



December 14, 2015

Neil Kornze, Director
Bureau of Land Management
U.S. Department of the Interior
1849 C Street, N.W.
Washington, D.C. 20240

Re: RIN: 1004-AE17, Comments re Onshore Oil and Gas Operations; Federal and Indian Oil and Gas Leases; Measurement of Gas, 80 Fed. Reg. 61,646 (Oct. 13, 2015)

Dear Mr. Kornze:

On October 13, 2015, the Bureau of Land Management (“BLM” or “agency”) issued a proposed rule entitled “Onshore Oil and Gas Operations; Federal and Indian Oil and Gas Leases; Measurement of Gas” (80 Fed. Reg. 61,646, the “Proposed Rule” or “proposal”). This Proposed Rule would replace Onshore Oil and Gas Order No. 5, Measurement of Gas, which prescribes standards for the measurement of gas produced from onshore federal and Indian oil and gas leases with new, more expansive regulations that would be codified in Title 43 of the Code of Federal Regulations (“CFR”). It would also replace, and incorporate into Title 43 of the CFR, various nationwide and state-specific Notices to Lessees (“NTLs”), which contain BLM policy and guidance for the measurement of gas produced from onshore federal and Indian oil and gas leases.

The American Petroleum Institute (“API”) is a national trade association representing over 640 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. API member companies are leaders of a technology-driven industry that supplies most of America’s energy, supports more than 9.8 million jobs and 8 percent of the U.S. economy, and since 2000, has invested nearly \$2 trillion in U.S. capital projects to advance all forms of energy, including alternatives. API appreciates the opportunity to submit comments on this Proposed Rule.

The Independent Petroleum Association of America (“IPAA”) represents thousands of independent oil and natural gas explorers and producers, as well as the service and supply industries that support their efforts. Independent producers drill roughly 95 percent of American oil and natural gas wells, and produce about 54 percent of American oil and more than 85 percent of American natural gas.

The Western Energy Alliance (“the Alliance”) represents over 450 companies engaged in all aspects of environmentally responsible exploration and production of oil and natural gas in the West. Alliance members are independents, the majority of which are small businesses with an average of fifteen employees.

While we support robust gas measurement regulations and codification of those requirements in the CFR, BLM’s Proposed Rule has serious legal, procedural, economic, and technical implications for operators as described in this letter and in our technical comments attached as Appendix A. Despite the fact that BLM for no stated reason has asked commenters to confine their comments only to those issues specifically identified by the agency as ripe for comment,¹ we are providing comments on all aspects of the proposal that are important to our members. Chief among these are:

- (1) the unduly abbreviated comment period for a complex and technically challenging proposal that will affect thousands of operations on federal and Indian oil and gas leases;
- (2) BLM’s trifurcated rulemaking process, i.e., proposing revisions to the Site Security,² Measurement of Oil,³ and Measurement of Gas regulations separately instead of in a single and straightforward rulemaking action, which underrepresents the true economic and regulatory impact of the interrelated proposals;
- (3) BLM’s reluctance to recognize its obligation to adopt properly established industry standards;
- (4) BLM’s misapprehension of current industry standards, resulting in a proposal that requires adherence to a set of prescriptive standards that does not accommodate current or future practices and technologies;
- (5) BLM’s failure to provide a rational basis for selecting many of the technologies, methodologies, and standards prescribed in the Proposed Rule;
- (6) BLM’s gross underestimation of the costs associated with implementation of the Proposed Rule, and imposition of compliance timelines that will be impossible to meet;
- (7) the removal of critical standard-setting and adjudicatory functions from the notice-and-comment rulemaking process, placing them instead in the hands of a BLM–appointed “Production Measurement Team” (“PMT”) or leaving standard-setting to future BLM discretion;
- (8) the removal of the enforcement regime from the regulations and placing it in as-yet unseen internal “guidance documents;” and
- (9) BLM’s attempt to impose fixed assessments on contractors for noncompliance.

¹ See 80 Fed. Reg. at 61,648 (“[p]lease make your comments as specific as possible by confining them to issues for which comments are sought in this notice”). BLM cannot insulate parts of its proposed rule from public comment.

² 80 Fed. Reg. 40,768 (July 13, 2015).

³ 80 Fed. Reg. 54,760 (Sep. 11, 2015).

In light of these issues, BLM should withdraw the Proposed Rule, and simultaneously re-propose the entire amended suite of regulations – including revisions to the site security and oil measurement regulations – for comment at the appropriate time.

As with BLM’s proposal to revise the site security and oil measurement regulations, other than citing the age of the existing gas measurement rules, the Proposed Rule does not adequately explain or present clear evidence supporting the putative benefits of the more stringent regulation of gas production measurement that BLM proposes. Even where it attempts to provide a cost-benefit assessment, the proposal simply provides a conclusory statement that the costs of industry compliance would “approximately equal” the “royalty risk” to the government, as though obtaining speculative government benefit offsets the imposition of definite costs to operators. See 80 Fed. Reg. at 61,655. Framing the issue in this way is all the more dubious because the interests of the government and the regulated community in this context should be aligned. Our members are every bit as interested as BLM in fully measuring all gas production because production is the basis on which our members are compensated for their efforts. In fact, API’s members are *seven times* more interested than BLM in accounting for all gas produced from their leases, since they generally tend to receive 7/8ths interest in the gas produced from federal and Indian leases, while the government and Indian lessors generally receive 1/8 through the royalty payment. This proposal does not deal with allocating revenues or calculating royalties; it simply addresses gas measurement. From the perspective of both industry and the government, accurately measured production means greater revenue.⁴

We welcome continued dialogue with BLM to devise a more balanced, real-world approach to the topics the agency proposes to cover in both this Proposed Rule and the recently-proposed revisions to the site security and oil measurement rules. We share BLM’s goals of improving production and royalty accountability and will continue to work with the agency to achieve them.

I. The comment period is inappropriately brief, limiting the opportunity to develop needed analysis and frustrating the purpose of public notice and comment.

As previously explained in API’s requests for extensions of the comment periods on this Proposed Rule and the related site security and oil measurement regulations, which BLM ultimately granted for the first two proposed rules,⁵ our review of this Proposed Rule is frustrated by an inordinately brief comment period.

To date, BLM has failed to grant an extension of the comment period for this proposal despite multiple industry requests to do so and despite the fact that this proposal is much larger and far more complex than the proposed revisions to the companion oil measurement regulations for which BLM agreed to extend the comment period. This Proposed Rule will potentially affect a

⁴ BLM’s apparent justification for the Proposed Rule is a perception of systematic underreporting of oil production. Even if the proposed changes to the oil measurement rules were to improve measurement accuracy, the result would be to reduce the potential for both overreporting as well as underreporting of oil production.

⁵ 80 Fed. Reg. 72,943 (Nov. 23, 2015).

far larger number of existing, operating wells, and warrants a longer, not shorter, comment period than proposed revisions to the oil measurement regulations.

Additionally, both BLM and the Office of Management and Budget's Office of Information and Regulatory Affairs ("OIRA") acknowledge that the Proposed Rule is "significant," not only because it would be the first revision to the gas measurement regulations in over 25 years, but also because "it would raise novel legal or policy issues." 80 Fed. Reg. at 61,684; see also 80 Fed. Reg. at 61,646 – 61,647. This Proposed Rule also affects hundreds of operators on thousands of federal and Indian oil and gas leases. Yet BLM inexplicably provided a disproportionately brief 60-day comment period. Although we recognize that the Government Accountability Office ("GAO") has urged the Secretary of the Interior to direct the BLM to "meet its established timeframe for gas measurement,"⁶ this should not come at the expense of the public's opportunity to meaningfully comment on the proposed rule. To be sure, a 60-day comment period is more befitting a simple or routine rulemaking or administrative update, not a regulatory overhaul of this magnitude.

As OIRA acknowledged in its significance determination, this Proposed Rule is neither simple nor routine. It is the first major revision to the gas measurement rules in over 25 years, and occupies 69 Federal Register pages. It would apply to thousands of federal and Indian leases and facilities, both existing and future, spread in often remote locations across the country. It addresses a multitude of complex and technical production measurement issues, provides for the immediate assessment of violations, identifies new mandatory reporting requirements, subjects non-lessees and non-operators to assessment liability, empowers a PMT with quasi-legislative and quasi-adjudicatory authority to review and approve new measurement technologies, and prescribes completely new technological standards, verification procedures, reporting requirements, testing protocols, and software requirements for the entire industry that, once finalized, will likely remain in place for many years. Sixty days to review and comment on such a sweeping proposal is plainly unreasonable.

At a minimum, 60 days is insufficient time for industry participants to submit the type of information BLM requested. In the regulatory preamble, BLM expresses its preference for comments that are "supported by quantitative information or studies" because they "will be most useful and likely to influence [BLM] decisions." Sixty days is simply insufficient time to assemble such information, particularly for a proposal that implicates detailed technical, economic, and "best practices" issues across a broad industry spectrum.

As we emphasized in our comments on the companion proposals, there is little, if anything, to be gained by cutting corners on a public comment process that would remain extraordinarily brief given the context and the 25-year interval between revisions to these regulations. Accordingly, BLM should extend the comment period on the Proposed Rule, as well as its proposed revisions to the site security and oil measurement rules, for a minimum of 75 additional days to allow for the kind of detailed and meaningful input BLM claims it is seeking.

⁶ Report to Congressional Requesters, Oil and Gas Resources, Interior's Production Verification Efforts: Data Have Improved but Further Actions Needed, GAO 15-39, 32 (Apr. 7, 2015).

II. In treating the revisions to the site security, oil measurement, and gas measurement rules as three independent proposals, BLM fails to consider paths to compliance and the cumulative impacts to operators.

The resources of BLM, operators, and equipment and service vendors are likely to be seriously constrained if they are required to contemporaneously implement all three final rules. Cumulative expense and delay will result as operators request extensions and apply for variances from the PMT as they struggle to redesign their oil and gas site security, measurement, accounting, and reporting systems in extremely short order. Each of BLM's three proposals presumes, without any basis, that electronic databases meeting all the new requirements will be immediately available to operators and readily integrated into existing systems. They also assume that the PMT will be able to quickly review and approve potentially thousands of applications, and that specialty service contractors and measurement equipment manufacturers and vendors will have the capacity to meet the demand to supply, install, and operate all the new equipment, software, and accounting and reporting methods required by all three new rules simultaneously. None of BLM's regulatory proposals provides support for such assumptions.⁷

From an implementation standpoint, our members are striving to understand the sequencing of the regulatory trifecta and how timely compliance with all three regulations is possible. For example, it is uncertain that an operator can achieve compliance certainty under the two measurement rules to file for the facility measurement point ("FMP") approvals under the proposed site security rule. It is also unclear whether operators must first obtain FMP approvals, revise facility diagrams, or revisit existing commingling agreements and off-lease measurement agreements (required by the proposed site security regulations), and, once receiving BLM approval, reconfigure and upgrade oil and gas measurement equipment. Because many gas producing operations also produce oil, the implementation timelines under the Proposed Rule may render such an approach infeasible. The problem is exacerbated because the implementation timeframe for very-high-volume natural gas FMPs under the Proposed Rule is only six months,⁸ and applying for and obtaining FMPs and facility diagram approvals under proposed revisions to the site security rule very likely will take more than six months. This virtually ensures that the facility will be shut-in for noncompliance under the Proposed Rule while the operator is midway through the approval process under proposed changes to the site security rules. Facility shut-in is especially problematic because both gas and oil production would be suspended. Once the facility is shut-in for noncompliance with the instant proposal, any compliance required for the proposed oil measurement regulations becomes moot.

⁷ BLM provides virtually no supporting documentation for the assumptions underlying the Proposed Rule. In the preamble to the Proposed Rule, BLM requests public comments "supported by quantitative information or studies," but doing so in this case is difficult for two reasons. First, BLM provides little detail in support of the Proposed Rule, limiting our ability to respond. Second, BLM has provided only 60 days for comment, which is insufficient time to assemble quantitative information or conduct industry-wide studies addressing technical, economic, and "best practices" issues. In the attached technical comments, we provide as much detailed information as possible given the circumstances.

⁸ 80 Fed. Reg. at 61,657.

At a minimum, BLM must propose for comment regulations with which operators can reasonably comply. Providing anything less is simply arbitrary and capricious. See FCC v. Fox Television Stations, Inc., 132 S. Ct. 2307, 2309 (2012) (“[r]egulated parties should know what is required of them so they may act accordingly; and precision and guidance are necessary so that those enforcing the law do not act in an arbitrary or discriminatory way”). It is not clear from the language of the regulations how compliance with all three proposals reasonably can be achieved.

BLM must also recognize that operators will require time after the rules are finalized to digest the specific requirements and their applicability; identify changes needed to existing procedures, programs, and systems necessary to accommodate the new requirements; develop a plan to address these changes and upgrade equipment; and assign tasks and train employees and contractors/vendors in meeting all of the new requirements, and obtain any necessary state approvals. In setting the effective dates for the rules, BLM also must consider the level of effort required on the part of both BLM staff and operators to plan and prepare for implementation of such a sweeping and simultaneous overhaul of the site security, oil measurement, and gas measurement rules.

BLM should propose implementation guidance with the proposed revisions to the site security, oil measurement, and gas measurement rules that identifies the logical sequence of events for complying with the entire set of new rules and outlines the beginning-to-end implementation process that the agency will support. See id., at 2309-2310. The compliance process for new wells and facilities will be very different from the compliance process for existing wells and facilities as proposed. The guidance should provide direction to BLM staff, operators, and vendors to allow for efficient and directed use of their respective resources to avoid inconsistency, duplication, and inadequate submittals. The required new BLM databases and applications, and agency-preferred reporting forms, all must exist before BLM can expect operators to utilize them, and each should be supported by guidance that operators can incorporate into their training programs.

In sum, BLM should rescind the Proposed Rule and the other two proposals and re-propose a single integrated set of rules that considers these issues and provides a clear and realistic implementation strategy.

III. By proposing piecemeal regulations, BLM underestimates the regulatory and economic impact, undermining the objectives of the Regulatory Flexibility Act and the Small Business Regulatory Enforcement Fairness Act.

As with the proposed revisions to the site security and oil measurement regulations, BLM has determined that the proposed revisions to the gas measurement rules “would not have a significant impact on a substantial number of small entities,” obviating the need for a final Regulatory Flexibility analysis under the Regulatory Flexibility Act (“RFA”), 5 U.S.C. § 601 et seq. Similarly, based on the assumption that the rule would increase costs to industry “about \$46 million annually” or \$13,000 per regulated entity per year, BLM declined to perform a detailed economic analysis of the Proposed Rule’s impacts under the Small Business Regulatory Enforcement Fairness Act (“SBREFA”), 5 U.S.C. § 804(2), or Executive Order No. 12,866, Regulatory Planning and Review. See 80 Fed. Reg. at 61,685. Neither conclusion is

supportable. Conducting the appropriate level of economic analysis is critically important because the estimated economic impacts of the proposal's regulatory provisions clearly played a substantial role in BLM's decision-making process.

