unloading operations as part of this proposed rule, and urges BLM to adopt best available technologies for mitigating this significant source of natural gas waste.

There is broad agreement that liquids unloading represents a large source of wasted natural gas on a national scale, although estimates vary as to the magnitude of emissions from individual liquids unloading events. One recent estimate of liquids unloading emissions comes from EPA's GHGRP, which requires reporting of liquids unloading from large operators of oil and gas production facilities. In 2012, entities subject to the GHGRP reported liquids unloading operations from almost 59,000 wells, with total emissions of 276,378 metric tons of methane. This equates to approximately 18.6 billion cubic feet of whole gas, or over 7.7 million metric tons of CO₂ (using a 100-year GWP of 28).⁵⁵ This total is very similar to a separate estimate reported in the 2012 API/ANGA survey of almost 43,000 wells, and is also nearly identical to the emissions total reported in the Annual Inventory (which uses the API/ANGA study as a basis for calculating emissions).⁵⁶ According to the GHGRP, liquids unloading is the fifth-largest source of methane in the oil and gas sector, and the eighth-largest source of overall natural gas losses in the sector.⁵⁷

Current BLM policy allows unlimited venting during liquids unloading for a period of up to 24 hours, without any cumulative venting limits and without requiring any of the technologies and practices now available to prevent or reduce venting during liquids unloading. Furthermore, Subpart OOOO does not currently require mitigation of these emissions. This is a clear regulatory oversight given that various cost-effective technologies and practices can prevent or mitigate the waste of natural gas during liquids unloading operations – including the use of automated plunger lifts, artificial lift systems, and velocity tubing.⁵⁸ These methods, when properly applied, can virtually eliminate liquids unloading emissions and increase the productivity of the well. ICF's cost curve study found, for example, that the use of plunger lifts costs just \$0.74 per Mcf reduced, even if it is assumed that the capital cost of a plunger lift is more than twice the amount reported to EPA's Natural Gas STAR program and no improvements in productivity are assumed.⁵⁹

Recognizing the effectiveness of these techniques, the state of Colorado adopted a requirement earlier this year that all operators in the state first attempt to carry out liquids unloading without venting to the atmosphere, and limit “any venting to the atmosphere . . . to the

⁵⁵ EPA, *Oil and Natural Gas Sector Liquids Unloading Processes 5* (2014) (hereinafter EPA Liquids Unloading White Paper).

⁵⁶ *Id.* at 7, 10.

⁵⁷ EPA Subpart W Summary, at 7.

⁵⁸ EPA Liquids Unloading White Paper, at 16-19.

⁵⁹ ICF Report, at 3-17 to 3-18, 4-4.

maximum extent practicable.” To assure compliance with these requirements, Colorado regulations require careful records of the date, time, cause, and duration of liquids unloading.⁶⁰

EDF believes it would be appropriate for BLM to adopt a similar requirement for all wells on BLM lands, supplemented by BLM guidance as to best management practices for preventing or minimizing venting. Operators should be required first to attempt to carry out the liquids unloading operation without venting, using a recognized technique that is appropriate for site-specific conditions and consistent with BLM guidance. Should a zero-emissions liquids unloading prove infeasible, the operator should then be required to minimize venting and to carefully monitor the liquids unloading operation.

g. BLM Should Require Rigorous Leak Detection and Repair

A rigorous LDAR program is an essential component of a strategy to reduce vented and flared emissions on public lands. Reducing emissions from leaking equipment and components represents one of the largest opportunities to mitigate methane emissions and capture wasted natural gas. In fact, ICF’s cost curve analysis found that LDAR to reduce fugitive emissions accounted for 36% – or almost 60 Bcf of methane – of the total opportunity to reduce U.S. onshore methane emissions. Moreover, the ICF analysis is based on average emissions values, but recent studies suggest that emissions may exhibit a high-skewed distribution, with super-emitters accounting for a substantial portion of total emissions. The super-emitter phenomenon may explain some of the differences between top-down and bottom-up measurement studies⁶¹ and only further underscores the need for frequent, comprehensive leak detection and repair.

Though BLM does not currently require LDAR at facilities on federal lands, the agency identified LDAR as a mitigation option in its public presentations, and EDF urges BLM to move forward with rigorous LDAR standards applicable to all facilities on federal lands. There are several key elements to a comprehensive, rigorous LDAR program:

- Frequent Inspections: The recent Colorado standards, EPA analyses, and several recent reports conclude that more frequent LDAR inspections result in fewer emissions and consequently greater gas savings.⁶² ICF’s cost-curve analysis finds that annual inspections reduce emissions by 40%; quarterly inspections by 60%; and monthly inspections by 80%.⁶³ Colorado’s rules reflect the importance of frequent inspections, requiring well sites that emit more than 12 tons per year (“tpy”) of VOCs to inspect for leaks on a monthly basis. Accordingly, we urge BLM to adopt an LDAR standard that requires monthly inspection.
- Comprehensive Coverage: It is likewise critical that operators comprehensively inspect sources on federal lands, as leaks can come from different types of components and equipment. Colorado’s rules include LDAR requirements applicable to well-sites,

⁶⁰ 5 COLO. CODE REGS. § 1001-9 XVII.H.

⁶¹ A.R. Brandt et al., Methane Leaks from North American Natural Gas Systems, 343 SCIENCE 733 (Feb. 14, 2014), available at <http://www.novim.org/images/pdf/ScienceMethane.02.14.14.pdf>

⁶² ICF Report, at 3-10; Carbon Limits at 19.

⁶³ ICF Report, at 3-10.

storage tanks, and compressors,⁶⁴ and ICF’s cost-curve report identifies both well-sites and compressors as significant opportunities to reduce fugitive emissions.⁶⁵ The Carbon Limits report underscores these findings and also concludes that LDAR programs may help to identify other malfunctioning devices like pneumatic controllers.⁶⁶ BLM should therefore require comprehensive LDAR at all potential leaking sources on federal lands.

- Rigorous Detection Thresholds and Swift Repair: BLM sought comment on detection and repair thresholds. We urge the agency to adopt a rigorous detection threshold of 500 ppm, consistent with EPA’s requirements for gas processing plants and many existing state LDAR requirements, which are more fully described in Table 1, below. We also urge BLM to require swift repair of all detected leaks, as both the ICF Report and Carbon Limits analyses confirm is highly cost-effective and important to secure maximum gas savings.⁶⁷ Finally, as part of the repair requirement, we encourage BLM to consider requiring operators to ensure that any replacements for failing components are certified to an industry-accepted low-leak or “leakless” standard.⁶⁸
- Continuous Improvement: Methane detection technologies are advancing rapidly, and it is imperative that LDAR requirements incentivize development of innovative approaches and swiftly incorporate these new technologies. We recommend BLM establish a rigorous LDAR requirement based on the best available technology and, in parallel, provide for an alternative compliance pathway based on an operator’s ability to demonstrate that the pathway achieves greater or equal emissions reductions. We urge BLM to rapidly respond to these alternative pathway requests, to commit to 5-year technology reviews, and to expressly state that this framework is intended to foster innovation in LDAR technologies with an aim to increase accuracy and reliability through deployment of rigorous continuous monitoring systems. In addition, we encourage BLM to consider pilot programs with operators that would help to develop and deploy these new technologies.

The table below provides additional information on existing state and provincial LDAR requirements.

⁶⁴ 5 COLO. CODE REGS. § 1001-9 XVII.F.

⁶⁵ ICF Report at 4-3.

⁶⁶ Carbon Limits, *Quantifying the Cost-effectiveness of Systematic Leak Detection and Repair Programs Using Infrared Cameras* 5 (Mar. 2014), available at http://www.carbonlimits.no/PDF/Carbon_Limits_LDAR.pdf.

⁶⁷ See ICF Report, at Table 3-7 (showing costs of less than \$3/mcf methane reduced for production and gathering LDAR and cost savings for LDAR at reciprocating compressors in the midstream segments); see also Carbon Limits at 17-18 (requiring repair of all leaks adds modest additional costs but results in important additional emissions reductions).

⁶⁸ Certain low-leak technologies, such as “Low-E” valves and valve packings, have been in use for over fifteen years; have been found to leak rarely and at minimal rates; and are available at a moderate cost premium of 10-35% relative to standard valves. See Kosta Loukeris, *Low Leak Valve and Valve Packing Technology (Low-E Valve)* 4 (EPA, Aug. 16, 2011). See also Joseph Wilwerding, *Fugitive Emissions From Valves: Update, Hydrocarbon Processing V-81, V-82* (June 2010) (indicating that costs for low-leak valve packings are “similar and sometimes less than costs for similar equipment.”).

TABLE 1: State & Provincial Leak Detection and Repair Measures

CALIFORNIA	San Joaquin, ⁶⁹ South Coast, ⁷⁰ Santa Barbara, ⁷¹ and Ventura ⁷² all require quarterly monitoring using Method 21. Specific requirements apply in each air district, and a less frequent requirement may apply in certain circumstances or after reaching certain compliance levels.
COLORADO	The Colorado Air Quality Control Commission adopted statewide LDAR requirements on February 23, 2014. The new rule requires LDAR for well production facilities, storage vessels, and compressor stations using Method 21, infrared camera, or an equivalent instrument-based detector. ⁷³
OHIO	The Ohio EPA, Division of Air Pollution Control, issued revised Model General Permits for new unconventional well sites on April 4, 2014. ⁷⁴ The updated permits adopt statewide LDAR requirements mandating quarterly monitoring using an IR camera or Method 21 compliant analyzers.
PENNSYLVANIA	Pennsylvania’s General Permit for Natural Gas Compression and/or Processing Facilities (GP-5) requires quarterly LDAR at new and existing natural gas plants and compressor stations. ⁷⁵ The state also recently revised Exemption 38, which requires yearly LDAR in order to exempt new well sites from the permitting process as minor sources. ⁷⁶
TEXAS	<p>Texas has a voluntary LDAR program that covers any authorized equipment in VOC service, including processing storage and transfer.⁷⁷ Incentives are available to participants to deploy LDAR, and the program requires annual leak surveys. Repairs must be completed with 45 days of detection (unless a repair period in excess of 45 days is required).</p> <p>Texas also requires quarterly Method 21 inspections of new large facilities with greater than 10 TPY VOCs from equipment leaks in the Barnett Shale,⁷⁸ and of certain new</p>

⁶⁹ San Joaquin R. 4409 (2005) (applies to oil and gas production facilities and natural gas processing plants).

⁷⁰ South Coast R. 1173 (1989) (applies to oil and gas production facilities and natural gas processing plants, as well as refineries, components and pressure regulating valves (“PRVs”).

⁷¹ Santa Barbara Rule 331 (1991) (applies to oil and gas production facilities and natural gas processing plants, as well as refineries, components and pipeline transfer stations).

⁷² Ventura Rule 74.10 (1989) (applies to oil and gas production facilities and natural gas processing plants, as well as pipeline transfer stations, pump seals, compressor seals, PRVs and stuffing boxes).

⁷³ 5 COLO. CODE REGS. § 1001-9 § XVII.F.

⁷⁴ Ohio Env’tl. Prot. Agency, General Permit 12.1(C)(5)(c)(2), 12.2(C)(5)(c)(2), <http://www.epa.state.oh.us/dapc/genpermit/genpermits.aspx> (click “Recently Issued Model General Permits”).

⁷⁵ Pa. Dep’t of Env’tl. Prot., General Permit for Natural Gas Compression and/or Processing Facilities (GP-5), <http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-94153/2700-FS-DEP4403.pdf>.

⁷⁶ Pa. Dep’t of Env’tl. Prot., Air Quality Permit Exemptions, No. 275-2101-003, <http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-96215/275-2101-003.pdf>.

⁷⁷ 30 TEX. ADMIN. CODE §§ 101.150–101.155.

⁷⁸ 30 TEX. ADMIN. CODE § 116.620(a)–(k) (non rule standard permit applicable only for new sources—constructed after April 1, 2011—in the Barnett Shale with total facility VOC emissions greater than 25 TPY).

	large facilities located outside the Barnett Shale based on proximity to homes and other buildings. ⁷⁹
WYOMING	The Wyoming Department of Environmental Quality requires new and modified facilities located in the Upper Green River Basin Nonattainment Area that have the potential to emit at least 4 TPY of VOCs from fugitive sources to institute quarterly monitoring consisting of Method 21, infrared camera, or some combination of the preceding. ⁸⁰
ALBERTA	Alberta requires production and certain pipeline facilities to “develop and implement a program to detect and repair leaks” based on Method 21. ⁸¹

h. BLM Should Minimize Emissions from Compressors

In its venting and flaring presentation, BLM did not identify mitigating emissions from compressors as a significant opportunity to capture wasted gas on federal lands. Compressor emissions from the onshore production sector, however, may be underestimated.⁸² Moreover, BLM’s analysis, which focuses exclusively on the production sector, omits substantial compressor emissions from the gathering, processing, and transmission sectors. Indeed, ICF’s 2018 projected inventory shows that almost a quarter of the emissions come from compressors – roughly 94 billion cubic feet of methane.⁸³ Compressors in these segments may be found on federal ROW, and, as discussed above, BLM has manifest authority to require these sources to minimize wasted gas.

Available technologies can reduce compressor emissions cost-effectively. In particular, the ICF Report found that minimizing methane emissions from wet seal centrifugal compressors was one of the single largest methane mitigation opportunities across the natural gas value chain. The Report also found that replacing reciprocating compressor rod packing and performing regular LDAR at reciprocating compressors could achieve important gas savings. The table below reproduces select portions of Table 4-1 in the ICF Report.

TABLE 2: Cost Effectiveness of Compressor Mitigation Measures

Source / Measure	Annualized Cost (\$ million / yr)*	BCF Methane Reduced/Year	\$/mcf Methane Reduced*	Initial Capital Cost (\$ million)
Centrifugal Compressors (wet)	-\$58.7	19.1	-\$3.07	\$79.6

⁷⁹ 30 TEX. ADMIN. CODE § 116.620(l) (standard permit applicable for new sources located outside the Barnett Shale and existing statewide sources with total facility VOC emissions greater than 25 TPY).

⁸⁰ Wyo. Dep’t of Env’tl. Quality, Oil and Gas Production Facilities: Chapter 6 Section 2 Permitting Guidance (June 1997, Revised Sept. 2013).

⁸¹ Alberta Energy Regulator (“AER”) Directive 060, Section 8.7 (applies to all “upstream” petroleum industry facilities as well as gas pipeline facilities licensed by AER under the Pipeline Act).

⁸² ICF Report, at B-9.

⁸³ ICF Report, at 3-8.

seal gas capture)				
Compressor Stations (Storage) LDAR	-\$4.5	1.5	-\$3.03	\$2.8
Reciprocating Compressor Fugitives LDAR	-\$10.5	32.3	-0.33	\$61.6
Compressor Stations (Transmission) LDAR	\$7.7	2.8	\$2.79	\$5.3
Reciprocating Compressor Rod Packing	\$22.3	3.6	\$6.11	\$182.3

* negative numbers represent cost savings

Given these substantial, highly-cost effective opportunities to capture wasted gas, we urge BLM to include requirements to reduce methane emissions from compressors.

III. CONCLUSION

The President's Strategy to Reduce Methane Emissions sets forth an important role for BLM in reducing venting and flaring on federal lands, and EDF is encouraged that BLM is moving forward swiftly to meet this presidential commitment. EDF urges BLM to finalize a rigorous rule, limiting venting and flaring on federal lands as described above, and we look forward to working collaboratively with the agency as it continues to move forward on this critical action.

Respectfully submitted,

Tomás Carbonell
Holly Pearen
Peter Zalzal
Brian Korpics
Environmental Defense Fund
1875 Connecticut Ave., NW
Suite 600
Washington, DC 20009



ENVIRONMENTAL LAW & POLICY CENTER

Protecting the Midwest's Environment and Natural Heritage

May 30, 2014

Department of the Interior
Bureau of Land Management
Neil Kornze, Director
1849 C Street NW, Rm. 5665
Washington, D.C. 20240

Mitchell Leverette, Division Chief – Solid Minerals
20 M Street SE
Washington, D.C. 20003
Submitted electronically to: blm_wo_og_comments@blm.gov

Re: Comments on Venting and Flaring of Gas Produced from Onshore Federal Lands

Dear Director Kornze, Division Chief Leverette and BLM Staff:

The Environmental Law & Policy Center (“ELPC”) appreciates the opportunity to submit the following comments on the importance of implementing strong regulations regarding the venting and flaring of natural gas to prevent methane emissions. Our organization is very engaged in efforts to reduce venting and flaring in North Dakota, particularly to protect special places such as the Dakota Prairie Grasslands, Schnell Ranch Recreation Area and Theodore Roosevelt National Park. ELPC is supportive of BLM’s regulation revision effort in light of the negative effects of flaring and venting in the Bakken region in recent years. Strengthening BLM’s regulations will not only positively impact the millions of acres of federal and tribal lands that BLM manages in North Dakota and across the nation, but will provide a framework for states like North Dakota as they continue to address venting and flaring on private and state-owned lands.

Economic and Environmental Impact of Venting and Flaring

Venting and flaring natural gas are not only a waste of a valuable domestic natural resource, but also result in lost revenue for BLM, the State of North Dakota, and mineral rights owners, as well as in serious adverse health and environmental impacts due to the air pollution they release. In a report released last year, Ceres estimated that, in 2012 alone, producers in

35 East Wacker Drive, Suite 1600 • Chicago, Illinois 60601
(312) 673-6500 • www.ELPC.org

Nancy Loeb, Chairperson • Howard A. Learner, Executive Director

Columbus, OH • Des Moines, IA • Jamestown, ND • Madison, WI • St. Paul, MN • Sioux Falls, SD • Washington, D.C.



North Dakota flared over \$1 billion worth of natural gas.¹ In May 2013, gas flaring was costing the state approximately \$3.6 million per day in lost revenue.² Recently, the Western Values Project estimated that if all the gas vented and flared on all federal lands in 2013 were sold instead, the BLM would have received at least \$53 million in royalties.³

Venting and flaring of natural gas are also major sources of pollution that adversely affect public health and the environment. When associated natural gas is vented from wells, methane, which makes up a large percentage of natural gas, is released directly into the atmosphere.⁴ Methane causes great damage to the environment due to its severe global warming impacts. Methane has 86 times more global warming potency than carbon dioxide over a 20-year period.⁵ Greenhouse gases such as methane and carbon dioxide endanger health and welfare by, among other things, increasing the likelihood of severe heat waves, increasing smog and wildfires, expanding the geographic range of food – and water – borne pathogens, further stressing water resources, and adversely impacting crop yields.⁶

All those impacts have a significant cost to society. U.S. EPA and other social scientists have developed economic formulas to determine the “social cost” of methane, which incorporates “the impacts of climate change on all relevant market and non-market sectors, including agriculture, energy production, water availability, human health, coastal communities, biodiversity, and so on.”⁷ A 2012 paper funded by the U.S. Environmental Protection Agency’s National Center for Environmental Economics found the social cost of methane to be at least \$370 per ton.⁸ Even the lower social cost of methane calculated by another recent paper – \$205 per ton – is still substantially higher than the social cost of an equivalent amount of carbon dioxide.⁹

¹ Ryan Salmon and Andrew Logan, “Flaring Up: North Dakota Natural Gas Flaring More than Doubles in Two Years,” *Ceres*, July 2013 (“Ceres Report”) at 7, available at <http://www.ceres.org/resources/reports/flaring-up-north-dakota-natural-gas-flaring-more-than-doubles-in-two-years> (last accessed April 18, 2014).

² *Id.*

³ Western Values Project, “Up in Flames: Taxpayers Left Out in the Cold as Publicly Owned Natural Gas is Carelessly Wasted,” May 2014, at 4, available at <http://westernvaluesproject.org/wp-content/uploads/2014/05/Venting-Flaring-Final1.pdf> (last accessed May 22, 2014).

⁴ Michael Ratner and Mary Tiemann, “An Overview of Unconventional Oil and Natural Gas: Resources and Federal Actions,” Congressional Research Service, 15 July 2013, at 9 n.22, available at <http://www.fas.org/sgp/crs/misc/R43148.pdf> (last accessed Oct. 9, 2013).

⁵ Intergovernmental Panel on Climate Change, “5th Assessment Report,” September 2013, at 714, available at http://www.climatechange2013.org/images/report/WG1AR5_Chapter08_FINAL.pdf (last accessed May 28, 2014).

⁶ See U.S. EPA, “EPA’s Endangerment Finding: Health Effects,” available at http://epa.gov/climatechange/Downloads/endangerment/EndangermentFinding_Health.pdf (last visited Oct. 9, 2013), and “EPA’s Endangerment Finding: Environmental and Welfare Effects,” available at http://epa.gov/climatechange/Downloads/endangerment/EndangermentFinding_EnvironmentalEffects.pdf (last accessed Oct. 11, 2013).

⁷ A.L. Marten and S.C. Newbold, *Estimating the Social Cost of Non-CO2 GHG Emissions: Methane and Nitrous Oxide*, Feb. 13, 2012, at 3, available at <http://yosemite.epa.gov/EE/epa/eed.nsf/WPNumber/2011-01?OpenDocument> (last accessed May 28, 2014).

⁸ *Id.* at 14.

⁹ Stephanie Waldhoff et al., *The Marginal Damage Costs of Different Greenhouse Gases: An Application of Fund*, Working Paper No. 380, March 2011, at 8, available at <http://www.esri.ie/UserFiles/publications/WP380/WP380.pdf> (last visited May 28, 2014).

Venting natural gas also allows the direct release into the atmosphere of volatile organic compounds (“VOCs”), toxic chemicals that also comprise a significant proportion of natural gas. VOC pollution is associated with a whole host of known, severe health impacts, including but not limited to the creation of ozone (smog), which aggravates and exacerbates respiratory ailments such as asthma and emphysema and can lead to heart failure or even premature death.¹⁰

Though one method to reduce methane and VOC pollution from oil and gas wells is to flare the natural gas, flaring creates its own set of serious environmental and public health problems. First, when methane is combusted, it is converted into carbon dioxide (“CO₂”). While CO₂ is a less potent global warming pollutant than methane in the short term, it stays in the atmosphere much longer and thus has severe negative environmental impacts over the long haul. In 2012, gas flaring in North Dakota produced 4.5 million metric tons of CO₂ – as much carbon dioxide as about 1 million cars would emit in a year.¹¹

Just like methane, CO₂ emissions impose significant costs on society. Along with their determination of the social cost of methane, the U.S. EPA and other federal agencies have developed a calculation for the social cost of carbon, which is meant to be “a comprehensive estimate of climate change damages and includes, among other things, changes in net agricultural productivity, human health, and property damages from increased flood risk.”¹² If gas flaring in North Dakota in 2015 produces as much CO₂ as was produced in 2012 – a likely scenario, with the volume of flared gas growing significantly as drilling continues to grow in North Dakota – the social cost of carbon pollution from North Dakota’s flares in 2015 alone will be between \$54 million and \$522 million.¹³

In addition to CO₂, natural gas flaring also produces substantial amounts of harmful, smog-forming nitrogen oxides (“NO_x”), which result from the chemical reaction that occurs when the VOCs contained in natural gas are combusted.¹⁴ Like VOC and ozone pollution, NO_x pollution is linked to adverse respiratory health effects, including exacerbation of asthma and airway inflammation.¹⁵

Moreover, flares allow significant amounts of methane and VOCs to be released into the air uncombusted. In August 2012, the U.S. EPA estimated that, even using flares with efficient combustion, VOCs that remain uncombusted from a single well in the Ft. Berthold Reservation in the Bakken would amount to 75 tons of VOC emissions per year.¹⁶ Considering that over 9,300 wells were in production in North Dakota in July 2013, EPA’s estimate of 75 tpy

¹⁰ Richard K. Lattanzio, “Air Quality Issues in Natural Gas Systems,” Congressional Research Service, March 4, 2013, at 10, available at <http://www.civil.northwestern.edu/docs/Tight-Shale-Gas-2013/Air-Quality-Issues-Natural-Gas-Ratner-2013.pdf> (last accessed Oct. 9, 2013) (“Air Quality Issues Report”).

¹¹ Ceres Report at 6.

¹² U.S. EPA, “Fact Sheet: Social Cost of Carbon,” November 2013, at 1, available at <http://www.epa.gov/climatechange/Downloads/EPAactivities/scc-fact-sheet.pdf> (last accessed April 18, 2014).

¹³ See Fact Sheet: Social Cost of Carbon at 3.

¹⁴ Air Quality Issues Report at 5-6, and U.S. EPA, “Approval and Promulgation of Federal Implementation Plan for Oil and Natural Gas Well Production Facilities; Fort Berthold Indian Reservation (Mandan, Hidatsa, and Arikara Nations), ND,” (“Ft. Berthold FIP”) 77 Fed. Reg. 158 (Aug. 15, 2012).

¹⁵ Air Quality Issues Report at 11.

¹⁶ Ft. Berthold FIP at 48886.

VOCs/well suggests that over 210,000 tons of VOCs per year are polluting North Dakota's from flare-controlled wells alone.¹⁷

The pollution coming from the venting and flaring of natural gas in the Bakken is already showing up in North Dakota's air monitoring system. The North Dakota Department of Health has found that North Dakota's ozone monitoring network reveals ambient smog levels approaching the 75 parts per billion ("ppb") health-based National Ambient Air Quality Standards ("NAAQS") for ozone set in 2008, and in some cases exceeding the 60-70 ppb threshold that EPA's Clean Air Science Advisory Committee has repeatedly recommended as the standard necessary to protect human health. Several air monitors in the northwest portion of the state already show significant ozone concentrations.¹⁸ Notably, in 2011, a monitor in the Northern Unit of Theodore Roosevelt National Park, downwind from the Bakken, recorded a spike in 1-hour ozone of 327 ppb, more than four times the national air quality standard.¹⁹

BLM's Regulations Should Be Updated

In light of the negative impacts of venting and flaring natural gas, BLM should update its regulations and requirements to minimize waste and promote conservation of natural gas. Such waste-prevention requirements are not only common sense – they are also mandated by the Mineral Leasing Act and Federal Land Policy Management Act, which require BLM to prevent waste and to manage federal lands in a manner that will protect the quality of federal resources, including "air and atmospheric" resources. *See, e.g.*, 30 U.S.C. § 225; 44 U.S.C. § 1701(a)(8). Though in some areas there may be bottlenecks in moving gas to pipelines because of limited infrastructure or gathering lines without enough capacity, it is technologically possible and economically feasible for operators to capture the gas at the well site to limit flaring and venting and BLM's regulations should reflect that reality. Existing capture technologies are particularly economical to install at well sites in the Bakken in North Dakota because of the unique qualities of the natural gas, including greater amounts of liquids such as ethane, propane, butane, or natural gasoline, and are described in further detail below.²⁰ In addition, BLM's regulations should be updated to mandate use of other economically feasible technologies to minimize methane emissions throughout the processing and transportation of natural gas.

