Wyoming Outdoor Council
wyomingoutdoorcouncil.org

444 East 800 North
Logan, UT 84321
t & f: 435.752.2111
e: bruce@wyomingoutdoorcouncil.org

Ms. Kellie Roadifer
BLM Pinedale Field Office
NPL Natural Gas Development Project
P.O. Box 768
Pinedale, WY 82941

April 7, 2011

Re: Scoping Comments for the Normally Pressured Lance Natural Gas Development Project

Dear Ms. Roadifer:

Please accept these scoping comments from the Wyoming Outdoor Council, Greater Yellowstone Coalition, and The Wilderness Society regarding the above-referenced project (hereinafter the "NPL Project").

I. Air Quality.

Air quality issues in the Upper Green River Valley are a dominant concern relative to this project. There are at least two major concerns: ozone pollution and impacts to visibility in nearby Class I areas. In our view this project cannot be permitted if it will contribute to continued violation of the ozone 8-hour National Ambient Air Quality Standard (NAAQS), or if it will lead to impairment of visibility in Class I areas.

We will not belabor these comments with a detailed review of the ozone problems in the Upper Green River Valley. BLM is well aware of the extremely high ozone levels being monitored in this area, levels well in excess of the 8-hour ozone NAAQS, which is 75 parts per billion ozone (ppb). This area is poised to be designated in nonattainment with the 8-hour ozone NAAQS. The State of Wyoming has recommended nonattainment designation to the Environmental Protection Agency (EPA). Moreover, this summer the EPA will very likely establish a new 8-hour primary ozone NAAQS as well as a unique secondary ozone NAAQS. The new primary standard will likely be set in the range of 60-70 ppb and the secondary standard will be a season-long average level of 7-15 part per million-hours, with the purpose of protecting vegetation, especially in Class I areas. Thus, the nonattainment status of this area will likely become an even more dominant concern. We will touch on a few implications of the extreme ozone problems that plague this area.

BLM is not permitted to authorize a project that will lead to the violation of Clean Air Act standards. The Clean Air Act provides, "[e]ach department, agency, and instrumentality of the executive, legislative, and judicial branches of the Federal

Government (1) having jurisdiction over any property or facility, or (2) engaged in any activity resulting, or which may result in the discharge of air pollutants, and each officer, agent, or employee thereof, shall be subject to, and comply with, all Federal, State, interstate, and local requirements, administrative authority, and process and sanctions respecting the control and abatement of air pollution in the same manner, and to the same extent as any nongovernmental entity." 42 U.S.C. § 7418(a). Thus, the BLM cannot take any action that might lead to a violation of the ozone NAAQS or which perpetuates violation of the ozone NAAQS. Many BLM regulations and other authorities also prohibit permitting a project that could violate a NAAQS. For example, under BLM land use authorization regulations, BLM must provide terms and conditions for a project that "[r]equire compliance with air and water quality standards . . . ." 43 C.F.R. § 2920.7(b)(3). Many other similar provisions could be cited. *See, e.g.,* BLM standard lease form 3100-11 section 6, 43 C.F.R. §§ 3161.2, 3162.1(a), 3162.5-1(a), 3162.5-1(b).

Given the all but certain nonattainment status of this area, the BLM must ensure the ozone NAAQS is not violated before it can permit the NPL Project. And we note this: even if this area is not formally designated in nonattainment yet, that will certainly not be the case by the time this project is approved in two or three years. Consequently BLM must take steps *now* to address the pending nonattainment status. To meet this obligation, BLM is going to have to ensure that far more is done to control air pollution in this area than has been done in the past. For example, the Department of Environmental Quality's (DEQ) "offsets" policy is clearly not working, as shown by the extraordinary ozone levels this past winter. So sticking just with the current offsets policy will not meet BLM's obligations. The BLM must demand that greater levels of offsets be required by DEQ before it will approve this project. Similarly, it is obvious that the DEQ's oil and gas best available control technology (BACT) requirements are not sufficient to prevent violations of the ozone standard. Thus, more stringent BACT requirements must be put in place by DEQ before BLM can approve this project. Many other possibilities exist for reducing emissions, as described in our April 20, 2011 letter to BLM Pinedale Field Office Manager Shane DeForest and our April 26, 2011 letter to the Wyoming Air Quality Division, which we copied to Mr. DeForest.

In the Federal Register Notice announcing this project BLM mentions several air pollution control measures that may be taken including a three-phase pipeline gathering system, electric compressors, and the use of remote telemetry. 76 Fed. Reg. 20,371 (April 12, 2011). While we appreciate these steps, these appear to be modest proposals. At a minimum BLM must ensure that these measures are sufficient *standing alone* to prevent violation of the ozone NAAQS, otherwise measures like an improved offsets policy and more stringent BACT requirements must be put in place by DEQ before this project can be approved.

Similarly, in Encana's slide show that describes this project it claims that nitrogen oxide (NO_x) and volatile organic compound (VOC) emissions from this project

will be less than current emissions.[1] But BLM cannot just assume the company's claims are true, it must independently verify this claim. 40 C.F.R. § 1506.5 (providing that where an applicant submits environmental information for use in preparing an environmental impact statement, "The agency shall independently evaluate the information submitted and shall be responsible for its accuracy). BLM must validate through modeling that the claimed lesser emission level will in fact exist, and even if it will BLM must further determine that this level of emissions reductions is sufficient to prevent the current violations of the ozone NAAQS before it can permit the NPL Project. Let us emphasize this point: simply reducing emissions from this project is not sufficient to allow its approval; the only way this project can be approved is if BLM demonstrates (through quantitative modeling) that the emissions reductions are of a sufficient magnitude *to prevent continued violation* of the ozone NAAQS.

As noted in the State's technical report requesting that EPA designate this area in nonattainment with the ozone NAAQS, "[t]he analysis conclusively shows that elevated ozone at the Boulder monitor is primarily due to local emissions from oil and gas (O&G) development activities: drilling, production, storage, transport, and treating."[2]. Thus, Sublette County is heading toward nonattainment status due almost entirely to the prior oil and gas development BLM has permitted. BLM cannot continue to exacerbate that problem by permitting more oil and gas development unless far more stringent pollution controls are assured.

If this area is designated in nonattainment—a virtual certainty—the State will be required to revise its state implementation plan (SIP) to reflect the new legal status. The revised SIP could put in place many requirements that are not currently reflected in the legal framework that BLM and the DEQ are operating under. Thus, it seems inappropriate to move toward approving this project until the air quality law that will apply to this project is more clearly settled.

One important area of change will likely be related to new source review (NSR) requirements. In Wyoming, there will be NSR requirements for both major and minor sources of air pollution. For major sources of air pollution there will be two areas of NSR review, compliance with the Clean Air Act's prevention of significant deterioration (PSD) requirements and nonattainment area NSR. Nonattainment area NSR provisions will likely require the imposition of pollution controls on major sources that are more stringent than anything currently in place—namely requirements that the lowest achievable emissions rate, or LAER, be achieved. Under the Clean Air Act different levels of nonattainment are recognized relative to the ozone NAAQS (marginal, moderate, serious, severe, and extreme) and indications are that Sublette County will be found to be in the marginal or moderate category. If this is the case, any source of

[1] This slide show is available at https://www.wyogasfair.org/Jeff%20Johnson.pdf, see slide number 51.

[2] This report is available at http://deq.state.wy.us/out/downloads/Ozone%20TSD_final_rev%203-30-09_jl.pdf and this statement was made on page viii, although a number of similar statements are made elsewhere.

emissions that emits more than 100 tons per year of an air pollutant would be a major source subject to LAER. At a minimum, compressor stations will likely be deemed to be major sources subject to these enhanced requirements. Furthermore, we ask the BLM to also consider whether drill rigs are major sources that will be subject to LAER.

Under PSD NSR, the BLM will have to ensure that both Class I and Class II area pollution increments are not violated. This will require that BACT be installed on major sources of emissions. We are particularly concerned that visibility in the Bridger Wilderness Area not be further impaired by this project and the BLM should ensure this is the case. Again, both compressor stations and drill rigs operating in this project area, under authority of BLM's decision in this matter, may be subject to these PSD BACT requirements. The BLM should put into place a requirement that there will be zero days of visibility impairment in the Bridger Wilderness Class I area, just as it did in the Pinedale Anticline Supplemental Environmental Impact Statement Record of Decision. We feel it is an open question as to whether this project can be approved while still assuring zero days of visibility impairment in the Class I area, and the BLM should not approve this project if non-impairment cannot be assured. Under the Clean Air Act the national goal is the "prevention of any future, and the remedying of any existing, impairment of visibility" in a Class I area. 42 U.S.C. § 7491(a)(1). The BLM should ensure this goal is met before approving the NPL Project. The project proponents should be required to engage in annual modeling showing that their development is not impairing visibility in the Class I area.

Furthermore, the DEQ's 2005 report entitled *Summary Report Southwest Wyoming NO_2 Increment Consumption Modeling: Results for Sublette County* showed that nearly half of the Class II increment for nitrogen dioxide (NO_2) was consumed in some areas of the Jonah field. Emissions from the NPL Project can only lead to further consumption of the permissible increment, and the BLM should fully consider this issue before permitting this project. BLM is not permitted to allow full consumption of the Class II increment. In any event, we again reiterate that since these additional NSR and SIP requirements will almost certainly be imposed within the foreseeable future, the BLM should not move to approve this project until these changes have been made and the new legal regime can be incorporated into the NPL Project environmental impact statement and record of decision.

II. Big Game and Sage-Grouse.

The NPL Project would be constructed in important big game and greater sage-grouse habitats. As the enclosed map shows, much of this area is a sage-grouse core area, and pronghorn migration corridors traverse this area. Exhibit 1. In addition, we believe that portions of the project are important for wintering mule deer. Moreover, an elk herd apparently occupies this area. The BLM must ensure that these resources are adequately protected.

A. Sage-grouse.

The Pinedale Resource Management Plan (RMP) indicates that this area is designated a Traditional Leasing Area. RMP Record of Decision (ROD) at Map 2-9. A number of sage-grouse leks occur in this area. RMP ROD Map 2-36. Other information we have received indicates that something like 1000 sage-grouse inhabit the area. Under the terms of the ROD, management provisions for sage-grouse in Traditional Leasing Areas are specified. RMP ROD at 2-46. These must be adhered to in the record of decision for the NPL Project. The same is true of big game resources. *See id.* at 2-48 (providing for big game mitigation measures).

However, in addition to complying with the provisions in the applicable RMPs relative to sage-grouse and big game resources, we feel several other requirements must also be met. Relative to sage-grouse, we believe the BLM must ensure compliance with the State of Wyoming's sage-grouse Executive Order (EO) issued by the Governor. Executive Order 2010-4 (Aug. 18, 2010). Perhaps most importantly, the EO provides that surface disturbance in core areas will not exceed five percent of suitable sage-grouse habitat per 640 acre section of land. In addition to the EO, we believe the BLM must also comply with the provisions in the Wyoming Game and Fish Department's "Stipulations for Development in Core Sage Grouse Population Areas." Furthermore, the BLM must also comply with its own Instruction Memoranda (IM), IMs WY-2010-012, WY-2010-013, and IM 2010-071. IM WY-2010-012 provides that, among other things, in core areas there shall not be more than one energy production location per 640 acres and that disturbance is not to exceed five percent of the sagebrush habitat in those same 640 acres. And of course the BLM is preparing an RMP amendment for both the Pinedale and Rock Springs Field Offices relative to sage-grouse conservation. The requirements in all of these documents should be met as condition of approval for the NPL Project.

The provision in IM WY-2010-012 that disturbance not exceed one energy production location per 640 acres may have special significance. In the Federal Register notice announcing this project, the BLM states there could be "four 18-acre multi-well pad locations per 640 acre section of land." 76 Fed. Reg. 20,371 (April 12, 2011). This would appear to violate the provision in IM WY-2010-012 that there be no more than one energy production location per 640 acres, as well as the five percent habitat/sagebrush destruction limitations in both the IM and EO. We ask that BLM ensure that this project be constructed with no more than one energy production location per 640 acres in sage-grouse core areas, as its Instruction Memorandum requires, and that all provisions in the IMs, EO, and Wyoming Game and Fish Department stipulations document be complied with. Moreover, in our view it would be inappropriate to approve this project prior to finalization of the sage-grouse RMP amendments that are being prepared. These amendments may well establish new requirements for sage-grouse conservation, and the BLM should ensure these new provisions are fully abided by as the NPL Project is pursued. As will be discussed in the next section of these comments with respect to BLM's duty to minimize the environmental impacts of oil and gas development, there is no doubt BLM has authority and indeed an obligation to put these measures in place as

conditions for this development proceeding, even if they are not currently part of the stipulations in the applicable leases.

B. Pronghorn.

Relative to pronghorn, as the enclosed map shows, Exhibit 1, the Wyoming Game and Fish Department has mapped several pronghorn migration routes in this project area. We also direct the BLM to the Master of Science Thesis prepared by Daly Sheldon at the University of Wyoming entitled "Movement and Distribution of Pronghorn in Relation to Roads and Fences in Southwestern Wyoming" (2005), which also demonstrated that pronghorn migration routes are found in the eastern portion of this area. The BLM should strongly consider the research that has been conducted by Dr. Kim Berger and others regarding the effects of gas field development in the Upper Green River Valley on pronghorn. Their report is available at http://www.blm.gov/pgdata/etc/medialib/blm/wy/information/ NEPA/pfodocs/anticline/revdr-comments/eg.Par.82689.File.dat/02. The BLM should apply this research, subsequent publications prepared by these authors, and the findings of current research by others to assure the best possible conservation of pronghorn migration corridors in the NPL Project area. Given the epic and striking pronghorn migration patterns from Grand Teton National Park to the Red Desert that these local migrations corridors are part of, protecting these corridors has far more than local significance. Their significance is at least national and perhaps even internationals in scope, as shown by the vast number of publications that have appeared regarding the Grand Teton to Red Desert pronghorn migration. The BLM should approach antelope conservation in the NPL Project environmental impact statement from this perspective.

Furthermore, with respect to the conservation of all big game species, including pronghorn, the BLM should fully consider and abide by the Wyoming Game and Fish Department's mitigation measures found in its report "Recommendations for Development of Oil and Gas Resources Within Important Wildlife Habitats" (March 2010). This report is available at http://gf.state.wy.us/downloads/pdf/og.pdf. As just mentioned, as will be discussed in the next section on the duty to minimize environmental impacts, not only does BLM have authority to require these measures it in fact has an obligation to do so, even if current stipulations do not specifically provide for these measures.

C. Mule Deer.

According to the Wyoming Game and Fish Department's crucial winter range map for mule deer, no crucial winter range is found inside of the proposed NPL Project area. At first blush this seems to be the end of the matter, but several factors indicate that wintering mule deer may be a concern within the NPL project area and deserve scrutiny in the NPL project environmental impact statement.