What is clear is that the agency has significantly underestimated the costs of compliance with the Proposed Rule. Although BLM's truncated comment period precludes us from assembling industry-wide cost data for each of the proposed regulatory requirements, some of our members have furnished us with information that should compel a re-examination of the economic assumptions underlying BLM's proposal. For example, proposed §§ 3175.91 and 3175.101 require gauge lines and valves to have 0.375" internal diameter. However, current industry practice is to use tubing with an outside diameter of 0.375". Finalizing this regulatory provision would compel the entire industry to replace all existing tubing with larger tubing. The costs will be exorbitant. One of our members with many federal leases estimates its initial cost of compliance with this single regulatory provision at as much as several million dollars, potentially a hundred times greater than BLM's estimated initial costs of \$8,900 per company for the first *three years* of compliance with *all* of the proposal's requirements. See 80 Fed. Reg. at 61,685.

Many lessees and operators currently utilize transducers, flow computers, isolating flow conditioners, and other measurement equipment that BLM would disallow under the Proposed Rule unless specifically approved by the PMT and placed on the approved equipment list. See proposed §§ 3175.40 – 3175.48. Since there currently is no equipment on the approved equipment list, operators will need to seek PMT approval for each of these components, a process that involves unknown equipment testing protocols, undisclosed costs, and uncertain timeframes, all of which raise the risk of shutting-in wells for noncompliance. BLM did not even attempt to define, much less analyze, any of these costs or circulate them for public review. Our members estimate that testing a single transducer model to assure it meets the required specifications of the Proposed Rule will cost hundreds of thousands of dollars and take over 24 weeks under a single set of flow conditions. We additionally question whether there are enough laboratories in the country to timely conduct all the equipment tests that will be necessary to avoid widespread shut-ins of existing operations. Testing all the equipment currently in use at the cost of many millions of dollars, or, rebuilding the entire production verification system to meet the new requirements, or, as a third option, shutting in altogether (with total loss of production, revenue and royalty), simply must be considered in BLM's analysis of the economic impacts of the Proposed Rule.

It is also unclear whether BLM considered the economic impacts of codifying the existing provisions of nationwide and state-specific NTLs into the CFR. Although the preamble discussion appears to presume that these NTLs are already binding on lessees and operators,⁹ it is well established that NTLs are merely policy documents that are not binding on the agency or the regulated community.¹⁰ Accordingly, the costs associated with formally adopting provisions of

⁹ See, e.g., 80 Fed. Reg. at 61,649.

¹⁰ This is in part because NTLs are not issued through a public notice-and-comment process in compliance with the Administrative Procedure Act ("APA"), 5 U.S.C. § 551 et seq. See EnSCO Offshore Co. v. Salazar, No. 10-1941, 2010 WL 4116892, at *5 (E.D. La. Oct. 19, 2010) (holding that NTL No. 2010-N05 was invalid because it was in fact a substantive rule in the

these NTLs into binding new regulations in the CFR must be considered and analyzed as new costs associated with the implementation of the Proposed Rule.

BLM has seriously underestimated the costs of compliance, which could easily exceed the \$100 million threshold for a “major” rulemaking, and the Proposed Rule should be re-analyzed in light of the technical comments attached as Appendix A. BLM likewise should include the true costs associated with the proposed revisions to the site security and oil measurement regulations in this analysis. As explained in our comments on these other proposals, the very act of separately proposing revisions to the site security, oil measurement, and gas measurement regulations, and estimating their economic impact individually rather than cumulatively, gives the false appearance of minimal regulatory and economic impact. This “segmentation” of the economic analysis serves only to avoid analyzing the true collective impact of BLM’s regulatory initiative to revise the oil and gas production measurement and verification regulations and helps the agency side-step the more onerous analytical requirements of the RFA, SBREFA, and E.O. 12,866 that apply to “significant” regulatory actions such as these. If these regulations were proposed together as BLM originally contemplated and represented to the public in 2013, the regulatory and economic impact of the consolidated proposal would certainly be far greater than that of any single proposal. While BLM’s effort to make consistent the comment periods on the companion regulations explicitly recognizes their interrelationship, it does not change the fact that BLM is still treating them legally and analytically as separate rulemaking actions.

Segmenting a regulatory proposal for the purpose of sidestepping the administrative burden of conducting the appropriate level of economic analysis is akin to segmenting a project proposal for the purpose of avoiding the Environmental Impact Statement requirements of the National Environmental Policy Act (“NEPA”). See Save Barton Creek Ass’n v. Fed. Highway Admin., 950 F.2d 1129, 1140 (5th Cir.1992). Neither scheme is permissible, and agencies in good faith should seek to avoid, rather than exploit, statutory ambiguity for the purposes of frustrating public involvement in the regulatory process and avoiding due consideration of the impacts its actions will have on the economy. Like NEPA, an agency’s compliance with the requirements of the RFA and SBREFA are judicially reviewable. See Montanans for Multiple Use v. Barbouletos, 542 F. Supp. 2d 9 (D.D.C. 2008); Thompson v. Clark, 741 F.2d 401 (D.C. Cir. 1984). Accordingly, BLM should withdraw this Proposed Rule and conduct an economic evaluation of the impact of all the proposals and then re-propose them as a single regulatory action.

IV. The proposal’s prescriptive requirements do not reflect current industry practice, will cause needless economic dislocation, and will raise new safety concerns.

Although one of BLM’s primary purposes in updating the gas measurement rules purportedly is “to reflect advancements in technology, industry standards, and changes in applicable legal standards,” the agency is proposing to create a new set of prescriptive requirements that likely will quickly become outdated. 80 Fed. Reg. at 61,649; see also 80 Fed. Reg. 61,646. In its attempt to so finely prescribe new measurement standards, BLM has created inflexible layers of

guise of interpretive guidance, and was not promulgated in accordance with the notice-and-comment procedures of the APA).

prescriptive requirements that neither reflect current industry practice nor accommodate the swift evolution in measurement technologies and techniques currently taking place. The recent downturn in oil and gas production and revenue is spurring extensive industry efforts to improve operational efficiencies and all industry technologies, including measurement technologies. Thus, the BLM is simply re-creating the very problem it seeks to remedy in issuing the Proposed Rule in its current form.

For example, the requirements of proposed § 3175.48 presume the use of orifice meters, which are BLM's currently-preferred technology and have been the subject of exhaustive testing, performance, and inspection requirements. Under the proposal, the BLM, through the PMT, "may" approve alternate linear devices such as ultrasonic meters, which are gaining popularity among gas producers and evolving into an industry standard in a number of applications. However, due to the expense, time, and uncertainty associated with obtaining BLM approval for any technology, and the need to obtain such approval on a "case-by-case basis," the Proposed Rule creates a disincentive to use new, potentially more efficient technologies and cements the technological status-quo into binding regulations.

Additionally, proposed § 3175.80(n) requires visual inspection of meter tubes before installation, and notification to the Authorized Officer ("AO") at least 72 hours in advance of the inspection, presumably so the AO may inspect the tubes on-site. However, it is common industry practice for suppliers to deliver a prefabricated meter skid with integrated tubing to the well location, which, absent complete disassembly on-site, would preclude detailed inspection. BLM cannot reasonably require on-site disassembly to facilitate AO inspection.

Some of the proposed requirements that are inconsistent with industry practice also present safety concerns. For example, § 3175.80(h) specifies the use of borescopes "or equivalent device[s]" to inspect the inside of meter tubes. However, many companies' safety guidelines prohibit the use of such technologies in gas exposed environments due to the danger of explosion and fire. BLM should reconsider this aspect of the proposal to determine whether the perceived need to inspect the inside of meter tubes outweighs the safety concerns presented by the inspection.

As described in further detail in the attached technical comments, these requirements frustrate rather than hasten the development and adoption of improved measurement methodologies in the field, repeating the mistakes inherent in BLM's existing gas measurement rules. The proposal would leave little room for the accommodation of new technologies absent a decision by BLM – based on the recommendations and analysis of the PMT – to approve an alternative technology on a case-by-case basis. In fact, the Proposed Rule currently fails to even address a number of measurement technologies, such as ultrasonic or cone meters, which are widely accepted by industry. At the same time, the proposal requires operators to use antiquated inspection methodologies, such as visual inspection of meter tubes, which industry has already left behind or is currently in the process of abandoning. API instead recommends that BLM create truly performance-based measurement requirements rather than prescribe the use of certain technologies or attempt to delineate individualized performance standards. BLM then can be assured of accurate measurement while allowing industry to develop ever more accurate and efficient means for doing so.

BLM's Proposed Rule underutilizes the extensive, industry-supported performance standards with which operators and regulators are familiar. Industry standards, such as API standards, are vetted thoroughly and transparently and are typically performance-based rather than prescriptive. Complete adoption of these standards would serve to enhance the Proposed Rule, lend credibility to BLM's technical requirements, and provide industry with the certainty it needs. BLM should incorporate, to the greatest extent possible, the API standards applicable to gas measurement. BLM representatives participate on API committees tasked with updating existing industry standards and developing new industry standards. Using API standards wherever applicable, and periodically updating its gas measurement regulations to incorporate new API standards, would assure that BLM's requirements are consistent with continuously improving industry standards.

Indeed, BLM is under an obligation to adopt applicable API standards. Section 12(d) of the National Technology Transfer and Advancement Act of 1995 ("NTTAA"), 15 U.S.C. § 272(d), which codified the policies of OMB Circular A-119, requires "all Federal agencies and departments [to] use technical standards that are developed or adopted by voluntary consensus standards bodies, using such technical standards as a means to carry out policy objectives or activities determined by the agencies and departments." To carry out this requirement, agencies and departments "shall consult" with those bodies and "shall ... participate" with them in developing voluntary consensus standards "when such participation is in the public interest and is compatible with agency and departmental missions, authorities, priorities, and budget resources." BLM may disregard existing technical standards developed by voluntary consensus standards bodies only where using them would be "inconsistent with applicable law or otherwise impractical." Even then, before using any standard other than a voluntary consensus standard, the head of the agency or department must send OMB "an explanation of the reasons for using such standards." OMB transmits to Congress and its committees an annual report summarizing all explanations received that year.

There is no doubt that API practices for gas measurement are "technical standards ... developed by [a] voluntary consensus standards body." API practices are painstakingly and transparently developed by its members with the input of industry experts from around the world, including BLM employees. API standards and practices are generally regarded as the "industry standard" for oil and gas measurement, and represent accepted practice on operations across the U.S. Pursuant to § 12(d) of the NTTAA, BLM must use these standards in the Proposed Rule. Accordingly, BLM should first engage in a meaningful dialogue with API regarding the latest industry standards, and then incorporate by reference all relevant API practices and standards into its Proposed Rule rather than adopt its own prescriptive standards.

We further recommend that BLM establish a system for periodically revising the rule to incorporate new industry standards and practices as they emerge. Other federal agencies, such as the Pipeline and Hazardous Materials Safety Administration ("PHMSA"), have adopted this approach. PHMSA has chartered an advisory group, which includes API, under the Federal Advisory Committee Act ("FACA"), 5 U.S.C. §§ 1-16, for the purpose of incorporating the most current industry standards and practices into its regulations. We recommend that BLM do the same here (as well as in its proposals for the site security and oil measurement rules). BLM also

should make variances from the incorporated practices available to small operators that may have difficulty implementing the most current industry practice for good cause shown.

V. The proposal is missing critical information necessary for meaningful comment.

BLM provides limited, if any, basis for a number of key technical and economic assumptions underlying the proposal's regulatory approach and specific requirements. The absence of this information frustrates meaningful comment and is inconsistent with the provisions of the APA. Under section 706(2)(A) of the APA, 5 U.S.C. § 706(2)(A), the primary determinants of a regulation's validity are: (1) whether the *record* supports the factual conclusions upon which the rule is based; (2) the rationality or reasonableness of the policy conclusions underlying the rule; and (3) the extent to which the agency has *adequately articulated the basis* for its conclusions. See Motor Vehicle Mfrs. Ass'n v. State Farm Mutual Auto. Ins. Co., 463 U.S. 29, 42–45 (1983); Citizens to Pres. Overton Park, Inc. v. Volpe, 401 U.S. 402, 419–20 (1971). One of the key reasons agencies must provide such information in the record is to facilitate meaningful public comment, which is central to the purpose of the APA and intended to ensure fully informed agency decision-making.¹¹ In the regulatory preamble, BLM requests public comments “supported by quantitative information or studies,” yet generally fails to provide a commensurate level of detail in support of its proposed regulatory provisions. Accordingly, BLM must provide supporting information for public comment on several issues before finalizing the Proposed Rule.

The general structure of the Proposed Rule revolves around the classification of a given facility FMP into one of four categories, each of which is defined by a range of flow rates (i.e., very-high, high, low, and marginal). BLM provides no rational or defensible economic, administrative, or production-based rationale for the four-tiered system, or for the relative placement of each of the four tiers. Additionally, BLM does not explain how operators are to calculate flow rates for the purposes of determining to which tier a given FMP belongs. Generally, industry calculates flow rates by calculating total flow over a 24-hour period, including periods of zero flow. However, if the flow rate must be determined only while the well is flowing, the overall rate will appear to be higher, shifting an increased number of wells into the higher-flow tiers and subjecting them to additional regulatory requirements and costs. Without an explanation of the tier system or how BLM is calculating the flow rate for FMPs, meaningful comment on this important aspect of the Proposed Rule is impossible.

Proposed § 3175.30 establishes the allowable measurement uncertainty for each of the four categories of FMP, and explains that “BLM uses [an] uncertainty calculator to determine the uncertainty of meters that are used in the field.” 80 Fed. Reg. at 61,654. If BLM finds a meter with an uncertainty in excess of what is permitted for the class, the operator will be in violation and potentially subject to penalties. However, the proposal does not include the equations that are used by the uncertainty calculator. If the uncertainty calculator is the sole means by which compliance with the uncertainty requirements is determined, and the calculator relies on certain

¹¹ See infra note 12.

equations, BLM must make these available to the regulated community before mandating the uncertainty calculator's use.

Proposed § 3175.115 establishes frequencies for gas spot sampling but fails to provide the underlying gas sampling frequency calculation on which the sampling frequencies are based. BLM explains that it will base the sampling frequency calculation on the statistical variability of previously reported heating values. However, the statistical heating value variation calculation is not provided, making the proposed section impossible for stakeholders to evaluate.