Though North Dakota natural gas is particularly economical to capture, reducing methane emissions in other parts of the country is also technically and economically feasible. A recent study by ICF International examined opportunities for methane reduction in the U.S. onshore oil and gas industries and highlighted a number of economically feasible technologies and

¹⁷ See Lynn Helms, "Director's Cut [Report on June/July 2013 Production], 13 Sept. 2013, NDIC Department of Mineral Resources, ("Sept. 2013 Director's Cut"), at 1, available at <https://www.dmr.nd.gov/oilgas/directorscut/directorscut-2013-09-13.pdf> (last accessed Oct. 9, 2013).

¹⁸ See North Dakota Department of Health, *Annual Report: North Dakota Air Quality Monitoring Data Summary 2011*, available at http://www.ndhealth.gov/aq/ambient/Annual%20Reports/ANN_11.pdf (last accessed Oct. 9, 2013).

¹⁹ See *id.* at Figure A4-10.

²⁰ Luke Geiver, "Aware of the Flare," *The Bakken Magazine*, November 19, 2013, available at <http://thebakken.com/articles/413/aware-of-the-flare> (last accessed April 15, 2014).

techniques.²¹ The study concluded that a 40% reduction in methane emissions from the oil and gas industries is projected to be achievable with existing technologies at a total cost of \$0.01 per Mcf of natural gas produced.²²

During the public forums this spring, BLM staff identified a number of major topics to address in their revised regulations including casinghead and associated gases, liquids unloading, gas conservation plans, well completions, production tests, storage tank emissions, pneumatic devices, and leak detection and repair. ELPC's comments on these topics, as well as on inspection and enforcement, are below.

Casinghead and Associated Gases

To minimize waste and protect the environment, BLM should revise its regulations to prohibit flaring of casinghead and associated gases except in very limited circumstances.

Prohibiting flaring of casinghead and associated gases except in limited circumstances (for example, when flaring is necessary to abate imminent risks of severe harm to workers) makes sense from both an economic and an environmental perspective. There are a variety of technically feasible and economically reasonable technologies that have been developed to capture and use otherwise-flared gas. One of those methods is, of course, to connect the well to a gathering line, through which the natural gas can be transported to gas processing facilities and then on to the wider natural gas market for electricity generation or heating. Connection to gathering lines is a fully accepted and acceptable method for limiting methane emissions, and BLM should require operators to consider that approach in formulating their Gas Conservation Plans (discussed in further detail below). But gathering lines have some downsides: they can become oversubscribed and thus lack capacity to receive gas from new wells, and – because they are significant infrastructure projects – they can take some time to construct.

Fortunately, there are a number of viable alternative technologies that are already available, economically reasonable, and can be deployed in a shorter timeframe than it may take to get a well connected to a gathering line. Projects and efforts by state and industry actors in North Dakota provide good examples of such alternative technologies. In 2003, the State of North Dakota created the North Dakota Oil and Gas Research Program, a state-industry partnership which provides grant funding to a number of projects, including those demonstrating the feasibility of capturing associated gas onsite and utilizing it in a variety of ways.²³

Oil and Gas Research Program grantees have included the University of North Dakota's Environmental Energy Research Center ("EERC"), Blaise Energy, and Bakken Express. The University of North Dakota's EERC studied a variety of possible end uses for associated gas including natural gas liquids recovery, compressed natural gas for vehicles, and electric power

²¹ ICF International, "Economic Analysis of Methane Emission Reductions Opportunities in the U.S. Onshore Oil and Natural Gas Industries" ("ICF Methane Reduction Study"), March 2014, available at http://www.edf.org/sites/default/files/methane_cost_curve_report.pdf (last accessed May 19, 2014).

²² *Id.*

²³ See North Dakota Oil and Gas Research Council Website, <http://www.nd.gov/ndic/ogrp-infopage.htm> (last visited May 29, 2014).

generation.²⁴ The EERC study concluded that using associated gas for power, either as grid support or for local load, would be very scalable to the resources available, have ease of mobility and be very likely deployable at a small scale too.²⁵ Blaise Energy's project further demonstrated the commercial viability of using associated gas onsite for electrical generation.²⁶ Blaise Energy's generators and other equipment are in skid-mounted containers to be located at the wellhead.²⁷ After the equipment is delivered to the wellhead, a gas line is connected from the operator to the Blaise equipment and an electrical interconnect is set up between the Blaise equipment and the grid.²⁸

The EERC also evaluated and confirmed the viability of using captured natural gas to power onsite equipment. One EERC project demonstrated using associated gas at the wellhead as a fuel to power the diesel generators.²⁹ The project concluded that "1.8 billion cubic feet of gas could be used annually to power 200 drilling rigs in North Dakota, saving over \$72 million in fuel cost[s]."³⁰

Liquids Unloading

BLM should also adopt stringent requirements for well operators to put in place well-established liquids unloading technologies that significantly minimize methane and other pollution. Similar to casinghead and associated gases, liquids unloading produces a very substantial volume of methane pollution.³¹ Also like casinghead and associated gases, there are several available, economically-feasible technologies which BLM should require to minimize methane pollution during liquids unloading. Those include plunger lifts, the use of pumps to lift liquids, and installation of small-diameter tubing into the well to increase the velocity of the gas as it comes up the well.³² Use of those proven technologies could significantly cut methane emissions at a very low cost to operators.

Moreover, BLM should further revise its regulations to set cumulative duration limits for liquids unloading over the course of some set time period, such as a month. Preventing liquids unloading events that last more than 24 hours does little to limit methane pollution if an unlimited number of 24-hour events are allowed in a given month. Finally, to the extent BLM allows operators to exceed such cumulative duration limits or use liquids unloading techniques

²⁴ John Harju, et al., Webinar for North Dakota Pipeline Authority, "End-Use Technology Study—An Assessment of Alternative Uses for Associated Gas," November 5, 2012, available at <http://ndpipelines.files.wordpress.com/2012/11/eerc-slides-nov-5-2012.pdf> (last visited May 29, 2014).

²⁵ *Id.*

²⁶ Blaise Energy, Inc., Brief on G-019-043 "Flare Gas—Power Generation Commercial Viability Pilot," July 7, 2011, available at <http://www.nd.gov/ndic/ogrp/info/g-019-043-brief.pdf> (last visited May 29, 2014).

²⁷ *Id.*

²⁸ *Id.*

²⁹ University of North Dakota Environmental Energy Research Center, "Bakken Production Optimization Program—Reduced Gas Flaring," available at <http://www.undeerc.org/Bakken/Reduced-Gas-Flaring.aspx> (last visited May 29, 2014).

³⁰ *Id.*

³¹ U.S. EPA Office of Air Quality Planning and Standards, *Oil and Natural Gas Sector Liquids Unloading Processes 2-3* (White Paper, April 2014), available at <http://www.epa.gov/airquality/oilandgas/pdfs/20140415liquids.pdf> (last visited May 30, 2014).

³² *Id.* at 14, 20-23.

not identified above in any circumstances, operators must not be permitted to do so without express written pre-approval from BLM.

Gas Conservation Plans

ELPC supports BLM's proposal to require Gas Conservation Plans. Such plans should require the implementation of economically feasible gas gathering technologies at the well site, including but not limited to connection to a gathering line and other gas capture technologies, examples of which were discussed above. BLM should only approve Gas Conservation Plans that call for flaring only in very limited circumstances or not at all.

In those limited instances where onsite capture technology is not useable and the only viable gas capture technique is connection to a gathering line, BLM should adopt regulations that restrict any oil and gas operations that could lead to venting or flaring until those gathering lines are in place and ready to receive gas from the well. If BLM is unwilling to stay operations until gathering lines are ready, at minimum, BLM should make clear in its regulations that companies must undertake the construction of gathering line infrastructure within a reasonable time frame. Otherwise, if BLM decides to allow flaring during the construction period (which, as we note herein, it need not do), companies could use the construction regulation as a loophole to continue flaring without consequences. In addition, to incentivize companies to capture gas as quickly as possible, BLM should not allow extensions of any flaring approvals from initial construction timelines and instead should subject operators that do not comply with those timelines to penalties and royalty payments for flared (or any vented) gas.

Well Completions and Production Tests

As BLM recognizes, NTL-4A and BLM regulations are insufficient to prevent unnecessary venting and flaring from both well completions and production tests. With regard to the latter, NTL-4A currently allows gas well flaring without a royalty cost for unlimited well purging and evaluation tests, and grants so much discretion to the Supervisor that even the 30 day maximum for well production tests can be overridden indefinitely for seemingly no reason. *See* NTL-4A, Section III. BLM should adopt regulations for leak detection and monitoring in the first instance and amend its regulations to prevent flaring and venting during production tests to the fullest extent possible. Doing so would be consistent with 43 C.F.R. § 3162.5-1, which requires operators to conduct operations in a manner that protects environmental quality.

With regard to well completions, BLM should require that operators of all wells – oil, gas, and mixed – implement the proven, economically reasonable “green completions” technologies that EPA requires, under its 2012 New Source Performance Standards, at natural gas wells.³³ Such well completion requirements are essential given that much of the methane pollution that comes from oil and gas wells is released during completions, with lesser amounts coming up wells in the subsequent production phase.

³³ Oil and Natural Gas Sector: New Source Performance Standards and National Emissions Standards for Hazardous Air Pollutants Reviews, 40 C.F.R. pt. 60 and 63 and U.S. EPA, “Overview of Final Amendments to Air Regulations for the Oil and Natural Gas Industry: Fact Sheet,” 1, available at <http://www.epa.gov/airquality/oilandgas/pdfs/20120417fs.pdf> (last visited May 30, 2014).

To the extent BLM allows any venting or flaring at all during well completions or production tests, BLM should amend its regulations to require royalty payments on produced gas that is vented or flared, even if the Supervisor approves the actions. Such royalty payments are fully appropriate in light of the lost economic value and the negative health and environmental impacts of venting and flaring. This change will require companies to internalize the negative costs of their decisions to vent and flare natural gas.

Storage Tank or Vessel Emissions

BLM regulations should amend the definition of unavoidably lost gas to exclude gas vapors lost from storage tanks on lease, thus making such emissions royalty-bearing. Doing so will incentivize companies to prevent further fugitive emissions from storage tanks, helping both the environment and the economy. ELPC also supports BLM's proposed policy changes of requiring the capture of gas vapors from tanks holding gas from new wells and installing combustors on existing well storage vessels. BLM should require vapor recovery units, which can prevent up 95% of methane and CO₂ from being released.³⁴

Pneumatic Devices

ELPC supports a policy of replacing high bleed pneumatic devices with low bleed or "zero bleed" devices. Currently, high bleed pneumatic devices are responsible for 7% of methane emissions.³⁵ Because pneumatic devices are operated by pressurized natural gas to control valves and other functions,³⁶ these devices vent methane as part of the regular operation of the device.³⁷ Replacing high bleed devices with low- or zero-bleed devices means that much less methane will be vented in the course of normal operations of the device.

Leak Detection and Repair

ELPC also encourages BLM to adopt regulations requiring leak detection and repair. The ICF study highlighted savings from increasing inspections to detect leaks and repair them, particularly for compressor storage stations and fugitive leaks from reciprocating compressors.³⁸ More frequent inspections of facilities will result in greater emissions reductions.³⁹ Fugitive emissions from reciprocating compressors result in 13% of overall methane emissions.⁴⁰ Increasing leak detection at compressor stations is particularly important because these stations comprise the largest source of vented methane emissions in the transmission of natural gas.⁴¹

Various leak detection and repair programs have been evaluated as part of EPA's NSPS effort and the recently enacted Colorado Air Quality Control Commission methane rules.⁴²

³⁴ ICF Methane Reduction Study at D-7.

³⁵ *Id.* at 3-7.

³⁶ *Id.* at D-8.

³⁷ *Id.*

³⁸ *Id.* at 4-3.

³⁹ *Id.* at 3-10.

⁴⁰ *Id.* at 3-7.

⁴¹ *Id.* at 2-4.

⁴² *Id.* at 3-9.

Colorado's rules require owners and operators of oil and gas facilities to inspect their equipment and components at natural gas compressor stations and well production facilities for leaks, either annually, quarterly, or monthly, depending on the fugitive emissions.⁴³ Inspection records must be kept for two years and made available to the Air Pollution Control Division.⁴⁴ An annual report to the Division on leak detection and repair is also now required.⁴⁵ BLM should look to Colorado's rules as a possible template in adopting their own policy.

There are a number of other economically feasible technologies highlighted by the ICF study that BLM should encourage operators to adopt. Wet seal degassing capture systems is one such technology.⁴⁶ This technology retrofits existing wet seal centrifugal compressors to degas the lubricating seal oil by sending the seal oil contaminated with gas from a separator to a recovery system to use as fuel.⁴⁷ The study found that the cost of the retrofit would be paid back in less than a year and continue to provide natural gas savings year after year.⁴⁸

In addition to the wet seal degassing capture systems, BLM should encourage operators to replace Kimray pumps with electric pumps.⁴⁹ Kimray pumps are gas-powered pumps used in gas dehydrators and vent large amounts of gas,⁵⁰ resulting in 3% of total methane emissions.⁵¹ Kimray pumps use the mechanical energy of the gas from the well to power the pump and then vent off the natural gas, so replacing the pumps with those powered by electricity means no gas is used to power pump, thus no methane is vented.⁵²

Inspection and Enforcement

Finally, ELPC also encourages the BLM to develop a memorandum of understanding with the State of North Dakota and the tribes to meet oil and gas inspection and enforcement goals. BLM has formal agreements in California, Colorado, Nevada and Wyoming, but not in North Dakota.⁵³ Given the rapid development in North Dakota, it is particularly important for the BLM's field office in the state to coordinate to the maximum extent possible with tribes in the State to inspect high priority wells and prevent duplicative inspections. BLM should also begin reviewing and monitoring inspection activities at its field offices to determine if offices are meeting inspection goals.

Again, ELPC appreciates the opportunity to provide comments and input to BLM and participate in the public forum. We encourage BLM to develop strong policies to reduce venting

⁴³ Colorado Department of Public Health and Environment, "Revisions to Colorado Air Quality Control Commission's Regulation Numbers 3, 6, and 7 Fact Sheet," March 5, 2014, 3-4, available at <http://www.colorado.gov/cs/Satellite/CDPHE-AQCC/CBON/1251647985820> (last accessed May 22, 2014).

⁴⁴ *Id.* at 4.

⁴⁵ *Id.*

⁴⁶ ICF Methane Reduction Study at 5-2-5-6.

⁴⁷ *Id.* at 5-2-5-3.

⁴⁸ *Id.* at 5-6.

⁴⁹ *Id.*

⁵⁰ *Id.* at 3-16.

⁵¹ *Id.* at 3-7.

⁵² *Id.* at D-12.

⁵³ U.S. Government Accountability Office, GAO-14-238, "Oil and Gas: Updated Guidance, Increased Coordination, and Comprehensive Data Could Improve BLM's Management and Oversight," May 2014, at 32.

and flaring, which is of particular importance in North Dakota, in order to limit the environmental harms of methane and maximize the economic benefit of gas capture for U.S. taxpayers.

Respectfully submitted,



Jennifer L. Cassel, Staff Attorney
Mindi Schmitz, Government Relations Specialist
Karen Torrent, Federal Legislative Director
Jennifer E. Tarr, Associate Attorney
Stephanie K. Chase, Associate Attorney

Environmental Law & Policy Center
104 1st Avenue S., Suite 200
Jamestown, North Dakota 58401
(701) 952-0020
www.elpc.org



National Wildlife Federation
Northeast Regional Center
149 State Street, Suite 1
Montpelier, VT 05602
802.552.4325 (James Murphy Direct)
jmurphy@nwf.org

SENT VIA ELECTRONIC MAIL TO: blm_wo_og_comments@blm.gov

May 30, 2014

The Honorable Sally Jewell
Secretary, Department of the Interior
1849 C Street, N.W.
Washington, D.C. 20240

Re: Bureau of Land Management Rules for Onshore Methane Waste

Dear Secretary Jewell:

National Wildlife Federation (NWF) thanks the Bureau of Land Management (BLM) for the opportunity to give comment on the upcoming rulemaking to prevent methane waste from onshore federal oil and gas leases operations. These comments follow three hearings held in New Mexico, North Dakota and Washington, D.C. where members of the public and stakeholders were allowed to weigh in on the importance of preventing methane waste on onshore public lands.

BLM's action is part of the Administration's announced *Strategy to Reduce Methane Emissions* announced in March of 2014. This rulemaking is a sensible measure to stop needless waste of a public resource that could be captured to provide a fuel source and royalties for Americans. It is also a key part of a needed strategy to ensure that natural gas and oil production does not unnecessarily pollute the atmosphere.

NWF has for over three-quarters of a century been the leading national organization in advocating for policies that benefit wildlife for our children's future. NWF has affiliate organizations in 49 states and territories with approximately 4 million members and supporters nationwide. Many of our members and affiliate members use and enjoy federal public lands, which provide vital fish and wildlife habitat.

Methane is a valuable commodity that is all too often needlessly wasted or literally burned into the atmosphere because gas and oil producers fail to take demonstrated and often low-cost steps to prevent waste. Methane is also a powerful greenhouse gas pollutant – between 20 and almost 90 times more powerful than carbon dioxide depending on the length of time it is in the atmosphere – and a cause of severe localized pollution such as ozone that harms wildlife, people, and diminishes the enjoyment of public lands.

It is crucial that BLM prevent methane waste and ensure the American public receives royalties for all leased assets on public land. BLM's efforts are a key piece in an overall methane pollution reduction strategy that must be pursued in close coordination with the EPA who will hopefully issue a strong rulemaking later this year aimed at controlling methane pollution from all oil and gas developments. We strongly encourage both agencies to move forward with these synergistic efforts to ensure methane pollution does not undermine the President's climate goal to reduce carbon pollution by 17 percent by 2020. BLM and EPA's methane reduction efforts go hand-in-hand to ensure waste is prevented, a valuable resource is captured, and pollution is reduced.

Under the Mineral Leasing Act of 1920, BLM is compelled to require producers of oil and gas resources on public lands to prevent waste. Such efforts also constitute sensible, long overdue actions that would provide a true triple win by: (1) ensuring mineral resources held in trust for the public are not wasted, but instead used; (2) providing increased revenues to Americans from royalties on resources that belong to the public; and (3) reducing emissions of a highly polluting gas.

To achieve these benefits, BLM must put forth rules that apply the strongest standards to ensure methane waste is greatly reduced from oil and gas operations on public lands. These rules must address not only the use of appropriate control technology, but ensure that adequate facilities exist to transport and make use of all methane produced from leased lands. With careful upfront planning, BLM could reduce the footprint of oil and gas development on public lands and also produce greater returns for both taxpayers and energy consumers from these lands.

Failure to adequately prevent methane waste on public lands poses a host of threats to wildlife. It fails to encourage the most efficient use of public lands and resources, resulting in wasteful losses of wildlife habitat. It fails to collect the full amount of royalties, allowing money that could go towards conserving and protecting public lands literally go up in flames. It causes ground level ozone and other pollution that harms wildlife and people and decreases the enjoyment and use of public lands. It additionally spurs further climate change. Without robust efforts to reduce greenhouse gas emissions, runaway climate change will cause massive species extinction, habitat disruption, droughts, floods, wildfires, and other events that will displace and present severe harms to wildlife.

BLM's duty is clear. Federal law requires that "[a]ll leases of lands containing oil or gas ... shall be subject to the condition that the lessee will, in conducting he explorations and mining operations, use all reasonable precautions to prevent waste of oil or gas developed in the land."¹ However, regulations under this provision have not been updated in a generation. While estimates vary, it is undoubted that significant methane waste occurs from oil and gas operations on public land – and generally – with some estimates finding that methane waste from public lands alone would, if captured, meet the needs of Los Angeles or Chicago.²

¹ 30 U.S.C. § 225.

² Western Values Project. Up in Flames: Taxpayers Left Out in the Cold as Publicly Owned Natural Gas is Carelessly Wasted. May 2014. <http://westernvaluesproject.org/wp-content/uploads/2014/05/Venting-Flaring-Final1.pdf>.

Fortunately, the U.S. Government Accountability Office has found that oil and gas operators could economically capture 40 percent of all vented or flared gas with existing technologies – an estimate that might be low. Such an effort would generate \$23 million in annual royalties and avoid the emission of 16.5 million tons of greenhouse gases.³ This is a win-win-win that we hope BLM will pursue aggressively.

We urge BLM to put forth a rule that: (1) mandates the use of proven, cost-effective technologies and practices to prevent natural gas waste; (2) harnesses BLM's existing planning and management tools to facilitate investment in natural gas infrastructure necessary to market captured natural gas and thereby incentivize efforts to reduce methane waste; and (3) recognizes that preventing methane waste is part of a sensible effort to responsibly manage public lands and protect special places used the American people. Our public lands and the habitat they provide are a national treasure that should not be wasted.

We look forward to working with BLM to achieve a strong rule, and to working with the Administration to achieve significant reductions in methane pollution. We again thank you for the effort to comment on these forthcoming proposed rules, and anticipate the opportunity to further comment on the draft rules once they are released.

Sincerely,

Jim Murphy
Senior Counsel

³ United States Government Accountability Office. Federal Oil and Gas Leases: Opportunities Exist to Capture Vented and Flared Natural Gas, Which Would Increase Royalty Payments and Reduce Greenhouse Gases. October 2010. <http://www.gao.gov/new.items/d1134.pdf>,

**AMIGOS BRAVOS ♦ APPALACHIAN MOUNTAIN CLUB ♦ CALIFORNIANS
FOR WESTERN WILDERNESS ♦ CENTER FOR BIOLOGICAL DIVERSITY ♦
CITIZENS FOR A HEALTHY COMMUNITY ♦ CLEAN AIR TASK FORCE ♦
CLEAN WATER ACTION ♦ CONSERVATION COLORADO ♦ DAKOTA
RESOURCE COUNCIL ♦ DINE CARE ♦ EARTHJUSTICE ♦ EARTHWORKS ♦
ENVIRONMENT AMERICA ♦ GRAND CANYON TRUST ♦ HECHO –
HISPANICS ENJOYING CAMPING, HUNTING AND OUTDOORS ♦ LEAGUE
OF CONSERVATION VOTERS ♦ LOS PADRES FORESTWATCH ♦ MONTANA
ENVIRONMENTAL INFORMATION CENTER ♦ NATIONAL PARKS AND
CONSERVATION ASSOCIATION ♦ NATIONAL WILDLIFE FEDERATION ♦
NATURAL RESOURCES DEFENSE COUNCIL ♦ POWDER RIVER BASIN
RESOURCE COUNCIL ♦ SAN JUAN CITIZENS ALLIANCE ♦ SIERRA CLUB ♦
SOUTHERN UTAH WILDERNESS ALLIANCE ♦ U.S.CLIMATE PLAN ♦ UPPER
GREEN RIVER ALLIANCE ♦ WESTERN ENVIRONMENTAL LAW CENTER ♦
WESTERN ORGANIZATION OF RESOURCE COUNCILS ♦ WESTERN
RESOURCE ADVOCATES ♦ WILDEARTH GUARDIANS ♦ WYOMING
OUTDOOR COUNCIL**

May 30, 2014

The Honorable Sally Jewell
Secretary
U.S. Department of the Interior
1849 C Street N.W.
Washington, DC 20240

Dear Secretary Jewell,

In March 2014, President Barack Obama issued a Strategy to Reduce Methane Emissions (“Strategy”). The Strategy, implementing a key part of the Administration’s March 2013 Climate Action Plan, tasks BLM with modernizing its rules to prevent the waste of methane from the oil and gas supply chain under its purview, primarily upstream production. BLM’s responsibilities dovetail nicely with a comprehensive set of methane reduction actions that also include the U.S. Environmental Protection Agency and individual states. These regulatory actions can be coordinated effectively to ensure complementary action to drive the maximum amount of practical and feasible methane emission reductions. The undersigned organizations provide these comments to support and inform that coordinated—and comprehensive—action and focus specifically on BLM’s rulemaking to prevent waste.

We do so because effective action regarding methane pollution and waste is essential to achieving the President’s goal of reducing greenhouse gas (“GHG”) emissions by 17% (using a baseline of 2005) by 2020. More to the point, preventing waste of methane – a climate warming pollutant 86 times more potent than carbon dioxide over a 20-year time period – presents a near-term climate mitigation opportunity to reduce the risk of crossing a 2°C warming threshold and thereby avoid catastrophic climate disruption. Fortunately, methane waste can be prevented or reduced with proven, off-the-shelf technologies. These technologies are often economical, paying for themselves quickly even at today’s relatively low natural gas prices. Moreover, these technologies, by increasing the supply of energy that can be sold, increase royalty payments to private mineral owners and to cash-strapped federal and state governments—and the public programs, such as education—that they support.

Put simply, preventing methane pollution and waste achieves a “triple win”: first, less methane in the atmosphere means more natural gas to heat our homes, cook our food, and generate electricity; second, less wasted gas means more royalties from natural gas sales for cash-strapped governments and landowners; and third, by reducing the waste of natural gas, we reduce emissions of climate warming methane *and* reduce emissions of other pollutants that degrade local air quality and harm public health.

Relative to BLM’s responsibilities, modernizing the agency’s waste rules is necessary to comport with the Mineral Leasing Act of 1920. The Mineral Leasing Act requires that the Bureau of Land Management, before granting leases for federally-owned onshore oil and gas resources, ensure that oil and gas producers “use all reasonable precautions to prevent waste of oil or gas developed....” Unfortunately, at present, BLM’s outdated, 34-year old waste policies do not effectively prevent waste, as evidenced by the Government Accountability Office’s 2010 Report, GAO-11-34, which found that through more robust action BLM could reduce wasteful flaring, leaking, and venting of natural gas by 40%. More recent studies have confirmed that substantial amounts of methane waste can quickly be eliminated at very low cost. Given technological trends, these estimates suggest a pathway towards “zero tolerance” for methane waste and pollution.

This pathway is particularly viable if BLM modernizes its waste policies by harnessing a potent combination of “front-end” planning and management tools with requirements mandating the use of proven, often-cost effective technologies and practices at the “back end” of oil and gas development. BLM’s use of its “front-end” planning and management tools also demonstrates how BLM action effectively coordinates with other regulatory action by, e.g., EPA, to drive the maximum amount of practical and feasible methane emission reductions.

These comments are designed to illuminate that pathway for BLM. As background, on January 27, 2014, the signatories to these comments provided BLM with a set of Core Principles. Those Core Principles are incorporated by reference. The undersigned organizations provide these additional comments to build upon our Core Principles and to respond to issues raised at BLM’s public forums hosted in Golden, Colorado; Albuquerque, New Mexico; Dickinson, North Dakota; and Washington, D.C. in the Spring of 2014.