First, as oil and gas development continues to expand throughout much of the Upper Green River Valley, especially within mule deer crucial winter range, it seems

likely that other areas not mapped as crucial winter range by Wyoming Game and Fish Department have or will become increasingly important for wintering mule deer.[3] As depicted in Exhibit 2, the proposed NPL project area has few existing gas wells and may be important for wintering mule deer that have or will be displaced by oil and gas activities elsewhere, especially those activities within the mapped crucial winter ranges near LaBarge and Big Piney. The Wyoming Game and Fish Department last updated the mule deer crucial winter range maps in 2006 and because major changes have occurred in the Upper Green River Valley since that time BLM should consult with the fish and game agency and conduct additional research to ensure that this environmental impact statement reflects current mule deer use. Second, despite not being mapped as crucial winter ranges, Reardon Draw and Chapel Canyon are both known to be important areas for wintering mule deer and mule deer have been observed migrating along the western boundary of the project area. Finally, it is unclear to us whether portions of the NPL Project area are considered severe winter relief (SWR) areas for mule deer, but such areas, if present, are important because they provide habitat during extremely severe winters. Exhibit 3, p. 4. It is important to note that SWR areas do not necessarily overlap with crucial winter ranges and should be considered separately from them. *Id.*

The Sublette mule deer herd has a national significance, it draws hunters to this region of Wyoming from across the country because of its famed trophy mule deer. In addition, this herd provides a sustainable boost to the local economy through hunting related expenditures for food, fuel, lodging, guide services, taxidermy, and meat processing. The continuing decline of this herd has been a cause for alarm among hunters, conservationists, and wildlife managers for the past twenty years. Because the impacts from the proposed NPL Project are unclear, we ask BLM to fully consider all of the potential impacts to mule deer that are or may be using BLM lands within the proposed NPL Project area.

D. Elk.

Based on discussions some of our members have had with BLM wildlife biologists, it appears that there are resident elk in the NPL Project area. There are apparently two herds, one of about 200 animals that originated in the Wind River Mountains, and the other of about 100 to 150 animals that is found in the Buckhorn Canyon area. Because these animals are found in sagebrush habitats and not forested habitats, the BLM should fully consider this in the environmental impact statement. We specifically direct BLM to the research of Dr. Hall Sawyer that was done on the elk herd in the Jack Morrow Hills area, another area of predominantly sagebrush habitat. That work is enclosed as Exhibit 4. At a minimum the BLM must adhere to the mitigation measures found in the Wyoming Game and Fish Department's Recommendations for

[3] For example, in light of the recent and significant decline of mule deer use on the Mesa and the apparent increase in mule deer use in the Ryegrass/Soapholes area, researchers suggested that " it is possible that [Ryegrass/Soapholes] now retains deer that previously would have moved on to the Mesa." Sawyer, H. and R. Neilson, Mule Deer Monitoring in the Pinedale Anticline Project Area: 2010 Annual report. Western Ecosystems Technology, Inc. Cheyenne, Wyoming.

Development of Oil and Gas Resources report so as to ensure adequate conservation of this elk herd.

III. BLM's has a Duty to Minimize the Impacts of Oil and Gas Development and this must be Reflected in the Approval of the NPL Project.

An array of BLM regulations and near-regulatory provisions require BLM to minimize the adverse environmental impacts of oil and gas operations and to protect the environment in the face of these operations. BLM's approval of the NPL Project must comply with these standards.

A. Requirements for BLM to Minimize Adverse Environmental Impacts and Protect Environmental Qualities.

1. The 3101.1-2 Regulation.

Any rights granted in a lease are made "subject to" reasonable measures that may be required by the authorized officer, with such reasonable measures being as needed to "minimize adverse impacts to other resource values, land uses or users not addressed in the lease stipulations at the time operations are proposed." 43 C.F.R. § 3101.1-2. BLM is given the right, consistent with lease rights granted, to modify the siting or design of facilities, the timing of operations, and can specify interim and final reclamation measures; however, reasonable measures "are not limited to" these actions. *Id.* While the regulation specifies that actions are consistent with the lease rights granted if they do not exceed three limits,[4] the regulation is also explicit that these three limits are "[a]t a minimum" of what is consistent with lease rights. As BLM stated when it adopted this rule, "the authority of the Bureau to prescribe 'reasonable,' but more stringent, protection measures is not affected by the final rulemaking." 53 Fed. Reg. 17,340, 17,341 (May 16, 1988). The Interior Board of Land Appeals (IBLA) also recognized that a constrained interpretation of the 3101.1-2 regulation is not warranted: "[This] constrained interpretation of a 'reasonable measure' [that would only allow imposition of the three listed limits] is at odds with the plain language of the regulation, which describes what measures 'at a minimum' are deemed consistent with lease rights, and does not purport to prohibit as unreasonable *per se* measures that are more stringent." *Yates Petroleum Corp.*, 176 IBLA 144, 156 (2008).

2. The Standard Lease Form.

Section 6 of BLM's standard lease form (form 3100-11) requires the lessee to conduct operations in a manner that "minimizes" adverse impacts to a host of environmental resources. Reasonable measures "deemed necessary by lessor" (i.e., BLM)

[4] The regulation states that reasonable measures "[a]t a minimum" are consistent with lease rights granted if they do not require relocation of the proposed operation by more than 200 meters, require operations to be sited off of the lease, or prohibit surface disturbing operations for more than 60 days in a lease year. 43 C.F.R. § 3101.1-2.

must be taken by the lessee to accomplish this intent. Again, the BLM can modify the siting or design of facilities, the timing of operations, and specify interim and final reclamation measures to achieve these needs, but BLM's specification of reasonable measures "are not limited to" just these measures.

3. Leasing, Permitting, and Easement Regulations.

BLM's regulations for leases, permits, and easements also require BLM to minimize environmental impacts. These regulations require that every land use authorization contain terms and conditions which shall "[m]inimize damage to scenic, cultural, and aesthetic values, fish and wildlife habitat, and otherwise protect the environment." 43. C.F.R. §2920.7(b)(2). A number of other environmental protection requirements are also found in these regulations, including the regulation requiring compliance with air quality standards that was mentioned above.

4. Onshore Oil and Gas Order No. 1.

Another source of authority requiring BLM to minimize adverse environmental impacts from oil and gas operations is Onshore Oil and Gas Order No. 1. The Order requires that, "[t]he operator must conduct operations to minimize adverse effects to surface and subsurface resources, prevent unnecessary surface disturbance, and conform with currently available technology and practice." Onshore Order No. 1 § IV. In approving an Application for Permit to Drill (APD), BLM must attach conditions of approval that reflect necessary mitigation measures, including reasonable mitigation measures to ensure that operations "minimize adverse impacts to other resources . . . ." *Id.* § III.F.a.3.

5. BLM's Oil and Gas Operations Regulations Mandate Compliance with the Minimization Standard and Impose an Additional Duty to Protect Natural Resources and Environmental Quality.

BLM's oil and gas operations regulations reinforce the obligation to minimize adverse impacts. The authorized officer is authorized and "directed" to, among other things, "require compliance with lease terms, with the regulations in this title, and all other applicable regulations . . . ." 43 C.F.R. § 3161.2. Consequently BLM compliance with the minimization standard in the standard lease form, the 3101.1-2 and 2920.7(b)(2) regulations, and Onshore Order No. 1 is required by this regulation. Moreover, pursuant to this regulation the authorized officer must also require that operations be conducted in a manner that "protects" other natural resources and environmental quality.[5] *Id.* The word "protect" means to keep from being damaged or injured, to guard. THE AMERICAN HERITAGE DICTIONARY OF THE ENGLISH LANGUAGE 1409 (4TH ed.).

[5] *See also* 43 C.F.R. §§ 3162.1(a) (requiring the operating rights owner to conduct operations in a manner which protects other natural resources and the environment); 3162.5-1(a) (same, also giving authorized officer authority to determine conditions of approval); 3162.5-1 (operator much exercise due care to assure operations do not cause undue damage to surface resources).

6. *The Gold Book.*

And finally, while it is not a regulation, BLM's Gold Book also makes it clear that environmental impacts must be minimized. Under the Gold Book, the BLM must minimize undesirable impacts to the environment, the long-term health and productivity of the land must be assured, and BLM and the operator must minimize long-term disruption of the surface resources and uses and promote successful reclamation. Gold Book at 2, 15. While the objective is to maximize oil and gas recovery, this is to be done "with minimum adverse effect on . . . other natural resources, and environmental quality." *Id.* at 37. Design and construction techniques should "minimize surface disturbance and the associated effects of proposed operations and maintain the reclamation potential of the site." *Id.* at 15. And under regulatory provisions, operators "shall comply" not only with statutory and regulatory provisions, but also must comply with "other orders and instructions of the authorized officer." 43 C.F.R. § 3162.1(a). The Gold Book is nothing if not standing instructions and orders from the BLM, and accordingly its provisions are binding and must be complied with.

As can be seen, there are a host of BLM regulations and other authorities that require the agency to "minimize" the adverse environmental impacts of oil and gas development, and others that require it to "protect" natural resources and environmental quality. These are *substantive* obligations that the agency must adhere to as it moves to approve the NPL Project. The obligation to minimize impacts applies relative to the ozone problem and Class I area visibility mentioned above, as well as issues related to sage-grouse and big game conservation, which were also mentioned above.

B. The Meaning of the Word "Minimize."

The word minimize means "[t]o reduce to the smallest possible amount, extent, size, or degree." THE AMERICAN HERITAGE DICTIONARY OF THE ENGLISH LANGUAGE 1119 (4TH ed.). Obviously this is a strong standard. And it is not an analytical or procedural requirement—it is not just a mandate to comply with the National Environmental Policy Act (NEPA). It is an additional *substantive* obligation—in order to meet the obligation to minimize impacts established by its regulations, the BLM must reduce adverse environmental impacts "to the smallest possible . . . degree." This substantive standard is not necessarily met by engaging in NEPA *analysis*, actual *measures* to minimize adverse impacts to the environment must be put in place.

C. The Supreme Court's Interpretation of the Word "Minimize."

In *Entergy Corp. v. Riverkeeper, Inc.*, 129 S. Ct. 1498 (2009), the United States Supreme Court offered a somewhat restricted view of the meaning of "minimizing" in a Clean Water Act case. In *Entergy* the Supreme Court determined that minimize "is a term that admits of degree and is not necessarily used to refer exclusively to the "greatest possible reduction."" 129 S. Ct. at 1506. This interpretation allowed the Court to hold that it was permissible for the EPA to conduct cost-benefit analyses to set national performance standards and to allow variances thereto in order to meet a statutory

requirement for cooling water intake structure standards that "reflect the best technology available for minimizing adverse environmental impact." *Id.* at 1503, 1505-1506, 1510. But despite this interpretation of the word minimizing, we believe that *in the context of BLM oil and gas decision-making*—as opposed to section 316(b) of the Clean Water Act, which was all that *Entergy* concerned, and all that its holding strictly applies to—BLM nevertheless has very strong obligations to reduce the adverse environmental impacts of such development.

D. Additional Supreme Court Precedents.

Despite *Entergy*, in numerous cases the Supreme Court has made it clear that the ordinary, dictionary definition of a word is the place to start in finding its meaning and that all words in a law should be given effect. For example, recently in *Ransom v. FIA Card Serv.*, 131 S. Ct. 716 (Jan. 11, 2011), the eight-justice majority stated, "we look to the ordinary meaning of the term" in order to determine the meaning of the word "applicable." 131 S. Ct. at 724 (citing *Hamilton v. Lanning,* 130 S. Ct. 2464 (2010)) (citing also the definitions of "applicable" found in Webster's Third New International Dictionary and the New Oxford American Dictionary). Moreover, the Court recognized ""[W]e must give effect to every word of a statute wherever possible."" *Id.* (citing *Leocal v. Ashcroft*, 543 U.S. 1, 12 (2004)). And it was essential that the word applicable "carry meaning as each word in a statute should." *Id.*

Long ago the Supreme Court said,

> We are not at liberty to construe any statute so as to deny effect to any part of its language. It is a cardinal rule of statutory construction that significance and effect shall, if possible, be accorded to every word. [In an early legal work] it was said that 'a statute ought, upon the whole, to be so construed that, if it can be prevented, no clause, sentence, or word shall be superfluous, void, or insignificant.' This rule has been repeated innumerable times. Another rule equally recognized is that every part of a statute must be construed in connection with the whole, so as to make all the parts harmonize, if possible, and give meaning to each.

Market Co. v. Hoffman, 11 Otto 112 (Supreme Court 1879). *See also Duncan v. Walker,* 533 U.S., 167, 174 (2001) (citing six Supreme Court cases for the same or similar propositions), *Dodd v. U.S.,* 545 U.S. 353, 370 (2005) (same).

Given this precedent, which is just as binding and persuasive as that found in *Entergy*, it seems apparent that "minimize" in BLM's oil and gas regulations and other authorities must be given meaning, and the meaning should follow the ordinary dictionary definition of the word unless that is precluded by the terms or overall structure of the laws in question. While the Court in *Entergy* may have had a basis for concluding that *in the context of the Clean Water Act* minimize is a term that "admits of degree", this interpretation should not be viewed as universally true given other Supreme Court precedent that makes it equally clear that the ordinary meaning of a word should prevail

if at all possible, and that in any event every word in a law must be given effect and meaning. Accordingly, unless a different interpretation is demanded by the context in which the word minimize is used in the various regulations and other authorities cited above, minimize should be interpreted in accordance with its ordinary meaning, which is "[t]o reduce to the smallest possible amount, extent, size, or degree." The context in which minimize is used in these authorities does not support a definition of minimize other than its ordinary dictionary meaning, and thus BLM must minimize the environmental impacts of the NPL Project in the ordinary sense of the word as a condition of approving the project.

E. Overarching Statutes Support a View that a Strong Definition of Minimize Should Apply and Applying Such a Definition would not be Inconsistent with Lease Right Granted.

1. The Requirements of FLPMA and the Mineral Leasing Act.

There are three statutory provisions that support a view that the ordinary definition of minimize should apply, and that a significant modification of the definition is not appropriate. The FLPMA provides that the Secretary of the Interior "shall, by regulation or otherwise, take any action necessary to prevent unnecessary or undue degradation of the [public] lands." 43 U.S.C. § 1732(b). One court found that "[a] reasonable interpretation of the word 'unnecessary' is that which is not necessary for mining. 'Undue' is that which is excessive, improper, immoderate, or unwarranted." *Utah v. Andrus,* 486 F. Supp. 995, 1005 n.13 (D. Utah 1979). Thus, excessive, improper, immoderate, or unwarranted impacts must be prevented to comply with FLPMA's mandate to prevent undue degradation of the public lands.[6]

The Mineral Leasing Act provides that BLM shall *regulate* oil and gas surface-disturbing activities and shall determine actions "required in the interest of conservation of surface resources." 30 U.S.C. § 226(g). The word "conservation" means, among other things, "[t]he protection, preservation, management, or restoration of wildlife and natural resources such as forests, soil, and water." THE AMERICAN HERITAGE DICTIONARY OF THE ENGLISH LANGUAGE 391 (4TH ed.).