Proposed § 3175.119 establishes the minimum gas components that an operator is required to analyze. For very-high- and high-volume FMPs, if the concentration of hexane+ exceeds 0.25 mole percent, the operator also must analyze the FMP for hexanes, heptanes, octanes, and nonanes+. BLM explains that “[t]he threshold of 0.25 mole percent was derived through numerical simulation of the assumed composition of hexane+... compared to randomly generated values of hexane, heptanes, octane, and nonane.” 80 Fed. Reg. at 61,676. However, BLM failed to provide the referenced numerical simulation for review.

Proposed § 3175.126(a)(3) provides that the heating value of hexane+ would be derived from an assumed gas mixture consisting of 60 mole percent hexane, 30 mole percent heptane, and 10 mole percent octane. Because this mixture is significantly different from what many pipeline systems are currently set to run, the basis of BLM's underlying assumption is questionable. BLM should explain how it arrived at this assumed mixture for review.

Proposed § 3175.141 prescribes requirements for flow-computer software testing. The proposal establishes “pass-fail” criteria for the software testing, and these criteria would be determined by entering output data from the flow computer into “reference software approved by the BLM.” 80 Fed. Reg. at 61,679. Failure to pass the reference software test is a violation of the regulations. However, BLM's “reference software” is not provided, frustrating any attempt to evaluate whether it will work as intended.

VI. BLM failed to consider the reasonably foreseeable environmental consequences of the proposal in its Environmental Assessment (“EA”).

Under NEPA, BLM is required to consider the reasonably foreseeable environmental consequences of implementing the Proposed Rule prior to finalization. 42 U.S.C. 4332(C); Balt. Gas and Elec. Co. v. NRDC, 462 U.S.87 (1983). Just as BLM underestimates the magnitude of the regulatory and economic effects of the Proposed Rule, so too it underestimates the environmental consequences associated with implementing its provisions. As described above and in the attached technical comments, BLM consistently and erroneously assumes that the Proposed Rule generally reflects current industry practice, and as such, represents a minimal deviation from the status-quo. As explained further in the attached technical comments, the Proposed Rule is replete with failures to acknowledge the operational consequences of the proposed standards, each of which incrementally contributes to BLM's underestimation of their environmental effects. Additionally, due to BLM's improper “segmentation” of this regulatory initiative into three independent regulatory proposals, the EA grossly underestimates the cumulative impact of the proposed changes to the gas measurement rules when added to the

environmental consequences associated with the simultaneously-proposed site security and oil measurement rules. See 40 C.F.R. §§ 1508.7 – 1508.9.

Accordingly, BLM should withdraw the proposal and circulate a new EA for public review that fully considers the environmental consequences of BLM's proposed changes from the status-quo and the environmental consequences of all three proposals conjointly, and also considers an alternative that accurately reflects current industry practice. See 40 C.F.R. § 1508.9(b).

VII. The requirements of the proposal are impermissibly retroactive, and the timeframes for compliance are unreasonably short.

Similar to the proposed revisions to the site security and oil measurement regulations, the requirements of the Proposed Rule are effectively retroactive, giving existing operations various time periods to bring their gas measurement systems (equipment and software) into compliance depending on the volume of gas produced. See Proposed § 3175.60. We strongly urge BLM to reconsider this approach and instead properly apply the new requirements only to new or significantly modified operations. Retroactive application of the proposal to existing, approved operations is not only legally impermissible, but will have profound effects on thousands of existing operating wells across the country. Retroactive application of the Proposed Rule, with the attendant costs and potential for delay, may lead to temporary or permanent cessation of existing production, raising breach of contract, due process, and takings issues. Compelling widespread shut-ins as operators scramble to retrofit their operations or wait for PMT approval of the technologies they currently are using also poses significant economic consequences that far exceed those estimated in the regulatory impact analysis. This is not only unfair to those who have reasonably relied on prior agency standards to design and operate their facilities, but also threatens the very viability of such operations, particularly those that are currently marginally economic.

The compliance problem is only compounded by unreasonably short compliance timeframes, many of which will be impossible to meet. For example, very-high-volume FMPs must comply with the Proposed Rule's provisions within six months of the effective date, high-volume FMPs must comply within one year after the effective date, low-volume FMPs must comply within two years after the effective date, and marginal-volume FMPs must comply within three years of the Proposed Rule's effective date. However, the proposal fails to take into account factors such as the number of meter tubes that will need to be manufactured and installed in a very short period of time, particularly for very-high-volume FMP compliance. Operators with very-high-volume FMPs may find themselves bidding for a limited supply of tubes to avoid shut-in.

Similarly, the timeframes for compliance fail to account for the time it will take to meet the gas analysis reporting requirements. Proposed §§ 3175(b)(1)(ii) and 3175(b)(2)(ii) require very-high- and high-volume FMPs to comply with the gas analysis reporting requirements immediately upon the effective date of the rule. However, BLM has not yet completed its Gas Analysis Reporting Verification System ("GARVS"), which is necessary for operators to make required software changes to comply with the gas analysis reporting requirements. Reporting is also part of an operator's accounting system which, for larger operators, may take as long as two years to modify to ensure compliance with royalty obligations. Moreover, most of the flow

computers in current use do not comply with the FMP requirements in BLM's proposed Site Security regulations. Consequently, reports will also remain incomplete, in possible violation of the Proposed Rule, until new FMP-compliant computers are available and can be integrated into lessees' and operators' accounting and laboratory systems. It is simply impossible to implement all of these proposed requirements immediately upon their implementation dates, necessitating shut-in until compliance is achieved or until BLM, at its discretion, grants a variance from the regulations for the operator. This is just one example of the interrelationship of the proposed site security and gas measurement rules, and substantiates the need for a single comprehensive rulemaking.

BLM also fails to acknowledge that retrofitting measuring devices and associated equipment for separate measurement of individual lease production, as proposed in the site security rule, is by its nature more expensive and time consuming than new facility installations due to siting, supply, and related constraints. Modifying existing production and measurement systems to segregate lease production can be an involved design, procurement, and construction project. Although BLM purports to include exceptions and variances from these new requirements, the Proposed Rule makes clear that exceptions and variances are to be seldom used, and operators of course have no assurance in advance that they and local BLM staff will view situations in the same way. Nor is it likely that BLM will be capable of acting expeditiously on exception and variance requests due to the flood of requests likely to inundate the BLM field offices on the Proposed Rule's effective date, together with the overwhelming workload BLM proposes to undertake incident to its revisions of the site security and oil measurement regulations. In an era of rising economic challenges and increasingly important domestic energy security, BLM should not unnecessarily burden the industry with infeasible compliance dates or unnecessary retrofitting costs that will only result in temporary or permanent shut-in and breach of contract or takings claims.

Similarly, suspensions of the compliance-related timeframes should be available to accommodate practical difficulties beyond the control of the operator. For example, depending on times of year, access to certain FMPs may be severely limited. During spring mud conditions, travel on county roads or BLM roads is discouraged because of safety and avoidable rutting and road erosion issues. Winter storms may make access unsafe or impossible. In many cases, BLM may restrict access. Leases and permits often contain seasonal stipulations to minimize surface disturbance and noise, or to protect wildlife during calving, nesting, or brooding seasons. The compliance timelines for field activities such as reconfiguring, upgrading, or inspecting equipment, or measuring or sampling production should account for these ubiquitous access issues.

Because the proposed timeframe for compliance fails to take into account: (1) manufacturing and delivery times for equipment changes and modifications; (2) delivery times for yet-to-be developed flow computers; and (3) the time required to implement the required accounting changes, the proposal may result in a de-facto shut-in of all very-high and high-volume FMPs. We propose that BLM limit the application of the new requirements only to new and significantly modified operations. In the alternative, we propose a two-year compliance timeframe for all facilities. In any case, BLM should always provide the opportunity for any operator to seek and timely obtain extensions of time for good cause shown.

VIII. BLM should prescribe the process for approving measurement and testing technologies by regulation, and PMT determinations should be administratively reviewable.

The Proposed Rule establishes a PMT that “would act as a central advisory body for approving equipment and methods not addressed in the proposed regulations.” 80 Fed. Reg. at 61,657. As explained in further detail in the attached technical comments, this will likely be a critical function because of the time and expense that would be involved in retrofitting all gas FMPs and associated systems according to the mandates of the Proposed Rule. It is therefore imperative that BLM clarify the nature of the PMT (including the number, availability, and qualifications of its participants), its role in the regulatory process, the criteria by which it will make its determinations, and timeframes for doing so. Additionally, because the role of the PMT appears to be adjudicatory in nature, its determinations should be administratively reviewable.

Although the PMT is described as a “panel of oil and gas measurement experts designated by the BLM that would be charged with reviewing changes in industry measurement technology,” the proposal does not clearly indicate whether the PMT will be comprised of BLM employees or outside experts. 80 Fed. Reg. at 61,657, see also 80 Fed. Reg. at 61,648. If BLM intends the PMT to be an advisory panel made up of outside experts, then the PMT should be chartered under FACA, which requires balanced representation and public transparency. See Public Citizen v. U.S. DOJ, 109 S. Ct. 2558 (1989). On the other hand, if the PMT is to be comprised of BLM employees, BLM must: (1) explain the nature of the relationship between “BLM” and the “PMT” and the circumstances under which BLM will accept or reject the PMT’s recommendations; (2) identify the criteria by which the PMT will make its determinations and subject these criteria to the public notice-and-comment process before making them effective; and (3) provide for administrative review of PMT determinations.

These measures are necessary because the determinations of the PMT (and BLM’s decisions based on the PMT’s recommendations) are not only critically important to the regulated community, but also because they bind the regulated community with the force and effect of law. BLM’s action on a PMT recommendation could either result in either: (1) the approval of a measurement method or technology and placement on BLM’s approved technologies list; or (2) the disapproval of a measurement method or technology, effectively prohibiting its use. In this way, BLM’s actions on PMT recommendations redefine the “rules of the game.” See FCC v. Fox Television Stations, Inc., 132 S. Ct. 2307, 2310-18 (2012). This is the hallmark of legislative rulemaking under Section 553 of the APA, 5 U.S.C. § 553.

Although BLM proposes to post the PMT’s administrative decision-making criteria on its website, public notice is not enough. First, public input on the proposed PMT procedures and criteria is essential to ensure fully informed agency decision-making, one of the primary Congressional impetuses for enacting the APA in the first place.¹² Second, once these criteria

¹² According to the APA’s legislative history:

An administrative agency . . . is not ordinarily a representative body. . . . Its deliberations are not carried on in public and its members are not subject to direct

are duly promulgated as binding regulations, the agency may not change them on a whim to the detriment of the regulated community. To the contrary, another rulemaking would be required before new changes to the PMT procedures can be made. This is precisely the result the APA intends because it ensures that the private rights of the governed are adequately protected. *Id.* Accordingly, any formal criteria by which the PMT makes, or BLM reviews, standards should be subject to the public notice-and-comment rulemaking process before finalization. See *Chrysler Corp. v. Brown*, 441 U.S. 281, 303 (1979) (quoting *Attorney General's Manual on the Administrative Procedure Act*, 30 n.3 (1947)).

For similar reasons, PMT determinations are also adjudicatory in nature. When BLM accepts the PMT's determinations, they would have binding legal effect on the operator who proposed the technology for approval. The Proposed Regulations should expressly provide for administrative review of an adverse PMT determination.

In a number of places in the Proposed Rule BLM also attempts to reserve to itself the discretion to impose additional or alternate requirements or protocols as it deems necessary. For example, Proposed § 3175.46 requires operators to test flow conditioners under API 14.3.2, Appx. 2-D, but proposed § 3175.46(b) states that in the future the BLM may require additional test protocols above and beyond the referenced API practice. BLM must engage in notice-and-comment rulemaking before attempting to impose any requirements on operators supplemental to those expressly contained in the Proposed Rule.

There is no need to implement such a cumbersome and legally problematic system for adopting current and future industry standards. Many of these issues could be resolved through the adoption of API standards rather than the prescriptive requirements and restrictive approval processes currently proposed. Periodically adopting API standards would also provide opportunities for industry and agency experts to come together to review the capabilities and performance of current measurement technologies and industry standards, and help develop new standards if needed.

IX. BLM may not promulgate new binding regulations in internal "handbooks."

Similar to BLM's proposal to revise the oil measurement regulations, the Proposed Rule would completely eliminate the enforcement infrastructure prescribed in Onshore Order No. 5, including major and minor violations, corrective actions, and abatement periods. Instead, BLM

political controls as are legislators. . . . Its knowledge is rarely complete, and it must always learn the . . . viewpoints of those whom its regulations will affect. . . . [Public] participation . . . in the rule-making process is essential in order to permit administrative agencies to inform themselves and to afford safeguards to private interests.

Legislative History of the Administrative Procedure Act, S. Doc. No. 248, at 19–20 (1946) (alterations in original) (quoting *Administrative Procedure in Government Agencies*, S. Rep. No. 77-8, at 101–03 (1941)).

proposes to “develop an internal inspection and enforcement handbook that would direct inspectors on how to classify a violation, how to determine what the corrective action should be, and the proper timeframe for correcting the violation.” 80 Fed. Reg. at 61,650. Removing the enforcement provisions from the realm of transparent, publicly reviewable regulations that were promulgated with public notice and comment, and concealing them in non-public policy documents that can be altered in the absence of public input, is inconsistent with the requirements of the APA. If BLM intends to make these enforcement provisions binding on the regulated community, it must duly promulgate them as legislative rules.

BLM also proposes to impose fixed assessments on contractors who violate the regulations. See 80 Fed. Reg. at 61,681. This new requirement will deter service providers from working with operators on federal and Indian leases, and increase costs to operators as their contractors seek to insure themselves against liability. Holding contractors liable is also plainly inconsistent with BLM’s authority and stated rationale for imposing fixed assessments. According to the agency, the authority to impose fixed assessments is derived from the lease instrument, which is a contract between the government and the lessee. BLM considers fixed assessments as a form of non-punitive liquidated damages intended to compensate the lessor for the lessee’s breach of contract. See 80 Fed. Reg. at 61,680. While BLM is in privity of contract with lessees (including operating rights holders), it is *not* in privity of contract with their contractors, who are not capable of breaching a lease to which they are not a party. Accordingly, BLM may not use the liquidated damages theory to impose assessments on contractors.

Although BLM repeatedly emphasizes that fixed assessments, as contract damages, are only intended to compensate the agency for losses associated with the breach of contract, it simultaneously claims that it has the authority to impose duplicative fixed assessments on the lessee *and* its contractor for the same violation. See 80 Fed. Reg. at 61,680-81. Recovering the full costs of a violation from both the lessee and the contractor does not simply compensate the agency, it results in improper enrichment. At best, such recovery is punitive, which is precisely what BLM claims the proposal is intended to not do. Because imposing immediate duplicative fixed assessments on both contractors and lessees is plainly inconsistent with BLM’s authority and its stated rationale for imposing fixed assessments, the proposed revisions to § 3160 should be deleted from the Proposed Rule.