We are optimistic that BLM will move forward expeditiously with its rulemaking to curb methane waste and pollution from the development of publicly owned oil and natural gas resources. To inform this process, we welcome the opportunity to discuss our recommendations in more detail.

Sincerely,



Erik Schlenker-Goodrich
Executive Director
Western Environmental Law Center
Taos, New Mexico

Tom Singer
Senior Policy Advisor
Western Environmental Law Center
Santa Fe, New Mexico

Rachel Conn
Projects Director
Amigos Bravos
Taos, NM

Georgia Murray
Staff Scientist
Appalachian Mountain Club
Gorham, New Hampshire

Mike Painter
Coordinator
Californians for Western Wilderness
San Francisco, CA

Kassie Siegel
Director, Climate Law Institute
Center for Biological Diversity
Joshua Tree, CA



David McCabe
Senior Atmospheric Scientist
Clean Air Task Force
Washington, DC

Darin Schroeder
Associate Attorney
Clean Air Task Force
Boston, MA

Jim Ramey
Executive Director
Citizens for a Healthy Community
Hotchkiss, CO

Lynn Thorp
National Campaigns Director
Clean Water Action
Washington, DC

Pete Maysmith
Executive Director
Conservation Colorado
Denver, Colorado

Scott Skokos
Senior Field Organizer
Dakota Resource Council
Bismarck, ND

Lori Goodman
Dine CARE
Durango, CO

Jessica Ennis
Senior Legislative Representative
Earthjustice
Washington, DC

Lauren Pagel
Policy Director
Earthworks
Washington, DC

Travis Madsen
Senior Program Manager, Global Warming
Solutions
Environment America
Denver, CO

Taylor McKinnon
Director of Energy
Grand Canyon Trust
Flagstaff, AZ

Rod Torrez
Director
HECHO – Hispanics Enjoying Camping,
Hunting and Outdoors
Los Alamos, NM

Sara Chieffo
Legislative Director
League of Conservation Voters
Washington, DC

Jeff Kuyper
Executive Director
Los Padres ForestWatch
Santa Barbara, CA

James D. Jensen
Executive Director
Montana Environmental Information Center
Helena, MT

Nicholas Lund
Energy Manager
National Parks and Conservation
Association
Washington, DC

Jim Murphy
Senior Counsel
National Wildlife Federation
Montpelier, VT

Matthew McFeeley
Attorney
Natural Resources Defense Council
Washington, D.C.

Shannon Anderson
Organizer
Powder River Basin Resource Council
Sheridan, WY

Dan Olson
Executive Director
San Juan Citizens Alliance
Durango, CO

Deb Nardone
Director, Beyond Natural Gas Campaign
Sierra Club
Washington, DC

Stephen Bloch
Legal Director
Southern Utah Wilderness Alliance
Salt Lake City, UT

Evan Weber
Executive Director
U.S. Climate Plan
Washington, D.C.

Linda F. Baker
Executive Director
Upper Green River Alliance
Pinedale, WY

Don Nelson
Oil and Gas Campaign Team Chair
Western Organization of Resource Councils
Keen, North Dakota

Gary Graham
Director, Lands Program
Western Resource Advocates
Boulder, CO

Jeremy Nichols
Climate and Energy Program Director
WildEarth Guardians
Denver, CO

Bruce Pendery
Chief Legal Counsel
Wyoming Outdoor Council
Logan, Utah

WASTED OIL AND GAS RESOURCES ON FEDERAL LANDS

Comments Submitted To Inform Modernization Of The U.S. Bureau of Land Management's 34-Year-Old Rules

Submitted By:

AMIGOS BRAVOS ♦ APPALACHIAN MOUNTAIN CLUB ♦ CALIFORNIANS FOR WESTERN WILDERNESS ♦ CENTER FOR BIOLOGICAL DIVERSITY ♦ CITIZENS FOR A HEALTHY COMMUNITY ♦ CLEAN AIR TASK FORCE ♦ CLEAN WATER ACTION ♦ CONSERVATION COLORADO ♦ DAKOTA RESOURCE COUNCIL ♦ DINE CARE ♦ EARTHJUSTICE ♦ EARTHWORKS ♦ ENVIRONMENT AMERICA ♦ GRAND CANYON TRUST ♦ HECHO – HISPANICS ENJOYING CAMPING, HUNTING AND OUTDOORS ♦ LEAGUE OF CONSERVATION VOTERS ♦ LOS PADRES FORESTWATCH ♦ MONTANA ENVIRONMENTAL INFORMATION CENTER ♦ NATIONAL PARKS AND CONSERVATION ASSOCIATION ♦ NATIONAL WILDLIFE FEDERATION ♦ NATURAL RESOURCES DEFENSE COUNCIL ♦ POWDER RIVER BASIN RESOURCE COUNCIL ♦ SAN JUAN CITIZENS ALLIANCE ♦ SIERRA CLUB ♦ SOUTHERN UTAH WILDERNESS ALLIANCE ♦ U.S. CLIMATE PLAN ♦ UPPER GREEN RIVER ALLIANCE ♦ WESTERN ENVIRONMENTAL LAW CENTER ♦ WESTERN ORGANIZATION OF RESOURCE COUNCILS ♦ WESTERN RESOURCE ADVOCATES ♦ WILDEARTH GUARDIANS ♦ WYOMING OUTDOOR COUNCIL

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I. INTRODUCTION

We appreciate the opportunity to provide comments on BLM's rulemaking to prevent methane waste. This rulemaking is a keystone of President Barack Obama's March 2014 Strategy to Reduce Methane Emissions¹ and, more broadly, March 2013 Climate Action Plan. We see great opportunity for BLM to take strong, effective action to secure a triple win: conserved oil and gas resources; increased royalties for federal and state governments to support public programs such as education; and a better safeguarded climate, environment, and public health.

These comments:

- Illuminate a pathway for BLM to secure methane reduction opportunities through a potent combination of "front end" planning and management and "back end" technologies that are proven and often cost effective.
- Augment Core Principles that the signatories to these comments submitted to BLM on January 27, 2014.
- Augment and respond to comments and issues raised during the BLM-hosted public forums conducted in the Spring of 2014.

At the outset, we emphasize that the case for BLM to take effective, immediate action to prevent methane waste has only strengthened since we provided the agency with our Core Principles just a few months ago.

In the wake of President Obama's Strategy to Reduce Methane Emissions, forty-nine members of Congress wrote the administration to express their support for executive action to control methane pollution and waste. See Letter from U.S. Congress members to President Obama (May 14, 2014) (attached as Exhibit 1). In addition, several new studies demonstrate that methane pollution and waste from oil and gas development may be significantly higher than "bottom up" estimates calculated by the U.S. Environmental Protection Agency. In particular:

- A peer-reviewed analysis conducted by the National Oceanic and Atmospheric Administration and University of Colorado published in May 2014 found that oil and gas operations in Colorado's Denver-Julesburg Basin leaked nearly three times as much methane as reported to EPA by facility operators in that area, or about 4% of the natural gas produced in the area.² This study reinforces concerns raised by a prior 2011 study of the

¹ Available at http://www.whitehouse.gov/sites/default/files/strategy_to_reduce_methane_emissions_2014-03-28_final.pdf.

² Petron, G., *et al.*, (2014) "A new look at methane and non-methane hydrocarbon emissions from oil and natural gas operations in the Colorado Denver-Julesburg Basin" *J. Geophys. Res. Atmospheres*. Available online at: <http://onlinelibrary.wiley.com/doi/10.1002/2013JD021272/abstract>. See also: <http://cires.colorado.edu/news/press/2014/airbornemeasurements.html>.

Denver-Julesberg Basin by the same authors that found that oil and gas operations lost 2.3-7.7% of all methane to the atmosphere. The authors also found that benzene emissions from oil and gas operations were seven times higher than expected from inventory estimates. While our comments focus on wasteful practices that emit methane, we note this striking result as an example of the detrimental emissions of other substances beyond methane from wasteful oil and gas operations. The measures we discuss below, without exception, would reduce emissions of multiple harmful substances, including benzene, in addition to methane.

- An analysis published in *Science* in February 2014 reviewed almost twenty measurement studies of methane emissions from component level to nationwide. The review found that methane emissions are underestimated by a large amount, with the natural gas and oil sectors as important contributors to the unaccounted-for methane.³
- A 2013 study of Utah’s Uinta Basin found methane loss rates from 6-12%.⁴
- A 2013 study analyzing air samples collected from tall towers and research aircraft found that oil and gas methane emissions may be fifty-percent higher than EPA estimates.⁵

The evidence all points to methane waste and emissions levels from oil and gas development greater, and perhaps far greater, than estimates generated by EPA’s “bottom-up” source counts and emissions factors. Moreover, in the comments below, we provide additional analysis demonstrating that methane emissions in basins such as the Green River, Piceance, San Juan, Uinta—where there are large amounts of federal land and BLM oversight is critical—are disproportionately high, suggesting unacceptably sub-par efforts to prevent methane waste. By exposing serious waste and risks from oil and gas development, in particular from BLM-managed oil and gas resources, this evidence underscores the need for immediate, thoughtful action to reduce methane waste.

The Comments below are divided into seven sections.

Section I: Introduction

Section II: Synthesizes and summarizes our recommendations.

Section III: Recommends that BLM issue immediate guidance to ensure that existing waste policies—though imperfect—are implemented and enforced at the

³ Brandt, A.R., *et al.* (2014) “Methane Leaks from North American Natural Gas Systems,” *Science*, 343, 733. Available online at: <https://www.sciencemag.org/content/343/6172/733.summary>

⁴ <http://onlinelibrary.wiley.com/doi/10.1002/grl.50811/abstract>

⁵ <http://www.pnas.org/content/early/2013/11/20/1314392110.abstract>

state and field level pending completion of new waste rules.

Section IV: Summarizes the legal basis for BLM action to prevent methane pollution and waste by integrating “front end” planning and management with “back end” technologies.

Section V: Elaborates on ways that BLM should design its new waste rules to take advantage of “front end” planning and management tools to prevent methane pollution and waste.

Section VI: Provides specific comments regarding BLM’s use of “back end” technologies to prevent methane pollution and waste.

These comments illuminate a pathway for BLM to maximize methane emission reductions through a potent combination of “front end” planning and management and “back end,” technologies that are proven and often cost effective. These comments thus reflect and build upon the Core Principles submitted to BLM on January 27, 2014. These comments also respond to issues raised during the BLM-hosted public forums conducted in the Spring of 2014.

II. SYNTHESIS AND SUMMARY OF RECOMMENDATIONS

Given the complexity of the comments contained herein, we felt that it would be helpful to provide a concise synthesis and summary of our recommendations.

- BLM should craft a new methane waste rule that recognizes that federal onshore oil and gas resources are publicly-owned resources managed in trust for the long-term benefit of the American people.
- BLM should consider an interim directive to prevent methane waste pending a new waste rule to ensure that existing waste rules and policies are implemented and enforced.
- BLM should design its new waste rule to harness a combination of “front end” planning and “back end” technologies as the best means to prevent methane waste.
- BLM should ensure that its new methane waste rule prevents waste from both existing and future oil and gas leases and development.
- BLM should prevent methane waste—and consider the economics of methane waste—at a broad basin or field-level scale to: (a) ensure consistent action across a basin or field; (b) identify basin or field level economic barriers that contribute to methane waste; and (c) to identify opportunities, with good planning and management action, to overcome those barriers.

- BLM’s new methane waste rule should mandate that oil and gas lessees and operators prepare “gas capture and marketing plans” before development projects are approved.
- BLM should review “gas capture and marketing plans” to ensure that all reasonable precautions to prevent methane waste have been taken and to ensure conformity with higher-level plans, decisions, and lease stipulations.
- BLM’s new methane waste rule—as implemented through planning and management decisions—should provide meaningful, geographically-specific criteria and guidance to BLM’s field-level supervisors to ensure effective oversight of oil and gas operations to prevent methane waste.
- BLM’s new methane waste rule should impose an absolute, “strict liability” requirement that a lessee or operator obtain prior approval to vent or flare and ensure that documentation of such approval is readily and easily available to the public.
- BLM’s new methane waste rule should mandate all reasonable action to prevent methane waste, not just action that oil and gas lessees or operators deem sufficiently profitable.
- BLM’s new methane waste rule should ensure, to the degree that economics inform action, that the *total* production of oil and gas is used to gauge what is or is not economic.
- BLM’s new methane waste rule should consider the true and full costs involved in oil and gas development, not just the narrow costs projected or incurred by oil and gas lessees or operators. This includes the costs that methane waste imposes on the climate, public health, water, wildlife, and other resources and values.
- BLM’s new methane waste rule should consider abandoning the distinction between “avoidably” and “unavoidably” lost gas in favor of a distinction premised on whether oil and gas development is at the exploratory, delineation, or production stage
- BLM’s new methane waste rule should identify situations where methane waste is “undue” and development, absent mitigation, should be prohibited.
- BLM’s new methane waste rule should charge royalties on all lost and wasted gas, including, to the degree the distinction is preserved, an effective royalty rate of 100% on all “avoidably” lost or wasted methane.
- BLM’s new methane waste rule should incorporate enhanced penalty provisions that would provide for the cancellation or suspension of leases, and a prohibition against the acquisition of new leases, for repeated or egregious waste.

- BLM’s new methane waste rule should identify what elements of the new waste rule, if violated, would constitute a “major” versus “minor” violation as defined in 43 C.F.R. § 3160.0-5.
- BLM’s new methane waste rule should strengthen remedies and civil penalties provisions in 43 C.F.R. § 3163.1 and § 3163.2. Core Principles at 30.
- BLM’s new methane waste rule should consider higher national minimum acceptable bids to better encourage more efficient use of existing leases rather than the acquisition of new leases.
- BLM’s new methane waste rule should be coordinated with other agency authorities and responsibilities, such as duties to protect water, wildlife, and other resources to best identify mutually reinforcing measures to prevent methane waste and protect the environment.
- BLM’s new methane waste rule should use the agency’s existing planning and management framework to:
 - Identify criteria or circumstances where the waste of methane is “undue” and, accordingly, where development should be prohibited unless and until action is taken to constrain methane waste within acceptable limits.
 - Impose controls on the timing, pace, and location of development—i.e., “phased development.”
 - Provide that methane must be marketed, not just captured by synchronizing upstream production operations with midstream gathering, compression, and processing capacity.
 - Require that that oil and gas lessees and operators submit “gas capture and marketing plans” to inform drilling-stage planning and management decisions.
- BLM’s new methane waste rule should mandate that oil and gas lessees and operators use a minimum set of technologies—to be expanded upon and refined as the agency works through its planning and management framework—to prevent methane waste including:
 - Leak Detection and Repair: BLM must require operators to control leaks by regularly conducting instrument-based Leak Detection and Repair surveys and timely repair of leaks that are discovered.
 - Liquids Unloading: BLM must require operators to utilize technologies to eliminate or reduce wasteful venting; if operators claim that doing so is infeasible for particular wells, they must supply specific information that demonstrates this to BLM, and BLM must describe quantitative criteria that it will use to evaluate any such claims.

- Natural Gas-Driven Pneumatic Equipment. BLM must not allow existing high-bleed controllers to continue wasteful, excessive venting on well pads and compressor stations subject to BLM jurisdiction, and BLM must also consider measures to limit emissions from intermittent-bleed controllers.
- Compressors: For reciprocating compressors, BLM must extend the NSPS Subpart OOOO requirement for regular replacement of rod packing seals to existing compressors, for centrifugal compressors BLM must address wasteful emissions from wet-seals by requiring replacement with dry seals or retrofitting with oil degassing units and routing to a vapor recovery unit.
- Venting and Flaring of Gas From Oil Wells: BLM must address waste in its resource planning and require and participate in planning by oil and gas producers and midstream companies to ensure that adequate infrastructure is in place before wells are completed so all natural gas produced is utilized and flaring and venting of associated gas, an inherently wasteful practice, is ended. Reduced emissions completions for oil wells with hydraulic fracturing must be required. In addition to traditional gas gathering systems, BLM and operators should consider the use of alternative approaches to utilize or transport associated gas, such as recovering natural gas liquids, compressing gas in the field for transporting to markets, and generating electric power for powering field equipment or for sale to the grid.

III. BLM SHOULD CONSIDER AN INTERIM DIRECTIVE TO PREVENT METHANE WASTE PENDING A NEW WASTE RULE

In our January 27, 2014 Core Principles, we recommended that BLM issue an interim directive by July 1, 2014 to ensure that NTL 4A and associated existing waste rules and policies are fully implemented and enforced pending completion of new methane waste rules. We reiterate that recommendation here.

While BLM's existing waste prevention rules and policies are imperfect, they must still be fully implemented and enforced to minimize near-term methane waste from the nearly 12.5 million acres of federal oil and gas resources already under production and from pending leasing and drilling proposals. Today, methane is being wasted due to the lack of effective BLM oversight and sloppy drilling practices by industry, and BLM has the authority and responsibility—*right now*—to do something about it by ensuring that existing waste prevention rules and policies are fully implemented and enforced. Taking near-term action to prevent methane waste will also help BLM build credibility with all stakeholders, identify issues and opportunities pertinent to BLM's rulemaking process, and help speed the learning curve for BLM state and field offices that will be charged with implementing and enforcing new methane waste rules.

If BLM does not ensure the implementation and enforcement of existing waste rules and policies, in particular through planning and management decisions, BLM's oil and gas management decisions will be vulnerable to challenge as arbitrary and capricious. 5 U.S.C. § 706(2). While some BLM field offices are to be applauded for taking action—such as the Tres

Rios Field Office in Colorado—others are not taking *any* action, period, to prevent methane waste. For example, the Vernal Field Office in Utah is considering the massive 5,700-well “Monument Buttes” drilling project in Utah’s Uintah Basin but is not considering measures to prevent methane waste. Numerous RMPs are in the process of being rewritten, and many current drafts propose taking action to prevent methane waste, including the Buffalo Field Office RMP, which envisions 15,000 new oil and gas wells, including 3,865 new shale oil wells that often have high rates of flaring. Failure to address methane in planning—as well as the high degree of inconsistency between field offices—is unacceptable and inconsistent with BLM’s statutory duties.

We therefore direct your attention to Core Principle No. 2, where we explained that an interim directive should:

- (a) Underscore BLM’s existing authority, responsibility, and opportunity to prevent natural gas waste as per the MLA, the MLA’s implementing rules, and NTL 4A;
- (b) Require that BLM Field Offices address waste through oil and gas-related planning and decision-making processes;
- (c) Signal to lessees and operators that they must reduce vented, flared and leaked methane and significantly step up methane waste prevention efforts; and
- (d) Encourage Field Offices to mandate the use of specific technologies and management practices to prevent waste in their planning, leasing, and permitting activities.

Core Principles at 18-19. Regarding (a)—BLM’s existing waste policies—we emphasized, and emphasize again, the need for much better implementation and enforcement of NTL 4A, specifically NTL-4A’s:

- Section I provisions, in the context of Section II’s definitions, regarding oversight and approval of well venting, flaring, and leaks throughout the natural gas supply chain.
- Section III(B) and III(c) limits on “short-term” venting or flaring during well purging, well evaluation, and initial production tests.
- Section IV(A) and IV(B) limits on venting and flaring, including prohibitions against venting or flaring, except as provided by Sections II(C) and III or as explicitly authorized by the “Supervisor” in Section IV(B) for oil well gas. This includes Section IV(B)’s requirement that a lessee or operator to submit an “action plan” that “will eliminate venting or flaring of the gas within 1 year from the date of the application,” and meaningful review of that application by the “Supervisor” to determine whether venting or flaring is “justified.”

- Section V tracking and reporting of avoidable and unavoidable losses of gas, including making this information more easily available to the public.
- Section VI computation and enforcement of royalty due when the “Supervisor” determines that gas is lost due to lessee or operator negligence or failure to take all reasonable measures to prevent or control methane losses.

IV. BLM SHOULD EXERCISE ITS EXPANSIVE AUTHORITY AND RESPONSIBILITY TO PREVENT METHANE WASTE THROUGH A COMBINATION OF “FRONT END” PLANNING AND MANAGEMENT AND “BACK END” TECHNOLOGIES

BLM’s duty to prevent waste is expansive: “[a]ll leases of lands containing oil or gas ... shall be subject to the condition that the lessee will, in conducting his explorations and mining operations, use all reasonable precautions to prevent waste of oil or gas developed in the land...” 30 U.S.C. § 225; *see also* 30 U.S.C. § 187 (“Each lease shall contain...a provision...for the prevention of undue waste...”). BLM is also required “to promote the orderly and efficient exploration, development and production of oil and gas.” 43 C.F.R. § 3160.0-4. As the MLA’s legislative history teaches, “conservation through control was the dominant theme of the debates.” *Boesche v. Udall*, 373 U.S. 472, 481 (1963) (citing H.R.Rep. No. 398, 66th Cong., 1st Sess. 12-13; H.R.Rep. No. 1138, 65th Cong., 3d Sess. 19 (“The legislation provided for herein...will [help] prevent waste and other lax methods...”).

The MLA’s mandates empower the agency to craft a new methane waste rule that harnesses a potent combination of “front-end” planning and management with “back-end” methane reduction technologies to drive the maximum amount of methane pollution and waste reductions.⁶ In the aggregate, this legal framework underscores six key points. In understanding these key points, we underscore the fact that they apply to both existing and future leases and development, as we explained in our Core Principles.⁷

A. BLM Should Prevent Methane Waste At The Basin Or Field Level Through The Agency’s Existing Planning and Management Framework

BLM has a duty to prevent methane waste at a broad basin or field-level scale. This reflects the MLA’s plain language while furthering BLM’s responsibility to manage public lands and resources in accord with the spirit and intent of the Federal Land Policy and Management Act

⁶ By “front end” we mean BLM’s basic obligation to plan for, manage, and review the impacts of proposed actions *before* leases are executed and development projects approved. By “back end” we mean the application of specific technologies or practices to specific oil and gas development projects *after* BLM has determined the general timing, pace, and location of development projects and at the point lessees and operators are developing specific drilling projects. “Back end” technologies can, of course, be mandated in advance of those projects and imposed either by rule, plan, lease stipulation, or condition of approval.

⁷ Core Principles at 22-23 (Core Principle No. 4).

("FLPMA") and, specifically, with Resource Management Plans ("RMPs"). 43 U.S.C. §§ 1701, 1712. Fixating on site-specific oil and gas development proposals—such as individual applications for permits ("APDs") to drill—to the exclusion of basin and field level development plans and action is contrary to BLM's authority and responsibility to take "all reasonable precautions to prevent waste of oil and gas" 30 U.S.C. § 225, and "to promote the orderly and efficient exploration, development, and production of oil and gas." 43 C.F.R. § 3160.0-4.

Indeed, BLM's oil and gas planning and management framework—from RMPs and geographically-specific Master Leasing Plans ("MLPs"), through lease execution and unitization, on down to master development plans ("MDPs") (sometimes referred to as "Plans of Development") and ultimately to APD approvals—is presumably designed "to promote orderly and efficient" oil and gas activity at the basin and field level, ensuring that site-specific activity, such as APDs, are only approved in accord with broader basin or field level plans. This also facilitates BLM addressing environmental impacts through sequentially tiered reviews, ensuring that the agency focuses on the most important issues at the most relevant geographic and decision-making scales.

Integrating waste prevention into this framework is thus pragmatic, making use of existing agency tools and assuaging risk that lax regulatory oversight may operate to passively acquiesce or contribute to methane waste. It also comports with an axiom of administrative law: that an agency, to pass muster under the arbitrary and capricious standard, must articulate "a rational connection between facts found and conclusions made." *W. Watersheds Project v. Kraayenbrink*, 632 F.3d 472, 481 (9th Cir. 2011); 5 U.S.C. § 706(2)(A), (D). Integrating waste prevention into the planning and management framework gives BLM the ability to provide the requisite "rational connection" and thereby support a finding that the agency—and oil and gas lessees and operators—have taken all "reasonable precautions" to prevent methane waste and reconcile any tensions with other resource areas that may arise. 5 U.S.C. § 706(2)(A), (D); 30 U.S.C. § 225.

As detailed in section V below, and to improve the efficacy of BLM's planning and management framework, BLM's methane waste rule should also mandate that oil and gas lessees and operators prepare "gas capture and marketing plans" governing exploration, delineation, and production operations consistent with RMPs, MLPs, and lease stipulations. These "gas capture and marketing plans" must necessarily conform to RMPs, MLPs, and lease stipulations, would be subject to additional conditions of approval imposed by BLM, and would be approved by BLM before any drilling operations are approved and could commence.

Our recommendations regarding planning and decision-making underscore why we are frankly troubled by BLM's presentations at the public forums in the Spring of 2014. BLM was clear that no proposal was on the table and that the public forums were being held with the express purpose of soliciting public input before such proposals were formally crafted and released for review. Nonetheless, BLM's presentations did suggest the agency's basic direction regarding how a proposed waste rule would be structured.

BLM identified particular sources of methane waste (e.g., “liquids unloading,” “casinghead and associated gases,” “storage vessel/tank emissions”); articulated current BLM policy that addressed that particular source; and provided potential options to better prevent waste from that source. Absent from the presentation was any sense of how BLM’s efforts to prevent waste would be integrated with the agency’s state and field office-level “front-end” planning and management framework. This is a serious problem. It is not enough to state that site-specific oil and gas development projects necessarily conform to higher level plans and decisions if such plans and decisions do not integrate waste mitigation measures; such conformity must be affirmatively demonstrated in the record for those site-specific decisions and drilling approvals, e.g., for APDs. *W. Watersheds Project*, 632 F.3d 472, 481; 5 U.S.C. § 706(2)(A), (D).

It bears to remember that NTL-4A—as concluded by the Government Accountability Office’s 2010 report (GAO-11-34)—is poorly implemented and enforced. In large part this is precisely because the agency’s efforts to prevent waste are segregated from the agency’s front-end planning and management framework and, therefore, often forgotten by BLM’s state and field office personnel as they go about their day-to-day management of the oil and gas resource. To the degree NTL-4A is implemented and enforced, BLM appears to only do so *after* RMPs and MLPs are completed, *after* leases executed, *after* unitization agreements put in place, *after* MDPs and APDs crafted and approved, and *after* wells are drilled. Absent specific direction set in place by RMP and MLP measures, specific stipulations, specific unitization measures, and MDP and APD level COAs, methane waste is simply not foremost in—and is often absent from—state and field personnel’s minds. Thus, BLM fails to take advantage of critical points to plan for, manage, and prevent methane waste. This segregation not only results in BLM passively acquiescing or contributing to methane waste, but also undermines the transparency, accountability, and credibility of BLM’s decisions.