And under FLPMA, BLM must manage the public lands under principles of multiple use and sustained yield. 43 U.S.C. § 1732(a). The definition of "multiple use" in FLPMA partly provides that BLM must not cause "permanent impairment of the productivity of the land and the quality of the environment . . ." when considering the relative values of the resources "and not necessarily the combination of uses that will

[6] There is little doubt that the undue degradation clause is the clause that must be considered here, not the unnecessary degradation clause. *See Mineral Policy Center v. Norton,* 292 F. Supp. 2d 30, 42 (D.D.C. 2003) (making it clear that both clauses are mandatory obligations, but stating, "FLPMA, by its plain terms, vests the Secretary of the Interior with the authority—and indeed the obligation—to disapprove of an otherwise permissible mining operation because the operation, though necessary for mining, would unduly harm or degrade the public land.").

give the greatest economic return or the greatest unit output." 43 U.S.C. § 1702(c). "Impair" means "[t]o cause to diminish, as in strength, value, or quality . . . ." THE AMERICAN HERITAGE DICTIONARY OF THE ENGLISH LANGUAGE 878 (4th ed.).

Synthesizing these standards does not indicate that a definition of "minimize" other than its ordinary meaning should be applied to the NPL Project. The need to "reduce to the smallest possible amount, extent, size, or degree" (minimize) is consistent with the need to prevent excessive impacts (undue degradation clause), protect, preserve, manage, and restore surface resources (Mineral Leasing Act provision), and prevent impairment of the productivity of the land and the environment (multiple use definition). When these authorities are considered, the ordinary definition of minimize should continue to prevail as BLM considers its obligations.

2. *The Ordinary Definition of Minimize is Consistent with the Lease Rights Granted.*

The underlying thrust of these numerous substantive requirements would not support anything more than a minor deviation from the ordinary meaning of the word "minimize." While "minimize" perhaps "admits of degree" in some cases, the word, when considered in the overall regulatory and statutory context of the laws applicable to BLM oil and gas development, demands that BLM must require the "greatest possible reduction" of environmental impacts, or something much like that. This ordinary interpretation of the word would still accord with the statement in some of the authorities that the imposition of reasonable measures to minimize impacts must be "[t]o the extent consistent with lease rights granted."

The lease rights granted are: (1) that the leaseholder has the exclusive right to extract all of the oil and gas resource on the leasehold (Form 3100-11); (2) that the lessee has the right to "use so much of the leased lands as is necessary to [extract] all of the leased resource" (43 C.F.R. § 3101.1-2); and (3) that the lessee has the right to build and maintain necessary improvements on the leasehold (Form 3100-11).[7] No other rights are granted. These are the only rights that must be maintained while also ensuring impacts are minimized.

These lease rights and the objectives of the regulations can be honored while still minimizing adverse environmental impacts in the ordinary sense of the word. There probably is no question that Encana will have the exclusive right to develop all of the oil and gas on these leases, so impingement on that lease right is not threatened by demanding the utmost in environmental protection. As to the right to "use" so much of the lease as is "necessary" to extract "all" of the oil and gas and to build "necessary" improvements so as to extract the oil and gas, the following should be noted. The word "necessary" does not confer unqualified rights to the lessee to pursue development as it

[7] The objective of BLM's operations regulations is to "promote the orderly and efficient exploration, development and production of oil and gas", 43 C.F.R. § 3160.0-4, and to allow for the "maximum ultimate recovery of oil and gas . . .", 43 C.F.R. § 3161.2.

sees fit and desires. Rather, "necessary" means that which is "convenient, useful, appropriate, suitable, proper, or conducive to the end sought." BLACK'S LAW DICTIONARY 1029 (6th ed. 1990). That is, being able to do what is "necessary" to extract all of the oil and gas and what is "necessary" to build related facilities must be interpreted in the overall context of the lease rights granted—that context defines what in necessary.

The context of the lease rights granted is that immediately after granting the above-mentioned rights, the standard lease form makes any rights granted "subject to" an array of conditions. The lease is "subject to" applicable laws, the terms, conditions, and stipulations found in the lease, regulations and formal orders in place when the lease is issued, and regulations and formal orders issued afterward if not inconsistent with the lease rights granted. Additionally, the 43 C.F.R. § 3101.1-2 regulation makes the lease "subject to" stipulations, restrictions in specific, nondiscretionary statutes, and such reasonable measures as might be required "to minimize adverse impacts to other resource values, land uses or users, not addressed in the lease stipulations at the time operations are proposed." As is apparent, the rights created by a federal onshore oil and gas lease are conditional and certainly unfettered rights are not created.

The conditional nature of a Federal onshore oil and gas lease was recognized many years ago by the Supreme Court when it stated,

> Unlike a land patent, which divests the Government of title, Congress under the Mineral Leasing Act has not only reserved to the United States the fee interest in the leased land, but has also subjected the lease to exacting restrictions and continuing supervision by the Secretary . . . . [The Secretary] may prescribe, as he has, rules and regulations governing in minute detail all facets of the working of the land. In short, a mineral lease does not give the lessee anything approaching the full ownership of a fee patentee, nor does it convey an unencumbered estate in the minerals.

Boesche v. Udall, 373 U.S. 472, 477-78 (1963). And in a BLM Information Bulletin (IB), the BLM acknowledged that "[t]he Secretary has broad authority and discretion under the [Mineral Leasing Act] to administer oil and gas leasing and operations of those leases." IB 2007-119 (reviewing existing surface management authority for oil and gas leases and concluding BLM has broad authority to regulate such operations).

So what is "necessary" to develop the lease must be interpreted in light of these limitations that have also been put in place. This will define what measures BLM can demand to minimize adverse impacts, while still acting in a way that is "consistent with lease rights granted." When this is done it apparent BLM can require strong measures to protect the environment. At a minimum, the lease terms (section 6 in Form 3100-11), regulations (43 C.F.R. § 3101.1-2 and others), and formal orders (Onshore Order No. 1)—all of which any lease rights granted have been made "subject to"—require minimization of impacts and/or efforts to protect the environment. Those obligations—

and those in the FLPMA and Mineral Leasing Act—are at least co-equal with any lease rights that allow the lessee to do what is "necessary" to extract the oil and gas and to build related "necessary" facilities. The lease has explicitly been made "subject to" these limitations. Accordingly, any exercise of "valid existing rights" so as to maximize oil and gas recovery in an orderly and efficient manner must be done in a way that also minimizes environmental impacts in the ordinary sense of the word.

There are many means by which the obligation to minimize adverse impacts can be met. Two of the most significant would be to require the use of directional drilling and to mandate a phased approach (temporally or spatially) to development. The Federal Register notice for the NPL Project indicates that a number of measures will be used to reduce impacts, and we appreciate that. *See* 76 Fed. Reg. 20,370, 20,371 (April 12, 2011). This includes the use of directional drilling. But in moving forward on this project BLM must reconsider whether it has done the absolute most to reduce impacts, as the minimization standard requires. As discussed above, for example, allowing four well pads per section would not be in conformance with sage-grouse protections limiting development to one well pad per section, so it is apparent more must be done to minimize impacts in this regard. No more than one well pad per section should be permitted if impacts are to be minimized. And certainly the utmost must be done to reduce ozone levels, because this pollutant presents a severe threat to the public health

Moreover, the BLM should fully consider requiring a phased approach to development in this area. In the Encana slide show, slide 43 indicates that Encana may contemplate a three-phased approach.[8] This three tiered approach could be a means to minimize the impacts of this project. In particular, the first "concentric ring" that is portrayed in the slide might be drilled from the existing Jonah field using directional drilling, which could reduce impacts. And in all cases, development of the next phase should not be permitted until reclamation has been successful in an earlier phase area. Many other means might be available to minimize adverse impacts, and BLM should consider the full range of these options prior to permitting this project, especially relative to controlling ozone pollution, protecting visibility, conserving sage-grouse, and protecting big game habitat and migration corridors.

As discussed, efforts to minimize impacts such as we have suggested would not be inconsistent with lease rights that have been granted. Putting in place requirements for the use of directional drilling from fewer well pads, the use of centralized liquid gathering facilities, and the use of remote well monitoring telemetry, for example, are not inconsistent with any lease rights and would help meet BLM's obligation to minimize environmental impacts due to oil and gas operations.

Accordingly, it is appropriate to apply the ordinary meaning of minimize relative to what is required to protect resources in the NPL Project area. And certainly even if a modified meaning were used it cannot be a change of such magnitude that the word is

[8] *See* https://www.wyogasfair.org/Jeff%20Johnson.pdf.

effectively nullified or read out of the regulations. The obligation to minimize adverse impacts must be given real meaning.

Finally, we have enclosed herewith as Exhibit 5 an article that describes BLM's extensive "retained rights" that it enjoys allowing it to protect the natural environment in areas that have been leased. We ask the BLM to fully consider this article as it determines how to minimize the environmental impacts of the NPL Project.

IV. Conclusion.

Under numerous legal authorities the BLM must minimize the adverse environmental impacts of the NPL Project. If the BLM fully exercises its retained rights under the onshore oil and gas leases at issue here it can meet this responsibility and ensure that ozone levels are reduced to within legal standards, that visibility in Class I areas is protected, that sage-grouse are protected so a to prevent the need to list them under the Endangered Species Act, and that socially valued big game populations are maintained in this area. We ask the BLM to ensure these needs are fully met before approving the NPL Project, and again emphasize that BLM is legally required to protect these resources before approving this project.

Thank you for considering these scoping comments, and we look forward to remaining involved in NPL Project development.

Sincerely,

Bruce Pendery,
Staff Attorney and Program Director

And on Behalf of:

Lloyd Dorsey,
Greater Yellowstone Coalition

Stephanie Kessler,
The Wilderness Society

Enclosures

cc (w/out enclosures): Governor Matt Mead
Steven Dietrich, Wyoming Air Quality Division
Larry Svoboda, EPA
Mary Fanderka, Wyoming Game and Fish Department

Exhibit 1. Greater sage-grouse core habitat and pronghorn migration routes in and near the proposed NPL project area.

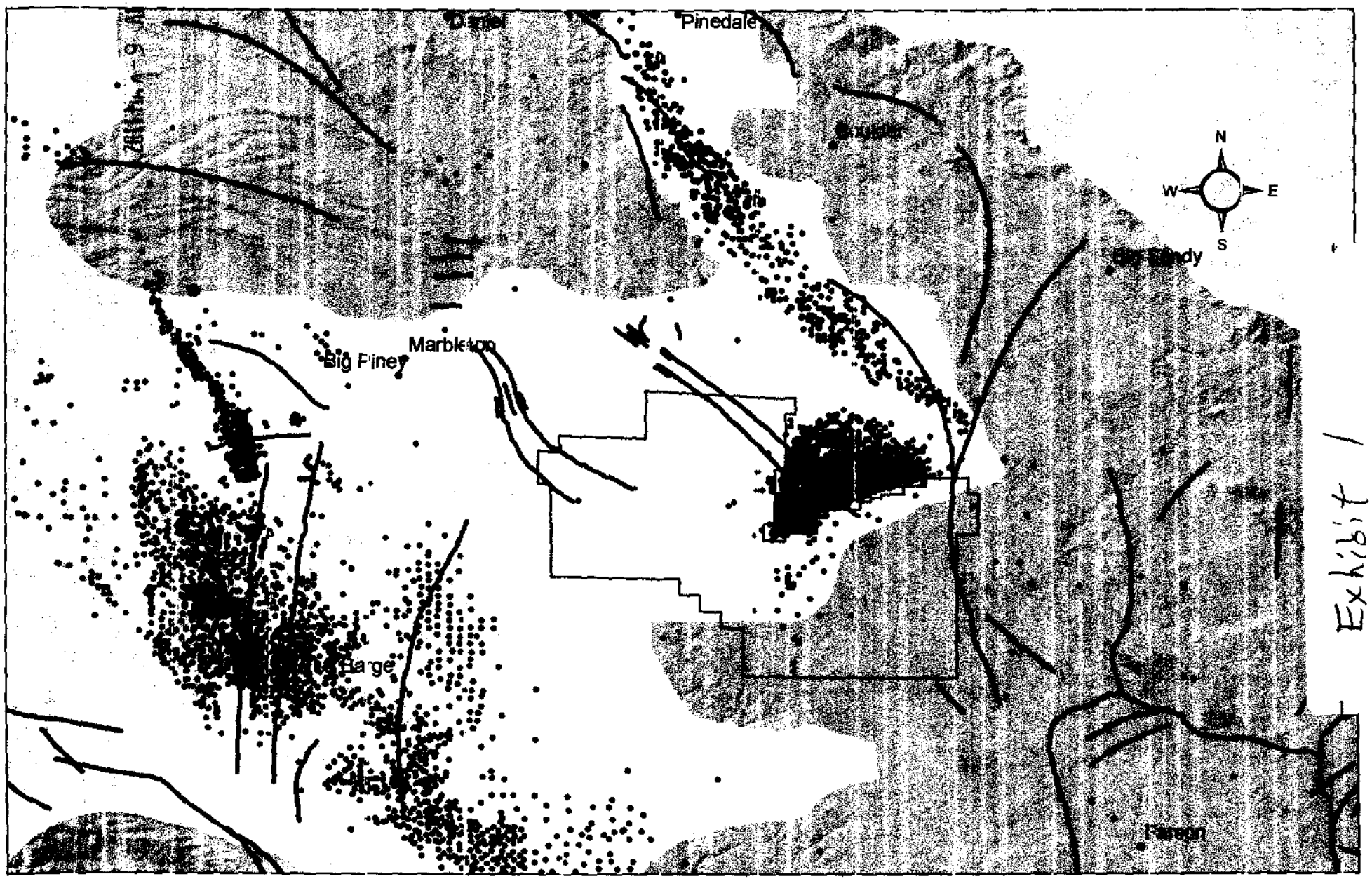
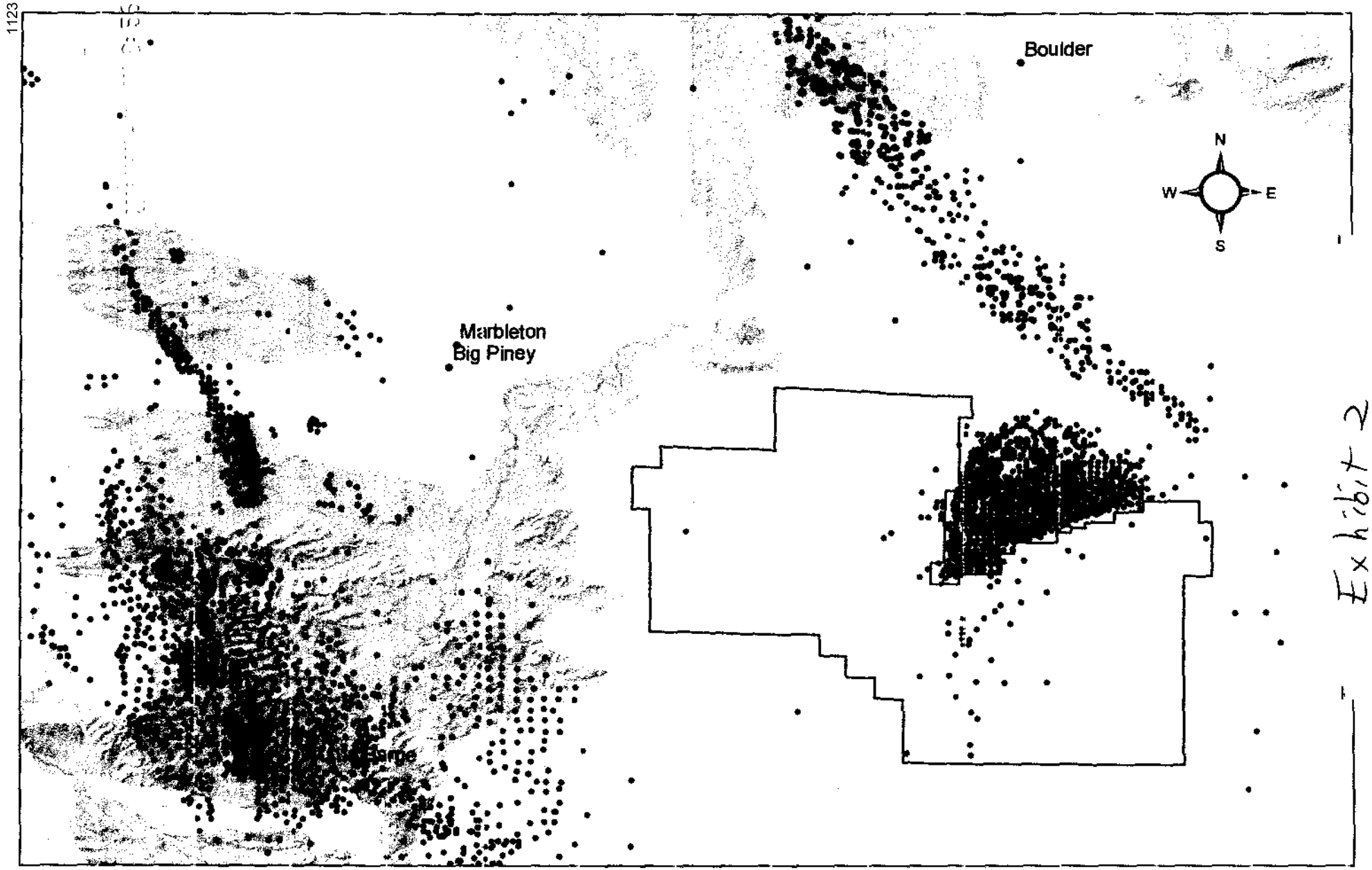