Additionally, we do not agree with BLM’s unsubstantiated assertion that “contractors themselves are also obligated to comply with applicable regulations, lease terms, notices, and orders.” 80 Fed. Reg. at 61,681. There is no BLM regulation imposing substantive obligations on contractors generally, and a penalty assessment rule is not the place to create them. Contractors are *not* subject to lease terms or BLM notices or orders, and therefore cannot fail to meet a duty that would give rise to the assessment of a penalty.

Additionally, BLM may not impose civil penalties on non-operator transporters or purchasers of federal and Indian oil and gas for alleged recordkeeping or related violations, since they cannot reasonably be held responsible for meeting these obligations in their ordinary course of business. Transporters and purchasers can only be held responsible for complying with the specific transporter and purchaser provisions of the Federal Oil and Gas Royalty Management Act

(“FOGRMA”) and its implementing regulations. Immediate assessments are impermissible under these provisions, which require formal notification to trigger a period to correct.

X. BLM continues to underestimate the extensive burden the current suite of proposals and other BLM regulatory initiatives would place on agency resources.

As with the proposed revisions to the site security and oil measurement regulations, BLM again fails to recognize that the Proposed Rule will place an extensive and ongoing implementation burden on BLM personnel and resources. For example, the proposal would only allow FMP equipment that is susceptible to independent BLM verification of the accuracy and validity of all inputs, factors, and equations that are used to determine the quality or quantity of gas to be measured. Verification of such equipment is a lengthy and expensive process. BLM entirely ignores the burden that would be placed on the agency to conduct such work for the thousands of different devices currently in use and proposed to be used.

Implementing the painstaking review, approval, verification, accounting, testing, and inspection regimes established in the Proposed Rule would create a formidable workload for existing BLM staff – which have already been subject to Congressional criticism for the inability to meet the demands of their current obligations,¹³ much less the increased demands of other recent regulatory initiatives, such as the recently-issued (and now stayed) hydraulic fracturing rule (80 Fed. Reg. 16,128 (Mar. 26, 2015)), the proposed revisions to the site security and oil measurement rules, and the possible proposal of new venting and flaring rules. The Proposed Rule cites no corresponding increase in funding from the Department of the Interior to allow staffing increases for BLM to discharge these new duties while it maintains the current level of mandatory agency inspections. Additionally, the Proposed Rule adds considerable new technical and regulatory responsibilities to the workload of BLM staff involved in validating the measurement of oil and gas production. BLM does not indicate how and when these individuals would receive the necessary training and hands-on experience in the field to properly execute their new responsibilities, which, given the time timeframes for compliance, is a matter of serious concern for industry. Site inspections and calibration witnessing are two recurring concerns of the recent GAO reports, but the Proposed Rule only reduces the likelihood of BLM field offices addressing these concerns by requiring additional approvals from BLM for thousands of ongoing oil and gas operations nationwide. Consequently, BLM should issue regulations that reduce, rather than increase, the number of administrative actions and approvals necessary to conduct business on federal and Indian oil and gas leases.

* * * * *

¹³ See GAO, Oil and Gas Development: BLM Needs Better Data to Track Permit Processing Times and Prioritize Inspections, GAO-13-572, (Aug. 23, 2013), available at <http://www.gao.gov/products/GAO-13-572> (identifying significant and still unresolved administrative issues related to timely permit processing and adequate inspections).

For the reasons stated above and the technical comments attached as Appendix A, API, IPAA, and the Alliance respectfully request that BLM withdraw the current regulatory proposal and re-propose it with an extended 75-day comment period that is coextensive with a new comment period on BLM's re-proposed revisions to the site security and oil measurement regulations, as well as with any companion materials such as manuals or guidance that could be binding on the conduct of operators.

Should you have any questions, please contact Richard Ranger at 202.682.8057 or rangerr@api.org, Dan Naatz at 202.857.4722 or dnaatz@ipaa.org, or Kathleen Sgamma at 303.623.0897 or ksgamma@westernenergyalliance.org.

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Appendix A

Technical Responses or Comments to 43 CFR Part 3170 Subpart 3175

General Comments

The section by section comments that follow in this attachment are the result of consultation with subject matter experts in the technical discipline of measurement of crude oil and natural gas production from among API's member companies as well as other industry representatives. The detailed comments that follow provide a critique of many elements of the text BLM has presented as proposed 43 CFR §3175. API supports the objectives for the revisions to the Onshore Orders that BLM has described previously: to ensure accurate measurement, production accountability, and royalty payments, and to prevent theft and loss of crude oil and natural gas during production. However, we believe that many elements of the proposed rule present serious procedural, economic, and technical implications for operators and the equipment manufacturing and service-supply industry as well. In some cases, costs of compliance are underestimated to a degree that some operators might choose to cease production rather than to absorb those costs. Likewise, we believe that certain elements of the proposed rule fail to take cognizance of current industry standards, or are written so prescriptively as to place the agency and operators in a position of being unable to accommodate future technologies and practices. Operators support the adoption and usage of new industry standards as a basis for updating governmental regulation. Where possible, we offer alternative wording or alternative approaches for BLM to consider. In this context, API recommends that in a new rule, BLM not restrict approval to certain prescribed measurement technologies for production of oil and/or natural gas as referenced in the proposed rule. In the case of this proposed rule, our industry is as interested as BLM in the accurate measurement of natural gas production because production is the basis on which operators are compensated for their efforts.

We believe that BLM can accomplish much of what it seeks through this proposed rule by updating the content of Onshore Orders No. 4 and No. 5 to reflect current voluntary consensus standards, incorporating these by reference wherever possible. Additionally, BLM should consider citing standards such as API MPMS Chapter 13.3 which is available for public review as it concludes its final consensus ballot stage, and which will allow for the introduction of the most up to date technology and proven engineering practices. For example, see a recent Bureau of Safety and Environmental Enforcement (BSEE) notice of proposed rulemaking: <https://www.federalregister.gov/articles/2015/02/24/2015-03609/oil-and-gas-and-sulphur-operations-on-the-outer-continental-shelf-requirements-for-exploratory>. In this rule, BSEE "proposes to incorporate, with certain exclusions discussed later in this proposed rule, draft proposed API RP 2N, Third Edition, which is available for free public viewing during the API balloting process on API's Web site at <http://mycommittees.api.org/standards/ecs/sc2/default.aspx> (click on the title of the document to open)."

Thus, while BLM has not described a path/process whereby new or updated standards are incorporated into this rule after it is finalized, the above BSEE example provides such a model. Another best practice would be to consider forming an industry-government technical committee similar to the Pipeline and Hazardous Materials Safety Administration (PHMSA)

Technical Advisory Committees, which meet on a semi-annual basis to review PHMSA’s proposed regulatory initiatives to assure the technical feasibility, reasonableness, cost-effectiveness and practicality of each proposal. The committees also regularly discuss updates to reference standards, and provide a mechanism for PHMSA staff to understand the status of the reference standards. We recommend that BLM consider the approaches taken by BSEE and PHMSA as models to assist the agency in establishing its own protocol and process to review industry consensus standards on a regular basis to ensure up-to-date standards are cited. In addition, we would recommend that BLM include a provision incorporating by reference the definitions used in the other portions of the BLM oil and gas regulations, e.g., Part 3160, to ensure consistency in terminology among the different areas where the agency regulates onshore oil and gas operations.

In summary, by referencing voluntary consensus standards, as mandated by the National Technology Transfer and Advancement Act, PL 104-113 and following the guidelines outlined in OMB Circular A-119 (see <https://standards.gov/nttaa/agency/index.cfm?fuseaction=home.main>) BLM will meet its goal in the most effective and efficient manner possible.

Section-by-Section Comments

The following document contains detailed comments and recommendations for the proposed rules within 43 CFR Parts §3162 and §3175. Please note that the primary suggestions for alterations to the proposed rules are captured within the “Recommendations” sections. However, additional recommendations can and will exist within the comments of many of the sections.

§3162.2 – Civil Penalties

The new and changed requirements and the severity of the penalties pose difficult and undue pressure on the operators. In some cases it will negatively impact flow and royalties. (e)(2) is an example of this.

(e)(2) Notice of new flow or flow after 90 days no flow. The requirement of notification of flow after 90 days of non-production is difficult for operating groups to maintain. The penalty of \$10,000 per day violation is harsh. The result will mean companies will be required to keep wells shut in longer to make sure all of the notifications are made timely. This will result in less flow time and reduced royalties.

Recommendations:

1. The BLM should remove this penalty.

§3175.10 – Definitions

Bias – “means a shift in the mean value of a set of measurements away from the true value of what is being measured”. This definition refers to a shift or change in a specific direction. This is a correct definition but the term is misused in the document. It is used to

refer to measurement uncertainty which is not a shift but a lack of achieved accuracy. The use of ‘bias’ in the document infers intentional uncertainty.

Marginal, Low, High, and Very-High Volume Facilities

The proposed order established new definitions of facilities based on volumes per day. An economic justification for the marginal-volume of 15 MCFD is given on page 61653. There was not any economic justification or explanation of the rates for low, high, and very-high-volumes. It is proposed to revise the definitions of all terms: marginal, low-volume, high-volume and very-high-volume Facility Measurement Points (FMPs) as specified in Table 1 below. For ease of reference in this discussion, rate categories are numbered and referred to as tiers, where each successive tier is subject to additional requirements.

TIER	FMP CATEGORY	BLM §3175.10 PROPOSED RULE MCFD	PROPOSED REVISION MCFD
1	MARGINAL FMP	<15	<80
2	LOW-VOLUME FMP	15 TO 100	80 TO 500
3	HIGH-VOLUME FMP	100 TO 1000	500 TO 2500
4	VERY-HIGH-VOLUME FMP	> 1000	> 2500

Rate categories are defined using a cost-benefit economic analysis modeled after the BLM economics provided on page 61653 in the proposed rules that define the 15 MCFD cutoff for a marginal FMP. Instead of using rate of return (ROR) to define the rate limits, as the BLM did, a simpler payout calculation was utilized.

The revised payout metric is chosen based on the following justification: Rate of return (ROR) is not the typical metric used by operators to rank field expense projects such as meter equipment replacement. ROR is very sensitive to small variations in start date, operating costs and discounting methods. Complexities associated with discounting make the calculation of ROR difficult to standardize among competing projects for meaningful ranking. ROR is also a poor comparison metric because it often reaches its upper limit of 100% where direct correlation to input variables is lost. Choosing a payout metric minimizes standardization issues, simplifies calculations and provides a continuous range of results for direct correlation and meaningful ranking.

To determine the payout associated with the BLM’s 15% ROR example, an economic model was built in Aries petroleum economics software to recreate the plot displayed in Figure 1 on page 61653 of the proposed rules. Information that was not provided by the BLM was estimated such as gas BTU content, production tax rate, measurement-related expenses, working interest and net revenue interest. Using this new model, the resulting ROR and payout were plotted as a function of investment for \$4/MMBTU gas. See Figure 1 below. The BLM “match points” for

an \$8,000 investment and a 15 MCFD FMP are denoted and one can see that the 15% ROR equates to a 2.2 year payout.

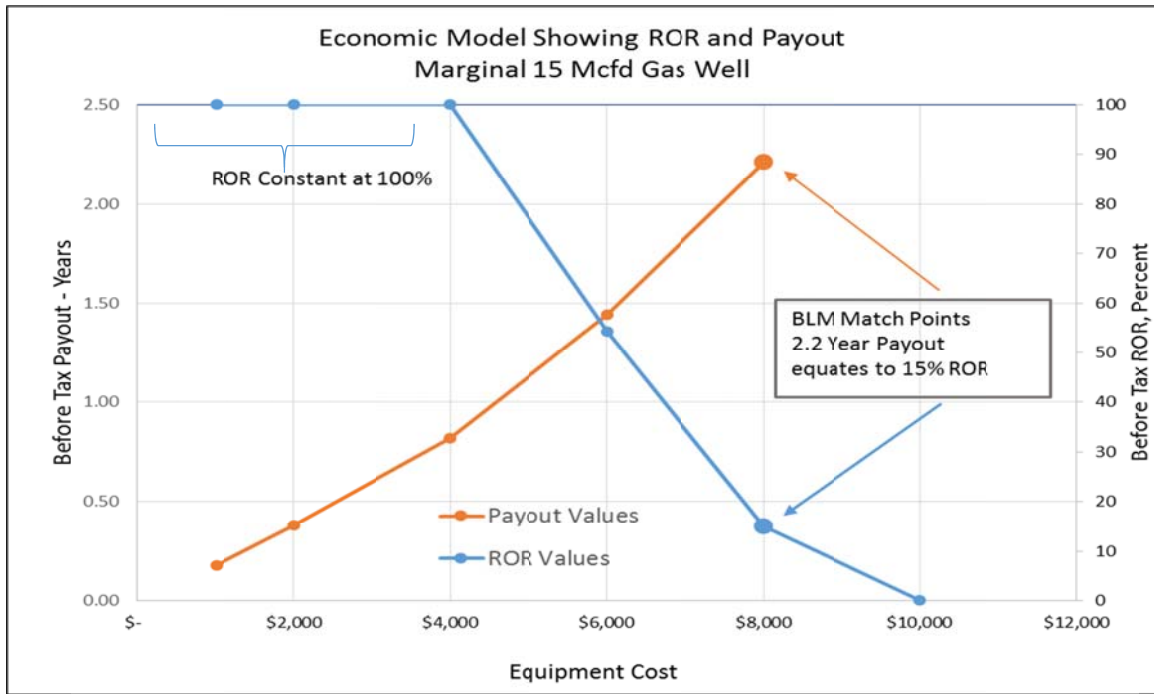


Figure 1

The 2.2 year payout tied to the BLM analysis is close to, but somewhat greater than, that used by industry for ranking. Depending on commodity prices, industry chooses expense projects with payouts ranging from 0.5 to 1.5 years. For the purpose of a mutually acceptable solution, the more conservative 1.5 year payout is selected for this analysis.

Economics used to determine the revised rate limits are based on a cost-benefit analysis, where **benefit is the actual revenue improvement associated with improved measurement.** For example, a 100 MCFD gas well that has a reduction in measurement uncertainty of 1% would realize a revenue improvement of $100 \text{ MCFD} \times 1.05 \text{ MMBTU/MCF} \times \$4/\text{MMBTU} \times 0.89 \text{ net-after-production-taxes/gross} \times 365 \text{ days/year} \times 0.01 = \sim \1400 annually. Table 2 below illustrates the precise revenue changes at various production rates and the assumptions made for this analysis. It also shows the maximum investment at each production rate to achieve a 1.5 year payout. Any greater investment to achieve this uncertainty improvement would not meet economic hurdles.