These problems are exacerbated by the fact that existing BLM waste rules and policies do not provide meaningful criteria or guidance to BLM’s field-level supervisors. This undermines the supervisor’s authority, rendering the supervisor vulnerable to pressure from oil and gas lessees and operators who are not inclined, as a matter of expediency, to change development plans to accommodate methane prevention actions that were not vetted through and required in advance by BLM’s planning and management framework.

B. BLM Should Impose An Absolute Requirement That Prior Approval Be Obtained To Vent Or Flare Methane

The MLA requires a clear and strong framework to implement methane waste prevention efforts. BLM should therefore impose an absolute requirement that a lessee or operator obtain prior approval to vent or flare (except in cases where venting or flaring is necessary for safety purposes), and ensure that documentation of such approval is readily and easily available to the public. Such prior approval, which should be limited to circumstances discussed below in Section VI, will help ensure conformity to BLM plans and management decisions, including lease stipulations.

Where prior approval is not obtained, and venting or flaring is not otherwise allowed, vented or flared gas would be automatically categorized, regardless of economics or other rationales, as “lost or wasted” gas for purposes of royalties and any other consequences. Current BLM policy— which we understand to be articulated in Instruction Memoranda 87-652 and 92-91 – that effectively allows oil and gas lessees to flaunt BLM authority by not seeking prior approval for venting and flaring, and imposes a far too heavy burden on BLM to demonstrate that a lessee or operator has caused waste, should be abandoned. Imposing an absolute requirement to obtain prior approval to vent or flare—to the degree that venting or flaring is even allowed—is consistent with proven permitting systems, such as the Clean Water Act’s National Pollution Discharge Emission System permit system, which impose strict liability on entities that fail to get required permits. See 33 U.S.C. §§ 1311(a), 1342.

C. BLM’s Authority And Responsibility To Prevent Waste Is Not Constrained By Measures That Are Cost-Effective To A Particular Lessee Or Operator

BLM’s authority and responsibility to prevent methane waste—as provided by the MLA and reinforced by the Federal Land Policy and Management Act (“FLPMA”)—is not delimited by what is cost-effective (i.e., has net negative costs) for a particular oil and gas lessee or operator. The MLA instead mandates that “*all reasonable* precautions to prevent waste” are taken, not just those precautions that oil and gas lessees or operators deem sufficiently profitable. 30 U.S.C. § 225 (emphasis added). This authority and responsibility is expansive, compelling action to prevent waste even where it would cause oil and gas companies to incur net positive costs or, even, where it would forbid development pending satisfaction of certain conditions imposed on drilling authorizations.

The MLA and FLPMA impose a framework mandating that BLM manage the publicly owned oil and gas resource in trust for the long-term benefit of the American people, a duty that overrides the narrow economic interests of oil and gas lessees and operators. This framework is distinct from the one used by lessees and operators in the context of privately owned oil and gas resources or in their own financial assessments. Indeed, the hurdle rates that oil and gas producers apply to risk-adjusted returns on investment may be orders of magnitude higher than the returns appropriate for development of public resources.

Economics are, of course, a relevant (though not dispositive) factor in gauging the propriety of particular waste prevention actions. However, such analyses should be completed at the basin or field level, not at an individual facility. As discussed in more detail below in Section VI, there are, of course, myriad methane reduction technologies—proven by industry itself—that are, in fact, quite cost effective for oil and gas lessees and operators and provide a payback on up-front capital investments in very short time periods (e.g., under a year).⁸ However, basin or field level economic analysis provides a reasoned and informed basis for consistent methane

⁸ See, e.g., EPA Natural Gas STAR Recommended Technologies and Practices (breaking down estimated payback period for methane reduction actions) (<http://www.epa.gov/gasstar/tools/recommended.html>).

waste prevention action across a particular basin or field. It also provides a reasoned and informed basis for identifying basin or field level economic barriers that contribute to methane waste—as well as opportunities, with good planning and management action, to identify economies of scale and to overcome those barriers (economies and opportunities that may not be apparent at the MDP or APD level).

The basin or field level scale also best ensures that BLM, in assessing the economics of waste prevention action, considers—consistent with current NTL-4A policy—the *total* production of oil and gas in gauging what is or is not economic (rather than considering the oil or gas resource individually and in isolation). Put differently, BLM should ensure that profits from oil and natural gas liquids sales, as well as natural gas sales, are considered in the aggregate to gauge the economic viability of methane capture and marketing measures. BLM should not allow lessees and operators to gauge the economic viability of methane capture and marketing by looking at only well-level production in isolation. By considering total production—at the basin and field level—BLM furthers existing rules to ensure the “the maximum ultimate recovery of oil and gas with minimum waste and with minimum adverse effect on the ultimate recovery of other mineral resources.” 43 C.F.R. § 3161.2. We therefore support the spirit of BLM’s presentation, as we understand it and with the caveats and recommendations provided herein, to use total oil and gas production and “[f]ield-wide economics for gas capture and transportation regardless of operator.” Presentation at Slide 15.

The use of economics to gauge the propriety and efficacy of methane waste prevention action must, furthermore, consider the true and full costs involved in oil and gas development, not just the narrow costs projected or incurred by oil and gas lessees or operators. BLM should, as we explained in our Core Principles, therefore ensure that economics to gauge action to prevent methane waste consider the total cost to the public of wasting methane production on public lands, including the costs to nonmarket resources such as water, public health, and wildlife.⁹ BLM should also consider economics with an eye towards optimizing the long-term value of oil and gas resources—and the lands and resources that overlie those resources—to the public.

Economic quantification of the true and full costs of development—with an eye on long-term value to the publicly owned oil and gas resources—provides important data to evaluate what are or are not “reasonable precautions” to prevent methane waste. 30 U.S.C. § 225. This not only furthers the MLA’s prohibition against waste, but also harmonizes BLM’s efforts to prevent waste with the agency’s core mandates to manage for multiple use and the broad public interest. Such quantification also ensures that economics, to the degree it is appropriately considered in agency decisions, does not falsely and arbitrarily assume that the costs of oil and gas leasing and drilling to the atmosphere and other non-market resources, like water, public health, and wildlife, are zero.

⁹ See Core Principles at 27-29 (Core Principle No. 8); BLM, Instruction Memorandum No. 2013-131 (Guidance on Estimating Nonmarket Environmental Values).

Support for consideration of the true and full costs of development is found in FLPMA's plain language. FLPMA explicitly provides that BLM must manage the public lands not simply as a resource for exploitation, but:

in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, *air and atmospheric*, water resource, and archeological values; that, where appropriate, will preserve and protect certain public lands in their natural condition, that will provide food and habitat for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use.

43 U.S.C. § 1701(a)(8) (emphasis added). BLM must also manage the oil and gas resource to “best meet the present and future needs of the American people” and ensure that management of the oil and gas resource “takes into account the long-term needs of future generations for...non-renewable resources, including...minerals.” 43 C.F.R. § 1702(c). Furthering these objectives, RMPs must, *inter alia*, specifically “use and observe the principles of multiple use and sustained yield,” “consider present and potential uses of the public lands,” and “weigh long-term benefits to the public against short-term benefits.” 43 U.S.C. §§ 1712(c)(1), (5), (7). Inherent in this framework is identifying, in the words of Gifford Pinchot, who laid the philosophical basis for multiple use, “the greatest good for the greatest number in the long run.”¹⁰

Additional support for this approach to economic analysis is found in the National Environmental Policy Act (“NEPA”). NEPA mandates that BLM take a hard look at the direct, indirect, and cumulative impacts of actions on the “human environment.” 40 C.F.R. §§ 1502.16(a), (b); 1508.25(c). Methane waste causes a variety of impacts to the “human environment”: the loss of oil and gas resource itself, climate impacts, public health impacts, increased pressure to lease and drill additional lands to meet demand for oil and gas, etc. NEPA also specifically mandates that BLM address, as part of the required hard look, “[e]nergy requirements and conservation potential of various alternatives and mitigation measures,” “[n]atural or depletable resource requirements and conservation potential of various alternatives and mitigation measures,” and “[m]eans to mitigate adverse environmental impacts (if not fully covered under 1502.14(f)).” 40 C.F.R. §§ 1502.16(e), (f), (h). This hard look, in turn, informs BLMs consideration of alternatives, helping the agency “sharply defin[e] the issues and provid[e] a clear basis for choice among options by the decision maker and the public.” 40 C.F.R. § 1502.14. In completing NEPA analyses, BLM routinely completes an analysis of economic impacts, and this analysis would be dramatically improved if BLM addressed the true and full costs of agency action—not just costs to lessees or operators. Indeed, we submit that economic analyses that fail to consider the true and full costs of methane waste (and oil and gas development in general) are arbitrary and capricious, falsely assuming, as noted above,

¹⁰ <http://www.eoearth.org/view/article/155245/>

that the costs of oil and gas leasing and drilling to the atmosphere and other non-market resources, like water, public health, and wildlife, are zero. 5 U.S.C. §§ 706(2)(A), (D).

D. BLM Should Prevent Waste Based On Distinctions Between Exploration, Delineation, And Production Stages

BLM's expansive authority and responsibility to prevent methane waste allows it to use far stronger remedial measures and, more broadly, to rethink the basic structure governing how methane waste is prevented. In our January 27, 2014 Core Principles, specifically Core Principle No. 9, we identified several options.¹¹ In particular, we suggested that BLM charge royalties for *all* lost oil and gas, not simply oil and gas that is "avoidably" (versus "unavoidably") lost.

As an initial matter, we are troubled by the distinction that BLM makes between "avoidably" and "unavoidably" lost gas because it does not reflect how oil and gas development proceeds on the landscape. We recommend that BLM therefore consider whether this distinction should be abandoned in favor of a distinction premised on whether oil and gas development is at the exploratory, delineation, or production stage. In general, the intensity and scale of oil and gas development is lower at the exploratory stage. The intensity and scale increases through the delineation and, ultimately, the production stages. At each stage, the engineering and economic dimensions of methane waste prevention are different. Crafting a rule that reflects this progression is therefore practical, allowing the agency to tailor waste prevention actions to each stage of the development process. Further, it bolsters BLM's authority and responsibility to prohibit development where such development would cause undue waste or impacts. 30 U.S.C. § 187; 43 U.S.C. § 1732(b). This authority and responsibility is not clearly apparent in NTL-4A, which only keys in on whether oil or gas is "avoidably" or "unavoidably" lost or wasted—i.e., whether the loss or waste of oil or gas was "unnecessary" or "necessary" (not whether it is "undue").

Venting and flaring should, of course, be minimized if not prevented at every stage of the development process. However, we recognize that, given the more limited intensity and scale of development, there may be engineering, economic, or other limitations making this difficult at the exploratory or delineation stages. We are emphatic, however, that once development gets to the production stage, anything that results in waste from venting and flaring at levels above those represented by the solutions discussed in Section VI – which represent what we believe constitutes the bare minimum of "reasonable precautions" --should be flatly prohibited as causing 'undue' waste. Accordingly, at the production stage, oil and gas lessees and operators should capture and market all recoverable methane as allowed by such solutions. If oil and gas lessees and operators cannot capture and market the methane by using the solutions, then production-stage operations should not be approved and development should

¹¹ Core Principles at 29-31.

be deferred until such "reasonable precautions" will be used.¹² Preventing "undue" waste in this fashion reflects and is supported by the principle, in accord with the MLA and FLPMA, that the natural gas resource is a publicly owned resource managed in trust for the long-term benefit of the American people.

That said, if BLM decides to retain the distinction between "avoidably" and "unavoidably" lost oil and gas, or layers that distinction on a more practical set of rules that distinguish between the exploration, delineation, and production phases, we ask that BLM explicitly build into its rule a provision empowering it to prohibit "undue" waste, for example, and most egregiously, the flaring of associated gas from oil wells. 30 U.S.C. § 187; 43 U.S.C. § 1732(b). We recommend that the mitigation measures discussed below in Section VI serve as minimum distinctions between undue (avoidable) and unavoidable waste.

We also refer you to our Core Principles, specifically Core Principle No. 9.¹³ There, we explained that, by not charging royalties on "unavoidably" lost methane, BLM improperly shifts (i.e., externalizes) a cost of production onto the shoulders of the American public in the form of the lost natural gas resource and lost natural gas sale royalties.¹⁴ If BLM, as we recommended in our Core Principles and recommend here, charges royalties on all lost oil and gas, we explained that it would internalize that cost and thereby create a (modest) disincentive for lessees and operators to waste natural gas.¹⁵

Charging royalties on all lost or wasted gas, whether such loss was avoidable or unavoidable, is supported by the plain language of the MLA, which forbids waste and authorizes the levy of royalties. 30 U.S.C. §§ 187, 225. It is also authorized—if not compelled—by the Federal Oil & Gas Royalty Management Act of 1982 which broadly states that "[a]ny lessee is liable for royalty payments on oil or gas lost or wasted from a lease site when such loss or waste is due to negligence on the part of the operator of the lease, or due to the failure to comply with any rule or regulation, order or citation issued under this chapter or any mineral leasing law." 30 U.S.C. § 1756. This language provides that BLM levy royalties for oil and gas "lost or wasted" without distinguishing between oil and gas that is avoidably or unavoidably "lost or wasted." *Id.*

While it has been BLM policy and practice to waive royalties for unavoidably lost oil and gas, it should be quite apparent—*see, e.g.,* GAO-11-34—that such policy and practice effectively

¹² This can be furthered through effective front-end planning and management, which, incidentally, addresses concerns regarding lessee surface use rights. 43 C.F.R. § 3101.1-2. For example, lease terms can be extended where leases are part of a unitized field (43 C.F.R. § 3107.3-1) or where suspended "in the interest of conservation of resources...." (30 U.S.C. § 209; 43 C.F.R. § 3135.2).

¹³ Core Principles at 29-31.

¹⁴ *Id.*

¹⁵ *Id.*

subsidizes oil and gas drilling practices (including sloppy practices); fails to accommodate current conditions, changed circumstances, and new science; and does not prevent methane waste. Accordingly, it should be abandoned and BLM’s new methane waste rule should charge royalties for *all* lost or wasted oil.

BLM, notably, is not bound by prior policy or practice, even if oil and gas lessees have relied on such policy and practice in acquiring or investing in leases. As the Supreme Court teaches, “[e]ven with respect to vested property rights, a legislature generally has the power to impose new regulatory constraints on the way in which those rights are used, or to condition their continued retention on performance.”¹⁶ *U.S. v. Locke*, 471 U.S. 84, 104 (1985). That legislative power extends to BLM’s authority to revise and promulgate rules in accord with such legislative power, in particular where such authority is designed to prevent the waste of publicly owned oil and gas resources held in trust for the American people. 30 U.S.C. § 189 (“The Secretary of the Interior is authorized to prescribe necessary and proper rules and regulations and to do any and all things necessary to carry out and accomplish the purposes of this chapter...”). Thus, so long as BLM promulgates a methane waste rule that is consistent with the MLA’s expansive authority and mandate to prevent waste, lessees cannot complain of new requirements even where such requirements alter how the lessee may exercise their surface use rights.

In our Core Principles, we also recommended, and recommend herein, that BLM—to the degree it retains the distinction—institute strict standards concerning what loss is truly unavoidable and differentiate between avoidably and unavoidably lost natural gas by setting distinct royalty rates for each. Only loss that literally cannot and could not have been prevented should be royalty free – and the BLM should define this exemption in the narrowest sense. We also recommend that BLM increase the royalty rate for calculating compensation due for avoidably lost oil and gas. See Core Principles, No. 9, at 30. We did not, however, specify a particular royalty rate. *Id.*

Upon review, we suggest that BLM set an effective royalty rate of 100 percent for undue waste. Charging a 100 percent royalty rate: (1) better disincentivizes waste; (2) ensures a full and fair return to the American public for the loss of publicly-owned domestic energy resources; and (3) best ensures that oil and gas lessees do not treat the atmosphere like a waste dump by unnecessarily wasting oil and gas. The MLA, notably, only sets a floor—not a ceiling—for royalty rates, empowering BLM to charge a 100% royalty rate on avoidably lost oil and gas. 30 U.S.C. § 226(b)(1)(A) (providing that royalties be set “at a rate of not less than 12.5 percent in amount

¹⁶ While lease rights may convey property rights, leases do not convey an absolute right to develop and, further, the proper vehicle for a lessee to protect such rights is not a takings action but, rather, a contract action. See, e.g., *Castle v. U.S.*, 301 F.3d 1328, 1342 (Fed Cir. 2002). Given the MLA’s expansive prohibition against waste, which lessees were clearly aware of when they acquired their leases, potential claims that BLM would breach a lessee’s surface use rights (43 C.F.R. 3101.1-2) if it applied a new waste rule to existing leases are, while necessitating contextual analysis, likely to fail. See 30 U.S.C. § 189; *Boesche v. Udall*, 373 U.S. 472, 477-78 (1963) (explaining that “Congress under the [MLA] has...subjected the lease to exacting restrictions and continuing supervision by the Secretary...In short, a mineral lease does not give the lessee anything approaching the full ownership of a fee patentee, nor does it convey an unencumbered estate in the minerals).

or value of the production removed or sold from the lease”); 43 U.S.C. § 1701(a)(9) (providing that it is U.S. policy to “receive fair market value of the use of the public lands and their resources....”)

Beyond royalties, BLM should also consider a complementary set of measures including:

- Enhanced penalty provisions that would provide for the cancellation or suspension of leases, and a prohibition against the acquisition of new leases, for repeated or egregious waste;
- Identification of what elements of the new waste rule, if violated, would constitute a “major” versus “minor” violation as defined in 43 C.F.R. § 3160.0-5; and:
- Strengthened remedies and civil penalties provisions in 43 C.F.R. § 3163.1 and § 3163.2. Core Principles at 30.

BLM should also consider higher national minimum acceptable bids to better encourage optimization of existing leases rather than the acquisition of new leases. See 30 U.S.C. § 226(b)(1)(B) (providing authority to Secretary to raise minimum bids “based upon a finding that such action is necessary: (i) to enhance financial returns to the United States; and (ii) to promote more efficient management of oil and gas resources on Federal lands”). There is, as we noted in our Core Principles, a significant disconnect between the acreage leased by BLM for oil and gas—nearly 38 million acres as per BLM Public Lands Statistics—and the acreage actually in production—12.5 million acres.¹⁷ Finally, while adoption of these measures will provide a strong signal that BLM is striving for zero tolerance toward methane waste, they are not a substitute for BLM’s “front-end” planning obligations or the methane capture technologies and practices we view as the primary mechanisms to reduce methane waste in the revised waste rule.

E. BLM Must Ensure That It Fulfills Its Authority And Responsibility To Prevent Waste By Promulgating, Implementing, And Enforcing A New Waste Rule

BLM’s authority and responsibility is distinct from the authority and responsibility of other regulatory agencies, and cannot be shunted aside pending action by other agencies, whether at the federal or state level. As should be evident from our comments, we see a great opportunity for BLM to work in concert with other federal and state regulators to ensure the maximum amount of methane emission reductions and welcome the ongoing interagency coordination regarding methane set in motion by the White House through its Climate Action Plan.

BLM is in the distinctive position to prevent waste by using its planning and management authorities to control the timing, location, and pace of development. While BLM certainly has the authority to protect air quality and, therefore, to complement whatever action EPA or state

¹⁷ Core Principles at 22, 31.

air quality regulatory authorities requires, the agency’s ability to actually plan for and manage the oil and gas resource—versus simply regulating its pollution within acceptable levels—is a powerful, chronically underused tool to prevent waste. By governing how oil and gas development proceeds, BLM’s distinctive planning and management authorities can also help overcome existing economic barriers to methane reduction action by sparking investment in upstream methane capture (e.g., green completions, low-bleed pneumatics, leak detection and repair) and midstream methane marketing (gathering lines, compressor power, and processing capacity) infrastructure.

BLM can also serve a critical role by filling gaps left by other regulatory agencies. For example, EPA’s 2012 New Source Performance Standards for oil and gas did not control for methane emissions directly, failed to apply to existing oil and gas infrastructure, and did not cover oil production. While EPA has more recently released a set of “white papers” for review and comment, EPA has not committed to any actual rulemaking that would fill these gaps.¹⁸ Even if they had, EPA rules would not obviate or weaken the imperative for BLM action. BLM has the authority to impose additional technological requirements above and beyond what EPA would require to account for site-specific conditions and comply with the BLM’s independent duty to prevent waste as well as its broad duty to protect “air and atmospheric” resources. 43 U.S.C. § 1701(a)(8).

Emerging state-level rulemakings also have major gaps, namely because they do not cover all BLM lands or methane waste sources. Instead, state-level rulemakings cover, by definition, only the state in question; differ in scope and efficacy from BLM’s authorities and responsibilities; and do not reflect that federal oil and gas resources should be subject to the highest standards given that these resources are held in trust for the long-term benefit of the American people.

F. BLM’s Authority And Responsibility To Prevent Waste Is Complemented By Authorities And Responsibilities To Protect The Environment And Public Health

BLM’s authority and responsibility to prevent methane waste in accord with the MLA and FLPMA is complemented by myriad other authorities and responsibilities that we spelled out in our January 27, 2014 Core Principles.¹⁹ These additional authorities and responsibilities reinforce our call for BLM to integrate its waste prevention efforts into the agency’s front-end planning and management framework given the obvious overlap between efforts to prevent methane waste and efforts to protect the environment, in particular the climate. By considering these authorities and responsibilities in a coordinated fashion, BLM can best identify mutually reinforcing measures to minimize methane waste in a way that benefits our economy *and* environment. We emphasize, here, the following authorities and responsibilities:

¹⁸ <http://www.epa.gov/airquality/oilandgas/whitepapers.html>

¹⁹ See Core Principles at 14-18.

- **Secretarial Order 3289 (Dept. Int. Sept. 14, 2009).** Secretarial Order 3289, in section 3(a), provides that BLM “must consider and analyze climate change impacts when undertaking long-range planning exercises, setting priorities for scientific research and investigations, developing multi-year management plans, and making major decisions regarding potential use of resources under the Department’s purview.”
- **The National Environmental Policy Act (“NEPA”).** Pursuant to NEPA, BLM must take a hard look at direct, indirect, and cumulative impacts. 40 C.F.R. §§ 1502.16(a), (b); 1508.25(c). BLM must also “sharply defin[e] the issues and provid[e] a clear basis for choice among options by the decision maker and the public.” 40 C.F.R. § 1502.14. BLM must, therefore, “[r]igorously explore and objectively evaluate all reasonable alternatives” and specifically “[i]nclude the alternative of no action.” 40 C.F.R. §§ 1502.14(a), (d). BLM, in engaging the NEPA process, must, of course, also provide for public participation. 40 C.F.R. § 1506.6.

V. FRONT END PLANNING AND MANAGEMENT IS A KEY ELEMENT OF EFFORTS TO PREVENT METHANE WASTE AND POLLUTION

We have repeatedly emphasized—above, in the January 27, 2014 Core Principles, and at BLM’s public forums—the importance of BLM’s “front-end” planning and management framework as a means of preventing methane pollution and waste. Specifically, BLM’s new waste rule should harness its planning and management framework by requiring that:

- RMPs and MLPs are expressly designed to prevent waste by identifying: (1) mandatory methane waste reduction requirements; (2) stipulations to be added to future leases; (3) COAs to be added to approvals for APDs on existing leases; and by (4) controlling the timing, pace, and location of development; (5) synchronizing upstream production operations with midstream operations to ensure that methane is captured *and* marketed; and (6) prohibiting, if not already provided by rule, development that would cause unnecessary or, in particular, undue methane waste.
- Leases are executed with stipulations specifying the measures necessary to prevent waste—thus informing unitization agreements and conditioning the surface use rights (43 C.F.R. § 3101.1-2) afforded to the lessee—or, where such stipulations cannot be identified because of a need to better understand more geographically specific engineering, geologic, or other conditions—fully reserving the right to identify and impose such measures at the MDP or APD stages.
- Unitization agreements are crafted consistent with BLM’s waste rule, RMPs, MLPs, and lease stipulations, and are expressly designed to foster both the capture and marketing of methane, thereby identifying economies of scale and opportunities to overcome barriers that impede methane waste prevention efforts (efficiencies and opportunities that may not be apparent at the MDP and APD stages).

- MDPs and APDs are designed and approved consistent with BLM’s waste rule, RMP and MLP waste prevention measures, lease stipulations, and augmented by “gas capture and marketing plans” and COAs to ensure that all site-specific “reasonable precautions” to prevent waste not otherwise required by prior planning or management stages have been taken. APDs submitted to BLM for approval should also certify that all “reasonable precautions” have been taken to prevent methane waste.

Effective use of BLM’s planning and management framework—as recommended here to prevent methane waste—would provide clear guidance and direction to state and field offices as they work to prevent methane waste. It also would provide clear guidance and direction to oil and gas lessees and operators, ensuring that they are more fully aware of and can better coordinate their responsibilities to prevent methane waste. And, it also would help to aggregate anticipated oil and gas development activities to identify economies of scale and, accordingly, opportunities to overcome economic barriers that impede efforts to prevent methane waste.

Such guidance and direction should be developed and mandated before leases are executed, when BLM’s authority to prevent methane pollution and waste, and to control the timing, pace, and location of drilling to facilitate methane capture and marketing, is at its apex. Once leases are executed, BLM may impose additional “reasonable measures” in the form of conditions of approval (“COAs”), but COAs are constrained by “surface use rights” granted to the lessee. *See* 43 C.F.R. 3101.1-2. COAs are therefore not a substitute for strong, effective lease stipulations and should only be used to augment waste prevention measures already imposed through stipulation or by higher-level, pre-lease planning and management stages. This ensures that BLM does not unwittingly hamstring its own authority to prevent waste—or hand recalcitrant lessees and operators an argument that they can exploit or leverage (rightly or wrongly) to stymie methane waste prevention. This reinforces our comments, above, expressing concern regarding the lack of meaningful criteria or guidance provided to BLM supervisors by the agency’s current waste rules and policies. *See* Section IV(A).

Substantively, BLM’s waste rule should leverage the agency’s planning and management framework with the following four elements.

First, to the degree not specifically identified by the waste rule itself, BLM should identify criteria or circumstances where the waste of methane is “undue” and, accordingly, where development should be prohibited unless and until action is taken to constrain methane emissions within acceptable limits. 30 U.S.C. § 187; 43 U.S.C. § 1732(b). As we recommended above in Section IV(D), production-stage venting, flaring, or leakage should be considered “undue waste” and, therefore, prohibited until measures are taken to capture and market methane produced from the leasehold. We also make recommendations in Section VI on circumstances and conditions which we view as establishing the line between undue and unavoidable waste.