Exhibit 1

Exhibit 2. Mule deer crucial winter range and active oil and gas wells near the proposed NPL project area.



FINAL-JULY 1990

Wyoming Chapter of the Wildlife Society

Report on

Standardized Definitions for Seasonal Wildlife Ranges

The Wyoming Chapter of The Wildlife Society (TWS) formed a committee to review, discuss and address the current Standardized Definitions for Seasonal Wildlife Ranges developed by the Chapter between 1984 and 1986 and subsequently adopted for Wyoming by the Soil Conservation Service (SCS), Bureau of Land Management (BLM), Forest Service (FS), United States Fish and Wildlife Service (USFWS) and the Wyoming Game and Fish Department (WGFD). The request, received from the WGFD and BLM, was to review the current standards, address criteria for quantifying the seasonal range definitions, develop necessary modifications and make recommendations.

Criteria for quantifying the seasonal ranges were discussed at great length. Among the criteria discussed were animal densities, percentage of a population occupying a designated seasonal range, frequency of observations, and indices of use among others. Attention was also directed at improving communication, cooperation, and data sharing among and between agency biologists, agency administrators, and interested publics.

Based upon our discussions and review along with input from TWS members, the committee finds and recommends the following:

1. The standardized definitions developed by TWS between 1984 and 1986 are still applicable and with, minor refinement, their use should be continued.

2. Two new seasonal wildlife range definitions have been included in Appendix A.

3. Additional quantification of these definitions, while an admirable goal, seems impractical on a statewide basis due to inherent variability among herd units in terms of habitat type and condition, population structure, habituation to existing disturbance, climate, land ownership, and inherent differences between big game species when coupled with existing wildlife staff levels and budgets.

4. Seasonal wildlife ranges should be quantified based on documented frequency of animal use over time. Documentation, in most instances, would be recorded observation of animals, however indications of animal use or potential use such as vegetation use, animal droppings, tracks, forage type, forage availability, and forage distribution in relation to cover should also be considered particularly for herds expanding their range or for transplanted animals.

5. The primary problem did not appear to be the current definitions or criteria, but the application of the information and communication among and between agency biologists, agency administrators and interested publics.

6. Each agency should agree to cooperate in data collection, data sharing and data transmission, in establishing and/or refining seasonal range boundaries and sharing in the collection of information. Agency biologists/conservationists having responsibility within a given herd unit or population of animals should jointly develop seasonal ranges with sign-off provisions for

547 - BH
1069 - AB
88-15

Exhibit 3

concurrence with the final boundary delineations and any refinements made thereafter. Said concurrence must be developed at the field level with concurrence at the regional and state level as necessary.

7. Final seasonal wildlife range maps should be reviewed and approved by each agency before it is made available to other interested parties; and

8. Seasonal range maps should be reviewed at least annually. Proposed revisions based on new data or knowledge should be documented and agreed upon. Revisions should probably not be formalized until sufficient data is available to establish a trend differing from historical baseline information. This may require 3 to 5 years.

Recommended changes to the current Standardized Definitions for Seasonal Wildlife Ranges are included in Appendix A and a discussion of the Application and Use of Standardized Wildlife Range Designators is included in Appendix B for your review and consideration. We have also included an informational summary for big game species relative to species behavioral habits, habituation to disturbance, geographic variability in terms of habitat types, land ownership patterns, climatic conditions, migratory patterns, etc.

It is our recommendation that each agency review the attached changes and committee recommendations, adopt them following review and input, and develop appropriate agreements and procedures to cooperatively establish seasonal wildlife range boundaries and share in the collection of information.

Note: In early 2004, WGFD adopted standardized, statewide beginning and ending dates for use of WIN, WYL and SSF *seasonal ranges. Those date ranges are listed in italics at the end of the applicable seasonal range definitions in Appendix A.*

areas" by some species.

* Pertain to threatened and endangered species only.

SSF	Summer or Spring-Summer-Fall	A population or portion of a population of animals use the documented habitats within this range annually only (from the previous winter) to the onset of persistent winter conditions (variable, but commonly this period is between 5/1 and 11/30 or shorter in Wyoming). *(5/1 - 11/14, adopted by WGFD in 2004)*
SWR	Severe Winter Relief	A documented survival range which may or may not be considered a crucial range area as defined above. It is used to a great extent, only in occasionally extremely severe winters (e.g., 2 years out of 10). It may lack habitat characteristics which would make it attractive or capable of supporting major portions of the population during normal years but is used by and allows at least a significant portion of the population to survive the occasional extremely severe winter.
WIN	Winter	A population or portion of a population of animals use the documented suitable habitat within this range annually, in substantial numbers only during the winter (variable, but commonly between 12/1 and 4/30). *(11/15 - 4/30, adopted by WGFD in 2004)*
WYL	Winter/Yearlong	A population or a portion of a population of animals makes general use of the documented suitable habitat within this range on a year-round basis. But during the winter months (commonly between 12/1 and 4/30), there is a significant influx of additional animals into the area from other seasonal ranges. *(11/15 - 4/30, adopted by WGFD in 2004)*
YRL	Yearlong	A population or portion of a population of animals makes general use of the suitable documented habitat within the range on a year-round basis. Exception - occasionally, under severe conditions (extremely severe winters, drought) animals may leave the area.

Proposed new seasonal range definition follows:

UND	Undetermined/ Undocumented	Areas or habitats, which are expected to or do support a population or portion of a population of animals. The distribution and importance of the area to the population has not been sufficiently documented to designate seasonal range

		occupancy. The term is applicable to areas where animals have recently been or will be reintroduced; where animals have migrated into and are establishing a population; where a population is expanding its range; or where management actions or activities have been implemented which will accommodate a population to expand their range.
HIS	Historical Habitat	Areas or habitats which historically supported a population or portion of a population of animals. These areas may indicate potential reintroduction sites.

Other seasonal range designations commonly used by the WGFD and the BLM but not specifically addressed by this committee are included for your information. These appear to meet the criteria desired and should be retained and adopted as part of the standardized definitions for seasonal wildlife ranges

Symbol	Term	Definition
OUT	Out	Areas which do not contain enough animals to be important habitat, or habitats of limited importance to a species.
MR	Migration Routes	Definable routes followed during seasonal movements year after year.
→ →	General area of movements	
→ → →	Specific movement corridors	
Varies	Raptor Nests	Nesting areas for hawks, owls, and eagles. Examples Include: ◯ prairie falcon, ◯· merlin, □ goshawk, ◯+ and great horned owl.
	Concentrated Wetland Area	
	Areas of scattered wetlands important to wildlife because of numerous playas, flooded meadows, beaver ponds, or impoundments.	
POT	Potential	Habitats identified for reintroduction of Threatened, Endangered, and Priority species (e.g., potential habitats for trumpeter swans and peregrine falcons).
BRE	Breeding Area	Documented courtship, nesting, and/or brood rearing areas, e.g.:
	◯ Censused lek, strutting or dancing ground	
	◫ Uncounted lek, strutting or dancing ground	
	● Abandoned lek, strutting or dancing ground	
STA	Staging Area	Documented migration or pre/post-migration concentration areas.

Standardized Raptor Nesting Terminology for Wyoming
(BLM, 1987)

Nest Status	Symbol	Definition
Active Verified	AV	A nest/scrape in which a breeding attempt was made as indicated by: (1) eggs in nest; (2) young in nest or on cliff ledges or branches next to nest; (3) fledged young in proximity of nest/scrape which exhibits sign of nestling presence (extensive whitewash on nest/scrape, on cliff, branches, and/or ground beside and below nests or scrapes); (4) incubating/brooding adult.
Active Estimated	AE	1. A nest exhibiting one or more of the following: (1) fresh lining material greenery such as pine boughs, deciduous tree leaves, juniper leaves, etc.; most apparent on occupied nests of golden eagles, accipiters, and several buteos); (2) adult presence (one or more adults in immediate vicinity of nest); (3) recent and well-used perch sites-occurrence of well whitewashed perches in close proximity to nest. 2. A tended nest within the estimated bounds of a territory housing an 'active' nest. 3. An occupied nest built subsequent to the failure of an active nest. 4. A nest that is in good repair but was observed during the non-nesting season when the presence of adults would not be expected.
Inactive Verified	IV	1. A nest surveyed during the breeding season which exhibited no apparent recent use or adult presence. 2. A nest that has evolved to a state of ruin or decay due to weather, natural aging, and/or neglect.
Inactive Estimated	IE	A nest exhibiting no apparent recent use or adult presence that was surveyed during the non-breeding season.
Destroyed	DE	A nest that has been removed, destroyed, or does not exist at the present time.

TWS also reviewed some other definitions currently being used in Wyoming. The Shoshone National Forest has seasonal range designations for 'Crucial Preferred Winter Range' (CPWR) defined as an area within crucial winter range where concentrations of animals can be found each year during the period of 1/1 to 3/31. These areas are considered essential for the welfare and maintenance of the dependent populations and for 'Crucial Winter Range' (CWR) defined as an area where 75 percent of the individuals in a population can be expected to be found during periods of inclement weather from 1/1 through 6/30 each year (Shoshone National Forest FEIS). We recommend these definitions not be included in the final standardized definitions. They would not be applicable on a statewide basis.

APPENDIX B

Application and Use of Standardized Wildlife Range Designators in Wyoming

(Most of the information was prepared by John Emmerich)

HISTORICAL PERSPECTIVE

Prior to 1987 each agency, federal or state, sharing wildlife population or habitat management responsibilities in Wyoming were using their own set of wildlife seasonal range designators. This situation often led to confusion and made any exchange of information among agencies difficult. In addition, misunderstandings and mistrust among agencies and between the agencies, interested public and private landowners arose when discussions where held relative to seasonal ranges or providing comments on reviews on various activities or projects. As an example, the Wyoming Game and Fish Department (WGFD) used the term "critical", to designate seasonal ranges that were considered the determining factor in a populations ability to maintain and reproduce itself over the long term. The term was used to designate limiting habitat associated with generally all wildlife species with mapped seasonal ranges. The term "critical" as well as "essential" have a much more restrictive application, however, on a federal level, since they are only associated with those wildlife species federally listed as threatened or endangered. This example is only one of many that were obvious sources of confusion and made the process of exchanging or discussing information much more difficult than it needed to be.

In an effort to rectify and reduce the confusion, communication, and information exchange problems the Wyoming Chapter of The Wildlife Society (TWS) formed a committee charged with the task of developing a set of standardized wildlife seasonal range designators with definitions. These designators would serve as the core set of seasonal range types to be recognized and used by all agencies but could be added to by individual agencies for special needs.

The original committee was made up of one representative from the U. S. Forest Service (USFS) (Dave Reeder), Bureau of Land Management (BLM) (Jack Welch) and the WGFD (John Emmerich). From late 1984 to late 1986 a set of wildlife seasonal range designators with definitions were developed. The final set adopted reflected considerable input and review from biologists representing each of the USFS occurring in Wyoming, from BLM resource area and state office biologists, and from personnel with the Soil Conservation Service (SCS), U. S. Fish and Wildlife service (USFS), WGFD and the state Land Board (SLB).

The current Standardized Definitions for Seasonal Wildlife Ranges were subsequently adopted by Forest service Regions 2 and 4 for Wyoming and by the WGFD in 1986 and the BLM in 1987. They were also recognized by the SCS, USFWS, and SLB. Since 1987 nearly all agencies with wildlife or habitat management responsibilities in Wyoming have either updated all of their seasonal range overlays using the standardized designators or have committed to do so as their scheduled overlay updates take place. The only exception appears to be the Shoshone National Forest.

In 1989 the WGFD and BLM requested the Wyoming Chapter of The Wildlife Society review the current definitions with particular attention to crucial and parturition habitat and additional quantification of definitions. TWS, under Chapter President Tom Ryder, formed a committee made up of representatives from USFS (Ihor Mereszczak, Tina Lanier), BLM (Jack Welsh, Bob McCarty), WGFD (Bill Gerhart, John Emmerich) and SCS (Dick Rintamaki) to address the request. Final recommendations from TWS were forwarded to participating agencies for review in early 1990.