BTU Content, MMBtu/MMcf	1.05			
Gas Price, \$/MMBtu	\$ 4.00			
Gas Price, \$/MMCF	\$ 4.20			
Sev-AdVal Tax, fraction	0.11			
Rate, MCFD (not declined)		100	500	2500
Uncertainty Improvement, fraction		0.010	0.010	0.010
Annual Revenue Improvement - All Parties*		\$ 1,364	\$ 6,822	\$ 34,109
Max Investment for 1.5 Year Payout = Annual Revenue Improvement x 1.5		\$ 2,047	\$ 10,233	\$ 51,164
* rate x gas price x uncertainty improvement x (1-tax rate) x 365				

Calculations in Table 2 were also performed for different gas prices and presented as shown in Figure 2 below. This plot can be used universally to show the economic investment limit per 100 MCFD for a 1% uncertainty improvement. It illustrates, for example, that at \$4/MMBTU gas, investments up to ~ \$2000 per percent improvement in uncertainty are economic, yielding a 1.5 year payout.

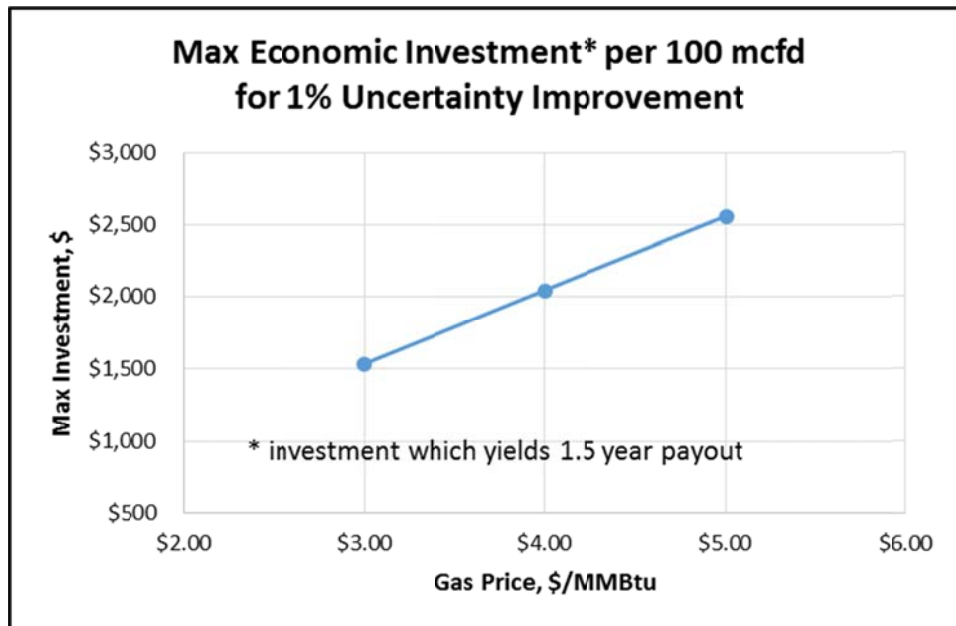


Figure 2

Either Table 2 or Figure 2 may be used to define the new rate limits. The maximum rate of 500 MCFD for a low-volume FMP, Tier 2, may be explained as follows: A key equipment distinction moving from Tier 2 (low-volume FMPs) to Tier 3 (high-volume FMPs) is the requirement to replace mechanical recorders. This cost will entail a new 2" or 3" meter tube and a flow computer with electronic displays. The installed cost is conservatively estimated for the purposes of this estimation only at roughly \$50,000. According to the Standard Handbook of Natural Gas Engineering, a chart recorder uncertainty may be as high as 8%. Recognizing the Tier 3 measurement uncertainty requirement of 3%, one can equate the investment of \$50,000 to replace the chart recorder and meter tube with an improvement in uncertainty of 5%. Using Table 2 or Figure 2 above, and applying a factor of 5, one can see that an FMP must be making

at least 500 MCFD for the investment of \$50,000 to payout in 1.5 years at \$4 gas. ($\$2000 \times 5\%/1\% \times 500 \text{ MCFD}/100 \text{ MCFD} = \$50,000$) In other words, meeting the requirements of a high-volume FMP, Tier 3, is only economical if the well produces 500 MCFD or more.

The maximum rate for a marginal FMP utilizes the same 5% uncertainty improvement and the \$8000 investment used in the BLM economics. In this case, a rate of 80 MCFD would be required to payout an \$8000 investment in 1.5 years. ($\$2000 \times 5\%/1\% \times 80 \text{ MCFD}/100 \text{ MCFD} = \$8,000$)

The maximum rate of 2500 MCFD for a high-volume FMP, Tier 3, is explained as follows: Moving from Tier 3 to Tier 4 represents a reduction in measurement uncertainty of 1%, per the proposed rules. To achieve this uncertainty, it will be necessary for operators to replace worn equipment that no longer meets the requirements, at the cost described above of ~\$50,000. Per the chart in Figure 2, the rate required for a \$50,000 investment resulting in a 1% uncertainty improvement to payout in 1.5 years at \$4/MMBTU is 2500 MCFD. ($\$2000 \times 1\%/1\% \times 2500 \text{ MCFD}/100 \text{ MCFD} = \$50,000$) Making this expenditure on a lower rate FMP would result in a longer payout and not meet economic hurdles.

The revised FMP definitions and calculations are summarized in Table 3 below.

Table 3. Summary of Payout Calculations and Revised FMP Definitions

FMP	Cost \$	Benefit expressed as Percent Uncertainty Improvement	Benefit expressed as Annual Revenue Improvement* (Function of Rate and Uncertainty Improvement) \$4/MMBtu \$	Annual Revenue Needed for 1.5 year Payout \$	Rate to yield 1.5 Year Payout using Goal Seek Feature McfD	Revised FMP Upper Rate Limit
Marginal	\$ 8,000	5%	\$ 5,333	\$ 5,333	78	80
Low-volume	\$ 50,000	5%	\$ 33,333	\$ 33,333	489	500
High-volume	\$ 50,000	1%	\$ 33,333	\$ 33,333	2443	2500

* revenue change actually could be plus or minus

These revised FMP definitions rely on consistent economic analyses for each category and comply with this Administration’s direction that regulations “must take into account benefits and costs” (Presidential Executive Order 13563, 76 FR 3821, January 21, 2011).

The stated justification for establishing the volume levels or tiers is based on the argument that improved measurement uncertainty will result in increased revenues and increased royalties. Though the recommendation utilizes a similar assumption, it is incorrect to assume improving measurement uncertainty will increase volumes. Improvement of uncertainty will only change volumes if a measurement error is occurring. The corrected volume of any such error may be

lower or higher than the uncorrected volume. Historical studies of measurement corrections do not support the assumption that improvements will increase volumes.

§3175.30 – Specific Performance Requirements

This section establishes the allowable measurement uncertainty for the various classifications. As stated earlier, improved measurement uncertainty does not ensure increased volumes or revenues. The required changes in 3175 may, at best, reduce true measurement uncertainty, but will have little or no change to the volumes. Royalties and production volumes will not increase because of the additional requirements. The additional costs to comply with the requirements will cause many existing wells to be uneconomical to modify and therefore will have to be shut in. If the BLM would adopt the tier changes proposed in the comments above for §3175.10 and extend the equipment and performance requirements of marginal FMPs to include that of the low-volume FMPs, it would increase the economic viability of those wells, based on the economic justifications presented in the comments for §3175.10.

The uncertainty is calculated using the BLM Uncertainty Calculator. The BLM has not published the calculations used by the calculator. The section by section analysis states that the calculator uses API equations however, the actual equations have not been made public by the BLM for industry review. The equations in the BLM calculator need to be made available.

The uncertainty limits are arbitrary values determined by the BLM without due explanation and justification. This document lowers the limits for high and very-high FMPs without proper justification and explanation. The costs to attempt these new limits do not increase revenues or royalties. BLM provides no economic justification for these lower limits.

(b) Heating Value Uncertainty levels – This document sets uncertainty limits for the heating value. However, the calculation of the uncertainty is not described. The justification for establishing a limit of 1 or 2% uncertainty is not stated. It is agreed that the heating value has equal weight on royalty determination as volumetric measurements. However, it does not seem logical that the heating value uncertainty would be more restrictive than the volumetric. If the uncertainty is based on the fluctuation of the calculated heating value, these limits do not take in consideration typical well fluctuation. 1% of an 1150 BTU is ± 11.5 BTU which can be less than typical well fluctuation. The BLM should take care to not confuse the terms variability and uncertainty. The sample collection procedures, analytical techniques, and calculation methods impact the heating value uncertainty. The heating value variability is independent of the heating value uncertainty.

There are significant concerns in being required to install either a composite sampler or an on-site chromatograph if the BTU on a high-volume FMP varies more than $\pm 2\%$ or on very-high-volume FMP if the BTU varies more than $\pm 1\%$. Composite samplers are expensive and the results may not be reliable when two phase flow occurs, such as in the shale plays located in the northern states that have wet or rich hydrocarbon gas conditions. The BLM has not demonstrated that there would be a significant benefit in gas quality results from the use of composite samplers that would affect the measured volume.

The use of on-site chromatographs is very expensive at tens of thousands of dollars per instrument. Heated instrument enclosures could then add an additional tens of thousands of dollars per location. The same applicability logic of a composite sampler applies even more so to an on-site chromatograph. Even complying with a costly installation of an on-line chromatograph that measures within a $\pm 2\%$ uncertainty does not guarantee that the heating value will not fluctuate more than $\pm 2\%$.

In addition, most production from shale formation wells that originally come in as a very-high-volume FMP would be reclassified as a high-volume FMP or lower in a short amount of time resulting in initial cost expenditures that were not reasonably necessary.

To require certain sampling systems solely upon a $\pm 2\%$ BTU swing for high-volume FMPs and a $\pm 1\%$ BTU swing for very-high-volume FMPs is not reasonable.

(d) Verifiability – The limitations stated to ensure independent verification is unduly restrictive. These limitations could have prevented the development of technology such as EFM's that the BLM is dependent on to ensure accuracy. It will limit new and innovative technology that could benefit both the Industry and the BLM.

Recommendations:

1. The BLM should utilize the volumetric tiers as proposed in these comments.
2. The BLM should extend the measurement procedures and equipment requirements of marginal FMPs to include that of the low-volume FMPs.
3. Delay implementation of the uncertainty requirements until the BLM's uncertainty calculation methods have been published and gone through an appropriate comment process.
4. The BLM should maintain existing uncertainty limits until the agency can provide scientifically valid justification for proposed values.
5. Allowable heating value uncertainties should be adjusted to reflect the volumetric uncertainty requirements.
6. Sample frequency should be based on volumes and not variability of heating value.

§3175.31 – Incorporation by Reference

Several industry standards are incorporated into the document by this section. However, the incorporation is limited to stated chapters and versions. These restrictions will prevent the BLM from using the newer standards that will be developed to improve measurement accuracy which is contrary to the responsibility of the BLM.

Recommendations:

1. Modify the proposed rule to utilize the latest version of incorporated standards when they become effective.

2. If recommendation #1 is not instituted, then the BLM should develop and outline a procedure for the incorporation of new and updated standards when they become effective.

§3175.40 thru §3175.45 – Measurement Equipment Approved by Standard or Make and Model

This section as written is unworkable and has extreme ramifications to the industry. The primary concern is that the proposed rule requires a compliance timeline for all very-high-volume FMPs (within 6 months) and all high-volume FMPs (within 12 months) after the rule's effective date. This does not acknowledge the time required by the BLM administrative process for component testing, evaluation and approval that compliance determinations are dependent upon. The compliance deadline also does not recognize the time required for any replacement of components after BLM has completed the development of an approved component list. Operators will be in a catch-22 for compliance as the deadline may pass without clear compliance criteria, resulting in existing measurement equipment no longer being allowed.

This section would disqualify all existing and future transducers, flow computers, isolating flow conditioners, and other measurement equipment until they go through extensive testing and are accepted by the PMT and BLM as approved equipment. BLM has not provided any list with the rule and our understanding is that such a list does not currently exist. Likewise, BLM has not provided the test criteria. Based on the proposed rule, it will take at least 24 weeks to test one transducer under one type of flow conditions. There are currently not enough laboratories in the country to conduct these tests. The test requirements are extremely cumbersome, expensive and time consuming. It has been estimated it could cost several hundred thousand dollars to test one transducer. There are many different transmitters in use today that will need to be tested and approved. These same limitations affect systems and flow conditioners. If any equipment is not on the approved equipment list of BLM (PMT) and an operator requests approval by BLM/PMT, it is unclear as to the duration of the waiting period for approval. Would an operator be allowed to continued use of existing equipment during the approval process? BLM needs to fully explain how this process would work and if an approved list is already developed, provide it and testing protocols as part of the record.

Additionally, manufacturers will not have any economic justification to test older equipment. If they don't test such equipment, then operators will have to install new equipment. The cost to test old equipment or replace it will be extremely expensive. Some companies with older wells may be forced to replace all meter tubes and EFM's for high and very-high-volume FMPs. The costs will most likely make it uneconomical to continue producing the wells. Other uncertainties are: what is the approval process for new models; will the process be based on vendor's claims or will BLM/PMT define testing protocols for the new device; and if there is no industry standard for testing that device, who will perform the test?

To prevent a significant reduction in production and related royalties, API recommends that this section be modified to continue to accept equipment that is currently in use and new

equipment installations that meet API industry standards. The rule should only require replacement of existing components where BLM has demonstrated they do not meet current industry performance criteria or standards. If BLM chooses not to accept API's preferred approach of reliance on updated industry standards, then the rule must, at a minimum, provide for an orderly and economically-based process for component or measurement system approval. Setting compliance deadlines based on the non-transparent deliberations of the PMT and on undisclosed performance requirements will create compliance uncertainty and, at best, be arbitrary.

Recommendations:

1. Continue to accept equipment which is currently in place and previously accepted by the BLM.
2. The rule should only require replacement of existing components where BLM has demonstrated they do not meet API performance criteria.

§3175.46 – Isolating Flow Conditioners

(b) States the BLM may require additional test protocols above what is stated in the API documents. These protocols are not currently available to the public. API protocols are subject to public review to ensure the accuracy and credibility of the test. This is important to ensure a test is scientifically valid and is not biased toward any type or brand of device. It is also not clear whether the protocols BLM refers to yet exist. If a company tests per the API protocols and the BLM adds additional protocols after the testing, the company will have to re-conduct the tests to include the new protocols. It is also unclear what the cost of the additional unknown testing will be and therefore the burden on the regulated community is unable to be determined.