Second, BLM should impose controls on the timing, pace, and location of development—i.e., “phased development.” Such controls “promote the orderly and efficient exploration, development and production of oil and gas.” 43 C.F.R. § 3160.0-4. Specifically, such controls can reduce the footprint of oil and gas production infrastructure and thus reduce the number and magnitude of potential sources of methane waste. Such controls can also help coordinate and harmonize BLM’s waste prevention efforts with the agency’s broader set of responsibilities to protect, e.g., the climate; ecological health and connectivity; water and air quality; public health; and wildlife. Thus, BLM can and should not only reduce the footprint of oil and gas development to prevent methane waste, but locate and constrain such development to avoid conflicts with other resources. This should, notably, extend beyond public lands to avoid conflicts with private farms, ranches, and communities.

Where conflicts cannot be effectively remedied—and it bears emphasis that oil and gas development cannot always be managed to mitigate impacts within acceptable limits, e.g., in special, sensitive, or beloved lands or where there are lack of resources or knowledge to do so—BLM should not authorize oil and gas leasing or development, period. We note, for example, tensions between efforts to reduce methane waste and to address serious water issues related to fracking through use of nitrogen foam fracking cocktails proposed for use in New Mexico’s Mancos shale formation. This formation rests within the infinitely rich cultural and ecological landscape of the Chaco region that is beloved by many and sacred to the descendants of the ancestral pueblos. While this technique is touted as a water conservation measure, it also apparently causes methane waste by preventing the capture and, in particular, the marketing of methane produced in association with the oil. BLM should avoid these situations, by obligating oil and gas lessees to incur costs that ensure that not only is water conserved, but that associated gas is captured and marketed. If this is not possible, BLM should prohibit development outright because of unacceptable resource tradeoffs that cause unnecessary or undue impacts (in particular given the proposed development’s location). 43 U.S.C. § 1732(b).

Third, to comply with the MLA’s prohibition against waste, methane must be marketed, not just captured. EPA’s Natural Gas STAR Program, notably, explains that, relative to associated gas, the “Gold” protocol is to “[r]ecover for beneficial use all associated gas produced from the reservoir, regardless of well type, except for gas produced from wildcat and delineation wells or as a result of system failures and emergencies” and specifically states that “[b]eneficial use does not include flaring.”²⁰

Accordingly, BLM should synchronize upstream production operations with midstream gathering, compression, and processing capacity. This will help obviate the need for upstream venting or flaring. While BLM may not have jurisdiction over the siting and permitting of midstream operations that do not fall on public lands, this is no excuse: inherent in the MLA’s

²⁰ EPA, Gas STAR Gold Protocol: Proposed Framework, Appx A, Protocol 1 (May 8, 2014) (http://www.epa.gov/gasstar/documents/Gas_STAR_Gold_proposedframework.pdf).

prohibition against waste is BLM’s authority and responsibility to condition the approval of upstream production operations on sufficient midstream gathering, compressor, and processing capacity. It is only by synchronizing upstream and midstream operations that BLM can satisfy the MLA’s prohibitions against waste by ensuring that methane captured at the production stage is marketed. BLM can thus require that upstream production operations be located with access to midstream gathering, compressor, and processing capacity and, further, control the magnitude and pace of upstream production operations to ensure that they do not overwhelm midstream gathering, compressor, and processing capacity. BLM can further this requirement by ensuring that it addresses both upstream and midstream activities through effective planning and management.

It makes little sense for BLM to impose requirements to capture methane if that methane cannot be marketed, leaving it to be vented or flared—i.e., wasted—to the atmosphere (or, as we recommend, requiring BLM to prohibit development). This is a very real problem: haphazard, poorly planned and managed development in the Bakken play of North Dakota has led to the waste of associated gas produced, with flaring rates still in excess of 35% or over 300 million cubic feet per day.²¹ This haphazard dynamic must not be replicated elsewhere. Existing waste rules rightly compel action to not just capture, but market, the oil and gas resource, mandating “that all [oil and gas] operations be conducted in a manner which...*results in the maximum ultimate recovery of oil and gas with minimum waste and with minimum adverse effect on the ultimate recovery of other mineral resources.*” 43 C.F.R. § 3161.2 (emph. added). These provisions should be reinforced and strengthened, both in the new methane waste rule and in BLM plans and management decisions.

Fourth, BLM should require, via the methane waste rule—and in conformity with the RMPs, MLPs, lease stipulations, and unitization agreements—that oil and gas lessees and operators submit “gas capture and marketing plans” (“GCMPs”) to inform drilling-stage planning and management decisions such as MDPs. BLM’s Spring 2014 presentations to the public suggested an iteration of these plans and we support GCMPs as defined herein. GCMPs should be required for each stage of the development process, from exploration, to delineation, and onwards to production; there are actions available at each stage to capture and market methane. The exploration and delineation stages also create a foundation for actual production. GCMPs are therefore important tools to prevent methane waste from exploration and delineation activities, although we emphasize that they are an imperative for production stage operations. By rule and in conformity with RMPs, MLPs, and lease stipulations, BLM would require:

- The inclusion of GCMPs by lessees and operators as part of MDP and APD submissions.

²¹ North Dakota Industrial Commission, NDPC Flaring Task Force Report at (January 2014) (<http://www.ndoil.org/latest-news/news-release-industry-to-increase-natural-gas-capture-to-85-percent-within-two-years-and-90-percent-in-six-years/>).

- That the lessee or operator submitting GCMPs take action to capture and market methane consistent with higher-level planning and management decisions—like RMPs, MLPs, and lease stipulations, and unitization agreements (so long as they address and are designed to prevent methane waste)—by refining higher-level methane capture and marketing measures in the context of specific oil and gas production-stage activities for defined geographic areas.
- That GCMPs identify specific production equipment and technologies, including methane capture technologies, as well as estimates of oil and gas production.
- That GCMPs identify the midstream gathering, compression, and processing capacity that will be needed to ensure that captured gas can be marketed.
- That BLM use GCMPs to gauge the accuracy of prior estimates of reasonably foreseeable development (see discussion below) to assess whether these higher-level planning and management decisions remain accurate or must be updated through revisions or amendments.
- That BLM use GCMPs to ensure an objective, level-playing field to facilitate coordination between upstream producers and midstream operators—and thus synchronize upstream and midstream activities—to capture *and* market all methane released from the subsurface mineral estate by drilling operations.

These ideas are pragmatic and supported by BLM’s own experience. For example, BLM’s proposed RMP/FEIS for the Colorado River Valley Field Office illustrates how front-end planning and management can facilitate both methane capture and marketing, as well as avoid and mitigate impacts to other resources:

In areas of federal and mixed mineral ownership, an exploratory unit can be formed before a wildcat exploratory well is drilled. The boundary of the unit is based on geologic data and attempts to consolidate the interests in an entire structure or geologic play. The developers of the unit enter into an agreement to develop and operate as a single entity, regardless of separate lease ownerships. Costs and benefits are allocated according to agreed-upon terms. Development in a unitized field can proceed more efficiently than in a field composed of individual leases because competition between lease operators and drainage considerations is not a primary concern. Unitization also can reduce surface use requirements because all wells are operated as though under a single lease, and operations can be planned for more efficiency. Duplication of field processing facilities is eliminated, and consolidation of facilities into more efficient systems is probable. Unitization can also involve wider spacing than usual, or spacing based on reservoir factor rather than a set rule, which could result in fewer wells and higher recovery efficiency. Through planning, access roads are usually

*shorter and better organized, facilities are usually consolidated, and well efficiency is maximized to a degree not seen in individual lease operations.*²²

Further, many oil and gas companies have expressed support for gas capture planning as a way to reduce the excessive flaring occurring in the Bakken region of North Dakota. Such support was evident at an April 22, 2014 Gas Flaring Hearing of the North Dakota Industrial Commission.²³ See Excerpts from testimony demonstrating this industry support for gas capture planning (attached as Exhibit 2). Gas capture planning can be equally effective at reducing methane waste and getting gas to market beyond the Bakken region, and such plans should be an integral part of the revised BLM waste rule.

To help further each of these four elements, BLM should make good use of Reasonably Foreseeable Development Scenarios (“RFDS”); RFDS provide a critical, data-driven tool to inform “front end” planning and management and to advance our recommendations.²⁴ RFDS are, according to agency guidance:

- A reasonable technical and scientific approximation of anticipated oil and gas activity based on the best available information.
- Includes all interrelated and interdependent oil & gas activities in a defined area regardless of land ownership or jurisdiction; and
- Should be scientifically credible and presented in a technical report that may be subject to professional peer review.²⁵

Further, according to agency RFDS guidance, “[a] scientifically based and well-documented [RFDS] is *the* critical component of information necessary for performing thorough cumulative effects analysis of oil and gas activities that could occur as a result of leasing.”²⁶ Agency RFDS guidance also notes that “an [RFDS] is a vital and necessary tool for serving as a context for more localized site-specific decisions on proposed exploration or development projects.”²⁷ Linking to our recommendations above, agency RFDS guidance also explains that “[g]as

²² BLM, Colorado River Valley Field Office, Proposed RMP/FEIS, Appx. P at 9 and 10 (April 2014) (emphasis added).

²³ <https://www.dmr.nd.gov/oilgas/dockets/2014/docket043014info.pdf>

²⁴ BLM, FS, EPA, and FWS Interagency Reference Guide, *Reasonably Foreseeable Development Scenarios and Cumulative Effects Analysis For Oil and Gas Activities On Federal Lands In the Greater Rocky Mountain Region* (June 2003) (“IRG”).

²⁵ *Id.*

²⁶ *Id.* at 12 (emphasis original).

²⁷ *Id.* at 12.

production rates in excess of local gathering and transmission capacity may require the construction of pipelines and associated infrastructure,” a need that is informed by the RFDS’ requirement that it address “all interrelated and interdependent oil & gas activities in a defined area regardless of land ownership or jurisdiction.”²⁸ That is, in addition to pipelines, the RFDS must address additional infrastructure that can also be the source of methane waste, including pneumatic devices, dehydrators, storage tanks, compressors, and gas processing facilities that may be needed to minimize waste.

An RFDS, by providing an informed understanding of how oil and gas development is projected to advance, can also help deal with issues caused by steep production decline curves commonly seen in development of shale resources. For example, typical horizontal shale oil well production in the Permian Basin declined by 66% after the first year and by 83% over three years.²⁹ Typical horizontal shale oil well production in the Bakken play declined by 70% in the first year and by 84% over three years.³⁰ These steep declines indicate that a significant amount of natural gas resources could be lost if methane waste minimization, capture, and marketing measures are not in place when oil or gas wells are completed. These steep declines may also suggest that BLM should account for the rate of depressurization of oil and gas wells and consider modulating that rate of depressurization. This is because, if a lessee or operator depressurizes a well too quickly to produce oil or natural gas liquids, it may degrade the amount of ultimately recoverable oil and gas, contribute to waste, and undermine the recovery of the natural gas resource. 43 C.F.R. § 3161.2.

An RFDS, by informing agency planning and management, can thus provide an effective basis to account for the impacts of oil and gas production activity and thereby ensure that methane emissions are minimized, captured, *and* marketed. An RFDS should, therefore, operate as binding constraint on oil and gas lease development in a particular area, and BLM should promulgate its methane waste rule accordingly. When an RFDS becomes outdated, inaccurate, or is exceeded, then BLM should complete a new RFDS and revisit and revise or amend its plans and decisions accordingly. Otherwise, BLM cannot credibly prevent methane waste by minimizing, capturing, and marketing natural gas, in particular where development is driven not by natural gas, but by oil or natural gas liquids or credibly contend that it has properly planned for and acceptably managed the impacts of oil and gas development.

See section VI.B.5. for a further discussion of technological alternatives to flaring.

²⁸ *Id.* at 11.

²⁹ The Shale Revolution, Myths and Realities, First Energy Capital Energy Growth Conference, 2013, at slide 50 (<http://legacy.firstenergy.com/UserFiles/HUGHES%20First%20Energy%20Nov%2019%202013.pdf>).

³⁰ *Id.* at slide 54. See also David Hughes, *Drill Baby Drill*, Post-Carbon Institute (2013) (<http://www.postcarbon.org/drill-baby-drill/report>)

VI. PROVEN, OFTEN COST-EFFECTIVE TECHNOLOGIES PROVIDE AN EFFECTIVE MEANS TO CAPTURE METHANE AND ENSURE THAT IT IS NOT POLLUTED AND WASTED TO THE ATMOSPHERE

A. General Principles

The solutions presented below in Section VI(B) constitute minimum technological requirements to ensure responsible development and to comply with BLM's statutory mandate to minimize waste.³¹ These "back end" technological requirements should be read in conjunction with our recommendations, above, regarding "front-end" planning and management. As background, BLM's current definition of "waste" provides:

any act or failure to act by the operator that is *not sanctioned by the authorized officer as necessary for proper development and production* which results in:

- (1) A reduction in the quantity or quality of oil and gas ultimately producible from a reservoir under prudent and proper operations; or
- (2) *avoidable surface loss of oil or gas.*"

43 C.F.R. § 3160.0-5 (emphasis added). Though "avoidable surface loss" is not defined, the current definition of "avoidably lost" provides insight:

the venting or flaring of produced gas without the prior authorization, approval, ratification or acceptance of the authorized officer and the loss of produced oil or gas when the authorized officer determines that such loss occurred as a result of:

- (1) Negligence on the part of the operator; or
- (2) The failure of the operator to take all reasonable measures to prevent and/or control the loss; or
- (3) The failure of the operator to comply fully with the applicable lease terms and regulations, applicable orders and notices, or the written orders of the authorized officer; or
- (4) Any combination of the foregoing.

Id. (emphasis added).

³¹ We recognize that certain emergency situations may require or result in unavoidable, short-term venting or flaring. While we do not suggest that such emergencies should be included in waste, we believe they should be extremely limited in their duration.

These provisions should be strengthened in accord with the recommendations provided above, in particular in Section IV. We simply observe that, by definition of the current rules, no venting or flaring of gas is “avoidably lost” if BLM authorizes it, nor may any other BLM-sanctioned acts qualify as “waste”—no matter the quantity of recoverable gas that is lost or means by which such acts are taken. Although, in light of BLM’s authority and responsibility to prevent “undue” waste, BLM is prohibited from authorizing acts that are “waste” in the practical (and statutory) sense, 30 U.S.C. § 187; 43 U.S.C. § 1732(b), this regulatory framework provides too little guidance to inform individual BLM actors in determining whether to authorize certain conduct.

Furthermore, even if venting or flaring is not approved or sanctioned, it is still not “avoidably lost” under this definition unless BLM supervisors make an affirmative determination that one, or a combination, of three conditions were met, problematically shifting the burden far too heavily onto BLM, rather than the oil and gas lessee or operator, to demonstrate whether or not reasonable precautions have been taken to prevent waste.³² Thus, whether an operator’s actions are deemed wasteful is far too dependent on whether BLM approves or sanctions the acts, an effort that is hampered by the lack of meaningful criteria or guidance to review and decide upon such approvals.

To comply with the MLA’s prohibitions against waste, BLM must—in addition to harnessing the agency’s “front end” planning and management framework—specifically explain what acts (or failures to act) it will not approve or sanction because they cause waste. Merely obtaining BLM’s approval to waste is not what Congress intended when it required all leases to include the condition to “use all reasonable precautions to prevent waste.”³³ In the sections that follow, we delineate what these acts are relative to specific technological elements involved in the oil and gas development process.

We make these recommendations in light of the fact that methane emissions from oil and gas facilities that BLM oversees are *higher* than typical onshore US facilities. In 2010, the General Accounting Office reported that between 4.2 percent and 5 percent of natural gas produced at onshore federal leases was vented or flared, which was is far higher than the 0.13 percent reported by operators to the BLM. The GAO found that operators did not report operational sources such as venting from oil storage tanks, pneumatic valves, or glycol dehydrators; and they inconsistently reported venting from intermittent events like completions, liquid unloading,

³² And even within these conditions, there is no indication about what BLM would consider negligent or “reasonable measures.”

³³ See H.R. Rep. No. 206, 65th Cong., at 9 (1917) (Then-Secretary of the Interior Franklin Lane, in a report to the entire House of Representatives, noting that, if the MLA passed, “it [would] obviate some of the abuses which [then] exist[ed] with respect to the development of the oil and gas lands, among them the sapping of oil deposits from adjacent lands and the destruction of same through lack of care of the wells.”)

or releases after equipment failures.³⁴ The GAO further found operators could economically reduce venting and flaring by forty percent using control technologies that were available in 2010.³⁵ The GAO made several recommendations to the Secretary of the Interior, including:

- The BLM should take steps to develop more complete data on lost gas
- The BLM should revise its guidance to operators to ensure that they use technologies to reduce vented and flared gas where they can be adopted economically, and
- The BLM should expand the use of infrared cameras to improve reporting of emissions and identify opportunities to reduce lost gas.³⁶

More recent data submitted to the US Environmental Protection Agency's (EPA) Greenhouse Gas Reporting Program ("GHGRP") by oil and gas producers shows that methane emissions are disproportionately large from four high-producing Western US oil and gas basins where most, or almost all, of the oil and gas production is from Federal lands or mineral estate and production is overseen by BLM. As shown below in Table 1, these basins—Green River, Piceance, San Juan, and Unita—produced 14.5 percent of US onshore natural gas and only 2.7 percent of US onshore oil in 2012,³⁷ but accounted for 27.1 percent of all the methane emissions reported from nationwide onshore oil and gas production in that year.³⁸

³⁴ GAO Report. 2010. FEDERAL OIL AND GAS LEASES: Opportunities Exist to Capture Vented and Flared Natural Gas, Which Would Increase Royalty Payments and Reduce Greenhouse Gases
GAO-11-34: Published: Oct 29, 2010. pgs. 10-12. Available at: <http://www.gao.gov/assets/320/311826.pdf>

³⁵ GAO report. 2010. Pg. 19.

³⁶ GAO report. 2010. Pgs. 33-34.

³⁷ For a description of the analysis methodology used to extract the information shown here and below on production and emissions from these basins, see Description of Methodology for Determining Methane Emissions from Production Basins and Sources (hereafter "Description of Methodology," attached hereto as Exhibit 3).

³⁸ See Description of Methodology. Not all methane emissions from oil and gas production facilities are reported to the GHGRP, due to limitations such as a reporting threshold that exempts smaller operators. However, we are not aware of any reason why these omitted emissions would skew the comparisons of GHGRP data for these basins and the US as a whole that we present here.

Table 1 – Oil and Gas Production and Reported Methane Emissions from Four Western US Basins with High Proportions of BLM Jurisdiction³⁹

Basin	Percentage of U.S. Gas Production	Percentage of U.S. Oil Production	Percentage of Reported U.S. Methane Loss
Green River	5.3%	0.8%	4.8%
Uinta	1.7%	1.3%	3.3%
San Juan	4.4%	0.1%	14.5%
Piceance	3.2%	0.4%	4.6%
Total for 4 Basins	14.5%	2.7%	27.2%

Furthermore, analysis of GHGRP data shows that emissions from a number of key sources are also disproportionately high in these basins, as shown in Table 2. For example, reported emissions from these four basins account for over 58 percent of nationwide reported emissions from liquids unloading and almost 35 percent of emissions from pneumatic controllers and pumps. Through its public forums, BLM has sought input on measures to reduce waste of natural gas from these sources, and as we discuss below, emissions from these sources can readily be reduced for very low (in some cases negative) cost.

Table 2 – Percentage of Nationwide Emissions for Specific Sources Occurring from the Green River, Uinta, San Juan, and Piceance Basins⁴⁰

Emissions Source		Percentage of National Emissions for Specific Source
Fugitives / Leaks		21.1%
Liquids Unloading		61.7%
Pneumatics	Pneumatic Controllers	33.6%
	Pneumatic Pumps	30.1%
Compressors	Reciprocating Compressors	42.6%
	Centrifugal Compressors	26.4%

These disproportionate emissions, far in excess of the portion of nationwide oil and gas production occurring in these basins, show that operations in these basins, including wells and facilities managed by BLM, are significantly worse than standard practice (let alone best practice). Quite simply, operations that BLM is managing are using wasteful practices that needlessly emit harmful pollutants, despite the Bureau’s clear mandate to prevent such waste.

BLM must recognize that the following solutions are necessary for proper oil and gas development and production, clearly describe them as such, and include them in the revised

³⁹ See Description of Methodology.

⁴⁰ See Description of Methodology.

waste rule. Further, these technologies and work practices must be revised regularly to ensure that the minimization of waste is based on the most up to date practices.⁴¹

B. Methane Reduction Technologies

1. Leak Detection and Repair (“LDAR”)

Oil and gas producers in the Green River, Piceance, San Juan, and Uinta Basins reported to the GHGRP that over 4.5 *billion* cubic feet (BCF) of gas leaked from their facilities in 2012.⁴² This type of waste is characterized by the unintentional (or neglected) escape of natural gas from static components such as connectors, valves, regulators, and hatches throughout the oil and natural gas sector. On public lands, such waste is widespread and includes components found on well pads, at processing plants, and throughout transmission and storage infrastructure. Moreover, there is no single cause for these leaks. Changes in a component’s exposure to new stresses (e.g., thermal or mechanical) can lead to deterioration of the integrity of certain parts, as can human error via improper installation or maintenance. Additionally, normal operations and exposure to weather conditions can break down certain equipment. Ultimately, the occurrence of waste due to leaks is virtually impossible to prevent.

We note that the Greenhouse Gas Reporting Program (GHGRP) requires oil and gas producers to report emissions from equipment leaks. But, the reported emissions are not based on measurements of leaks from facilities or even on proxies for leaks such as counting the number of leaking components at facilities and assuming standard leak rates for those leaking components. Rather, reporters simply count *all* components at their facilities and use standard leak rates, as prescribed by the GHGRP rules.⁴³ This is particularly important because, as noted above, a number of peer-reviewed studies have concluded that methane emissions from oil and gas facilities are significantly underestimated in the US EPA Greenhouse Gas Inventory.⁴⁴ Furthermore, many studies have recognized that infrequent but very high-emitting “super-emitters” are critical contributors to methane emissions from oil and gas facilities, and they are very likely a major source of the methane observed in methane measurement studies that is missing in official inventories.⁴⁵ For example, an extensive study of emissions from five gas processing plants found the 58 percent of the emissions from leaks from over 70,000 components came from just the top ten leaks at each plant (fewer than one component in a

⁴¹ See Executive Order 13563 (calling for federal agencies to develop and submit plans to facilitate periodic review of significant regulations).

⁴² See Description of Methodology.

⁴³ 40 C.F.R. § 98.232 (c)(21), and § 98.233(r).

⁴⁴ See Petron *et al* (2014) and Brandt *et al* (2014) and references therein.

⁴⁵ See Brandt *et al* (2014) at 734; Alvarez, R.A. *et al* (2012) “Greater focus needed on methane leakage from natural gas infrastructure,” *Proc.Natl.Acad.Sci.U.S.A.*, 109, 6435.

thousand), and 35 percent of the emissions from all the leaks at all five plants came from the top ten leaks at just one plant.⁴⁶ Because these large, wasteful emissions are occurring from such a small fraction of components, they are very difficult to account for in component-by-component measurements such as those used by EPA to calculate standard leak rates.

In other words, the above GHGRP figures *almost certainly substantially underestimate the volume of gas emanating from leaks from oil and gas facilities*. And, much of those emissions are coming from “super-emitters” which, as a rule, are improperly operated or maintained equipment. Examples noted in the literature include worn-out seals, hatches left open, rust holes in equipment, etc.⁴⁷ *These emissions are clearly wasteful*. BLM must ensure that facilities on Federal land, and facilities producing hydrocarbons from Federal mineral estate, are not wasting gas due to this type of negligence.

BLM must require operators to control leaks by regularly conducting instrument-based Leak Detection and Repair (LDAR) surveys. Based on EPA’s documentation for its 2012 NSPS, monthly instrument-based LDAR surveys of oil and gas facilities can reduce leaking gas by 80 – 87 percent.⁴⁸

Recent studies have shown that instrument-based LDAR programs are a very cost effective way to reduce wasteful leaks. A recent study of LDAR surveys by Carbon Limits,⁴⁹ for example, showed that the cost of surveys is quite reasonable (for example, surveys of wellsites cost about \$400, with the cost rising somewhat for larger facilities) and once leaks are identified, it is in the operator’s economic interest to repair them in almost every instance.⁵⁰ Carbon Limits analyzed data from over 4,000 LDAR surveys of oil and natural gas facilities in Canada and the U.S. which identified nearly 40,000 leaks. The surveys in this study were performed with infrared (IR) cameras, which can rapidly scan components to locate hydrocarbon gas emissions.

⁴⁶ National Gas Machinery Laboratory, Clearstone Engineering, Innovative Environmental Solutions, (2006) *Cost-Effective Directed Inspection and Maintenance Control Opportunities at Five Gas Processing Plants and Upstream Gathering Compressor Stations and Well Sites* (EPA, 2006). Available at: <http://www.epa.gov/gasstar/tools/related.html#four>

⁴⁷ For example: *Id.* at table 7; *City of Fort Worth Natural Gas Air Quality Study Final Report*, July 13, 2011, Figure 3.7-1. Thief Hatch Left Open, p. 3-99. Figure 3.7-5. Hole in Tank Roof - Miscellaneous Emission Source, p. 3-102. Available at: http://fortworthtexas.gov/uploadedFiles/Gas_Wells/AirQualityStudy_final.pdf

⁴⁸ See EPA, *Oil and Natural Gas Sector: Standards of Performance for Crude Oil and Natural Gas Production, Transmission, and Distribution, Background Technical Support Document for the Proposed Rules*, July 2011 (“2011 TSD”) at 8-22, Table 8-12 (available at <http://epa.gov/airquality/oilandgas/pdfs/20110728tsd.pdf>).

⁴⁹ Carbon Limits is an independent consultancy experienced in climate change policies and emission reduction project identification and development, particularly in the oil and gas sector.

⁵⁰ Carbon Limits, *Quantifying Cost-Effectiveness of Systematic Leak Detection and Repair Programs Using Infrared Cameras*, at 5. The report focuses on LDAR surveys of compressor stations, gas plants, and well sites/well batteries. Available at: <http://www.catf.us/resources/publications/view/198>

Once identified, the leaks were measured with a high-volume sampler or were estimated. Carbon Limits then assessed the net present value (NPV) of repairing the identified leaks based on the estimated costs of repair and the value of the gas that was conserved by the repair.⁵¹ The conclusions are striking: even using a very low value of conserved gas of \$3/Mcf, over 97 percent of the identified emissions were from leaks that had a positive repair NPV (i.e., repairing the leak cost less than the value of the gas conserved). Even after taking into account the cost of performing a survey, the aggregate NPV of performing the surveys in the database and repairing the identified leaks was generally positive.⁵² While many LDAR surveys had a small net cost (the survey and repair costs were slightly larger than the value of the conserved gas), this was outweighed by the net benefit of performing the survey and repairing the leaks at the leakier facilities. These aggregate costs are a measure of the net costs a firm with multiple facilities on Federal land, or all firms operating on Federal land, would bear if BLM required LDAR at facilities on those lands.