APPLICATION AND USE

For the most part the definitions for each of the standardized seasonal ranges include sufficient criteria for determining when to apply a specific range designation. In nearly every case the frequency of use by animals is the criteria used to determine an areas importance as winter range, parturition range, or some other range designation. The number of animals using the area may be important but it is not a determining factor. An area were several cow elk with calves are seen once every five years would not warrant the status of parturition area, but an area where as few as five cows (a portion of the female members of a "population") are seen nearly every spring with calves would be considered a parturition area. The definitions were intentionally written without the use of a set number of animals as criteria for applying the range designation, since numbers of animals can vary annually and certainly vary with different herd units having different population objectives. However, phrases like "commonly used" or "used eight years out of ten" were included intentionally in the definitions to emphasize the importance of frequency of use of an area as a criteria for applying a range designator.

The most difficult part of designating range types, in particular for big game species, is determining the location and extent of crucial range. These areas are absolutely necessary for the long term maintenance of a population of animals so they need to be accurately identified for protection and management purposes. Accurate identification is also important because land management agencies typically restrict the type and timing of activities that occur in these areas, restriction; that have significant effects on other users of the land.

The first step in determining the location of crucial habitat is an assessment of what habitat component, or components, are most limiting, in other words what habitat type is crucial. In Wyoming winter range is generally the most limiting habitat component because snow cover often makes forage less available than during summer months and restricts animal movements. In very dry areas good quality summer forage could be a limiting range type, especially if snow accumulation is typically light in the area. Good escape cover could be limiting for a big game species like bighorn sheep.

Once the range type or types considered limiting have been identified the next step is determining the location and extent of the range. The most accurate and reasonable process to delineate seasonal range boundaries is simply to get as many different observations as possible over time and under as many different kinds of situations as possible. For example, on crucial winter range or winter range as many observations as possible should be collected during early, mid, and late winter for several winters to document the extent of these ranges. Normally all agencies with wildlife population or habitat management responsibilities should pool their resources (i.e. personnel, flight time, etc.) to determine the distribution of animals during the season of the year when the range is considered limiting. This distribution information should be documented in a stored data format so several years of information can be compiled and evaluated to adequately identify those areas which are used most years (eight years out of ten) when conditions or time of the year cause animals to use the limiting or crucial habitat i.e. harsh winters if documenting crucial winter range. Input from landowners can also be added to this database. Sharing resources among agency personnel and joint

data collection and analysis gives all parties involved an opportunity to become involved and have a stake in determining the distribution patterns documented and the designation of crucial habitat locations. Differences in opinion as to location or extent of crucial habitat or other seasonal range designations should be resolved by the local biologists with on the ground analysis of distribution patterns. This analysis should include flight data, ground observations, and vegetation utilization data.

Once the crucial habitat has been documented and mapped it should be constantly evaluated. There is nearly always potential for refinement, in fact it is imperative that every attempt be made to refine crucial habitat designations so only that acreage necessary to sustain long term population objectives are designated as crucial. Despite the constant evaluation and refinement process it is recommended that actual map updates be drafted no more frequently than once every three to five years. Shifts in animal distribution or location of additional range previously not documented that suggest a need for realignment of crucial range boundaries should be documented over a period of time before maps are updated. This ensures that maps will not be needlessly changed for transient fluctuations in animal distribution that will not stand the eight years out of ten frequency of use test.

Refining the location and extent of crucial range should involve some evaluation of the forage available for the wildlife species of concern in the area defined as crucial. In public land areas of the state forage production information is available from the BLM and USFS. In private land areas of the state the SCS can provide potential forage production information by range site and in some cases range condition class and actual production information. A rough analysis of forage production and crucial range acreage information will point out if sufficient acreage of crucial habitat has been identified for objective numbers of animals or if more acreage has been identified than is actually necessary to sustain the objective number of animals. Failure to correlate the crucial winter range or other boundary designations with the actual habitat sites being used, often leads to boundaries encompassing large acreages, much of which is not actually providing crucial habitat. This can obscure the real value of the area of actual crucial habitat.

Forage type and quantity in relation to the numbers of animals to be sustained in an area are but two factors, biologists must also consider the distribution of forage in relation to cover and the availability forage and cover. Snow depth and snow distribution have a significant effect on the availability of forage and cover. Wind can and does play an important role as it influences snow depth and distribution patterns thereby influencing forage availability. Information on wind conditions and whether or not areas are blown free of snow most of the time can be important in refining the delineated boundaries. Correlations on the ground with browse use patterns and fecal pellet group concentrations can be very helpful in delineating winter use and crucial winter range boundaries also. In either case the crucial habitat ranges should be refined to correct for the problems identified.

Some discussion of severe winter relief range is probably necessary to help people properly identify this habitat type. Severe winter relief range can be a core area within crucial winter range or an area removed from the crucial winter range that is not normally used, where animals try to survive when winter conditions are abnormally extreme. These areas will not sustain objective numbers of animals but may allow a portion of the population to survive. They are generally managed in the same manner as crucial winter range in terms of protection and forage reservation if they are a core area within crucial winter range and are also used during normal winters. If the severe winter relief range is an area removed from the normal crucial winter range and use is infrequent and unpredictable the area may be managed differently than crucial winter range. In this situation, it would not be practical to reserve forage every year for anticipated wildlife use since use normally

occurs only two years out of ten. These areas, however, need to be identified so they can be protected from range type conversions or development that will render the area unusable in severe winters.

In many parts of Wyoming big game species display distinct seasonal migration patterns. Animals move from higher elevation summer range where snow accumulation is substantial to lower elevation winter range in late fall and vice versa in early spring. In those areas of the state where this migration pattern occurs winter range is normally a distinct range readily delineated and used nearly every winter. Some movement occurs within this winter range area as the winter season progresses, snow conditions change, and animals search for food. Availability of forage within the winter range, which can be influenced by summer grazing/browsing patterns and weather conditions during the growing season, also affects the distribution of animals within the winter range. For elk, moose, mule deer, and bighorn sheep these winter time movements are fairly minor as long as winter conditions do not become abnormally extreme (causing movements to severe winter relief range). Antelope, however, tend to display a higher level of variance in the degree of movement that occurs within their winter range. In a sense their winter range is less fixed in space as compared to most other big game species. Although they normally use the same area each winter the overall range used may be large because of their nomadic nature. In other words antelope can be found during the winter months in one part of the winter range where they did not occur earlier and be absent later in the winter from that portion of the winter range where they did occur earlier. Other big game animal populations can normally be found within a mile or two of the same area throughout the winter. As a consequence in those portions of the state where distinct seasonal ranges do not occur crucial winter range generally cannot be delineated as tightly particularly for antelope.

Research Article

Habitat Selection of Rocky Mountain Elk in a Nonforested Environment

HALL SAWYER,[1] *Western Ecosystems Technology, Inc., 2003 Central Avenue, Cheyenne, WY 82001, USA*
RYAN M. NIELSON, *Western Ecosystems Technology, Inc., 2003 Central Avenue, Cheyenne, WY 82001, USA*
FRED G. LINDZEY,[2] *United States Geological Survey, Wyoming Cooperative Fish and Wildlife Research Unit, Box 3166, Laramie, WY 82071, USA*
LORRAINE KEITH, *Bureau of Land Management, 280 Highway 191 North, Rock Springs, WY 82901, USA*
JAKE H. POWELL,[3] *United States Geological Survey, Wyoming Cooperative Fish and Wildlife Research Unit, Box 3166, Laramie, WY 82071, USA*
ANU A. ABRAHAM, *Department of Statistics, University of Wyoming, 1000 E. University Avenue, Laramie, WY 82071, USA*

ABSTRACT Recent expansions by Rocky Mountain elk (*Cervus elaphus*) into nonforested habitats across the Intermountain West have required managers to reconsider the traditional paradigms of forage and cover as they relate to managing elk and their habitats. We examined seasonal habitat selection patterns of a hunted elk population in a nonforested high-desert region of southwestern Wyoming, USA. We used 35,246 global positioning system locations collected from 33 adult female elk to model probability of use as a function of 6 habitat variables: slope, aspect, elevation, habitat diversity, distance to shrub cover, and distance to road. We developed resource selection probability functions for individual elk, and then we averaged the coefficients to estimate population-level models for summer and winter periods. We used the population-level models to generate predictive maps by assigning pixels across the study area to 1 of 4 use categories (i.e., high, medium-high, medium-low, or low), based on quartiles of the predictions. Model coefficients and predictive maps indicated that elk selected for summer habitats characterized by higher elevations in areas of high vegetative diversity, close to shrub cover, northerly aspects, moderate slopes, and away from roads. Winter habitat selection patterns were similar, except elk shifted to areas with lower elevations and southerly aspects. We validated predictive maps by using 528 locations collected from an independent sample of radiomarked elk ($n = 55$) and calculating the proportion of locations that occurred in each of the 4 use categories. Together, the high- and medium-high use categories of the summer and winter predictive maps contained 92% and 74% of summer and winter elk locations, respectively. Our population-level models and associated predictive maps were successful in predicting winter and summer habitat use by elk in a nonforested environment. In the absence of forest cover, elk seemed to rely on a combination of shrubs, topography, and low human disturbance to meet their thermal and hiding cover requirements.
(JOURNAL OF WILDLIFE MANAGEMENT 71(3):868–874; 2007)

DOI: 10.2193/2006-131

KEY WORDS *Cervus elaphus*, Global Positioning System, habitat selection, negative binomial, resource selection probability function, Rocky Mountain elk, Wyoming.

Of the North American ungulates, Rocky Mountain elk (*Cervus elaphus*) are among the most widely distributed and most-studied species. Elk are generally known to avoid roads open to vehicles (Lyon 1983, Witmer and DeCalesta 1985, Grover and Thompson 1986, Rowland et al. 2000), and they prefer areas characterized by edge habitat (Thomas et al. 1979, 1988; Irwin and Peek 1983; Grover and Thompson 1986), where quality forage and forest cover habitats are in proximity. Additionally, topographic features such as slope, elevation, and aspect are known to influence the habitat selection patterns of elk (Edge et al. 1987, Skovlin et al. 2004). This knowledge of elk behavior has been incorporated into numerous habitat suitability and other predictive models (Witmer et al. 1985, Wisdom et al. 1986, Roloff et al. 2001, Benkobi et al. 2004) used to improve elk management and to guide land-use planning in forested regions.

Although considerable data support elk management and habitat preferences in montane and forested environments, our knowledge of elk ecology in nonforested environments is limited. Few studies have focused on elk populations that occupy desert or nonforested environments, and those studies have been restricted to relatively small, nonhunted populations that inhabit land reserves with limited public access in Washington (McCorquodale et al. 1986, 1989; McCorquodale 1991) and Idaho, USA (Strohmeyer and Peek 1996, Strohmeyer et al. 1999). Nonetheless, recent range expansions by elk have demonstrated their ability to readily adapt to open environments (Lindzey et al. 1997), requiring managers to re-evaluate the traditional paradigms of forage (open meadows and clear cuts) and cover (timber) as they relate to managing elk habitat in nonforested areas. Our objective was to identify and describe seasonal habitat selection patterns of a hunted elk population in a nonforested desert region of southwestern Wyoming, USA.

STUDY AREA

Our study area was defined by the 2,517-km^2 Jack Morrow Hills Planning Area (JMHPA) located in southwestern Wyoming (Bureau of Land Management [BLM] 2004*a*). Elevations ranged from 2,000 m to 2,650 m. Our study area was generally characterized as a high-elevation cold desert with a variety of sagebrush (*Artemisia* spp.) and mixed shrub–grassland communities. The relative abundance of 8 general land cover types included 5% basin big sagebrush (*A. tridentata tridentata*); 30% Wyoming sagebrush (*A. tridentata wyomingensis*); 14% grassland; 17% greasewood

[1] *E-mail: hsawyer@west-inc.com*
[2] *Present address: 15 Millbrook Road, Laramie, WY 82070, USA*
[3] *Present address: Idaho Department of Fish and Game, Southwest Region, 3101 S. Powerline Road, Nampa, ID 83686, USA*

Exhibit 4

(*Sarcobatus vermiculatus*); 16% mixed shrub, including saltbush (*Atriplex gardneri*), rabbitbrush (*Chrysothamnus* spp.), mountain mahogany (*Cercocarpus* spp.), and bitterbrush (*Purshia tridentata*); 14% bare ground or sand dune; 3% riparian grass and shrubs; and 1% tree cover, including aspen (*Populus tremuloides*) and Rocky Mountain juniper (*Juniperus scopulorum*; BLM 2004*b*). The BLM administered 92% of the land surface, including 5 federally designated areas of critical environmental concern and 7 wilderness study areas (BLM 2004*a*). Livestock grazing occurred in 15 allotments of various sizes, and the active permitted use was 26,830 animal unit months, of which approximately 12% were sheep and 88% were cattle (BLM 2004*a*). Approximately 380 km of maintained dirt and 44 km of paved roads occurred in our study area.

Although unregulated hunting extirpated most elk in the region by the early 1900s, the Wyoming Game and Fish Department successfully transplanted 408 elk between 1946 and 1967 (Ryder et al. 1986). Since then, the elk population has steadily increased, and today it is managed for 1,200 animals and provides 350 annual hunting permits (G. Frost, Wyoming Game and Fish Department, unpublished report).

METHODS

Capture and Monitoring

We used helicopter net-gunning to capture and radiomark adult (>1.5-yr-old) female elk across winter ranges in the JMHPA. We blindfolded and hobbled elk to facilitate handling to minimize injuries. Between January 1999 and February 2001, we fitted 55 elk with very high frequency (VHF) radiocollars. Between March and December 2003, we fitted 33 elk with store-on-board Global Positioning System (GPS) radiocollars (TGW 2500, Telonics, Mesa, AZ). We programmed the GPS units to obtain locations every 4 hr. We equipped all collars with mortality sensors that changed pulse rate if the collar remained motionless for >8 hr. We located radiomarked elk from fixed wing aircraft approximately once per month and used helicopter net-gunning to retrieve GPS collars from elk at the end of the study in December 2004. Fix-rate bias was not an issue because of the high fix-rate success (97%), and we did not differentially correct GPS locations because 86% of the locations were 3-dimensional.