(c) Indicates the PMT will review the tests and make recommendation to the BLM and then the BLM will decide if it approves the device. The criteria for the PMT recommendation and BLM acceptance are not stated. Devices which meet the test protocols may not be approved for unknown reasons. This is troubling and problematic for both the manufacturer and the BLM.

Recommendations:

1. The BLM should allow the use of existing flow data as the basis for approval.
2. Continue to accept equipment which is currently in place and previously accepted by the BLM.

§3175.47 – Differential Primary Devices Other than Flange-Tapped Orifice Plates

Without a description of the additional protocols which the BLM "may" require for approval of other device types, it is impossible for the regulated community to evaluate and comment.

Recommendations:

1. The BLM should include the additional protocols as part of the proposed rule.

2. Continue to accept equipment which is currently in place and previously accepted by the BLM.

§3175.48 – Linear Measurement Devices

This section is an example of the worrisome language of §3175 in that the BLM “may” approve linear devices. §3175 is written entirely for orifice meters. As written, the proposed regulations could restrict technological advances in gas measurement on federal and Indian lands. §3175 provides for an extensive type-testing process for the BLM to approve the use of equipment. This process should be utilized for the approval of linear devices as well. Otherwise, §3175 is not an improvement on the existing On-Shore Order 5.

For example, ultrasonic meters have been utilized successfully for the measurement of gaseous volumetric flow rates for many years. These meters offer much higher accuracy than differential pressure devices ($\pm 0.10\%$ of reading on 4 path meters after flow calibration). They have a much wider turndown than differential pressure devices (up to 100 to 1). They also offer extensive meter diagnostics that can identify and send call outs when there are errors in measurement, flow restrictions, flow profile issues, and/or if liquids are present. This feature is not available for differential pressure devices, such as orifice meters. Ultrasonic meters are a good example of recent technological advances for linear meters.

Recommendations:

1. Type testing should be allowed for the approval of linear devices.
2. The BLM should incorporate the industry standards which relate to the linear devices (i.e. AGA 7, AGA 9, AGA 11, etc.).

§3175.60 – Timeframe for Compliance

The proposed timeframe for compliance does not take into account: (1) delivery times for equipment changes; (2) delivery times for as yet not developed flow computers required to meet the proposed rules; and (3) the time required by regulated parties to implement the required accounting and reporting changes. The BLM should allow companies two (2) years to begin implementation, still on a phased-in approach.

(b)(2) BLM proposes that all gas analysis reporting requirements will become effective immediately upon the issuance of the final regulations. This presents a number of problems. First, BLM has not finalized the Gas Analysis Reporting Verification (GARV) system. Second, because BLM has not finalized the GARV system, regulated parties are unable to make software changes that will allow these parties to comply with this requirement. Third, the gas chromatographs meeting the BLM’s new requirements will have neither been purchased nor upgraded until after the regulation is final. Fourth, the reporting is part of a regulated party’s accounting system – which, may take as much as two (2) years to modify. Lastly, most of the flow computers currently installed do not comply with the FMP requirement. Therefore, the

reports will be incomplete until FMP compliant flow computers are available and can be integrated into the regulated parties' accounting and laboratory systems.

Recommendations:

1. The proposed timeframe for measurement procedure and equipment implementation compliance should be extended as stated above.
2. The gas analysis reporting implementation timeframe should be extended to match the timeframe for the measurement procedure and equipment implementation.
3. The GARV system should be completed and available for review prior to implementation of the proposed rule.

§3175.80 – Flange-Tapped Orifice Plates

(a – n) This section imposes API 14.3.2 version 2000 requirements on FMPs installed prior to creation of the standard. Any FMP flowing more than 100 MCFD and installed prior to the API 14.3.2 2000, will have to be replaced. The installation of the new meter runs will not increase production or revenues. The preamble of the proposed rule states multiple times the implementation of these changes will not cause the operators to incur significant costs. Contrary to this statement, the costs to replace these BLM approved meter runs will be very significant. Since there will not be any increased production, there is not any economic justification for this requirement.

(b) The limitation of the orifice bore to not less than 0.45 inches is too restrictive for lower volume wells that are classified as high-volume FMPs by the BLM. Smaller plates may be necessary to increase differential pressure for better determination. The uncertainty of the smaller bore is less than the uncertainty of lower differential pressure readings. However, the smaller bores will still fall within the new BLM accepted beta ratio of 0.10 to 0.75. If the BLM accepts the recommended volume tiers, the wells in question will not be subject to the orifice bore limitation and more accurate volumes can be attained through smaller bores.

(f) Requires all non-marginal FMP meter tubes to meet the current API MPMS 14.3 requirements. This will mean that all non-marginal FMP meter tubes built to the pre-1985 AGA Report 3 requirements will need to be replaced. This will place an undue burden on regulated parties. The perceived benefit of replacing currently approved tubes will not justify the costs. Operators will have to consider spending the money or shutting in the wells.

In addition, this regulation does not take into account the number of meter tubes that will need to be manufactured and installed in a very short period of time. Regulated parties will be bidding for a limited supply. A better solution is to require that all future meter tubes meet the new requirement.

(h) Visual meter tube inspection – There are concerns regarding visual inspections with borescopes. Some company’s safety guidelines do not allow the use of borescopes in a gas exposed environment. The borescope process will need to ensure safety.

Visual inspection frequency is an issue for very-high-volume FMPs. The annual inspection requirement is more frequent than current industry standards. Normal conditions should not cause metal integrity issues over a 12 month period.

(k) Specifies the placement of flow conditioners. Even with the proposed exception of this requirement for marginal-volume FMPs, this will be a huge and costly task to verify and document if already installed meter run lengths meet the minimum upstream and downstream lengths. Like §3175.80(f), (k) will place an undue burden on regulated parties by requiring the replacement of many existing tubes and flow conditioners. In addition, this regulation does not take into account the number of meter tubes that will need to be manufactured and installed in a very short period of time. Regulated parties will be bidding for a limited supply. A better solution is to require all future meter tubes meet the new requirement.

(n) States the operator must notify the AO at least 72 hours before installation of a new meter tube. Notification will have to be added to the construction process. The exact timing is sometimes difficult to determine. Also, there is concern if this means the inspector will require a detailed inspection of the new tube. Many companies deliver a prefabricated meter skid package to the well location. The tube is already bolted to the associated piping which prevents a detailed inspection.

Recommendations:

1. The BLM should extend the measurement procedures and equipment requirements of marginal FMPs to include that of the low-volume FMPs.
2. Continue to accept equipment which is currently in place and previously accepted by the BLM.
3. The BLM should accept orifice bore sizes less than 0.45 inches which fall within the proposed beta ratio limits of 0.10 to 0.75.
4. Orifice plate eccentricity and sample probe location requirements should be removed from marginal and low-volume FMPs.

§3175.91 & 3175.101 – Installation of Mechanical Recorders and Electronic Gas Measurement Systems

This section, as well as 3175.101, require gauge lines and valves to have 0.375” internal diameter. This will require the use of ½” tubing. This is different from current industry practices which utilize 0.375” outside diameter tubing. The cost to implement this change for chart recorders and Electronic Gas Measurement (EGM) units for some larger volume operators could be as much as several million dollars. The BLM did not justify the reason for this change.

Recommendations:

1. The BLM should change the wording of the proposed rule to require gauge lines and valves to have 0.375" outside diameter.

§3175.100 – Electronic Gas Measurement (Secondary and Tertiary Device)

This section strongly incorporates API 21.1 as guidelines and requirements. The latest version of API 21.1 is not universally utilized because of the complexity and difficulty in implementation.

Recommendations:

1. The API 21.1 requirements should only be implemented for high-volume and very-high-volume FMPs.

§3175.101 – Installation and Operation of Electronic Gas Measurement Systems.

(b)(4) In total, the FMP EGM display would have 13 lines for each meter; some existing equipment would not be able to handle this requirement. Companies have recently spent millions of dollars complying with recent NTLs and the industry requests the removal of the 13 line requirement.

Recommendations:

1. Continue to accept equipment which is currently in place and previously accepted by the BLM.
2. The 13 line requirement for EGM displays should be stricken from the proposed rule.

§3175.102 – Verification and Calibration of Electronic Gas Measurement Systems

(g) States that volume report corrections must be made if the transducer calibration resulted in a change greater than 2% or 2 MCFD, whichever is less. While the 2% would appear to be reasonable, the 2 MCFD is onerous. With natural gas at \$2.50 per MMBTU, a 2 MCFD change represents approximately 2 MMBTU per day or \$5 per day. This would mean that almost all volume report corrections would have to be re-written. The 2 MCFD is only appropriate for marginal FMPs. A better solution would be to replace "whichever is less" with "whichever is greater." In that way, large wells would not be impacted by the small 2 MCFD limit.

(h)(1) Would this require verification equipment to be certified at least every 2 years. Proposed paragraph (b) would modify the test equipment requirements in the statewide NTLs by adopting language in API MPMS 21.1.8.4. The current API MPMS 21.1 allows test equipment with an uncertainty of no more than 0.10 percent of the upper calibrated limit of the transducer being tested. The BLM concedes that it is difficult of achieving this level of accuracy outside of a laboratory.

It is being proposed that the BLM would verify the overall measurement uncertainty, including the effects of the calibration equipment uncertainty, by using the BLM Uncertainty Calculator or an equivalent tool during the witnessing of a meter verification. Therefore, the BLM Uncertainty Calculator, or the unspecified “equivalent tool”, with its source code equations and calculations needs to be made available for public review, allowed to be tested, verified and commented on before its implementation.

Recommendations:

1. Replace the wording in (g) which states, “...flow-rate error greater than 2 percent or 2 MCFD, whichever is less...” with “...flow-rate error greater than 2 percent or 2 MCFD, whichever is **greater**...”.
2. Delay implementation of the uncertainty requirements until the BLM’s uncertainty calculation methods have been published and gone through an appropriate comment process.

§3175.103 – Flow Rate, Volume, and Average Value Calculations

(a)(2) States that for meters other than flange-tapped orifice plates, the Bureau’s PMT will establish the calculations used to determine flow rate, volume and average value, based on the primary device make, model, size and area ratio. The PMT and the BLM should not ignore the depth of knowledge and resources that organizations like the API or AGA utilize in establishing these equations. Rather than the PMT establishing these calculation methods, the language should state that the values of the meters other than flange-tapped orifice plates shall be those calculations established by either the AGA or the API. This will also require the BLM to work with manufacturers and software providers to implement the flow equations chosen by BLM.

Recommendations:

1. Utilize the calculation equations and procedures for meters other than flange-tapped orifice device as defined by the relevant AGA and API guidance documents.

§3175.104 Logs and Records

(a) Would establish minimum standards for the data that must be provided in a daily and hourly quantity transaction record (QTR). This proposed paragraph would require that both daily and hourly QTR’s submitted to the BLM must be original, unaltered, unprocessed, and unedited. The BLM further states that it is common practice for operators to submit BLM-required QTRs using third-party software that compiles data from the flow computers and uses it to generate a standard report.

(a)(2) The summary and this specific ruling, mentions that all log records should be at “5 significant digits”. The BLM needs to specify how it intends reports to achieve this. Some variables will have decimal places moving continuously based on the variable being a very small number or a very large number. This may require the variable to be logged in scientific

notation. This requirement should be better defined and the BLM should consider that a specified number of decimal places be listed in place of listing “5 significant digits”. As written, this will be difficult to implement. Please clarify this section.

(c) Would establish minimum standards for the data that must be provided in the event log and states that this event log would have a new requirement to record power outages. It is not clear what the BLM is trying to achieve with the current technology as the only power failure which would inhibit the meter’s ability to collect and store new data would be a DC power failure. Furthermore, the only event which occurs in a typical flow computer is an event recorded when DC power is restored. The flow computer cannot store a DC power failure (power off) event without DC power. Therefore, without an “off” event, you can’t calculate an outage length, only estimate it based on the last recorded QTR. The BLM needs to review this section to see if the requirement to record a power outage can actually be performed.

An additional clarifying point relating to § 3175.104(c) is for the BLM to confirm if it is the intent of section 3175.104(c)(1) to comply with API 21.1.9.6 that states “The EGM device shall provide a backup power supply, or nonvolatile memory, capable of retaining all data in the unit’s memory for a period not less than thirty-five days.” This API section further states “When primary power is lost and subsequently restored, the time and date of the failure and the time and date of the return to normal status shall be logged into the audit trail.”

Therefore, we agree with applicable sub-section 3175.104(c) language provided (c)(1) is amended to state “*primary*” power as follows:

- The event log must record all ***primary*** power outages...

Recommendations:

1. Third-party software systems should be allowed for use in the collection of the required EGM data as long as it can be demonstrated that the original data is unaltered, unprocessed, and unedited.
2. The BLM should require reported values to have a specified number of decimal places as opposed to number of significant digits.
3. Require only primary power outages to be logged into the audit trail.

§3175.110 – Gas Sampling and Analysis

The scope of the existing standards for sampling natural gas, API 14.1 and GPA 2166, does not include gas samples with any form of entrained liquid. All entrained liquid is to be separated in the pipeline at pipeline pressure and temperature and is to be accounted for separately. No technology exists for removing a representative gas sample containing entrained liquids in any form and analyzing that sample correctly and accurately. The method is not a bias. It is simply the only technology available to extract and analyze a gas sample correctly and accurately (see API 14.1 Appendix C). There is no scientific third party evidence that the proposed replacement rule for Onshore Order 5 would actually improve measurement of heating values by setting these proposed standards for gas sampling and analysis. The sample collection procedures,

analytical techniques, and calculation methods affect the heating value uncertainty. The heating value variability is independent of the heating value uncertainty.

Recommendations:

1. Sample frequency should be based on volumes and not variability of heating value.
2. The BLM should remove any requirements or equipment limitations which promote the collection of entrained liquids into the sampling systems unless they can provide a scientifically valid study which shows this to be representative.

§3175.111 – General Sampling Requirements

The 30° F heating requirement in the current standards was put in place because the hydrocarbon dew point was calculated and not known. In the BLM scenario of downstream of a process separator, the hydrocarbon dew point is known and 30 degrees above that number is not necessary. The 30° F heating requirement in API 14.1 and GPA 2166 is meant to prevent condensation as mentioned above. However, the basis for the heating requirement is that a gas only sample was removed from the pipeline without any entrained liquids in any form as defined in the scope of both standards. If any liquids were present in the pipeline, the vapor only sample that is removed is at the hydrocarbon dew point. The 30° F heating requirement was put in place to prevent this vapor only sample from condensing. It was not intended to vaporize aerosols or mist that was removed since that would distort the gas sample and bias the heating value. The assumption that a separator is 100% efficient is not correct, and liquid in any form that leaves the separator and enters the metering pipeline will not be uniformly mixed with the gas.