Moreover, because much of the data from this study is from Canada, where LDAR surveys have been required for years,⁵³ it is safe to assume that the Carbon Limits study underestimates the quantity of leak abatement that LDAR surveys will accomplish in the U.S., where in most jurisdictions surveys are not required. As a result, the study almost certainly underestimates the net value of leak surveys. (Leaks at U.S. facilities, which have been building up in some cases for years, will be higher, and therefore surveys will find more waste that can be avoided through repair, making the surveys more lucrative than the Canadian surveys in the Carbon Limits dataset.)

The surveys in the Carbon Limits dataset were largely performed annually. As some states have recognized (see below), the costs of LDAR surveys are low enough, and the avoided waste / emissions are large enough, to justify requiring more frequent LDAR surveys for larger facilities. Carbon Limits calculated the costs of performing LDAR more frequently for various facility types, and found that using quarterly and monthly LDAR is a cost-effective way to reduce emissions of VOC and methane. For example, monthly LDAR at all types of facilities reduces methane emissions at net costs to operators that are below recent estimates by EPA economists of the societal cost of a metric ton of methane emissions (\$970) due to its detrimental effects on

⁵¹ *Id.* at 16.

⁵² *Id.* at 18.

⁵³ See Alberta Energy Regulator Directive 060 at 8.7; <http://www.aer.ca/documents/directives/Directive060.pdf>

climate.⁵⁴ This estimate of the “social cost of methane” is certainly *below* the true damage to society caused by a ton of methane emissions.⁵⁵

Recognizing the low cost and high value of LDAR surveys, several states have taken steps to reduce waste from leaks by requiring regular surveys. In February 2014, Colorado revised its oil and gas regulations to require instrument-based LDAR surveys for well production facilities as well as at natural gas gathering compressor stations.⁵⁶ Facilities must perform LDAR surveys at compressor stations and well production facilities at a frequency that is dependent on the VOC emissions from that facility.⁵⁷ The frequencies required span from one time, for well production facilities with the smallest annual uncontrolled emissions, to annual, quarterly, and monthly, for facilities with successively larger annual uncontrolled emissions. Similarly, the required frequency for gathering compressor stations may be annual, quarterly, or monthly, depending on uncontrolled annual emissions.⁵⁸ The Colorado rules also require the repair to be made promptly, unless a shutdown is required (in which case it must be made during the next scheduled shutdown).⁵⁹ Colorado also requires the repaired leak to be re-monitored within 15 days of the repair, in order to confirm that the leak was indeed fixed.⁶⁰

Colorado’s rule was supported by several oil and gas producers in that state.⁶¹ Those firms submitted data, based on their own experience performing LDAR surveys, during the Colorado rulemaking process. These data show that firms can perform LDAR surveys at even lower cost than the figures used in the Carbon Limits study described above, as shown below in Table 3:

⁵⁴ This value is the calculated damage from methane emitted in 2015 using a 3% discount rate, the same parameters (and using the same methodology) used by the White House Office of Management and Budget to calculate the social cost of carbon dioxide. See Marten, A.L., and Newbold, S.C. “Estimating the social cost of non-CO₂ GHG emissions: Methane and nitrous oxide.” *Energy Policy* 51 (2012): 957 (available at: <http://tinyurl.com/kdbbf4z>).

⁵⁵ See, e.g.,: <http://costofcarbon.org/reports>.

⁵⁶ See 5 C.C.R. § 1001-9 XVII.F (2014).

⁵⁷ *Id.* at Tables 3, 4.

⁵⁸ *Id.* at Table 3.

⁵⁹ See *id.* XVII.F.7.a (the first attempt to repair that leak must be made within 5 days; if the necessary parts must be ordered, or other good cause delays the attempt, a repair must be made within 15 days of either receipt of the parts of the cause of delay ceases to exist).

⁶⁰ *Id.* XVII.F.7.b.

⁶¹ Finley, Bruce. “Colorado pitches new rules to cut oil and gas industry air pollution,” *The Denver Post*, 11/18/2013. (available at: http://www.denverpost.com/environment/ci_24548337/proposed-colorado-air-pollution-regs-clamp-down-oil).

Table 3 – LDAR Survey Costs

Facility Type	Cost per Inspection		
	Carbon Limits	Anadarko Petroleum Corporation ⁶²	Noble Energy Incorporated ⁶³
Compressor Station	\$2,300	\$1,250 – \$5,150	
Multi well batteries	\$1,200	\$450 - \$800	\$263 - \$431
Single well batteries	\$600		
Well site	\$400		

Colorado’s Department of Public Health and Environment (CDPHE) also produced estimates of total program cost and cost-effectiveness (cost per ton of avoided pollution) that are in line with the results of Carbon Limits’ analysis. For example, the CDPHE analysis found that repair costs are less than the value of the gas conserved by the repairs, consistent with the results we discuss above on the NPV of repairs.⁶⁴

Several other states require some or all oil and gas facilities to conduct instrument-based LDAR surveys regularly in order to obtain a permit or general permit. These include Pennsylvania,⁶⁵ Wyoming,⁶⁶ and Ohio.⁶⁷ The base frequency of the LDAR requirement for affected facilities in

⁶² <http://ft.dphe.state.co.us/apc/aqcc/PRESENTATIONS/Noble%20Energy%20Inc%20&%20Anadarko%20Petroleum%20Corporation/Anadarko.pdf>

⁶³ <http://ft.dphe.state.co.us/apc/aqcc/PRESENTATIONS/Noble%20Energy%20Inc%20&%20Anadarko%20Petroleum%20Corporation/Noble.pdf>

⁶⁴ Cost-Benefit Analysis, Submitted Per § 24-4-103(2.5), C.R.S. Pp. 21-22. Available at: http://ft.dphe.state.co.us/apc/AQCC/COST%20BENEFIT%20ANALYSIS%20&%20EXHIBITS/CDPHE%20Cost-Benefit%20Analysis_Final.pdf

⁶⁵ Department Of Environmental Protection, Air Quality Permit Exemptions, Category No. 38. Available at <http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-96215/275-2101-003.pdf>

⁶⁶ Quarterly instrument-based LDAR is required in the Upper Green River Basin for new and modified facilities. See Wyoming Department of Environmental Quality (2013), *Oil and Gas Production Facilities Chapter 6, Section 2 Permitting Guidance* at 22 and 27 (available at: http://deq.state.wy.us/aqd/Oil%20and%20Gas/September%202013%20FINAL_Oil%20and%20Gas%20Revision_UGRB.pdf).

⁶⁷ Ohio General Permit 12 for oil and gas production sites requires quarterly instrument-based LDAR, although it contains provisions for less frequent LDAR for facilities with manageable leak frequencies (if less than 2% of components are leaking, the next survey can be skipped). See Ohio General Permit 12.1(C)(5)(c)(2) (available at <http://epa.ohio.gov/dapc/genpermit/oilandgaswellsiteproduction.aspx>). We do not support these “step-down” provisions in LDAR rules as they incentivize operators to not find leaks, increase the complexity of the rule and compliance efforts, and the record shows that facilities can have leak frequencies below 2% and still waste copious amounts of natural gas. See *Sierra Club, et al., Rebuttal Prehearing Statement for Colorado Oil and Gas 2014 Rulemaking* at 8-11. (available at: <http://ft.dphe.state.co.us/apc/aqcc/REBUTTAL%20STATEMENTS,%20EXHIBITS%20&%20ALT%20PROPOSAL%20REVISIONS/Conservation%20Group/Conservation%20Groups%20-%20OREB.PDF>).

Wyoming and Ohio is quarterly. These rules demonstrate the feasibility of reasonable LDAR rules, but USEPA and the vast majority of states producing significant amounts of natural gas, including most states with significant Federal lands and mineral estate, do not require LDAR for oil and gas production facilities or gas gathering and transmission compressor stations. The lack of rules to require LDAR surveys of most oil and gas facilities on public lands has led to large scale, wasteful, and detrimental leaks. BLM must address this by requiring LDAR surveys.

Because leaks, by definition, are unintentional, any leak on public lands must be classified as “waste” that accrues royalties. To minimize such waste, BLM should adopt in its revised waste rule regular instrument-based surveys on all oil and gas facilities on public lands. We support the tiered approach that Colorado has taken to LDAR frequency, which requires more frequent surveys for larger facilities likely to leak more. However, we do not support the exemption from *regular* LDAR that the Colorado rules provide for smaller well productions facilities by only requiring a single, non-repeated survey. While there is value in a single survey, leaks will inevitably arise after the survey is performed, and given the very low costs for LDAR surveys at smaller facilities demonstrated by data from Carbon Limits, Noble Energy, and Anadarko Petroleum, the exemption from regular surveys is not warranted. Even the smallest oil and gas facilities should be inspected for leaks with appropriate instruments at least annually.

Once leaks are discovered, the rule should require that the first attempt to repair them must be made within 5 days, with actual repair occurring no more than 30 days after discovery unless exigent circumstances are present (such as ordering parts or shutdown is required). After repairs are made, operators must confirm within 15 days that repairs have in fact fixed the leaks.

2. Plunger Lifts and other Solutions to Eliminate or Minimize Venting During Liquids Unloading

Methane emissions from liquids unloading represent another significant source of waste. According to GHGRP data, almost 10 BCF of natural gas was vented during liquids unloading during 2012 from wells in the Green River, Piceance, San Juan, and Urita basins. This represents over 62 percent of all liquids unloading venting *nationwide*, and 27 percent of the methane emissions from all sources within oil and gas production from these basins.⁶⁸

The need for liquids unloading arises when water and other liquids accumulate in a mature well, slowing (or stopping) gas production for that well. In order to maintain production, operators remove, or “unload”, these liquids through a variety of methods, some of which vent gas to varying degrees. These methods include installing pumps to lift liquids; injecting soaps or other additives into the well to foam the liquids or installing smaller diameter production tubing in a well to increase the velocity of gas up the well, both of which enable the gas flow to better entrain liquids; and installing a plunger lift, a simple device that efficiently lifts a column of

⁶⁸ See Description of Methodology.

liquid out of a well.⁶⁹ Unfortunately, some operators will forego these proven, affordable approaches to liquids unloading and crudely “blow down” the well by opening it to the atmosphere. Since atmospheric pressure is lower than the pressure in gathering pipelines, this can increase the flow rate in the well, allowing some portion of the liquids to reach the surface entrained with the high gas flow. However, this approach is extremely wasteful, as it vents large quantities of gas but only removes a small portion of the liquids in the well.⁷⁰ While plunger lifts may be configured to vent gas while unloading wells, the quantity of venting will generally be much less for a given well if a plunger lift is used than if the well is unloaded using a crude blow down approach.

The need to unload liquids is not a surprise to operators; almost every well will need to unload at least once during its productive lifetime, and some require many liquids unloading events every year. Unfortunately, many operators on federal lands do not adequately plan and invest in technologies for liquids unloading, due in part to BLM’s lenient policy. As BLM has applied its current regulations and policies, the agency has permitted and not collected royalties on this intentional, predictable wasting of natural gas, provided that the liquids unloading event does not last more than 24 hours.⁷¹ To our knowledge, BLM has not codified any numeric limitations on the frequency of venting during liquids unloading. The very high, disproportionate emissions from liquids unloading in the basins with high numbers of Federal wells shows that large scale waste of gas is occurring from these wells due to the operators’ approach to liquids unloading, resulting not only in lost resources but also in harmful pollution.

BLM’s choice to ignore the waste caused by blowing down a well is egregious given that there are better approaches that can be used to unload wells, and that the venting results from a predictable stage in the wells’ life-cycle. As mentioned above, avoiding or minimizing wasteful venting from liquids unloading is very low-cost. According to Natural Gas STAR documentation, capital costs for a relatively routine plunger lift installation can range from \$1,900 to \$10,400 per well.⁷² These installations can reduce venting of natural gas 70-90 percent.⁷³ Smart automation of plunger lifts can reduce venting more than 90 percent from baseline emissions with no plunger lift, at total capital costs of \$7,600 to \$28,000 per well.⁷⁴ Because the gas that

⁶⁹ See USEPA, *Lessons Learned from Natural Gas STAR Partners, Options for Removing Accumulated Fluid and Improving Flow in Gas Wells.*” hereafter “Lessons Learned – Options,” (available at http://www.epa.gov/gasstar/documents/ll_options.pdf).

⁷⁰ See USEPA, *Lessons Learned from Natural Gas STAR Partners, Installing Plunger Lift Systems in Gas Wells,*” hereafter “Lessons Learned – Plunger Lifts,” p. 1. (available at: http://epa.gov/gasstar/documents/ll_plungerlift.pdf).

⁷¹ NTL-4A, Sec. III.B.

⁷² Lessons Learned – Plunger Lifts, pp. 3-4.

⁷³ Lessons Learned – Options, p. 5.

⁷⁴ Lessons Learned – Options, Exhibit 9.

would otherwise be wasted is being recovered instead, the operator will see increased revenue from the sale of that recovered gas. Moreover, there are additional benefits. Well blow downs require operational costs in the form of labor costs from manual blow downs and workover costs as a result of remediating poor conditions from liquids build-up. Installing plunger lifts will not only reduce these costs, but they will also increase the productivity of the well more effectively (and in a more timely manner) than blow-downs.⁷⁵ Accordingly, the up-front costs of plunger lifts can be quickly recouped through reduced maintenance associated with blow downs as well as increased revenue from increased gas production and minimizing (or eliminating) wasteful venting. As a result, plunger lift installations typically have payback periods of 9 months or less.⁷⁶

The emission figures for liquids unloading from western basins with high fractions of Federal wells is striking, and illustrates the severity of waste that is occurring under BLM's oversight. Producers in the San Juan basin reported 6.4 BCF was emitted just from liquids unloading in 2012; in the Piceance basin the figure was 2.6 BCF.⁷⁷ *No other basin in the nation reported emissions higher than 1.1 BCF, including several basins that produce far more gas than either of these basins.*⁷⁸ These very high, outlier emissions indicate that standard, proven technologies such as plunger lifts have not been installed – apparently operators are not choosing to invest in these commonsense methods. In its revised waste rule, BLM must require operators to utilize technologies to eliminate or reduce wasteful venting; if operators claim that doing so is infeasible for particular wells, they must supply specific information that demonstrates this to BLM, and BLM must describe quantitative criteria that it will use to evaluate any such claims. Since plunger lifts can reduce venting from wells during liquids unloading by 70 percent or more, these simple rules could reduce waste of billions of cubic feet of natural gas per year.

3. Zero-Bleed and Low-Bleed Natural Gas-Driven Pneumatic Equipment

Natural gas-driven pneumatic controllers and pumps are ubiquitous equipment that vent a large amount of methane on public lands. Methane venting from pneumatic equipment comprise 53 percent of total methane emissions from oil and gas sources in the Green River, Piceance, San Juan, and Uinta Basins. Pneumatic valve controllers vent 17 BCF on public lands, and pneumatic pumps vent 2.4 BCF in these basins.⁷⁹ Again, the emissions from this source are disproportionately high in these basins, where most wells are on Federal lands or producing from Federal mineral assets. While these basins produce 14.5 percent of US onshore gas,

⁷⁵ Lessons Learned – Plunger Lifts, p. 9.

⁷⁶ Lessons Learned – Plunger Lifts, p. 1.

⁷⁷ See Description of Methodology.

⁷⁸ Greenhouse Gas Reporting Program data, see Appalachian Basin.

⁷⁹ See Description of Methodology.

reported emissions from pneumatic controllers and pumps in these basins account for just under 35% of all reported emissions from this equipment, nationwide.

Gas-driven pneumatic equipment uses the pressure energy of natural gas in pipelines to do work, such as control, open, and shut valves or pump a liquid into a pipeline under pressure. By design, this equipment vents natural gas to the atmosphere without first combusting it as part of normal operations. Since the gas is not combusted, methane and other pollutants are released, and the chemical energy content of the gas is lost. The methane and other pollutants then degrade air quality and warm the climate.

Pneumatic valve controllers. These devices, which account for most of the emissions from pneumatic equipment, can be classified based on how rapidly they vent or “bleed” natural gas. High-bleed controllers are those that continuously vent more than 6 standard cubic feet per hour (scfh), while low-bleed controllers continuously vent less than 6 scfh.⁸⁰ Additionally, intermittent-bleed controllers – which vent irregularly – typically vent natural gas at a rate (averaged over periods when the controller is venting and not venting) higher than the low-bleed cutoff of 6 scfh, but lower than a typical high-bleed controller. Finally, “zero-bleed” equipment is available that either uses compressed air instead of natural gas, or electrical power instead of compressed gas, but in either case vents no natural gas. Some devices can be powered just with solar-generated power; others require more electrical power (from the grid or an on-site generator) or air compressed with a natural gas-powered engine.

US EPA greatly limited the use of high-bleed controllers for new installations as part of NSPS Subpart OOOO (high-bleed controllers may only be newly installed “based on functional needs, including but not limited to response time, safety and positive actuation”).⁸¹ However, Federal rules do not affect the hundreds of thousands of existing high bleed controllers that were installed before August 23, 2011, the effective date for these provisions of Subpart OOOO.⁸² Colorado, on the other hand, required operators to replace existing high-bleed controllers in the urban portions of the Denver-Julesberg (D-J) basin in 2009⁸³, and earlier this year required operators to replace all high-bleed controllers statewide by 1 May 2015.⁸⁴ Colorado found that replacement of a high-bleed controller with a low-bleed controller pays for itself, from the

⁸⁰ See USEPA, *Lessons Learned from Natural Gas STAR Partners, Options For Reducing Methane Emissions From Pneumatic Devices In The Natural Gas Industry*,” p. 2. (available at: http://epa.gov/gasstar/documents/II_pneumatics.pdf).

⁸¹ 40 C.F.R. § 60.5390(a).

⁸² *Id.* § 60.5365(d).

⁸³ See 5 C.C.R. § 1001-9 XVIII (2009) (available at <https://www.sos.state.co.us/CCR/GenerateRulePdf.do?ruleVersionId=2772&fileName=5%20CCR%201001-9>).

⁸⁴ 5 C.C.R. § 1001-9 XVIII.C.2.b (2014).

value of the conserved gas, in fourteen months (see below).⁸⁵ It is notable that Colorado’s existing rule for the urban parts of the D-J basin contained provisions allowing operators to keep high-bleed controllers in service, if they showed that doing so was necessary for “safety and/or process purposes.”⁸⁶ No operator requested such an exemption,⁸⁷ and there is no evidence in the record that these requirements have caused any operational problems. Clearly, replacing high-bleed controllers with equipment that vents less natural gas is very low cost and quite feasible. BLM, in the revised rule, must not allow existing high-bleed controllers to continue wasteful, excessive venting on well pads and compressor stations subject to BLM jurisdiction.

BLM must also consider measures to limit emissions from intermittent-bleed (IB) controllers. Analysis of GHGRP data shows that emissions from IB controllers are considerably higher than emissions from either low-bleed or high bleed controllers, including in basins with large numbers of Federal wells, as shown in Table 4.

Table 4 - Vented gas from pneumatic valve controllers (2012) in western producing basins

MMcf	Pneumatic Controller Type		
	High-Bleed	Intermittent-Bleed	Low-Bleed
Green River	1,272	2,094	81
Piceance	240	2,145	53
San Juan	3,203	5,555	82
Uinta	384	1,347	316

In all four basins, emissions from IB controllers are much higher than emissions from the other types of controllers. Recent measurements of emissions from pneumatic valve controllers conducted by the University of Texas show that the problem may be even worse than the GHGRP data shows. They found the emissions from low-bleed and IB controllers are 270 and 29 percent higher, respectively, than the emissions factors used in the GHGRP,⁸⁸ suggesting that the venting figures shown above are substantially underestimated.⁸⁹ (They did not measure emissions from high-bleed controllers).

⁸⁵ Cost-Benefit Analysis. Submitted per § 24-4-103(2.5), C.R.S. For proposed revisions to Colorado Air Quality Control Commission Regulation Number 3 (5 CCR 1001-5) and Regulation Number 7 (5 CCR 1001-9), p. 32. (available at: ftp://ft.dphe.state.co.us/apc/aqcc/COST%20BENEFIT%20ANALYSIS%20&%20EXHIBITS/CDPHE%20Cost-Benefit%20Analysis_Final.pdf).

⁸⁶ 5 C.C.R. § 1001-9 XVIII.C.3 (2009).

⁸⁷ Email from Daniel Bon, CDPHE, to David McCabe, Clean Air Task Force, 1 November 2013.

⁸⁸ Allen, D., *et al*, (2013) “Measurements of methane emissions at natural gas production sites in the United States,” *Proc. Nat. Acad. Sci. USA*, 110, 17,768, available at: <http://www.pnas.org/content/110/44/17768>.

⁸⁹ As discussed above, *all* emissions figures cited in this document from the GHGRP are underestimates of actual emissions, most importantly due to the fact that smaller oil and gas producers are not required to report their emissions to the program.

Continuous bleed controllers, including low-bleed controllers, and IB controllers serve similar and in many cases identical purposes. The American Petroleum Institute (API) has stated: “Achieving a bleed rate of < 6 SCF/hr [*i.e.*, the average vent rate required of new, continuous-bleed controllers] with an intermittent vent pneumatic controller is quite reasonable since you eliminate the continuous bleeding of a controller.”⁹⁰ Pneumatic controllers emitting less than 6 scfh (both continuous-bleed and IB) can serve many of the functions of higher-emitting intermittent devices, which thus could be replaced with low-bleed controllers. There are a wide variety of applications of pneumatic controllers, and also a wide variety of parameters for the design of controllers – pressure, extreme temperature performance, response time, flow rates, corrosiveness of fluids, etc. As such, there are many controllers of both continuous-bleed and IB design on the market, including many emitting below 6 scfh.⁹¹

The use of any pneumatic valve controller, new or existing, that emits more than 6 scfh is a wasteful practice that BLM must prohibit, except when technically necessary. BLM has the authority and the duty to require existing lessees to replace all pneumatic valve controllers emitting more than 6 scfh, whether continuous bleed or IB, with controllers that emit below that threshold (again, continuous bleed or IB), or with zero-bleed technology. While exemptions should be attainable in certain circumstances where high-bleed devices are technically necessary, experience in Colorado shows this will be rare. Indeed, BLM has already required this in areas that are heavily impacted by oil and natural gas drilling, confirming that operators can perform such replacements at low cost.⁹²

We present two estimates of costs for replacing high emitting controllers, based on USEPA data from the 2012 NSPS Subpart OOOO rulemaking and on Colorado data from their recent rulemaking effort. Both estimates show that replacing wasteful high emitting devices is a very low cost approach to reducing harmful emissions, with the extra revenue from sales of gas that would otherwise be wasted paying for the replacement in a few years.

⁹⁰ API, Technical Review of Pneumatic Controllers by David Simpson, P.E. (October 14, 2011), cited in Rebuttal Statement Of The Sierra Club, Natural Resources Defense Council, Earthworks Oil And Gas Accountability Project And Wildearth Guardians. (available at: <ftp://ft.dphe.state.co.us/apc/aqcc/REBUTTAL%20STATEMENTS,%20EXHIBITS%20&%20ALT%20PROPOSAL%20REVIEWS/Conservation%20Group/Conservation%20Groups%20-%20REB%20Exhibits.pdf>).

⁹¹ For discussion of low-bleed devices, including some specific low-bleed devices, see *Lessons Learned – Options*.

⁹² See Tres Rios FEIS at 376 (“Operators would either replace or retrofit high-bleed controllers, positioners, and transducers with low-bleed, no-bleed, or air-driven devices....The cost to inventory and replace high-bleed pneumatics with low-bleed pneumatic devices on existing oil and gas wells located on federal land is not high compared to the value of [methane] gas lost to the atmosphere. Most replacement costs are recouped in under 1 year, resulting in a large economic benefit for industry.”).

USEPA estimated in the NSPS rulemaking analysis that an average new low-bleed pneumatic controller costs \$2,553.⁹³ We add \$500 in labor costs, which is easily sufficient to cover the labor needed for a typical controller switch-out. Annualizing the total cost of \$3,053 over 10 years at 7 percent (even though controllers last far longer than ten years), produces a yearly cost per controller of \$434. The annual value of conserved gas for high-bleed pneumatics is approximately \$1,100, and the value for intermittent-bleed pneumatics is approximately \$430, which translates to a 3- and a 7-year payback period for high- and intermittent-bleed pneumatics, respectively. Colorado estimated the equipment cost of replacing a high (continuous)-bleed controller with a low-bleed at \$1,033, and the labor cost is \$387, leading to a total annualized cost per controller of \$169.⁹⁴ Using the same value of conserved gas as above, this translates to a 2- and a 6-year payback period for high- and intermittent-bleed pneumatics, respectively.

Pneumatic Pumps. Pneumatic pumps serve two main purposes in natural gas production. Chemical injection pumps are used to inject additives that prevent corrosion or formation of ice-like hydrates in gas pipelines. Pneumatic pumps are also used to pressurize and circulate chemicals used to dehydrate gas.

The use of electrically powered pumps, instead of natural-gas powered pneumatic pumps, eliminates this source of vented natural gas. For example, solar-powered chemical injection pumps are ubiquitous at Marcellus Shale wellpads in Pennsylvania. These pumps are used to inhibit hydrate formation – a problem which occurs only in the winter – and the successful use of this approach in a northern location with significant winter cloud cover suggests that it is a generally applicable technology. In revising its waste rule, BLM must consider whether the use of natural gas-driven pneumatic chemical injection pumps is wasteful, given the existence of non-venting options that can work on wellpads that are not connected to the grid. BLM should also investigate options for avoiding emissions from natural gas-driven pneumatic pumps associated with dehydrators.

4. Minimizing Compressor Emissions

Another source of waste on public land is gas compressors. Operators in the Green River, Piceance, San Juan, and Uinta basins reported nearly 590 MMCF of leaks and vented emissions from compressors to USEPA's GHGRP.⁹⁵ These figures include emissions from both

⁹³ See 2011 TSD at 5-15, Table 5-7. Note that this figure appears to be quite high. See, e.g., the costs of controllers cataloged in Appendix B, and Exhibit 4, in EPA Gas STAR's *Lessons Learned* document on PCs (available at http://www.epa.gov/gasstar/documents/ll_pneumatics.pdf).

⁹⁴ See *Initial Economic Impact Analysis for Proposed Revisions to Colorado Air Quality Control Commission Regulation No. 7.*, available at <http://www.colorado.gov/cs/Satellite/CDPHE-AQCC/CBON/1251647985820>. Table 30.