Modeling Procedures

We identified 6 variables as potentially important landscape predictors of summer (from 15 Jun to 15 Sep) and winter (from 15 Nov to 15 Mar) elk distribution, including elevation, slope, aspect, distance to road, distance to shrub cover, and habitat diversity. We used the SPATIAL ANALYST extension for ArcView to calculate slope and aspect from a 26 × 26-m digital elevation model (U.S. Geological Survey 1999). We obtained elevation, slope, and aspect (northeast, northwest, southwest, and southeast) values for each of the sampled units. We digitized existing maintained roads from 1:100,000 scale maps and defined them as dirt, gravel, and paved roads actively maintained by the county or state (Powell 2003). We did not include 2-track roads in the analysis because of the relatively low vehicular use they received. We calculated distance to shrub cover and habitat diversity by using a 30-m resolution vegetation map delineated from LandSat thematic mapper data (BLM 2004*b*). We defined cover as any vegetation type with trees or shrubs that could reach 1.5 m in height. Noncover categories included grassland, bare ground, and sand. We calculated a Shannon's diversity index (McGarigal and Marks 1995) for each sampling unit by using a customized FORTRAN routine (T. McDonald, Western Ecosystems Technology, unpublished data) that we based on the 8 land cover types identified under Study Area. We did not include vegetation type as a predictor variable because we wanted to develop a model that could be easily applied or extrapolated to other desert environments where vegetation types may differ from the JMHPA.

We followed the modeling approach used by Sawyer et al. (2006) that consisted of 4 basic steps: 1) estimate the relative frequency of use (i.e., an empirical estimate of probability of use) for a large number of sampling units for each GPS-collared elk during winter and summer, 2) use the relative frequency as the response variable in a multiple regression analysis to model the probability of use for each elk as a function of predictor variables, 3) develop a population-level model from the individual elk models for each season, and 4) map predictions of population-level models from each season. We treated individual radiomarked elk as the experimental unit to avoid pseudoreplication (i.e., spatial and temporal autocorrelation) and to accommodate population-level inference (Otis and White 1999, Erickson et al. 2001, Millspaugh et al. 2006).

We estimated relative frequency of use for each GPS-collared elk by using a simple technique that involved counting the number of elk locations in each of 10,063 systematically sampled circular sampling units across the study area. We chose circular sampling units that had 250-m (19.6-ha) radii, an area small enough to detect changes in animal movements but large enough to ensure multiple locations could occur in each unit. We measured predictor variables from each of the sampling units and conducted a Pearson's pairwise correlation analysis (PROC CORR, SAS Institute 2000) before modeling to identify multicollinearities and to determine whether we should exclude any variables from the analysis ($|r| > 0.60$).

The relative frequency of locations from a GPS-collared elk found in each sampling unit provided an empirical estimate of the probability of use by that elk, and we used it as a continuous response variable in a generalized linear model (GLM). We used an offset term in the GLM to estimate probability of use for each GPS-collared elk as a function of a linear combination of predictor variables, plus or minus an error term assumed to have a negative binomial distribution (McCullagh and Nelder 1989, White and Bennetts 1996).

We obtained a population-level model for each season by first estimating coefficients for each GPS-collared elk. We

used PROC GENMOD (SAS Institute 2000) and the negative binomial distribution to fit the following GLM for each GPS-collared elk during each winter and summer period:

$$\ln(E[r_i]) = \ln(total) + \beta_0 + \beta_1 X_1 + \ldots + \beta p X p, \quad (1)$$

which was equivalent to

$$\ln(E[r_i/total]) = \ln(E[\text{Relative Frequency}_i]) = \beta_0 + \beta_1 X_1 + \ldots + \beta_p X_p, \quad (2)$$

where r_i is the number of locations for a GPS-collared elk within sampling unit i (i = 1, 2, ..., 10,063), *total* is the total number of locations for that elk within the study area, β_0 is an intercept term, $\beta_1, \ldots, \beta_p$ are unknown coefficients for habitat variables $X_1, \ldots, X_p$, and $E[.]$ denotes the expected value. We used the same offset term for all sampled units of a given elk; thus, the term ln(*total*) was absorbed into the estimate of β_0 and ensured we were modeling relative frequency of use (e.g., 0, 0.003, 0.0034, ...) instead of integer counts (e.g., 0, 1, 2, ...). This approach to modeling resource selection estimated the relative frequency or absolute probability of use as a function of predictor variables, so we referred to it as a resource selection probability function (RSPF; Manly et al. 2002).

We assumed GLM coefficients for predictor variable k for each elk were a random sample from a normal distribution (Seber 1984), with the mean of the distribution representing the average or population-level effect of predictor variable k on probability of use. We estimated coefficients for the population-level model for each winter and summer period by using

$$\hat{\bar{\beta}}_k = \frac{1}{n}\sum_{j=1}^{n} \hat{\beta}_{kj}, \quad (3)$$

where $\hat{\beta}_{kj}$ was the estimate of coefficient k for individual j (j = 1, ..., n). We estimated the variance of each population-level model coefficient by using the variation between GPS-collared elk and the equation

$$\text{var}(\hat{\bar{\beta}}_k) = \frac{1}{n-1}\sum_{j=1}^{n}(\hat{\beta}_{kj} - \hat{\bar{\beta}}_k)^2 \quad (4)$$

This method of estimating population-level coefficients has been used to evaluate habitat selection patterns of Stellar's jay (*Cyanocitta stelleri*; Marzluff et al. 2004) and mule deer (*Odocoileus hemionus*; Sawyer et al. 2006). Population-level inferences using equations 3 and 4 are unaffected by potential auto- or spatial correlation, because temporal autocorrelation between locations of an individual elk or spatial autocorrelation between habitat units does not bias model coefficients for the individual radiomarked elk models (McCullagh and Nelder 1989, Neter et al. 1996).

We used a forward-stepwise model-building procedure (Neter et al. 1996) to estimate population-level models for 3 periods: summer 2003, summer 2004, and winter 2003–2004. The forward-stepwise model-building process required fitting the same models to each elk within a season and using equations 3 and 4 to estimate population-level model coefficients. We used a t-statistic to determine variable entry ($\alpha \leq 0.15$) and exit ($\alpha > 0.20$; Hosmer and Lemeshow 2000). We considered quadratic terms for distance to road and slope during the model-building process and included the linear form of each variable if the model contained a quadratic form. We used northeasterly aspect as the reference, and if one or more of the other aspect categories (northwest, southeast, and southwest) was significant ($\alpha \leq 0.15$), we elected to include all of the categories rather than define the effects of the nonsignificant categories to be equal.

We mapped predictions of population-level models for each season across 350 × 350-m pixels that covered the study area. We checked predictions to ensure all values were in the [0,1] interval, such that we were not extrapolating outside the range of the model data. We assigned the predictions for each pixel a value of 1 to 4 based on the quartiles of the distribution of predictions for each map. We assigned pixels with the highest 25% of predicted probabilities of use a value of 1 and classified them as high-use areas, assigned pixels in the 51 to 75 percentiles a value of 2 and classified them as medium-high use areas, assigned pixels in the 26 to 50 percentiles a value of 3 and classified them as medium-low use areas, and assigned pixels in the 0 to 25 percentiles a values of 4 and classified them as low-use areas. We then used 528 VHF locations collected between February 1999 and November 2002 from an independent sample (n = 55) of radiomarked elk to validate the population-level model predictive maps by calculating the proportion of locations that occurred within each quartile.

RESULTS

Summer 2003

We developed individual RSPFs for 25 GPS-collared elk (13,524 locations) during summer 2003. Most elk had positive coefficients for elevation (22 of 25), habitat diversity (19 of 25), and northerly aspects (15 of 25), and they had negative coefficients for distance to cover (14 of 25). Quadratic terms indicated most elk selected for moderate slopes (24 of 25) and away from roads (24 of 25).

We estimated a population-level model (Table 1) and associated predictive map (Fig. 1) that included all 6 predictor variables, with quadratic terms for slope and distance to road. Elk selected for areas with high elevations, high habitat diversity, close to shrub cover, and northerly aspects. Quadratic terms indicated elk selected areas with moderate slopes and away from roads. Areas with the highest probability of use were 2.78 km (SE = 0.40) away from roads and had slopes of 9° (SE = 0.25).

Summer 2004

We developed individual RSPFs for 20 GPS-collared elk (10,528 locations) during summer 2004. Distance to shrub cover and habitat diversity variables did not enter the models because they were not significant ($\alpha > 0.15$) at the population level. Most elk had positive coefficients for

Table 1. Coefficients for population-level models of Global Positioning System–collared elk during summer 2003, summer 2004, and winter 2003–2004 in the Jack Morrow Hills Planning Area, Wyoming, USA.

	Summer 2003			Summer 2004			Winter 2003–2004		
Predictor variable	**β**	**SE**	***P***	**β**	**SE**	***P***	**β**	**SE**	***P***
Intercept	−34.967	4.021	<0.001	−30.739	6.017	<0.001	−5.663	3.320	0.105
Elevation (m)	0.009	0.002	<0.001	0.008	0.003	0.007	−0.004	0.002	0.038
Slope (°)	0.703	0.065	<0.001	0.584	0.071	<0.001	0.897	0.086	<0.001
Slope^2 (°)	−0.040	0.004	<0.001	−0.032	0.004	<0.001	−0.040	0.005	<0.001
Distance to road (km)	0.927	0.159	<0.001	0.767	0.221	0.003	0.369	0.142	0.018
Distance to road^2 (km)	−0.167	0.027	<0.001	−0.137	0.033	0.001	−0.154	0.025	<0.001
Habitat diversity	0.441	0.222	0.012	N.S.[a]			0.515	0.132	0.001
Distance to cover (m)	−0.002	0.000	0.163	N.S.			−0.006	0.002	0.013
Aspect northwest	0.057	0.118	0.109	0.295	0.169	0.097	−0.212	0.228	0.365
Aspect southeast	−0.199	0.145	0.871	0.287	0.167	0.102	0.384	0.152	0.021
Aspect southwest	−0.622	0.230	0.021	−0.200	0.318	0.537	−0.173	0.297	0.568

[a] Not significant.

elevation (17 of 20) and northerly aspects (14 of 20). Quadratic terms indicated most elk selected for moderate slopes (18 of 20) and away from roads (17 of 20).

We estimated a population-level model (Table 1) and associated predictive map (Fig. 2) that included 4 of the 6 predictor variables. Elk selected for areas with high elevations and northerly aspects. Quadratic terms indicated elk selected areas with moderate slopes and away from roads. Areas with the highest probability of use were 2.80 km (SE = 0.48) away from roads and had slopes of 9° (SE = 0.54).

Winter 2003–2004

We developed individual models for 19 GPS-collared elk (11,194 locations) during winter 2003–2004. Most elk had negative coefficients for elevation (15 of 19) and distance to cover (13 of 19), and they had positive coefficients for habitat diversity (15 of 19) and southerly aspects (14 of 19). Quadratic terms indicated most elk selected for moderate slopes (18 of 19) and away from roads (16 of 19).

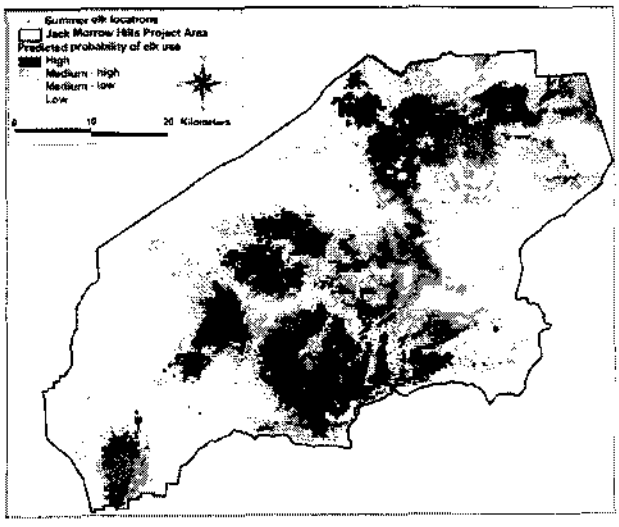


Figure 1. Distribution of 249 radiomarked elk locations collected from an independent sample (n = 55) across the predictive maps and associated categories of elk habitat use during summer 2003 in the Jack Morrow Hills Planning Area, Wyoming, USA.

We estimated a population-level model (Table 1) and associated predictive map (Fig. 3) that included all 6 predictor variables, with quadratic terms for slope and distance to road. Elk selected for areas with low elevations, high habitat diversity, close to shrub cover, and southerly aspects. Quadratic terms indicated elk selected areas with moderate slopes and away from roads. Areas with the highest probability of use were 1.20 km (SE = 0.47) away from roads and had slopes of 11° (SE = 0.73).

Predictive Map Validation

Of the 528 VHF locations we collected from an independent sample of 55 radiomarked elk, 249 locations occurred in summer and 279 in winter. Among the summer elk locations, 81% (n = 201) and 85% (n = 211) occurred in areas categorized as high use by the 2003 (Fig. 1) and 2004 (Fig. 2) summer predictive maps, respectively, whereas 3% (n = 7) occurred in areas classified as low use (Table 2). Areas classified as high or medium-high use by summer 2003 and 2004 predictive maps contained 94% (n = 233) and 93% (n = 232) of the summer elk locations, respectively, whereas areas classified as low or medium-low use contained 6% (n = 16) and 7% (n = 17). Among the winter elk locations, 56% (n = 156) occurred in areas classified as high use by the 2003–2004 winter predictive map (Fig. 3), whereas 10% (n = 28) occurred in areas classified as low use (Table 2). Areas classified as high or medium-high use by the winter predictive map contained 74% (n = 205) of the winter elk locations, whereas areas classified as low or medium-low use contained 26% (n = 74).

DISCUSSION

Given that most elk management guidelines and knowledge of habitat preferences were developed in montane and forested regions, the recent range expansions by elk into nonforested and desert habitats across the Intermountain West have required that important elk habitat characteristics also be identified in these areas. Our results suggested that large (>1,000) hunted elk populations can meet their year-round forage and cover requirements in nonforested regions,

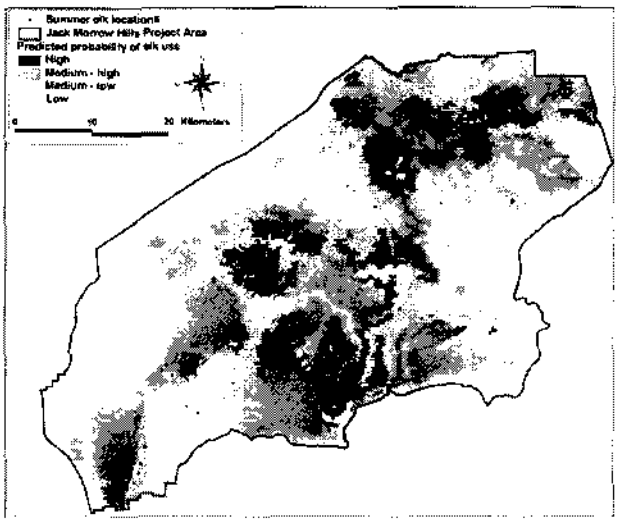


Figure 2. Distribution of 249 radiomarked elk locations collected from an independent sample ($n = 55$) across the predictive maps and associated categories of elk habitat use during the summer of 2004 in the Jack Morrow Hills Planning Area, Wyoming, USA.