Recommendations:

1. The BLM should remove any requirements or equipment limitations which promote the collection of entrained liquids into the sampling systems unless they can provide a scientifically valid study which shows this approach to provide accurate measurement.
2. The BLM should add provisions for the adoption or PMT approval of future sampling techniques as the technology advances.

§3175.112 – Sampling Probe and Tubing

(b)(1) In this section the BLM defines the location of the sample probe. First the BLM references API 14.1 which requires that the sample point be at least 5 pipe diameters downstream of the disruption (orifice plate). If the BLM is concerned about the sampling point being placed too far downstream, then 1 to 2 times the minimum distance cited in API 14.1 should be used as the range, which is 5-10 diameters downstream. The proposed rule incorrectly utilizes the minimum downstream lengths cited in API 14.3 as maximum downstream lengths. Calculating the downstream length per the proposed order, the full allowable range will be 5 diameters to

5.6 diameters for a meter designed for a full beta ratio range. In a 2" schedule 40 meter (with an ID of 2.067) this would give a band of installation of 1.24".

(c)(4) Proposes that the use of membranes and filters be prohibited in order to allow for the collection of entrained liquids. As liquid phase hydrocarbons do not flow through a given system in a homogeneous manner, it is impossible to collect a representative sample of the liquids. In addition, hydrocarbon liquids and debris can contaminate sampling systems, biasing subsequent samples, and potentially damaging on-line and portable gas chromatographs. Membranes and filters are recognized by the industry as an effective approach to minimizing the potential for contaminating sampling systems, safeguarding instrumentation, and ensuring a representative sample of the gaseous phase within the sample stream. In addition, at the API facilitated meeting, BLM representatives indicated this provision was to allow entrained liquids to enter the sample and GC. This conflicts with §3175.113(d)(iii)(2) which requires filters on the inlet of the GC to be cleaned or replaced. These filters will also prevent liquids from entering the GC and, thus, prevent expensive repairs to the GC.

API 14.1, which is incorporated by reference, in section 7.3.1 allows for the use filters and screens, added to the collecting end of the probe, to reduce the possibility of small liquid particles entering the probe. Additionally, API 14.3, which is incorporated by reference, indicates the filtration is an industry practice.

Recommendations:

1. The sampling probe location should be placed 1 to 2 times the minimum distance as cited in API 14.1.7.4.2.
2. §3175.112 (c)(4) should be stricken from the proposed rule.

§3175.113 – Spot Samples – General Requirements

(a) Stipulates that if an FMP is not flowing at the time that a sample is due, a sample must be collected within 5 days of when flow is re-initiated. Clarification is requested as due date can be defined as a timeframe or a specific day. In addition, the flow at a given FMP can be extremely intermittent and unpredictable, especially when artificial lift is utilized. In these cases, flow may be re-initiated for only a few minutes and then not flow again for some time, making it impossible to collect a sample within 5 days. It is recommended that language state that a sample shall be collected within the required timeframe (i.e. every 3 months, every 6 months, etc.). If the FMP does not flow during that timeframe, a sample must be taken within 5 days of when continuous flow is reinitiated. If the FMP flow in intermittent, a sample must be collected as soon as practicable.

(b) Requires a 72 hour notification period prior to sampling. This requirement is not reasonable or in most cases not feasible during typical operations. This requirement also frustrates any attempts to control real time gas quality enforcement through onsite sampling at a meter.

(c)(4) States that a sample cylinder must be physically sealed in a manner that prevents opening the sample cylinder without breaking the seal before sampling. It is agreed that the sample cylinders need to be properly cleaned in accordance with GPA 2166. However, cylinder seals will require replacement of valves on most cylinders to accommodate the seals, requiring significant cost with no added guarantee if and how the sample cylinder was cleaned prior to use. Sample cleaning procedures should be verified through each company's laboratory auditing process. Additionally, this rule makes an incorrect assumption that a sample taken in a cylinder with a broken or missing seal is an inaccurate sample. Section (c)(4) should be stricken from the proposed rule.

(d)(iii)(2) States that filters at the inlet of the GC must be cleaned or replaced before sampling. We request that BLM clarify this statement, because it could be interpreted to require that the filters must be cleaned prior to each sample being taken. Cleaning inlet filters prior to each sample is impractical in the field because (a) the time required would be prohibitive in the field and (b) the potential equipment and chemicals required for proper cleaning would be difficult to transport and utilize in a portable application. Proper purging is usually sufficient to ensure there is no carryover from sample to sample. It is recommended that the language be changed to require the filter be cleaned at each calibration, verification, and if sample results indicate the presence of contamination.

(d)(iii)(3) Requires the sample port and inlet to the sample line must be purged before sealing the connection between them. It is agreed that proper purging is crucial to ensuring that carryover from sample location to sample location does not affect the sample compositions. However, as written, the requirement implies the purge is to be performed with ambient air. Ambient air can create significant bias in the analytical results due to increased Nitrogen if all of the ambient air is not purged prior to sampling. It is therefore recommended that the language be changed to "The sampling system must be thoroughly purged with sample gas before injection onto the gas chromatograph."

(d)(iii)(4) It is not clear what the BLM's intentions are with respect to on-line chromatograph filter cleaning or replacement requirements such as when or at what frequency.

(d)(iii)(5) Stipulates that portable GCs may not be used when the flowing pressure of the gas is less than 15 psig. Several member companies have had significant success in performing portable GC sampling and analysis of gas streams with pressures less than 15 psi, including negative pressures, through the proper use of sample pumps as specified in API 14.1.12.10. A sample pump attached to a sealed sampling system allows for the collection of a representative gas sample. It is recommended that the language be changed to allow for portable GC's to be utilized at flowing pressures less than 15 psi, if a sampling system with a vacuum pump is used, complying with API 14.1.12.10 (incorporated by reference, see §3175.31), and the samples are obtained from the discharge of the vacuum pump.

Recommendations:

1. In section (a) the BLM should address the concerns of collecting a sample when intermittent flow conditions exist.
2. Section (c)(4) should be stricken from the proposed rule.
3. The language in (d)(iii)(2) should be changed to require the filter be cleaned at each calibration, verification, and if sample results indicate the presence of contamination.
4. The language in (d)(iii)(3) should be changed to “The sampling system must be thoroughly purged with sample gas before injection onto the gas chromatograph.”
5. The BLM should accept all of the provisions within API 14.1 and not limit the applicability of portable GC’s.

§3175.114 – Spot Samples – Allowable Methods

(a)(5) Limits the methods for obtaining spot samples to the four cited or other methods approved by the BLM.

Recommendations:

1. The BLM should utilize Appendix F of API 14.1 for determining additional approved spot sampling methods.

§3175.115 – Spot Samples – Frequency

(a) The sampling frequencies presented in Table 4 were developed as part of the “BLM Gas Variability Study Final Report,” May 21, 2010. The study used 1,895 gas analyses from 217 points of royalty settlement and concluded that heating value variability **is not** a function of reservoir type, production type, age, richness of the gas, flowing temperature, flow rate, or a number of other factors that were included in the study. Instead, the study found that heating value variability appeared to be unique to each meter.

The study (BLM Gas Variability Study Final Report,” May 21, 2010) also concluded that heating-value uncertainty over a period of time is manifested by the variability of the heating value, and more frequent sampling would lessen the uncertainty of an average annual heating value, regardless of whether the variability is due to actual changes in gas composition or to poor sampling practice. Is the BLM saying that heating value uncertainty is caused by variability of the heating value? Is the BLM concerned with just increasing gas sampling just because there may be poor gas sampling practice? A BTU swing by itself does not necessarily indicate poor sampling. Furthermore, having a variable gas sampling frequency will cause significant disruptions in organizations that already have well established gas sampling frequencies especially by requiring a maximum sampling frequency of once per week.

(b) States that the BLM will base the sampling frequency calculation on the statistical variability of previously reported heating values. However, neither the statistical heating value variation

calculation nor the decision criteria is provided, which makes it impossible to evaluate. The proposed rule states that it must meet the uncertainty requirements within 3175.30. If the same sample collection procedures, analytical techniques, and calculation methods are utilized for determination of heating values, the uncertainty will be the same regardless of the variability in the resultant value. The variability of the heating value of the gas stream is primarily a function of the ambient, product, and operational conditions, such as ambient temperature and artificial lift. Section (b) and the associated language in section (d) should be stricken from the proposed rule because the techniques utilized are already stipulated to meet the uncertainty requirements stated in 3175.30 and the variability of the gas stream has no impact on that uncertainty.

With the BLM initiating a new GARVS system and its subsequent reporting to the producer, the new sample frequency would be on a day by day or week by week basis. The additional cost associated with personnel time and equipment required to manage this ever changing schedule would be staggering. It is estimated that reporting requirements for the producer could go up as much as 25 fold.

There are concerns that the BLM would begin telling the industry that a particular zone or well has to have a certain BTU value. It would also appear that the BLM would rather see the industry install chromatographs on every meter station regardless of volume or economic value. An established frequency list based on volume is all that is required.

(d) Stipulates that if a composite sampling system or an on-line GC is required to be installed, it must be installed and operational no more than 30 days after the due date of the next sample. Heated composite samplers can take an average of 12 weeks or more to obtain and install. On-line gas chromatographs, along with the necessary buildings, sampling equipment, and standards, can take 6 months or longer to obtain and install. If this requirement is not removed from the proposed rule, as requested in the comment for 3175.115 (b), it is recommended that the BLM change the timeline for installation of the required equipment to 3 months after the due date of the next sample for composite samplers and 6 months after the due date of the next sample for on-line gas chromatographs.

Recommendations:

1. Sample frequency should be based on volumes and not variability of heating value.
2. Section (b) and the associated language in section (d) should be stricken from the proposed rule.
3. If section (b) and the associated language in section (d) are not stricken from the proposed rule, it is recommended that the BLM change the timeline for installation of the required equipment to 3 months after the due date of the next sample for composite samplers and 6 months after the due date of the next sample for on-line gas chromatographs, if the equipment necessary is available within those timeframes.

§3175.118 – Gas Chromatograph Requirements

(b) States that samples must be analyzed until three consecutive runs are within the repeatability standards listed in GPA 2261-00. Typically, when triplicate analyses are required, a percent relative standard deviation (%RSD) acceptance criteria is cited, such as in EPA Method 18. GPA 2261-00 cites a repeatability criteria. Repeatability is applicable to duplicate analyses. In addition, replicate analyses add a significant amount of analytical time to perform. Many laboratories already have a difficult time keeping up with the volume of samples delivered from the various companies they service, especially around the first of each month. Replicate analyses on each sample will push them beyond their capacity. It is agreed that replicate analyses are an important part of the QA/QC process. It is recommended that the language be changed from requiring triplicate analyses to duplicate analyses, to be consistent with the GPA 2261-00 specifications. In addition, the duplicate analyses should only be required on calibration and verification analyses. However, replicate analyses on routine samples put an undue burden on the analytical facilities. For example, most EPA methodologies only require a duplicate analysis every 10% or 20% of the samples analyzed on a given instrument to reduce the impact on throughput.

For on-line and portable GC analyses, repeatability specifications are not applicable. Repeatability specifications are used as a measure of how well replicate analyses of the same sample match one another. On-line and portable GC's pull samples directly from the gas stream. The gas stream composition can change from analysis to analysis. Repetitious analyses are not replicates of one another. Therefore, replicate analysis for samples that are not calibration or verification standards should only be required for laboratory gas chromatographs. The requirement should be stricken for on-line or portable gas chromatographs.

(b) Also states that the un-normalized sum of the mole percent of all gases analyzed is to be between 99 and 101 percent. The criteria cited in GPA 2261-00 section 7.3.5, stating that the un-normalized total should not vary more than $\pm 1.0\%$ from 100%, was based on an evaluation performed at fixed laboratories on bench-top gas chromatographs, in controlled environments. It was not designed, nor is applicable to portable gas chromatographs. As with typical laboratory bench-top gas chromatographs in the oil and gas industry, portable gas chromatographs utilize a fixed volume sample loop for injection. The volume of the fixed loop is affected ambient pressures. Ambient pressure changes with weather and altitude. It is impractical to stipulate a $\pm 1.0\%$ limit on un-normalized totals for portable GC's because the elevations between the point of calibration and the meter locations will be different. It is an industry accepted standard to utilize a $\pm 3.0\%$ allowable deviation criteria for the un-normalized totals on portable gas chromatographs. A $\pm 3.0\%$ allowable deviation will typically allow for an approximate $\pm 1,500$ foot elevation change. It is recommended that the language be augmented to state that the un-normalized sum of the mole percent of all gases analyzed by portable gas chromatographs be between 97 and 103 percent.

(c)(1) Stipulates that portable GC's must be verified not more than 24 hours before sampling. In order to maintain integrity and to maximize usability of the calibration and verification

standards for multiple field analysts, they are typically kept at a centralized location in a controlled environment. This location can often be several hours from the operational site or sites to be analyzed. It is impractical to expect the field analyst to spend several hours in round trip travel and a minimum of 1 hour to perform the verification analyses on a daily basis. Little to no time would remain for the analysis of actual samples. Even if multiple standards were utilized, at a significantly increased cost, in most cases there are not suitable locations with controlled environments to store the standards near each technician's area of operations. The verification frequency should be changed to every 7 days to coincide with the laboratory and on-line GC requirements.

(e) States that if the composition of the sample as determined by the GC varies from the composition of the calibration gas by more than the repeatability values listed in GPA 2261-00, the GC must be calibrated. The repeatability specifications are used as a measure of how well replicate analyses of the same sample match one another. They are not an indicator of the linearity of the instrument and are not applicable to be used for the allowable sample concentration deviation from the calibration standard. In analytical chemistry, it is an accepted theory that most detectors are linear within $\pm 50\%$ of the calibrated concentration. Section (e) should be stricken from the proposed rule because it is not valid a valid use of the GPA 2261-00 repeatability specification.

Recommendations:

1. Repeatability specifications should be based on duplicate analyses and not triplicate analyses.
2. Repeatability requirements should be placed on QA/QC samples only and not routine samples.
3. The language in (b) should be altered to state that the un-normalized sum of the mole percent of all gases analyzed by portable gas chromatographs be between 97 and 103 percent.
4. The verification frequency of portable GC's should be changed from every 24 hours to every 7 days to coincide with the laboratory and on-line GC requirements.
5. Section (e) should be stricken from the proposed rule.

§3175.119 – Components of Analysis

(b) Stipulates that for high-volume and very-high-volume FMPs, if the concentration of C6+ exceeds 0.25 mole percent, samples must also be analyzed for Hexanes, Heptanes, Octanes, and Nonanes +. Under the current volumetric tier structure, the majority of high-volume and very-high-volume FMPs will fall under this requirement, forcing a change in analytical equipment for both the operators and the laboratories.