⁹⁵ See Description of Methodology.

reciprocating and centrifugal compressors. While this is smaller than sources such as pneumatic equipment, liquids unloading, and leaks, most production compressors are not located on wellpads, but instead are located at gathering compressor stations. These facilities do not report emissions to the GHGRP.⁹⁶ Thus, the 590 MMCF figure represents a small fraction of the gas which leaks and vents from compressors on public land. Finally, the relatively small 590 MMCF emissions reported from these four basins still represents 41 percent of all reported emissions from compressors at oil and gas production facilities, nationwide. As discussed below, it is very feasible to substantially reduce emissions from these compressors.

For a reciprocating (piston) compressor, emissions occur primarily from worn out packing seals on connecting rods that transmit motion into the high-pressure cylinders. Over time these seals wear and if not regularly replaced, emissions can become very large. In other words, the more worn out these seals are, the more they waste natural gas.

Emissions from centrifugal (turbine) compressors also originate from seals, but in a different manner. These compressors are generally configured with one of two types of seal for the main shaft of the compressor. Dry (*i.e.*, oil-free) seals are designed in a way that minimizes leaks across the seal. Wet seals, in contrast, use oil to seal a narrow gap between the shaft and its housing. This oil absorbs significant amounts of the high-pressure natural gas which must be removed from the oil before it is re-circulated into the seal. Typically, the gas removed from the seal oil is vented, and these emissions are substantial: a typical wet-seal centrifugal compressor vents nearly 19,000 MCF per year.⁹⁷

Quite simply, there are two clear wasteful practices here that are easily remedied. First, waste from reciprocating compressors occurs when operators fail to properly maintain them by regularly replacing rod packing seals. The solution, then, is easy: require proper maintenance practices to minimize waste. EPA's 2012 NSPS Subpart OOOO requires operators of certain *new* compressors to replace rod packing every 36 months or 26,000 hours of operation.⁹⁸ Notably, in addition to all compressors existing before August 23, 2011, the rule exempts *new* compressors on wellpads.⁹⁹ The exemption of existing compressors in Subpart OOOO stems from the specific approach that the Clean Air Act takes to reducing pollutants such as VOCs, which Subpart OOOO regulates; it does not reflect any judgment by EPA that reducing

⁹⁶ USEPA, Petroleum and Natural Gas Systems 2012 Data Summary, Greenhouse Gas Reporting Program, at 3, (available at: <http://www.epa.gov/ghgreporting/documents/pdf/2013/documents/SubpartW-2012-Data-Summary.pdf>).

⁹⁷ EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2012*, Annex 3, Table A-128. (available at <http://epa.gov/climatechange/Downloads/ghgemissions/US-GHG-Inventory-2014-Annex-3-Additional-Source-or-Sink-Categories.pdf>).

⁹⁸ 40 C.F.R. § 60.5385(a).

⁹⁹ See *id.* § 60.5365(c) (NSPS applies only to compressors between the wellhead and the point of custody transfer to the transmission and storage segment that were installed after August 23, 2011).

emissions from existing compressors would not be cost-effective or feasible. In fact, maintaining an existing reciprocating compressor costs the same as maintaining a new compressor, and EPA found in the Subpart OOOO rulemaking that maintaining a gathering compressor, as required by that rule, would cost less than \$130 per ton of avoided methane emissions.¹⁰⁰

The BLM, to comply with its duty to minimize *all* waste on public lands, must extend this requirement for proper maintenance to apply to existing sources as well. It does not make sense to require operators to keep good maintenance practices for new sources while the same practices are just as cost-effective and applicable for eliminating waste from existing sources. Emissions from existing gathering and boosting reciprocating compressors would decline by more than half if the standards for new compressors were extended to existing compressors.¹⁰¹ Wellpad compressor emissions can be reduced eighty percent.¹⁰²

Second, BLM must address wasteful emissions from wet-seal centrifugal compressors. While replacing wet seals with dry seals is possible, it is generally less expensive to route gas from the oil degassing unit (which would otherwise be vented) to the natural gas inlet of the compressor. According to the EPA's 2012 NSPS, retrofitting oil degassing emissions from wet seal centrifugal compressors to a vapor recovery unit can reduce venting by 95 percent.¹⁰³ The EPA has estimated that the capital cost to route seal oil degassing emissions to fuel gas or compressor suction is \$22,000,¹⁰⁴ and due to the substantial amount of gas captured, the payback period for this option is 3 months.¹⁰⁵

¹⁰⁰ Calculated from data from EPA, *Regulatory Impact Analysis for Proposed New Source Performance Standards and Amendments to the National Emissions Standards for Hazardous Air Pollutants for the Oil and Natural Gas Industry* (July 2011) at 3-16, Table 3.3. (available at: <http://www.epa.gov/ttn/ecas/regdata/RIAs/oilnaturalgasfinalria.pdf>).

¹⁰¹ See 2011 TSD at 6-10, Table 6-5; 6-15, Table 6-6.

¹⁰² *Id.*

¹⁰³ See 2011 TSD, Section 6.4.4.2.

¹⁰⁴ EPA, *Oil and Natural Gas Sector: Standards of Performance for Crude Oil and Natural Gas Production, Transmission, and Distribution, Background Technical Support Document for the Final New Source Performance Standards*, April 2012, 2011 ("2012 TSD") at Section 6.2 (available at: <http://www.epa.gov/airquality/oilandgas/pdfs/20120418tsd.pdf>).

¹⁰⁵ Calculated based on a 90% abatement from initial 19,000 mcf emissions, and a \$4/mcf price for gas.

5. Venting and Flaring of Gas From Oil Wells

There are three distinct sources of natural gas waste from oil wells:

- The venting of associated natural gas, containing large quantities of methane, during well completions after hydraulic fracturing of oil wells
- The flaring of associated natural gas from oil wells during the production phase, due to lack of investment in infrastructure
- The venting of associated natural gas (often called “casinghead gas venting”) from oil wells during production, which is also due to lack of investment in infrastructure

In each case, whether it is vented or flared, natural gas is wasted by operators despite the fact that cost effective technologies currently exist to capture the gas and put it to beneficial use, either on-site or via pipelines. As described above in Sections IV and V, BLM has the opportunity, and authority, to ensure through “front-end” planning that such wasteful practices do not occur on public land.

As a general matter, BLM cannot allow this type of waste to take place. As explained in more detail above, *see* Section IV.A, BLM’s duty to minimize waste exists on a basin-wide level. As such, the Bureau must require proper planning during the RMP stage so that sufficient infrastructure to capture natural gas and bring it to beneficial use¹⁰⁶ is in place before wells are drilled, ensuring that the waste of natural gas will be minimized. Moreover, though economics are a factor, they should be viewed on a basin or field level. *See* Section IV.C. Doing so provides BLM with a reasoned basis for determining whether the natural resource as a whole is being wasted.

As it currently stands, the GHGRP does not cover these emissions sources as thoroughly as the sources described in Sections VI.B.1–4. For example, well completion emissions from hydraulically fractured *oil* wells are not covered by the GHGRP. As a result, nationwide emissions are challenging to estimate and we are unable to provide emissions estimates specific to the western basins dominated by public lands. Nevertheless, as documented below, the information we do have on current emissions shows it is clear that the magnitude of waste from each of these oil well sources are significant.

Below we also note that while traditional natural gas gathering systems are the most effective means of preventing waste from these sources, there are also several technologies that provide alternative means of productively utilizing associated gas beyond such traditional systems. We very briefly describe some of those technologies below. With these alternatives available, and

¹⁰⁶ “Beneficial use” here and below refers to capturing associated gas from oil wells and either transporting it to market via pipelines *or* utilizing the gas on-site as an energy source for useful work.

as discussed more fully in Section IV.D, BLM must issue rules that prohibit development on public lands unless operators are able to utilize the solutions we describe below.

a. Venting of gas during flowback following hydraulic fracturing of oil wells

EPA's NSPS Subpart OOOO addresses emissions of gas during well completion (flowback) of hydraulically fractured or re-fractured *gas* wells. Beginning on 1 January 2015, gas that flows to the surface during flowback from most gas wells must be separated and directed into pipelines.¹⁰⁷ Wells exempt from this requirement, such as exploration, delineation, and low-pressure wells, must flare the gas instead of venting it, or capture it and direct it into pipelines.¹⁰⁸ Before 1 January 2015, all wells not capturing gas for sale must flare it.¹⁰⁹

Unfortunately, this requirement does not extend to hydraulically fractured oil wells.¹¹⁰ Furthermore, oil and gas producers are not required to report emissions during this process to the GHGRP.¹¹¹ However, analysis of multiple datasets by the Environmental Defense Fund has shown oil wells produce 6 – 200 metric tons of methane completion / re-completion flowback.¹¹² One source they analyzed (GHGRP reports of well completions which appear to be *oil* well completions, despite the gap in the GHGRP mentioned above) shows that this gas is vented, instead of being captured for sale or flared, in a significant fraction of oil well completions, and only rarely is it captured for sale. Of the 957 completions and re-completions with clear data on the handling of the gas produced during completion, 467 were vented and only 186 were captured.¹¹³ Given the recent distinct shift in drilling activity to unconventional oil formations,¹¹⁴ it is certain that thousands of oil well completions with hydraulic fracturing

¹⁰⁷ 40 C.F.R. § 60.5375(a)(1)-(4).

¹⁰⁸ *Id.* § 60.5375(a)(3), (4).

¹⁰⁹ *Id.*

¹¹⁰ *Id.* § 60.5365(a) (each *gas* well is subject to this subpart); § 60.5430 (defining “gas well” as “an onshore well drilled principally for production of natural gas”).

¹¹¹ See 40 C.F.R. § 98.232(C)(6), (8) (requiring completion events at gas wells to report emissions to the GHGRP, but neglecting to include any requirements for completion events at oil wells). See also *id.* § 98.238 (defining “oil well” as a well that produces “hydrocarbon liquids and do[es] not meet the definition of a gas well.”).

¹¹² Environmental Defense Fund (2014), *Co-Producing Wells as a Major Source of Methane Emissions: A Review of Recent Analyses* at Table 1. Available at: <http://blogs.edf.org/energyexchange/files/2014/03/EDF-Co-producing-Wells-Whitepaper.pdf>.

¹¹³ *Id.* at Table 3.

¹¹⁴ See for example: Weeden, S. (2013), “Oklahoma reverses 25-year decline in oil production,” *E&P Magazine*. Available at: http://www.epmag.com/item/Oklahoma-reverses-25-year-decline-oil-production_110957; Durham, L.S. (2013), “Unconventional Uteland Butte Sparks New Utah Activity” Available at: <http://www.aapg.org/Publications/News/Explorer/Emphasis/ArticleID/2491/Unconventional-Uteland-Butte-Sparks-New-Utah-Activity>.

will be occurring on public lands in the near future (if that is not the case already). With high potential emissions per well completion and an industry pattern of venting a significant portion of these completions, BLM's new waste rule clearly must address significant waste of resources on public land from oil well completions.

Fortunately, there are clear, low-cost, and effective waste mitigation measures for this source. The same Reduced Emissions Completions (REC) approach, whereby natural gas is captured with specialized equipment, instead of allowing it to escape into the air, and directed into pipelines, can be applied to associated gas from oil wells. According to the EPA's 2012 NSPS rulemaking, RECs can reduce completion emissions by 95 percent,¹¹⁵ and recent research suggests that when properly carried out the emissions reduction can be better still.¹¹⁶ As described above, BLM must also ensure through planning processes that gathering lines and other infrastructure are in place prior to well completion, or that other alternative technologies are in place to utilize the associated gas (see below).

b. Flaring of associated natural gas during oil production

In the last several years, the volume of natural gas flared from onshore operations in the US has risen quite dramatically due to the practice of producing oil from wells without adequate infrastructure in place to capture the gas produced by those wells. For example, about one-third of the gas produced in North Dakota is currently flared – in 2013, this was over 90 *billion* cubic feet of gas, enough to heat almost 1.3 million homes.¹¹⁷ This occurs in part because wells go into production with no gas pipeline in place, but roughly half of the gas flared in North Dakota in 2013 was flared from wells already hooked up to pipelines. This “connected well flaring” occurs because there is insufficient infrastructure on wellpads (compressors), in the gathering system (insufficiently sized pipelines, and lack of facilities such as drip stations and pig stations to keep pipelines flowing consistently), and at processing plants. Simply put, due to poor planning, investment in the gas gathering and processing infrastructure has not kept pace with the enormous investment being made in drilling and completing oil wells.

BLM shares responsibility for this wasteful, environmentally detrimental situation. Wells on Federal and Tribal land are flaring similar portions of the gas they produce as wells on private or state land in North Dakota, as shown below in Table 5.

¹¹⁵ See 2012 TSD, section 5.1.

¹¹⁶ Allen, D., et al (2013).

¹¹⁷ Clean Air Task Force calculations based on data from North Dakota Industrial Commission (see <https://www.dmr.nd.gov/oilgas/stats/Gas1990ToPresent.pdf>) and US Energy Information Administration.

Table 5 – Flared Portion of Natural Gas Produced on North Dakota Federal, Tribal, and non-Federal Lands

	Little Missouri National Grassland	Other Federal Land	Fort Berthold Indian Reservation*	Private and State Land
Number of Wells	870	175	936	6700
Portion of Produced Gas that is Flared:				
From wells hooked up to pipelines	22%	6%	31%	21%
From wells not hooked up to pipelines	7%	14%	13%	8%
Total Portion Flared	29%	20%	44%	29%

Source: Clean Air Task Force analysis of data from North Dakota Industrial Commission. Data is from August 2013 – January 2014 inclusive.

*Not all wells within FBIR are on Trust land. Portions shown in this table are for all wells within FBIR.

As described above, BLM must not allow this detrimental waste to continue. Front-end planning must ensure that not only are wells hooked up to pipelines, but also that sufficient pipeline and processing capacity exists to get all gas produced to market, before wells are completed. Since well production is highest in first few months after completion and then declines quite steeply (see Section V *supra*), it is essential that wells not be completed without this infrastructure actually in place.

Alternatively, as discussed below, other technologies can be used to transport or utilize associated gas. BLM must ensure that either with traditional gathering systems or alternative technologies, all associated gas is utilized, and none is wasted via flaring (or venting).

c. Venting of associated natural gas during oil production

In some cases, producers are venting associated “casinghead” gas from oil wells, instead of flaring it. Oil producers in the Green River, Piceance, San Juan, and Unita Basins reported venting about 83 MMCF of casinghead gas in 2012.¹¹⁸ While this is a relatively small figure, it is a particularly egregious type of waste, since unlike venting from other sources (such as pneumatic equipment), no useful work *at all* is done with this gas. Further, when gas is not even flared, the environmental harm from the methane, VOC, and toxic constituents of the gas is utterly unabated.

This waste can entirely be prevented by ensuring that sufficient infrastructure is in place to capture all gas produced by oil wells, as discussed above.

¹¹⁸ See Description of Methodology.

d. Alternative means of utilizing or transporting associated gas

Typically associated gas from oil wells, including gas from well completions, is transported to processing plants in gathering pipelines. When wells are isolated or other issues limit the capacity of gathering systems, other technologies can make it feasible to utilize associated gas locally or get it to market for beneficial use.

In the coming weeks, Clean Air Task Force will release a report by Carbon Limits on alternative technologies to utilize associated gas in these situations, and communicate this report to BLM. The report highlights several technologies:

- Natural gas liquids (NGL) recovery – separating NGLs (heavier hydrocarbon which can be stored as liquids under pressure) from raw associated gas at wellpads, so that NGLs can be trucked to market. The residual lean associated gas can be utilized further with other technologies, and NGL recovery may make the gas more suitable for those technologies. The residual lean gas is also smaller in volume, therefore relieving some capacity when gathering systems are approaching capacity, and has a lower dew point. The latter property is important because if NGLs are not recovered from associated gas at wellpads, they often condense out of the gas in gathering pipelines and pool in low spots, restricting or clogging the pipeline.
- Compressed natural gas (CNG) trucking – compressing associated gas at wellsites and trucking to consumers, processors, gathering systems, etc.
- Electric power generation for local use (powering drilling rigs, frac pumps, artificial lift pumps, etc, or off-pad local use).
- Electric power generation for sale to grid.

Each one of the above options is a mature technology, having been deployed commercially more than once in tight oil developments. These technologies can also be scaled up or down depending on the size of the development. Finally, many of the technologies are portable: they can be moved from well to well. For example, a technology can be deployed at a well in the first few months, when gas production is very high, and dismantled or scaled down once a pipeline is in place and can handle the full volume of production from the well. These solutions represent practices that are feasible today at costs that are not prohibitive.

BLM must carry out its statutory mandate to ensure that lessees of public land are subject to the condition that they will use “*all* reasonable precautions to prevent waste of oil or gas” developed on public land. With the availability of these technologies and proper front-end planning procedures, flaring and venting of associated gas clearly constitutes waste. BLM must adopt a rule to prevent this waste by not allowing venting or flaring of associated gas.

VII. CONCLUSION

We hope that BLM gives these core principles due consideration and that they are of service in informing the agency's efforts to modernize its 34-year old waste rules. As we have noted, BLM has made steady progress acknowledging and remedying methane emissions and waste but that this progress must be accelerated and intensified. This will go far in ensuring that BLM is, in fact, ensuring the responsible development of this country's onshore oil and natural gas resources.

EXHIBIT 1

Congress of the United States
Washington, DC 20515

May 14, 2014

President Barack Obama
The White House
1600 Pennsylvania Avenue NW
Washington, D.C. 20500

Dear President Obama:

Thank you for releasing the *Climate Action Plan Strategy to Reduce Methane Emissions* on March 28th. We are encouraged that the Department of Energy, Department of the Interior, and Environmental Protection Agency are poised to take action to significantly reduce methane emissions from the oil and gas sector. Both the Environmental Protection Agency (EPA) and the Department of the Interior (DOI) should use their existing authority to enact policies that will decrease methane emissions across the oil and gas sector.

Curbing methane emissions will reduce harmful greenhouse gases and benefit the health of our citizens. Methane is a greenhouse gas commonly leaked and vented from oil and natural gas operations. According to EPA, methane is more than 20 times as potent as carbon dioxide. Moreover, the methane and volatile organic compounds (VOCs) emitted from oil and gas facilities can interact with sunlight to produce ozone or “smog,” which has been found to trigger asthma attacks and aggravate conditions of people with bronchitis and emphysema.

The good news is that methane emissions from the oil and gas sector can be controlled with existing, cost-effective technology that is available and already being used by some operators. In February, Colorado became the first state to require such controls. Colorado’s new regulations serve as a model for balanced oil and gas development, and we urge the EPA and DOI to consider similar policies to reduce such methane emissions.

According to EPA’s most recent Greenhouse Gas Inventory, the oil and gas industry emitted 8.4 million metric tons of methane in 2011, roughly equivalent to carbon emissions from 60 coal-fired power plants. In 2012, EPA updated its air pollution standards for natural gas wells; these standards will help reduce volatile organic compounds emissions and methane gas. These new standards are a laudable step, but the rule does not apply to oil wells and the agency did not address existing infrastructure that emits large quantities of methane and, in many cases VOCs and air toxics as well. We urge the EPA, acting within its existing authority, to more broadly address methane emissions from new and existing oil and gas facilities across the supply chain.

With approximately 14 percent of U.S. onshore gas production and 8.5 percent of U.S. onshore oil production taking place on federal lands, DOI is uniquely positioned to make meaningful progress in reducing emissions and minimizing waste of a natural resource. Operators on public lands regularly vent and flare methane, wasting publicly owned natural gas resources. DOI should take appropriate steps to implement “best management practices” for reducing air pollution and methane leaks at oil and gas facilities on federal lands.

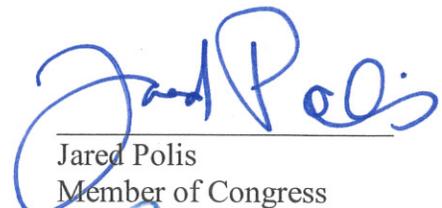
The Government Accountability Office estimates that 40 percent of gas that is currently lost to the atmosphere where it fuels dangerous climate change could instead be cost-effectively captured, generating new royalties of \$23 million and cutting 16.5 million tons of CO2-e annually. These common sense steps to improve oil and gas production on federal lands benefit the environment and the taxpayer.

To enhance our nation's energy security and reliability and to protect our environment, methane emissions must be reduced. Proper oversight investments in critical infrastructure will help to achieve that goal. We appreciate your attention to this issue, and look forward to working with you as federal agencies implement their obligations under the methane strategy.

Sincerely,



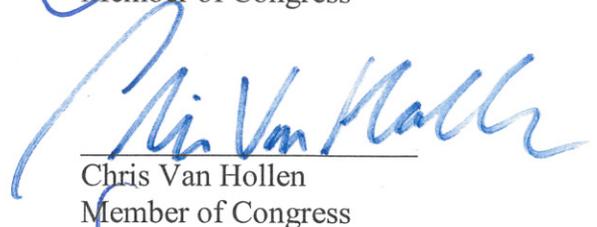
Jerry McInerney
Member of Congress



Jared Polis
Member of Congress



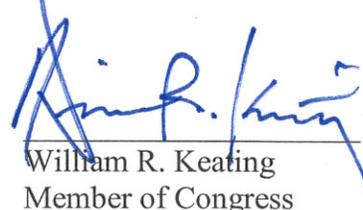
Peter A. DeFazio
Member of Congress



Chris Van Hollen
Member of Congress



Zoe Lofgren
Member of Congress



William R. Keating
Member of Congress



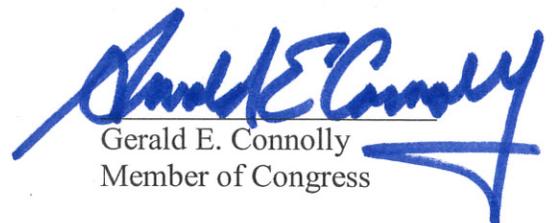
Rush Holt
Member of Congress



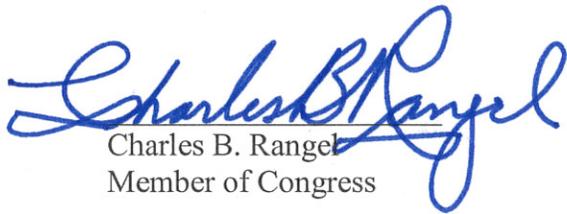
Paul Tonko
Member of Congress



George Miller
Member of Congress



Gerald E. Connolly
Member of Congress

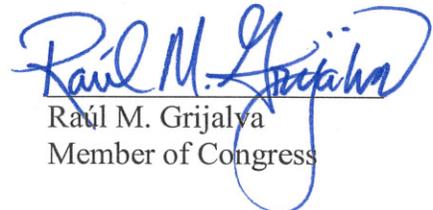

Charles B. Rangel
Member of Congress

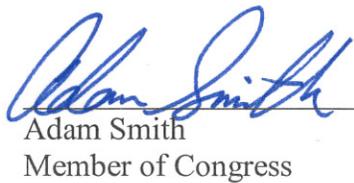

Lois Capps
Member of Congress

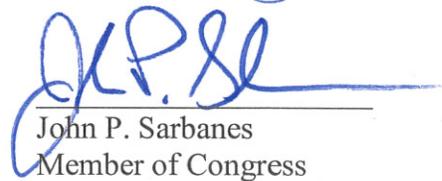

Anna G. Eshoo
Member of Congress

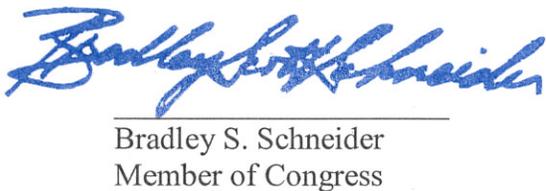

James P. Moran
Member of Congress


Michael M. Honda
Member of Congress

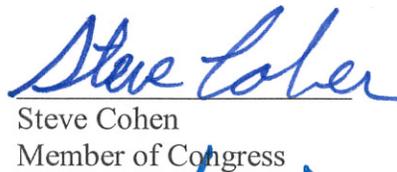

Raúl M. Grijalva
Member of Congress

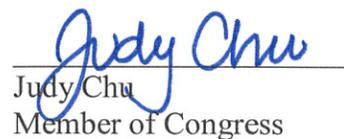

Adam Smith
Member of Congress

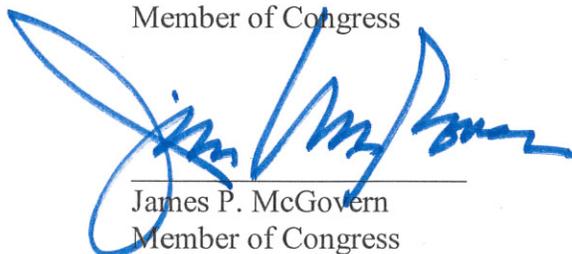

John P. Sarbanes
Member of Congress


Bradley S. Schneider
Member of Congress


Chellie Pingree
Member of Congress

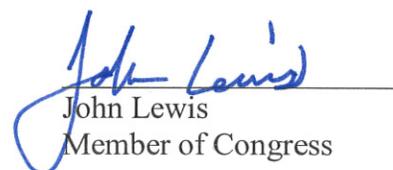

Steve Cohen
Member of Congress

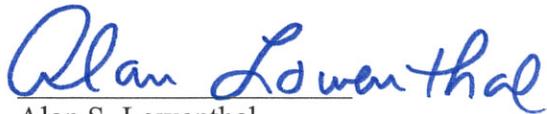

Judy Chu
Member of Congress


James P. McGovern
Member of Congress


James R. Langevin
Member of Congress


Niki Tsongas
Member of Congress


John Lewis
Member of Congress



Alan S. Lowenthal
Member of Congress



Mark Pocan
Member of Congress



Ann McLane Kuster
Member of Congress



Adam B. Schiff
Member of Congress



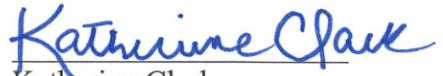
Michael E. Capuano
Member of Congress



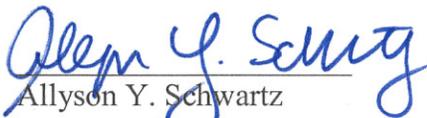
Matt Cartwright
Member of Congress



Scott Peters
Member of Congress



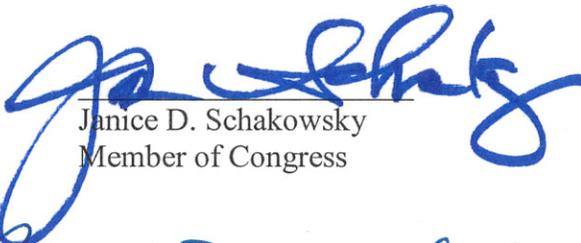
Katherine Clark
Member of Congress



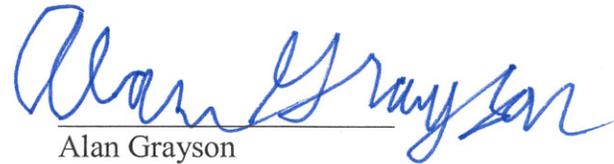
Allyson Y. Schwartz
Member of Congress



Jackie Speier
Member of Congress



Janice D. Schakowsky
Member of Congress



Alan Grayson
Member of Congress



Lucille Roybal-Allard
Member of Congress



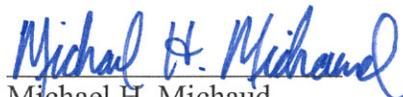
Julia Brownley
Member of Congress



Jared Huffman
Member of Congress

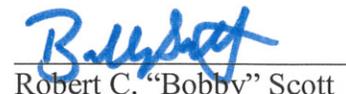


Keith Ellison
Member of Congress


Michael H. Michaud
Member of Congress

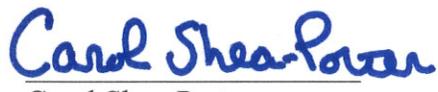

Tim Ryan
Member of Congress


Mike Quigley
Member of Congress


Robert C. "Bobby" Scott
Member of Congress


John F. Tierney
Member of Congress


Daniel Lipinski
Member of Congress


Carol Shea-Porter
Member of Congress

cc: Administrator Gina McCarthy
Secretary Sally Jewell
Secretary Ernest Moniz

EXHIBIT 2

**Excerpts from Testimony by Oil and Gas Companies in Support of
Gas Capture Planning in North Dakota
North Dakota Industrial Commission Hearing 4/22/14***

North Dakota Petroleum Council (500 member industry organization)

- Upstream, Midstream, Surface Owners and Government Agencies must work together to achieve the [flaring reduction] goal.
- Statewide capture targets can be achieved through proper planning and stakeholder cooperation.
- Midstream companies will have increased pressure for investment to meet the targets, but will have much improved forecasts for planning and obtaining capital.