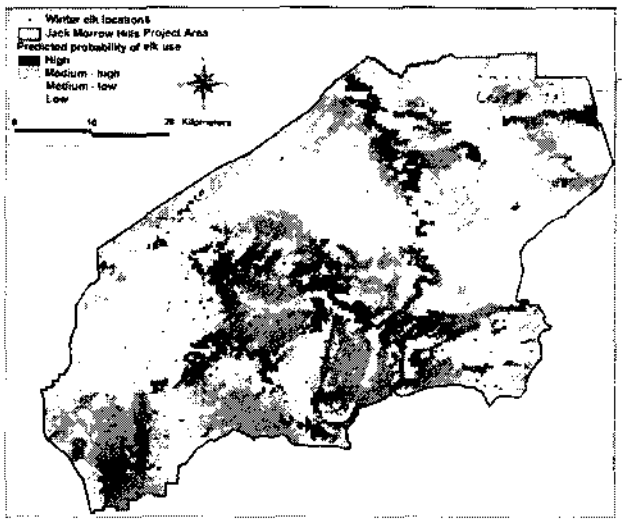


Figure 3. Distribution of 279 radiomarked elk locations collected from an independent sample ($n = 55$) across the predictive maps and associated categories of elk habitat use during winter 2003–2004 in the Jack Morrow Hills Planning Area, Wyoming, USA.

provided there is limited vehicular traffic, a range of elevations available, and dominant shrub communities. Specifically, our population-level models and associated predictive maps indicated that elk in the JMHPA selected for summer habitats characterized by higher elevations in areas of high vegetative diversity, close to shrub cover, northerly aspects, moderate slopes, and away from roads. Distance to shrub cover and habitat diversity did not enter the summer 2004 model; however, the predictions and validation for both the summer 2003 and 2004 models were similar. Winter habitat selection patterns were similar, except elk shifted to areas with lower elevations and southerly aspects. We attributed these seasonal differences to increased winter forage availability at lower elevations and south-facing slopes. The range of elevation (2,000–2,650 m) available across the JMHPA seemed to be important for providing elk with a variety of elevation, slope, and aspect options, such that they could make appropriate seasonal shifts in their habitat selection patterns.

The proximity of high-use elk habitats to roads during the winter versus the summer probably reflected the decrease in human activity that occurs in the winter when roads in the JMHPA become less accessible to vehicles and recreational use declines (L. Keith, BLM, unpublished report). If human activity were to increase during the winter because of land-use changes, such as off-road vehicle use, energy development, or mineral extraction, we would expect elk to distance themselves from roads in a manner similar to summer, altering the amount of winter habitat available to them. Generally, the effectiveness of elk habitat in forested regions declines when road densities exceed 0.62 km/km^2 (1 mi/mi^2; Lyon 1983, Wisdom et al. 1986, Thomas et al. 1988). Road density in the JMHPA (0.17 km/km^2) was much lower than 0.62 km/km^2, yet roads significantly influenced both summer and winter habitat use patterns. This influence is not unexpected, given that the behavioral response to traffic is influenced by topography and forest canopy adjacent to roads (Edge and Marcum 1991, Rowland et al. 2005), or lack thereof. In the absence of forest cover, restrictions on vehicular access or limiting road densities may be necessary to maintain an area as effective elk habitat (Lyon 1983, Cole et al. 1997). Research in other elk populations has suggested that moderate levels of human disturbance during the calving season may result in reduced reproductive success (Phillips and Alldredge 2000, Shively et al. 2005). However, recent population trends in the JMHPA (G. Frost, personal communication) suggest that current levels of disturbance or displacement in the JMHPA have not resulted in reduced

Table 2. Distribution of radiomarked elk locations collected from 55 elk from 1999 to 2002 across the 4 elk use categories of the population-level model predictive maps for summer 2003, summer 2004, and winter 2003–2004 in the Jack Morrow Hills Planning Area of southwestern Wyoming, USA.

	Summer 2003		Summer 2004		Winter 2003–2004	
Quartile	Elk locations	%	Elk locations	%	Elk locations	%
High	201	81	211	85	156	56
Medium-high	32	13	21	8	49	18
Medium-low	9	3	10	4	46	16
Low	7	3	7	3	28	10
Total	249	100	249	100	279	100

population performance. Nonetheless, land-use changes that require higher road densities or increased levels of human disturbance may be more difficult to mitigate in nonforested environments compared with forested regions where security cover is more abundant.

Management of roads and related human disturbance is an important consideration for managing elk populations (Christensen et al. 1993, Gratson and Whitman 2000, Rowland et al. 2000); and in some cases, road closures have been shown to decrease elk movements and increase survival (Cole et al. 1997). Our population-level models and predictive maps should improve the ability of agencies and industry to evaluate how future land-use decisions (BLM 2004*a*) and transportation plans may affect elk in the JMHPA and surrounding area. For example, approximately two-thirds of the JMHPA is considered to have moderate-to-high oil and gas development potential (BLM 2004*a*). If or when development plans are proposed, the models could incorporate the proposed changes (e.g., new roads and vegetation loss) to generate new predictive maps and illustrate how proposed development may influence winter and summer use of elk in the JMHPA. Furthermore, the models could be used to evaluate sets of development alternatives by quantifying potential changes in terms of their predicted effect on high-use elk habitat.

We suggest that the development of habitat selection models with interpretable predictor variables, similar to those developed in forested regions (Wisdom et al. 1986, Thomas et al. 1988, Rowland et al. 2000, Benkobi et al. 2004), may provide a basis for managing elk habitat in nonforested environments. Our approach to identifying predictor variables for modeling seasonal elk use in the JMHPA recognized that forage and cover requirements for elk need to be met, but we assumed that forage in nonforested environments tends to be dispersed more evenly than in forested habitats (McCorquodale et al. 1991), and, in the absence of forest cover, that elk rely on a combination of shrubs, topography, and low human disturbance to meet their thermal and hiding cover requirements. Thus, we considered slope, aspect, elevation, distance to road, distance to cover, and habitat diversity to be appropriate predictor variables of elk habitat use during both winter and summer. Additionally, because the variables were easy to measure, the model lends itself to application in other nonforested regions of southwestern Wyoming.

We used a forward-stepwise model-building procedure (Neter et al. 1996) to estimate population-level coefficients for winter and summer. Fitting the same model to each of the n individuals and then estimating population-level coefficients can provide a valid method for obtaining population-level inference (Marzluff et al. 2004, Millspaugh et al. 2006, Sawyer et al. 2006). Our model validation suggested that both the summer and winter population-level models successfully predicted areas of high and low elk use. We recognized that the number of categories in the predictive maps is a subjective decision and may vary depending on study objectives. Nonetheless, we found that dividing the predictive values into quartiles and creating 4 categories was useful for year-to-year and season-to-season comparisons. Additionally, our model validation suggested that the 4 categories were useful for predicting occurrence of elk that occupied the study area 1–3 years before model development.

MANAGEMENT IMPLICATIONS

Although conventional definitions of forage (open meadows and clear cuts) and cover (timber stands) do not generally apply to nonforested regions, our study suggests that basic habitat variables such as slope, aspect, elevation, distance to road, distance to shrub cover, and habitat diversity can successfully predict seasonal habitat use of elk in open environments. We encourage biologists responsible for managing elk populations in nonforested regions to consider these parameters in management decisions, rather than relying on the traditional forage-to-cover ratios (Thomas et al. 1979, 1988; Wisdom et al. 1986) used to evaluate elk habitat in forested regions.

ACKNOWLEDGMENTS

We thank B. Weynand, B. Rudd, T. Christiansen, G. Frost, T. Ryder, B. Banulis, and R. Grogan for providing assistance with fieldwork and logistical support. B. Collier and 2 anonymous reviewers provided constructive comments that improved the manuscript. Discussions with T. McDonald and L. McDonald helped to refine the statistical methods. G. Lust conducted aerial surveys and telemetry flights (Mountain Air, Driggs, ID). The BLM, the Wyoming Game and Fish Department, and the Rocky Mountain Elk Foundation funded our research.

LITERATURE CITED

Benkobi, L., M. A. Rumble, G. C. Brundige, and J. J. Millspaugh. 2004. Refinement of the Arc-Habcap model to predict habitat effectiveness for elk. U.S. Forest Service Research Paper RMRS-RP-51, Rocky Mountain Research Station, Ft. Collins, Colorado, USA.

Bureau of Land Management [BLM]. 2004*a*. Final environmental impact statement for the Jack Morrow Hills coordinated activity plan/proposed Green River resource management plan amendment. BLM/WY/PL-04/019+1610. U.S. Department of the Interior Bureau of Land Management, Rock Springs Field Office, Rock Springs, Wyoming, USA.

Bureau of Land Management [BLM]. 2004*b*. Rock Springs 2004 Vegetation Project. Rock Springs Field Office, Rock Springs, Wyoming, USA.

Christensen, A. G., L. J. Lyon, and J. W. Unsworth. 1993. Elk management in the Northern Region: considerations in forest plan updates or revisions. U.S. Forest Service General Technical Report INT-303, Intermountain Research Station, Ogden, Utah, USA.

Cole, E. K., M. D. Pope, and R. G. Anthony. 1997. Effects of road management on movement and survival of Roosevelt Elk. Journal of Wildlife Management 61:1115–1126.

Edge, W. D., and C. L. Marcum. 1991. Topography ameliorates the effects of roads and human disturbance on elk. Pages 132–137 *in* A. G. Christensen, L. J. Lyon, and T. N. Lonner, compilers. Proceedings of a symposium on elk vulnerability. Montana State University, Bozeman, USA.

Edge, W. D., C. L. Marcum, and S. L. Olson-Edge. 1987. Summer habitat selection by elk in western Montana: a multivariate approach. Journal of Wildlife Management 51:844–851.

Erickson, W. P., T. L. McDonald, K. G. Gerow, S. Howlin, and J. W.

Kern. 2001. Statistical issues in resource selection studies with radio-marked animals. Pages 209–242 *in* J. J. Millspaugh and J. M. Marzluff, editors. Radio tracking and animal populations. Academic Press, San Diego, California, USA.

Gratson, M. W., and C. Whitman. 2000. Road closures and density and success of elk hunters in Idaho. Wildlife Society Bulletin 28:302–310.

Grover, K. E., and M. J. Thompson. 1986. Factors influencing spring feeding site selection by elk in the Elkhorn Mountains, Montana. Journal of Wildlife Management 50:466–470.

Hosmer, D. W., and S. Lemeshow. 2000. Applied Logistic Regression. Second edition. John Wiley and Sons, New York, New York, USA.

Irwin, L. L., and J. M. Peek. 1983. Elk habitat use relative to forest succession in Idaho. Journal of Wildlife Management 47:664–672.

Lindzey, F. G., W. G. Hepworth, T. A. Mattson, and A. F. Reese. 1997. Potential for competitive interactions between mule deer and elk in the western United States and Canada. Wyoming Cooperative Fish and Wildlife Research Unit, Laramie, USA.

Lyon, L. J. 1983. Road density models describing habitat effectiveness for elk. Journal of Forestry 81:592–595.

Manly, B. F., L. McDonald, D. Thomas, T. McDonald, and W. Erickson. 2002. Resource selection by animals: statistical design and analysis for field studies. Second edition. Kluwer Academic, Boston, Massachusetts, USA.

Marzluff, J. M., J. J. Millspaugh, P. Hurvitz, and M. S. Handcock. 2004. Relating resources to a probabilistic measure of space use: forest fragments and Steller's jays. Ecology 85:1411–1427.

McCorquodale, S. M. 1991. Energetic considerations and habitat quality for elk in arid grasslands and coniferous forests. Journal of Wildlife Management 55:237–242.

McCorquodale, S. M., K. J. Raedeke, and R. D. Taber. 1986. Elk habitat use patterns in the shrub–steppe of Washington. Journal of Wildlife Management 50:664–669.

McCorquodale, S. M., K. J. Raedeke, and R. D. Taber. 1989. Home ranges of elk in an arid environment. Northwest Science 63:29–34.

McCullagh, P., and J. A. Nelder. 1989. Generalized linear models. Second edition. Chapman and Hall, Boca Raton, Florida, USA.

McGarigal, K., and B. J. Marks. 1995. FRAGSTATS: spatial pattern analysis program for quantifying landscape structure. U.S. Forest Service General Technical Report PNW-351, U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station, Portland, Oregon, USA.

Millspaugh, J. J., R. M. Nielson, L. McDonald, J. M. Marzluff, R. A. Gitzen, C. D. Rittenhouse, M. W. Hubbard, and S. L. Sheriff. 2006. Analysis of resource selection using utilization distributions. Journal of Wildlife Management 70:384–395.

Neter, J., M. H. Kutner, C. J. Nachtsheim, and W. Wasserman. 1996. Applied linear statistical models. Fourth edition. McGraw-Hill, Boston, Massachusetts, USA.

Otis, D. L., and G. C. White. 1999. Autocorrelation of location estimates and the analysis of radiotracking data. Journal of Wildlife Management 63:1039–1044.

Phillips, G. E., and A. W. Alldredge. 2000. Reproductive success of elk following disturbance by humans during calving season. Journal of Wildlife Management 64:521–530.

Powell, J. 2003. Distribution, habitat use patterns, and elk response to human disturbance in the Jack Morrow Hills, Wyoming. Thesis, University of Wyoming, Laramie, USA.

Roloff, G. J., J. J. Millspaugh, R. A. Gitzen, and G. C. Brundige. 2001. Validation tests of a spatially explicit habitat effectiveness model for Rocky Mountain elk. Journal of Wildlife Management 65:899–914.

Rowland, M. M., M. J. Wisdom, B. K. Johnson, and J. G. Kie. 2000. Elk distribution and modeling in relation to roads. Journal of Wildlife Management 64:672–684.

Rowland, M. M., M. J. Wisdom, B. K. Johnson, and M. A. Penninger. 2005. Effects of roads on elk: implications for management in forested ecosystems. Pages 42–52 *in* M. J. Wisdom, technical editor. The Starkey Project: a synthesis of long-term studies of elk and mule deer. Alliance Communications Group, Lawrence, Kansas, USA.

Ryder, T., B. Petch, and E. Raper. 1986. Steamboat mountain elk project. Wyoming Game and Fish Department, Cheyenne, USA.

SAS Institute. 2000. SAS/STAT® user's guide: statistics. Version 8. SAS Institute, Cary, North Carolina, USA.

Sawyer, H., R. M. Nielson, F. Lindzey, and L. L. McDonald. 2006. Winter habitat selection of mule deer before and during development of a natural gas field. Journal of Wildlife Management 70:396–403.

Seber, G. A. F. 1984. Multivariate observations. John Wiley and Sons, New York, New York, USA.

Shively, K. J., A. W. Alldredge, and G. E. Phillips. 2005. Elk reproductive response to removal of calving season disturbance by humans. Journal of Wildlife Management 69:1073–1080.