In the proposed rule, the additional components are labeled as "Hexane, Heptane, Octane, and Nonane+". As written, the additional requirements could be interpreted as straight chain

hydrocarbons only. The language should be revised to pluralize the additional components as “Hexanes, Heptanes, Octanes, and Nonanes+”.

In response to the requirement itself, one member company performed a study of 25 field samples. These samples were sent to a third party laboratory for extended analyses to allow for a comparison of the calculated heating value based upon Nonanes Plus analyses and Hexanes Plus analyses. The Hexanes Plus concentrations for the 25 samples were between 0.1860 and 1.1520 Mole%. After removing the samples with Hexanes Plus concentrations less than 0.25 Mole%, 23 samples remained with Hexanes Plus concentrations between 0.3180 and 1.1520 Mole%. The analyses showed that the maximum heating value loss by analyzing to Hexanes Plus, rather than the proposed Nonanes Plus, was 4.228 BTU. While that appears to be potentially significant, it is only 0.375% of the heating value of the sample. The latest models of gas chromatographs provided by one of the industry’s leading manufacturers cite a repeatability specification of 0.025% of the heating value. Of the 23 samples evaluated, only one sample had a percent difference outside of the repeatability of the instrumentation. All others were well within the specification. The average GC repeatability for the 23 samples was $\pm 0.280\%$ of the heating value. However, the average percent difference between the Nonanes Plus heating values and the Hexanes Plus heating values was only 0.112% (see attachment). The data set clearly shows that difference between heating values calculated using Nonanes Plus analyses and those calculated using Hexanes Plus analyses is well within the analytical deviation of the instrumentation. Therefore, the requirement should be stricken from the regulation as it does not provide a statistically valid increase in royalty. If the BLM intends to place a compositional limit where C9+ analyses would be required, it is recommended that they use the industry gas chromatograph manufacturer recommended threshold of 1.0 Mole%.

Recommendations:

1. The requirement for C9+ analyses on high-volume and very-high-volume FMPs where the concentration of C6+ exceeds 0.25 mole percent should be stricken from the proposed rule.

§3175.120 – Gas Analysis Report Requirements

(b) Requires that gas components not tested be annotated as such on the gas analysis report. This will require a change to some of the measurement systems that do not have this feature programmed into the system. This additional reprogramming to various regulated systems will take additional time and significant expense.

(e) Requires that all gas analysis reporting be done within five (5) days of the due date of the sample. §3175.60(b)(2) makes this requirement effective immediately upon the issuance of the final regulation. As pointed out previously, this presents a number of problems. First, BLM has not finished the GARV system. Second, because BLM has not finished the GARV system, regulated parties are unable to make software changes that will allow these parties to comply with this requirement. Third, the gas chromatographs meeting the BLM’s new requirements will have neither been purchased nor upgraded until after the regulation is final. Fourth, the

reporting is part of an regulated party's accounting system which, may take as much as two (2) years to modify. Lastly, as pointed out previously, there are no flow computers installed which will comply with the FMP requirements. Therefore, the reports will be incomplete until FMP compliant flow computers are available and can be integrated into the regulated parties accounting and laboratory systems.

This requirement is unreasonable and over-reaching. The time frame is too short due to the changing requirements that the BLM would generate using the new and untested Gas Analysis Reporting Verification System (GARVS). It is unclear what the format and method by which the gas analysis data will be submitted. Do to the vast amount of data which is going to be generated, it could only be accomplished by electronic means. If the BLM is going to proceed with this requirement, they should create and supply the necessary interface for the software that each company already has in place so that this data can be accepted into GARVS in the timeframe required.

Recommendations:

1. The GARV system should be completed and available for review prior to implementation of the proposed rule.
2. In order to allow sufficient time for review of each analysis, the reporting requirement in (e) should be extended to within thirty (30) days of the due date of the sample, with the due date defined as the last day of the sample period (i.e. every 60 days, 90 days, 180 days, or 365 days).
3. Implementation of the reporting requirements should be extended to match the proposed volumetric equipment requirements due to the amount of time to put into place the necessary software and procedures to collect the requested data.

§3175.121 – Effective Date of a Spot or Composite Gas Sample

(c) Requires the effective dates of a composite sample to coincide with the time that the sample cylinder was collecting samples. This type of requirement is inconsistent with the way the industry often carries out its production operations.

Recommendations:

1. The language in (c) should be changed to make composite samples effective for the month in which the sample was removed from the sampler to reduce the amount of prior period adjustments which would be required to apply it from the date when the sample cylinder was installed.

§3175.126 – Reporting of Heating Value and Volume

(a)(1) Stipulates that reported heating values must contain no water vapor (“dry”), unless the water vapor content has been determined through actual on-site measurement and reported on the gas analysis report. One member company has been performing actual moisture

content analyses using an automated chilled mirror device on most of their federal properties for approximately 2 years. The data has shown that, for the most part, the gas streams are some degree of partial saturation. However, the data has shown that the majority of samples had partial saturation of greater than 50% of full saturation at flowing conditions. Assumption of full saturation at flowing conditions is rarely accurate. The assumption of dry conditions at the FMP is never accurate. Actual on-site moisture measurement is the most equitable means of settlement, but settlement at dry conditions is the least accurate. Settlement at dry conditions produces an answer that is higher than the true number and therefore produces a bias. The proposed rules prohibit any bias.

Recommendations:

1. Work with industry representatives to conduct a detailed study to determine a method for accurately estimating the water vapor.
2. Continue to accept the BTU saturated at flowing conditions until the completion of a study described above.

§3175.131 thru §3175.135 – Transducer Testing and §3175.142 thru §3175.144 – Flow Computer Software Testing

These sections work in conjunction with §3175.40 – 48 (so called “type-testing”) and detail testing regimens for the inclusion of a new transducer or flow computer software on the Bureau’s approved list, which will be posted on the Bureau’s website. These regulations allow the Bureau to supersede such organizations as ANSI, ISA, NFPA, GPA and API, which all, in various forms, have specifications regarding the performance of electronic products. All sections relating to type-testing should be stricken and the relevant industry organization performance specifications should be utilized for acceptance.

This proposal would require tests to be carried out by a laboratory that is not affiliated with the manufacturer to avoid any real or perceived conflict of interest. This proposed language is not clear as to what constitutes a laboratory that may perform the required tests. It is unclear if any laboratory that is not affiliated with the manufacturer would be automatically approved. If it is the intention of the BLM to prohibit laboratories in general from testing transducers, then many companies that currently perform transducer testing now, and have for many years, could be prohibited from performing transducers tests that the company finds to be in their best interest to ensure measurement accuracy. This section appears to effectively eliminate the use of in-house testing and development of software unless there is performance of extensive testing protocol by a company that is considered to be a “qualified test facility”. Given that a company has access to and uses BLM approved reference software, then any company not affiliated with a manufacturer that complies with this reference should be allowed to be considered as a qualified test facility.

The section also states, “Proposed rule would require operators or manufacturers to ‘type test’ transducers and flow-computer software at independent testing facilities...” although the purpose of this proposal is understood, it is unclear how it would be actually be accomplished.

What facilities have this capability or the resources to accomplish this in any reasonable time frame once the rulings are published? There are numerous vendors and many different ranges and models of transducers. This is a very expensive and lengthy process. Some estimations are that a single model and range, without any additional turndown tested, would cost in the multiple hundreds of thousands of dollars for a single 24 week long term stability test. 3175.133(g) would translate to multiple millions of dollars for most manufacturers to get sensors approved. This is a conservative estimate if performed at independent laboratories. It is recommended that the BLM consider some manner in which the manufacturers can perform this testing since they already have the proper equipment and likely the most accurate equipment. BLM could certify the facility or have BLM approved witnesses present to witness all aspects of the testing and reporting. Independent facilities with sufficient capacity to accomplish this proposed ruling in a reasonable amount of time, are not available. Only one sensor of one DP/SP combination with a “turndown” of 10:1 and approval for each “turndown range”, would require 10 separate 24 week tests. For the one sensor type testing, this equates to over 4 years of environmental chamber time. The natural gas and oil producing industries are currently experiencing a very difficult financial time due to unusually low prices. Many companies have experienced significant personnel layoffs as a result. Manufacturers are also experiencing difficult times. It is likely that many manufacturers will not begin testing procedures that have any significant cost associated with them, until the specific testing procedures are published in the Federal Register and definite testing protocols are written into law. The timeframe between the new regulations being published and the actual effective date is often between less than 30 days up to 90 days. It is recommended that a significantly longer effectively timeframe be implemented. The current proposed transducer testing period is approximately 6 months in duration with the stability test alone taking 24 weeks. This strongly indicates that the effectively date should be at least 6 months after the published date in the Federal Register. This assumes that a 3rd party laboratory is open and waiting to begin testing. Without at least a 6 month time period between publishing of the final rule and the effective date, very few sensors and possibly flow computers will be available to be installed on Federal lands.

Recommendations:

1. Allow manufacturers with NIST traceable testing equipment and facilities, be allowed to perform all transducer and flow computer type testing with monitoring or witnessing of all tests and/or facilities and procedures by BLM approved 3rd parties or the BLM representatives themselves at the manufacturers facility.
2. Significantly extend the effective time period between the publishing of new requirements in the Federal Register and the effective date that compliant equipment must be installed on Federal leases.
3. Continue to accept equipment which is currently in place and previously accepted by the BLM.

§3175.140 – Flow Computer Software Testing

Clarification is needed on this proposed rule. It states that the PMT board would approve a particular version of the flow-computer software. It also states that testing would only be required for those software revisions that affect volume or flow rate calculations, heating value, or the audit trail. As software that includes applications other than the custody measurement application are updated or new features are added, the overall software revision number may change or be revised up one digit. How will this be handled? If “xyz-007” is on the approved PMT list of software and is later updated with no changes to the measurement applications and calculations and becomes “xyz-008”, how is “xyz-008” now approved and on the PMT approved list?

Recommendations:

1. Provide clarification on this proposed rule.

3175.141 – General Requirements for Flow Computer Software Testing

The proposed rule requires testing at an independent test facility not affiliated with the manufacturer. However, the manufacturer has to test the software before release. This information can be provided to the BLM. It is an unnecessary step and cost to have an independent laboratory perform the same test that was performed by the manufacturer.

Recommendations:

1. (a) It is requested that this proposal be amended to allow the manufacturers, as well as independent facilities, to be considered “Qualified Test Facilities” and perform this testing. BLM or the PMT board could audit the facility or witness the entire process. This will allow much more timely availability of approved software and greatly reduce the cost of such testing.

§3175.150 – Immediate Assessment

Identifies 10 specific violations that would be subject to elevated civil assessment amounts. As proposed, the rule includes ten new “immediate assessments” with a \$1,000 fine for each occurrence. The proposed regulations would completely do away with the enforcement infrastructure prescribed in Onshore Order No. 5, including major and minor violations, corrective actions, and abatement periods. Instead, BLM proposes to “address” these issues in “internal guidance documents, (handbooks, manuals or instruction memoranda (IMs)).” Removing these provisions from the realm of transparent, publicly reviewable rulemakings promulgated with public notice and comment, and instead concealing them in non-public policy documents that can be altered without notice and in the absence of public input, is inconsistent with the requirements of the Administrative Procedure Act (“APA”), 5 U.S.C. § 551 et seq. If BLM intends to make these enforcement provisions mandatory on the regulated community, it must duly promulgate them under Section 553 of the APA.

Recommendations:

1. The BLM should delay implementation of the proposed rule until they make their internal guidance documents available to the public for review and comment.

Nonanes Plus vs. Hexanes Plus Heating Value Comparison

Summary

Location	Hexanes Plus Concentration (Mole%)	C6+ Heating Value (BTU)	C9+ Heating Value (BTU)	Heating Value Difference (BTU)	Percent Difference (%)	GC Repeatability (%)
Location 2	0.3930	1128.604	1128.517	0.087	0.008%	± 0.282
Location 3	0.8450	1119.136	1119.071	0.065	0.006%	± 0.280
Location 4	0.5310	1091.715	1092.991	-1.276	-0.117%	± 0.273
Location 5	0.3180	1119.850	1120.267	-0.417	-0.037%	± 0.280
Location 6	1.1370	1143.549	1145.609	-2.060	-0.180%	± 0.286
Location 7	0.8720	1119.784	1122.499	-2.715	-0.242%	± 0.281
Location 8	0.5040	1105.998	1106.590	-0.592	-0.054%	± 0.277
Location 9	0.5740	1123.254	1124.611	-1.357	-0.121%	± 0.281
Location 10	0.6390	1125.171	1126.342	-1.171	-0.104%	± 0.282
Location 11	0.4290	1086.125	1087.137	-1.012	-0.093%	± 0.272
Location 12	0.6220	1111.794	1112.825	-1.031	-0.093%	± 0.278
Location 13	0.8130	1123.651	1125.437	-1.786	-0.159%	± 0.281
Location 14	0.6620	1111.129	1112.229	-1.100	-0.099%	± 0.278
Location 15	0.9820	1141.344	1144.448	-3.104	-0.272%	± 0.286
Location 16	1.1010	1126.955	1131.183	-4.228	-0.375%	± 0.283
Location 17	1.1520	1170.703	1173.756	-3.053	-0.261%	± 0.293
Location 18	0.4780	1093.729	1093.979	-0.250	-0.023%	± 0.273
Location 19	0.3200	1119.918	1119.865	0.053	0.005%	± 0.280
Location 21	0.3790	1088.803	1089.269	-0.466	-0.043%	± 0.272
Location 22	0.7180	1114.880	1116.479	-1.599	-0.143%	± 0.279
Location 23	0.5230	1100.874	1101.537	-0.663	-0.060%	± 0.275
Location 24	0.5180	1102.625	1103.065	-0.440	-0.040%	± 0.276
Location 25	0.9260	1161.346	1162.204	-0.858	-0.074%	± 0.291
Maximum	1.1520	1170.703	1173.756	0.087	0.008%	± 0.293
Minimum	0.3180	1086.125	1087.137	-4.228	-0.375%	± 0.272
Average	0.6711	1118.7364	1119.9961	-1.2597	-0.112%	± 0.280

*Note 1 - Hydrocarbon grouping is according to elution order and not necessarily carbon number, as it would be in a true C9+ instrument.

*Note 2 - Hexanes Plus assumes 60% Hexanes, 30% Heptanes, and 10% Octanes.

*Note 3 - Nones Plus utilizes the straight chain hydrocarbon properties for Hexanes, Heptanes, Octanes, and Nonanes Plus.

*Note 4 - Manufacturer quoted repeatability in an uncontrolled environment is 0.025% of heating value.