ConocoPhillips

Several years ago, ConocoPhillips established an ongoing dialogue with third party mid-stream companies to provide specific well location and flowrate estimates during the planning process, before applying for drill permits, to minimize flaring as the wells were brought on line. As a result of these proactive, cooperative initiatives, ConocoPhillips has established an internal goal for having 100% of our Bakken operated wells tied into a gas gathering system prior to first production through permanent facilities. We have also established a process and built necessary equipment to capture initial gas volumes during well clean-up and flow-back, with temporary tie-ins to the gas gathering system. We strongly support the reduction of flared gas volumes within the Bakken, and have worked with our competitors, through the North Dakota Petroleum Council's leadership, to submit an action plan to the NDIC for achieving this goal. We believe the action plan establishes reasonable targets and timelines for the industry and balances the reality of infrastructure construction lead-time with the urgency to reduce flaring.

Enerplus Resources

- For a company without specifically owned Midstream assets, like Enerplus, this requires operators and gas gatherers to work closely together to calculate the demand and build out the necessary infrastructure to handle the supply

Hess Oil

Hess applauds the NDIC for adopting the Gas Capture Plan recommendation put forth by the Flaring Task Force earlier this year. We believe this will be a powerful tool for regulators, while also promoting greater accountability for operators and midstream service providers. One of the most important aspects of Gas Capture Plan required for any new permit to drill is that it will ensure that operators are communicating with midstream providers before any new wells come on line ... Over the long term, we believe the Gas Capture Plans will have a dramatic effect on infrastructure planning and increase the industry's efficiency for capturing gas.

Oneok Partners [Midstream]

The Flaring Task Force has facilitated increased communication between producers and midstream companies, which will result in better planning in the years to come. The rapid

development of the Bakken/Three Forks play has challenged existing midstream infrastructure, and it will take some time to build out the necessary facilities in these early years of the development. Increased visibility into producers' plans and projections for the area allow midstream companies to get out front and better understand timing and capacity needs.

Petro-Hunt [Midstream]

As a midstream gatherer and processor, upon obtaining a party's drilling plans, we review (with that party) the location and number of wells (single/multiple) to be drilled, the proposed spud dates, and how much volume we might expect at each connection point. We then model the throughputs to quantify the existing gathering line(s) and field and plant compression capacities. After modeling, we prepare a cost estimate for the gathering line(s) and other appurtenant facilities, and when necessary, obtain quotes from (multiple) compressor companies and the closest electric power provider. Once all the information is compiled, (this process takes up to two (2) months), we submit the cost estimate for the project to and discuss the information with the producer. Upon reaching a mutual agreement regarding the estimated costs, we place an order for all required facilities that we do not have in inventory and commence right of way acquisition. (Right of way acquisition averages three (3) months.) On average, we connect ninety percent (90%) of the wells prior to first production.

Petro-Hunt, L.L.C. [Exploration & Production]

All of our North Dakota leases are now dedicated under gas processing contracts with three (3) midstream companies. We provide these companies our drilling schedules up to three (3) years in advance and our fracking schedules one (1) month in advance. This is done to allow these companies to model their systems and have our wells connected in a timely manner.

SM Energy

- Collaboration between the NDIC, operators and midstream companies is essential
- SM Energy proposes that the best way to manage gas capture targets is on a system basis
 - Limitations on the drilling of new wells, or curtailment of production, should be managed on a system (area) basis
 - A system is defined as a booster station(s) and associated gathering facilities

Statoil

- Support NDPC's proposal, so let the GCP's work

Whiting Petroleum

- Reduce the number of APD's that are approved to operators that are continuing to flare their gas contrary to their GCP's.

WPX Energy

- Our commitment to capturing gas drove us to construct our own gathering system on the Van Hook peninsula at investment cost of over \$50 million. In addition we have

made a \$10 million investment for well head compression as well as investing over \$100 million in well connections.

- Although we have many constraints WPX does support the use of the Gas Capture Plan for flaring reduction.
- WPX is confident that the GCP program can be successful in reducing gas flaring.

*Testimony available in pdf from the North Dakota Industrial Commission
<https://www.dmr.nd.gov/oilgas/>

EXHIBIT 3

Exhibit 3: Description of Methodology for Determining Methane Emissions from Production Basins and Sources

We estimated emissions on Federal Jurisdiction lands by summing emissions from four American Association of Petroleum Geologists (AAPG) basins that have large percentages of Federal land: Green River, Uinta, San Juan, and Piceance. Production in these four basins makes up 19% and 5% of total U.S. gas and oil production, respectively:

Basin Name	Gas Production (BCF)	% US Gas Production	Oil / Liquids (MBbl)	% US Oil Production
Green River Basin	1,463	5.3%	14,974	0.8%
Uinta Basin	461	1.7%	23,220	1.3%
San Juan Basin	1,201	4.4%	2,589	0.1%
Piceance Basin	883	3.2%	7,957.5	0.4%
Total in Selected Basins	4,008	14.5%	7,958	2.7%
Total in US.	27,576		1,788,942	

The oil and gas production, by AAPG basin, data underlying this table was compiled from county-level data from the HPDI database.¹ We thank Environmental Defense Fund for providing this basin production data.

To calculate emissions reported to AAPG from individual sources in these AAPG basins, we accessed Greenhouse Gas Reporting Program data using the EPA’s Envirofacts website.² From that site, data from “Petroleum and Natural Gas Systems” (Subpart W) reported by individual facilities, tagged by emitting facility, emissions source (e.g., pneumatic controllers), and greenhouse gas (e.g., methane, CO₂) is available. Facilities are sorted into AAPG basins by cross-referencing this data with the “Onshore Oil and Gas” Facility information in EPA’s summary spreadsheet of greenhouse gas emitters.³ Only methane emissions are used in this analysis. We converted the emissions data downloaded from the GHGRP in units of metric tons of CO₂e to metric tons of methane by dividing by the GWP EPA uses to date in the GHGRP, 21. We then converted these data to natural gas volumes (MMCF, BCF, etc.) by assuming that the natural gas is 79% methane and carrying out standard conversions.

Not all of the oil and gas wells in these basins are located on federal land, and we are not able to apportion emissions from those basins to wells on Federal land. However, given the very high fraction of wells within these basins that are Federal and the striking contrast between these basins and other basins, it is clear that the facilities on Federal land are contributing to the excessive methane emissions that are visible in the basin-level emissions data.

In addition, not all methane emissions from oil and gas production facilities are reported to the GHGRP, due to limitations such as a reporting threshold that exempts smaller operators. As

¹ Drilling Information, Inc. (DI). 2011. *DI Desktop*. 2011 Production Information Database.

² Website address: <http://www.epa.gov/enviro/facts/ghg/customized.html>

³ Available here: http://www.epa.gov/ghgreporting/documents/xls/ghgp_data_2012_09012013_FINAL.xlsx

noted in our comments, there are also limitations on the accuracy of the GHGRP data (such as the use of average leak emissions per component instead of measured leak emissions). However, we are not aware of any reason why these limitations of the GHGRP data would skew the comparisons of GHGRP data for these basins and the US as a whole that we present in our comments. Our emissions estimates are meant to be illuminating approximations, not precise calculations.

Because some of the category label for emissions sources in the GHGRP data are not terribly clear, we provide them here together with the terms we have used for the emissions sources.

Emissions Source	GHGRP Emissions Category Label
Leaks	OTHER EMISSIONS FROM EQUIPMENT LEAKS
Liquids Unloading	WELL VENTING
Pneumatic Valve Controllers	PNEUMATIC DEVICE VENTING
Pneumatic Pumps	NATURAL GAS DRIVEN PNEUMATIC PUMPS
Reciprocating Compressors	RECIPROCATING COMPRESSORS
Centrifugal Compressors	CENTRIFUGAL COMPRESSORS
Venting of associated natural gas during oil production* ("casinghead gas")	ASSOCIATED GAS VENTING FLARING

*Emissions during well completion are not included in this category.

Methane venting from oil and gas operations in these 4 basins accounts for 27% of total venting in the U.S.

Basin Name	Methane Venting (MMcf)	Percent of US Venting
Green River Basin	6,366	4.8%
Uinta Basin	4,371	3.3%
San Juan Basin	19,375	14.5%
Piceance Basin	6,122	4.6%
Total in Selected Basins	36,235	27.2%
Total in US.	133,196	

Here we break out emissions in these 4 basins by emissions source (MMcf):

Emissions Source		Green River Basin	Uinta Basin	San Juan Basin	Piceance Basin
Fugitives / Leaks		839	436	2,693	483
Liquids Unloading		502	412	6,374	2,593
Pneumatics	Pneumatic Controllers	3,447	2,047	8,840	2,438
	Pneumatic Pumps	822	982	196	362
Pneumatics Total		4,269	3,030	9,036	2,799
Compressors	Reciprocating	-	-	547	-
	Centrifugal	1	0	31	8
Compressors Total		1	0	579	8
Associated / Casinghead Gas		3	51	29	-
Other		751	442	664	239
Total		6,366	4,371	19,375	6,122
Grand Total		36,235			

And here are the combined emissions for the 4 basins by emissions source and compare to national emissions (MMcf):

Emissions Source		Total Venting in Selected Basins (MMcf)	Total Venting in U.S. (MMcf)	Percentage of National Emissions for Source	Percentage of Total National Emissions, All Sources
Fugitives / Leaks		4,451	21,121	21.1%	3.3%
Liquids Unloading		9,882	16,017	61.7%	7.4%
Pneumatics	Pneumatic Controllers	16,773	49,910	33.6%	12.6%
	Pneumatic Pumps	2,362	7,837	30.1%	1.8%
Pneumatics Total		19,135	57,747	33.1%	14.4%
Compressors	Reciprocating	547	1,284	42.6%	0.4%
	Centrifugal	41	155	26.4%	0.0%
Compressors Total		588	1,440	40.9%	0.4%
Associated / Casinghead Gas		83	5,189	1.6%	0.1%
Other		2,096	31,682	6.6%	1.6%
Total		36,235	133,196		27.2%

Joletta Bird Bear
Mandan-Hidatsa, land owner and mineral owner

BLM Oil and Gas Flaring and Venting on Federal and Indian Lands Public 25 Comments submitted via email May 30 2014 from Joletta Bird Bear, landowner and mineral owner of Fort Berthold Federal Indian Reservation, ND.

1. Place language in oil gas lease document at the front end of the oil and gas drilling process that requires operator to use proven emission reduction technology and emission reduction devices in all phases under lease.
2. Develop seamless transition to bring all existing leases into compliance to emission reduction requirements within 90 days of final language approval or require operator to pay gas royalty to mineral owner at a 5% higher rate until compliance is met.
3. Develop transition of emission reduction plan to maintain the steady stream of existing gas royalty to mineral owners under current lease.
4. Require in lease document that operators are required to implement the use of meters on equipment and devices to detect, report, and measure gas flare, gas vent, and gas leaks.
5. Require in lease document that operators are required to record and maintain record on all equipment and device measurement of gas flare, gas vent, and gas leaks under lease and to report such data on a daily basis of all minerals under lease on federal land and Indian lands.
6. Require in lease document infrared cameras on all equipment and devices to detect gas leaks.
7. Develop adequate data collection on a daily basis on the management of oil well fracked gas to ensure the "no waste" rule is effectively functional under the BLM regulatory authority.
8. Periodically subject data collection to testing of accuracy and place the procedures in place to address inconsistency in data reporting from operators who hold leases.
9. Develop data system which records the aggregate gas emissions and gas flaring per well and the cumulative data per oil field and per communitized lease hold.
10. Strive to attain data in a format more easily readable and understandable by average citizen.
11. Strive to report gas in Volume in addition to your current % measurement, volume

is in detail.

12. Develop a base of knowledge and research data on best available technology in Order to meet and exceed the updated standards of oil and gas flaring and venting emissions.
14. Require periodic review of emission standards and requirements to meet the changes of the climate change.
15. Require existing and new flare stacks to be taller in height to eliminate and further grass fires due to the oil and gas flaring on Fort Berthold, as emergency response is limited in a rural setting in a grass fire response.
16. Require the extraction of gas from oil to reduce the volatility from further oil gas explosions of the Bakken Three Forks oil.
17. Require the development and implementation of operator emergency response plans to notify all citizens who live within a three mile radius of all oil drilling pads and place that requirement in the lease document.
18. Require annual update and verification of current contact information on file of all occupied residences who live within a three mile radius of an operators oil drilling pad under lease and place that requirement in the lease document.
19. Require the operator to disseminate the annually updated emergency response plans to the residents occupants within a three mile radius to an operators oil drilling pad and place that requirement in the lease document.
20. Require the operator to develop a real time notification system of gas detect and gas releases over the maximum standard allowed under lease.
21. The Programmatic Environmental Assessment (PEA) remains unknown-hidden-delayed (?) and has yet to be released to the public of the Fort Berthold Indian Reservation in North Dakota on the federal BIA/BLM Federal Oil and Gas Drilling Program on Fort Berthold of 2006. The PEA is inadequate and fails to meet the full requirements of NEPA in the BIA/BLM Federal Oil and Gas Drilling Program on the Fort Berthold Indian Reservation. The choice to use the EA dismisses the reality of cumulative affects of flaring and venting on Fort Berthold and further, the choice to use the EA contradicts the requirements of NEPA because the magnitude of drilling on Fort Berthold does require an Environmental Impact Statement (EIS). The BIA/BLM has drilled at least 1000 (one thousand oil wells) and does anticipate an additional 2000 - 4000 new wells. This massive and rapid federal drilling program does invoke and warrant a complete Environmental Impact Study (EIS) on Fort Berthold. To withhold this EIS is allowing unprecedented flaring volumes on Fort Berthold which is causing adverse

impacts to land, air, water, human health, wildlife, and is contributing major emissions to the protective ozone of this earth. The EIS is a legal requirement of NEPA and it remains necessary in the further consideration and further development of this 21.BIA/BLM Federal Oil and Gas Drilling Program on Fort Berthold Indian Reservation. As of today May 30th, 2014, that legally required EIS has yet to be developed by the federal lead agency BIA and the federal agency BLM.

23. No more BLM violating its' own "no waste rule" when emission reduction technology is readily available.

24. Bring existing lease into alignment within 60 days while the final flare and vent revision rule is in development and take necessary action to adjust and implement flare and vent emission reduction in parallel immediacy of the rapid pace which you support in the development of oil and gas on federal and Indian lands.

25. Recognize this statement--this Earth is Our Mother. As a mother, She provides for you. So don't harm her anymore. Recognize the inter-relatedness of nature and people. Please refrain from making decisions in a vacuum-as if your decision is of no significance when it impacts all systems and all living systems.

My comments submitted to BLM Flaring and Venting on Federal and Indian lands revision process.

Joletta Bird Bear
Mandan-Hidatsa, land owner and mineral owner

regulations

Inbox x
Citizens x



Susan
Justice [REDACTED]@yahoo.com>
to me

May 30

Dear BLM:

I have resided in Colorado since 1963, and traveled through this Continental Divide Rocky Mountain of Colorado State....throughout the 50's.

I respect the value Colorado has offered my life for what it stands for the gifts it has given me. A grand water supply from our nations 'continental divide' and mile high cities need a lot to consider when mixing toxins and pollutants in our life's sources of Air and Water. Our most important and essential God given resources to serve humankind. You abuse this gift and there are consequences. Strictest of regulations need to established, maintained and carefully monitored.

Keep Colorado Beautiful, respect the natural resources for All Living Things....quit blasting and drilling and creating havoc in all that surrounds.

I would like to see an aerial photograph of our recent mudslide atop Colbren with photos of each and every gas and oil operation within two miles on our Grand

Mesa there where the historical mudslide occurred...

Stop this horrible practice and think about the future generations and what clean drinking water and clean air to breathe will contribute to our grandchildren children. Learn from the Native Americans that mothered this land. Teach it in our schools.

I want to see a statewide Ban on Fracking....as a state with values that keep us alive and healthy. The strictest regulations with outside of the agency inspectors, maintained and enforced. Clean up absolutely everything before you continue to blast and drill into our earth.

Thank you .

Regards ,

Flaring and Venting Emmissions

Inbox x

Citizens x



Kristi <[REDACTED]@vcn.com>

May 30

to me

May 30, 2014

Dear Mr. Spisak,

We are happy that BLM is looking into ways to reduce and prevent flaring and fugitive emissions from the public's energy resources. Our oil and gas is a finite resource and should be developed in ways to conserve and not waste the limited supply of nonrenewable fuels.

Our family has seen and felt the waste. For over a year, a BLM well, near our home, flared so much gas, we felt as if we were living right on the Denver airport tarmac. We had many sleepless nights, experienced headaches and bloody noses as well as our gardens dying. Not only was it awful to live here, it was heart breaking to see all the wasted gas. People in America were freezing, some to death, because they could not afford to fill their propane tanks to heat their homes.

While this well, Chesapeake Smith Creek, 10-32-70, was not flaring; it would vent gas that would settle in to a low laying area of a county road. Each morning, the children on the school bus received a good dose of gassing before going to school. Venting is especially dangerous to human health and the environment; it must be addressed and stopped at all costs.

At several times in the last 2 years we have had up to 6 large flares surround our homes, we are downwind of many more flares. Our health and the health of our livestock and vegetation have declined. We now have to worry about the air quality before we can go outside. This is big, wide open Wyoming, where in the past; we would have never given a thought to the quality of the air we breathe.

Another part of living in Wyoming is the wildlife. Since industry has moved in, we have seen declines in Greater Sage Grouse, a uniquely American West bird, and our Cheyenne River Mule Deer herd. The thunderous noise and lights from flaring, the smells from venting, go on 24/7 throughout our rural western lands. The flaring makes the wildlife change migration patterns, and stresses the animals. It must be curbed if we want to protect the wildlife and the way we live out west.

In the 1970's Alaska prohibited venting and flaring, the oil industry and communities survived and thrived. In areas of areas of Wyoming that have non-attainment for air, venting and flaring of gases is not allowed. There are ways besides pipelines that industry can deal with the gas. Both these instances have proven that waste can be prevented, for both conservation of resources and the health and wellbeing of habitants surrounding the oil and gas extraction. This must become the goal of BLM, using the models already in place. Venting and flaring can and should be stopped.

We urge BLM to have a frank talk with industry. Industry must be reminded that the resources they are extracting are owned by the residents of the United States. Thus royalties are expected, on each and every drop or molecule severed from the ground, no exceptions. America is facing enormous amounts of debt; it is right and just to collect all income from our resources. We as a nation have been told by industry that extraction is the way to economic stability and national security, and then we should hold industry to its word.

Sincerely,

Peter and Kristi Mogen

[REDACTED] [vcn.com](mailto:[REDACTED]@vcn.com)

[REDACTED] Douglas, WY [REDACTED]

Gas Flaring Rules

Inbox x

Citizens x



Deb Milburn <[REDACTED]@gmail.com>

May 24

to me

Oil companies must take measures to prevent all gas leaks during the drilling/production process. This is a huge waste of valuable finite resources. Gas leaks and flaring contribute to global warming and air pollution and should not be allowed. Oil companies need to have complete plans in place for getting oil and by-products to market, without using eminent domain across private farmlands.

Comments regarding BLM flaring and venting policy

Inbox x

Citizens x



Bill <[REDACTED]@swcp.com>

May 23

to tspisak, me

Tim Spisak

U.S. Bureau of Land Management

I am not overly familiar with all the technical and economic obstacles to the diminution of flaring and venting.

Perhaps this is common practice in the industry. Living not far from the ND oil fields, I am well aware of the huge waste that has been going on for some time now.

The extraction of oil from oil shale has of late become economically profitable. With the sudden introduction of these natural oil reserves, there is much welcomed optimism. How long they will represent a boost to our economy is uncertain. We are both lucky and blessed to given them. For this reason, it behooves us to treat such limited natural resources with care, and not waste what is difficult to replace, no matter the euphoria over the windfall.

The BLM serves as our representative for these common resources. While we can all be glad in both the expertise and labor of enterprising individuals to make the oil available for our use, they are not the ultimate owners of that oil and natural gas. They are a national treasure, and ought to be treated as such. The oil companies or public enterprises involved are stewards for what is owned in common.

For these reasons, I strongly recommend that flaring and venting of wells be minimized. Provisions for storing and distribution of the natural gas ought to be arranged prior to extracting oil from the well. Wells that are presently venting only because they have not provided such means of collection, ought to be shut down until such provisions are in place. It is criminal to waste what will likely in a few short years be considered rare, especially when we are without excuse and can clearly see that day coming.

Sincerely,
Bill Powers
White, SD

(no subject)

Inbox x

Citizens x



Deanna Pumplin <[REDACTED]@gmail.com> May 23

to me

Dear Mr. Spisak,

I have learned that the BLM is writing rules to regulate the off gassing from oil wells in North Dakota...perhaps other places as well. I, and many other citizens of earth, are extremely concerned about global warming. The contribution of the oil and gas industry to "green house gases" is enormous, and the BLM is in a position to make a serious contribution to lessening the impact of destruction of this industry. Please write regulations that will stop "waste". The industry is taking in enormous profits now and has the means to put systems in place that would go towards contributing to life on this planet, not destroying it. Thank you for considering the ramifications that your actions will have on LIFE on this planet. Deanna Pumplin, [REDACTED] [REDACTED] [REDACTED] Port Townsend, WA [REDACTED]

rules for flaring

Inbox x

Citizens x



Karen <[REDACTED]@restel.net>

May 23

to me

Dear Mr. Tim Spisak, USBLM

I am commenting on the flaring, venting or leaking of methane and other gases from crude oil well sites and any other site where this activity is occurring. This is a complete waste, a throwing away of our natural resources, accelerating global climate change, and reducing revenue for mineral owners.

They add pollutants to the atmosphere and if near homes, is harmful to people who live near them. Flares are also very loud and dirty, and destroy darkness for a good night sleep.

BLM is to make rules for the oil industry about the emissions of gases, with comments taken until May 30th. Here are some things the BLM should do when it writes these rules:

- Don't allow flaring by any companies that don't have a plan to capture methane gas and get it to market.
- Stop flaring, venting and leaking from all sources, not just major ones.
- Ask the oil and gas industry to do more advance planning for an efficient system of pipelines and other infrastructure to get gas to market, instead of using eminent domain power to run more and more pipelines across private and public land after wells re-drilled.
- BLM's goal, and the industry's, should be "zero waste".

Please stop this waste and destruction of our air, with consequences we are already experiencing with climate change. Make the rules for the people instead of for the industry.

Thank you for this opportunity to express my thoughts.

Karen A. Smith

██████████

Kenmare, ND ██████████

██████████ [@restel.com](mailto:██████████@restel.com)

Flaring of Natural Gas (wasting our natural resources)

Inbox x

Citizens x



Barb and Gary <[REDACTED]@msn.com>

May 14

to me

I understand that the oil companies do not currently have the pipeline infrastructure to move the byproduct (natural gas) to market during oil production. However, the BLM should not allow leasing or oil production unless the companies are prepared to develop the needed gas pipelines prior to production. The BLM approved flaring of our public resources is not in the best interest of our country and is a huge waste of our valuable resources that MUST be captured and put to constructive use. Also the American public are not getting any return on our valuable natural gas resources. The BLM must put an immediate stop to this wastefulness just so the oil companies can make a bigger, quicker profit. Stand up for the citizens and not the corporate greed.

Thank you:

Gary Roberts

former BLM geologist

oil and gas flaring

Inbox x

Citizens x



James Page <[REDACTED]@srt.com>

May 12

to me

I have reviewed some of the comments made at the recent flaring hearings. I do note that some websites that I follow (www.bakkenwastewatchcoalition.org) have said that thousands of gallons of "highly acidic" condensate fluids are being drained in to the ground directly under the flaring towers. I don't see anyone commenting on this issue and it seems to me it would be just as serious an issue, if not more so, than flared methane etc.

thank you.

End leaking, venting, and flaring of gas

FormEmail_EndLeaking x



Received 256 form emails

Jun 1

to me

Dear Mr. Spisak,

I'm glad to see that the Bureau of Land Management is looking into what it can do to reduce waste of our public energy resources. Our supplies of oil and gas are limited, and we need to be good stewards of these non-renewable fuels.

Oil companies should not be able to just burn off as much as they want for as long as they want, without planning for or investing in infrastructure to get that gas to the homes and businesses that need it.

The BLM is in charge of preventing the waste of our publicly owned oil and gas resources. We taxpayers are counting on you to make sure we get a fair return for those resources, and that valuable energy doesn't just go up in flames. If an oil company can't take the time to build the pipelines and markets it takes to capture our natural gas and sell it, they should at least pay the royalties we would get if they did slow down enough to stop the waste.

Leaking and venting gases make people sick. Flares are noisy and disruptive to neighbors. Flaring, venting, and leaks are major sources of climate changing gases. Please stop the leaking, the venting, and the flaring with strong rules.

Sincerely,