Skovlin, J. M., P. Zager, and B. K. Johnson. 2004. Elk habitat selection and evaluation. Pages 531–555 *in* D. E. Toweill and J. W. Thomas, editors. North American elk: ecology and management. Smithsonian Institution Press, Washington, D.C., USA.

Strohmeyer, D. C., and J. M. Peek. 1996. Wapiti home range and movement patterns in a sagebrush desert. Northwest Science 70:79–87.

Strohmeyer, D. C., J. M. Peek, and T. R. Bowlin. 1999. Wapiti bed sites in Idaho sagebrush steppe. Wildlife Society Bulletin 27:547–551.

Thomas, J. W., H. J. Black, R. J. Scherzinger, and R. J. Pedersen. 1979. Deer and elk. Pages 104–127 *in* J. W. Thomas, technical editor. Wildlife habitats in managed forests: the Blue Mountains of Oregon and Washington. U.S. Department of Agriculture Agricultural Handbook 533, Washington, D.C., USA.

Thomas, J. W., D. A. Leckenby, M. Henjum, R. J. Pedersen, and L. D. Bryant. 1988. Habitat-effectiveness index for elk on Blue Mountain winter ranges. U.S. Forest Service General Technical Report PNW-GTR-218. U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station, Portland, Oregon, USA.

U.S. Geological Survey. 1999. 30-meter National Elevation Dataset (tiled for Wyoming). U.S. Geological Survey EROS Data Center, Sioux Falls, South Dakota, USA.

White, G. C., and R. E. Bennetts. 1996. Analysis of frequency count data using the negative binomial distribution. Ecology 77:2549–2557.

Wisdom, M. J., L. R. Bright, C. G. Carey, W. W. Hines, R. J. Pederson, D. A. Smithey, J. W. Thomas, and G. W. Witmer. 1986. A model to evaluate elk habitat in western Oregon. U.S. Forest Service, Pacific Northwest Region, R6-F&WL-216-1986, U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station, Portland, Oregon, USA.

Witmer, G. W., and D. S. DeCalesta. 1985. Effect of forest roads on habitat use by Roosevelt elk. Northwest Science 59:122–125.

Witmer, G. W., M. J. Wisdom, E. P. Harshman, R. J. Anderson, C. Carey, M. P. Kuttel, I. D. Luman, J. A. Rochelle, R. W. Scharpf, and D. A. Smithey. 1985. Deer and elk. Pages 231–258 *in* E. R. Brown, editor. Management of wildlife and fish habitats in forests of western Oregon and Washington. U.S. Forest Service, Pacific Northwest Region R6-F&W-192-1985, U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station, Portland, Oregon, USA.

Associate Editor: Collier.

BLM'S RETAINED RIGHTS: HOW REQUIRING ENVIRONMENTAL PROTECTION FULFILLS OIL AND GAS LEASE OBLIGATIONS

BY
BRUCE M. PENDERY*

There are approximately 39,000,000 acres of federal mineral estate in the eleven western states subject to onshore oil and gas leases issued by the Bureau of Land Management (BLM). The leases grant the lessee the right to extract any oil or natural gas that may be found on the lease. However, the leases make the grant of rights "subject to" a number of reservations of authority to the federal government. The BLM lease provides that these retained rights stem from applicable laws; the terms, conditions, and stipulations in the lease; the Secretary of Interior's regulations and formal orders in effect when the lease is issued; and regulations and formal orders issued afterward if not inconsistent with the lease rights granted. A BLM regulation makes the lease subject to three further reservations of authority: stipulations; restrictions deriving from specific, nondiscretionary statutes; and reasonable measures the BLM authorized officer might require. A review of these authorities shows BLM retains substantial rights allowing it to regulate the time, place, and manner of oil and gas development. Development can be conditioned by regulating the timing of operations and the siting and design of facilities, as well as specification of the rates of oil and gas development and production. BLM can suspend operation of leases and can even prohibit development if impacts are substantially different or greater than normal. BLM retains the right to prevent "adverse impacts" by requiring

* The author is program director and a staff attorney with the Wyoming Outdoor Council. He has a B.S. degree in wildlife biology, an M.S. degree in range science, and received his J.D. from the University of Utah College of Law. He would like to thank Rebekah Smith for her assistance with research supporting this Article during her tenure as an intern with the Wyoming Outdoor Council during the summer of 2008. He would also like to thank Sara Waterson for her assistance in generating the data that appear in the table in this Article and other background data. Thanks is also due to the BLM personnel who are mentioned in the Article and who kindly offered helpful (and in some cases critical) information and materials. And finally, the author would like to thank Lisa Dardy McGee, a staff attorney with the Wyoming Outdoor Council, and Timothy J. Preso, a staff attorney with Earthjustice, who reviewed a draft of this Article and made helpful suggestions that improved it greatly. The author can be reached at bruce@wyomingoutdoorcouncil.org.

- Exhibit 5 -

"reasonable measures" to prevent environmental harms. These rights stem from provisions in the Mineral Leasing Act, Federal Land Policy and Management Act, National Environmental Policy Act, Endangered Species Act, Clean Air Act, Clean Water Act, National Historic Preservation Act, other statutes, BLM's leasing and operations regulations, the terms in the lease itself, and formal orders such as BLM Resource Management Plans, Onshore Oil and Gas Order Number 1, Executive Orders, and Secretarial and Department of Interior Solicitor Orders and Opinions, all of which the lease is made "subject to." If BLM fully exercises these retained rights it can considerably reduce environmental disturbance due to oil and gas development on the public lands. Means available for exercising these retained rights include requiring phased or paced development, directional drilling, suspension of operations on leases in the interest of conservation of resources, unitization of leases, and a number of best management practices, including placing netting over waste pits to reduce wildlife mortality, requiring "closed-loop" drilling fluid systems to reduce pollution, and requiring mats to be placed on the ground during drilling to reduce drilling impacts, to name a few. This Article argues that given the mandatory, nondiscretionary nature of many of the authorities a federal onshore oil and gas lease has been made subject to, not only does BLM have numerous retained rights, it in fact has an obligation to fully assert them, and several policy changes that could accomplish this are suggested.

I. INTRODUCTION

There are large areas of the public lands in the western United States that are encumbered by federal oil and natural gas leases. In the eleven western states of New Mexico, Colorado, Wyoming, Montana, Idaho, Utah, Arizona, Nevada, California, Oregon, and Washington—where public lands are an important aspect of land use, economic development, and social structure and culture—there were 404,500,000 acres of federal mineral estate, and over 39,000,000 acres of that estate were subject to federal oil and gas leases in fiscal year 2008.[1]

Given the large areas of public land encumbered by federal onshore oil and natural gas leases, a significant question relates to the "retained rights" enjoyed by the federal government in areas it has leased. This Article posits that the federal government has substantial retained rights allowing it to regulate oil and gas development in order to ensure protection of other resources on the lands it has leased. I define the term "retained rights" to mean powers the federal government maintains and has not ceded regarding public lands management when it issues an onshore oil and gas lease to a private party. As will be explained, the government has retained significant rights to protect the natural environment, including, for example, protection of threatened or endangered species, prevention of air and water pollution, the right to regulate operations in order to conserve surface resources, the ability to protect historic trails and other cultural and archeological resources, and the right to prevent unnecessary or undue degradation of the public lands.

With respect to onshore oil and gas leasing, management of the leasing program and the resulting leases is entrusted to the United States Bureau of

[1] *See* BUREAU OF LAND MGMT., U.S. DEP'T OF THE INTERIOR, PUBLIC LAND STATISTICS 2008 tbl.1-3 (2008), *available at* http://www.blm.gov/public_land_statistics/pls08/pls1-3_08.pdf [hereinafter BUREAU OF LAND MGMT., PUBLIC LAND STATISTICS 2008]; BUREAU OF LAND MGMT., U.S. DEP'T OF THE INTERIOR, TOTAL NUMBER OF ACRES LEASED, http://www.blm.gov/pgdata/etc/medialib/blm/wo/MINERALS__REALTY__AND_RESOURCE_PROTECTION_/energy/oil___gas_statistics.Par.16715.File.dat/chart_2009_02.pdf. These data do not reflect oil and gas leasing on tribal lands. *See* Bureau of Land Mgmt., U.S. Dep't of the Interior, Facts About Federal Energy Leasing and Development, http://www.blm.gov/wo/st/en/info/newsroom/Energy_Facts_07.html (last visited Apr. 18, 2010) (pointing out that nationwide the Bureau of Land Management manages nearly 700 million acres of federal mineral estate).

Land Management (BLM) within the United States Department of Interior.[2] For purposes of this Article, I will focus on the retained rights enjoyed by BLM on the public lands and the mineral estate that it manages in the eleven western states. Because of my knowledge of and experience in the State of Wyoming, many of the examples that will be presented relate to Wyoming.

BLM manages approximately 175,000,000 acres of surface estate in the eleven western states, as well as the above-mentioned mineral estate.[3] I will not specifically consider leasing in Alaska in this Article because some different legal provisions apply there, particularly in the National Petroleum Reserve in Alaska, but generally the analysis presented here also applies to BLM-managed oil and gas in Alaska.[4] While the focus of this Article will be on BLM and the lands it manages, similar lines of reasoning and the conclusions that will be presented here also apply to the over 158,000,000 acres managed by the United States Forest Service (Forest Service) in the eleven western states because similar leasing rules apply on those lands.[5] For purposes of this Article, I only consider federal onshore oil and gas leasing and leases. I will not consider offshore leasing managed by the Minerals Management Service under the direction of the Outer Continental Shelf Leasing Act.[6]

In the following sections, I will first describe the Mineral Leasing Act[7] and the onshore oil and gas leasing system it created. I will then discuss the terms and conditions of BLM onshore oil and gas leases with an eye toward what those provisions mean relative to BLM's retained rights. Following that is a discussion of the retained rights BLM enjoys under applicable laws, lease terms and conditions, regulations, and other authorities a BLM oil and gas lease is made "subject to." Then I will consider general doctrines of contract law that may also help define BLM's retained rights. Following that is a discussion of issues that might limit BLM's exercise of its retained rights, such as Fifth Amendment takings claims. Last, I will consider means by which BLM could exercise its retained rights and policy changes it could make, and then argue that not only does BLM enjoy substantial retained rights, it also has an *obligation* to assert them.

---

[2] *See* 43 C.F.R. pts. 3100, 3160 (2008) (presenting BLM's onshore oil and gas leasing and oil and gas operations regulations).

[3] *See* BUREAU OF LAND MGMT., PUBLIC LAND STATISTICS 2008, *supra* note 1, tbl.1-3.

[4] *See* Bureau of Land Mgmt., U.S. Dep't of the Interior, BLM-Alaska Energy Program, http://www.blm.gov/ak/st/en/prog/energy.html (last visited Apr. 18, 2010) (presenting information on BLM oil and gas leasing in Alaska).

[5] The Forest Service must consent to leasing on its lands, although BLM conducts the actual leasing. *See* Mineral Leasing Act, 30 U.S.C. § 226(h) (2006) (providing that leasing by the Secretary of the Interior on Forest Service lands cannot occur over the objection of the Secretary of Agriculture); 43 C.F.R. § 3101.7-1(c) (2008) (same); 36 C.F.R. §§ 228.100–.116 (2009) (presenting the Forest Service's oil and gas resource regulations).

[6] 43 U.S.C. §§ 1331–1356 (2006). For a description of the Minerals Management Service's offshore leasing program, see Minerals Mgmt. Serv., U.S. Dep't of the Interior, Offshore Energy & Minerals Management, http://www.mms.gov/offshore (last visited Apr. 18, 2010).

[7] 30 U.S.C. §§ 181–287 (2006).

II. OVERVIEW OF THE MINERAL LEASING ACT

Onshore leasing of federally owned oil and gas is governed by the Mineral Leasing Act of 1920.[8] The leasing system it established, including provision for royalties to be paid on produced minerals, represented a marked departure from the provisions under the General Mining Law of 1872,[9] where minerals and the exclusive right to possession of the land were granted to the first prospector able to "locate[]" a "valuable" mineral on public lands.[10] The leasing system established by the Mineral Leasing Act for many nonmetalliferous minerals provides for a significant increase in governmental control and regulation of mineral disposition and development compared to the self-initiated system under the General Mining Law that applies to hardrock minerals such as "gold, silver, cinnabar, lead, tin, [and] copper."[11]

Subject to enumerated exceptions, the Mineral Leasing Act provides that deposits of coal, phosphate, sodium, potassium, oil, oil shale, gilsonite, or gas, and lands containing such deposits that are owned by the United States, "shall be subject to disposition in the form and manner provided by this chapter."[12] The Act establishes qualifications for holding an oil and gas lease, establishes limits on the aggregate acreage of lease holdings, allows for cancellation and forfeiture of leases, allows for necessary rules and regulations to be prescribed, provides for royalties and other income to the government and disposition of the moneys received, prescribes the maximum size of individual leases and lease term lengths, and makes many other provisions.[13]

Most significantly for purposes of this Article, section 17 of the Mineral Leasing Act provides for leasing of oil and gas. Section 17(a) declares that "[a]ll lands subject to disposition under this [Act] which are known or believed to contain oil or gas deposits *may* be leased by the Secretary [of the Interior]."[14] Section 17(b) then provides for a competitive leasing system via oral auction where parcels are leased to the "highest responsible qualified

---

8 *Id.*

9 30 U.S.C. §§ 22–24, 26–30, 33–35, 37, 39–43, 47 (2006).

10 *Id.* § 29.

11 *Id.* § 23.

12 30 U.S.C. § 181 (2006).

13 *Id.* §§ 181, 184(d), 188–189, 191, 226(b)–(c).

14 *Id.* § 226(a) (emphasis added). In a line of cases, numerous courts have held that the decision to issue a lease in the first instance is a decision within the Secretary of the Interior's discretion. *See, e.g.*, Udall v. Tallman, 380 U.S. 1, 4 (1965); United States *ex rel.* McLennan v. Wilbur, 283 U.S. 414, 417 (1931); McDonald v. Clark, 771 F.2d 460, 463 (10th Cir. 1985); McTiernan v. Franklin, 508 F.2d 885, 887 (10th Cir. 1975); Duesing v. Udall, 350 F.2d 748, 750 (D.C. Cir. 1965); Cont'l Land Res., 162 I.B.L.A. 1, 7 (2004). *But see* Mountain States Legal Found. v. Hodel, 668 F. Supp. 1466, 1474 (D. Wyo. 1987) (finding that delay in processing leasing proposals can constitute an impermissible withdrawal of public lands); Mountain States Legal Found. v. Andrus, 499 F. Supp. 383, 391 (D. Wyo. 1980) (same). In *Bob Marshall Alliance v. Hodel*, 852 F.2d 1223 (9th Cir. 1988), the United States Court of Appeals for the Ninth Circuit declined to follow the holding in *Andrus* relative to withdrawals. *Id.* at 1229–30.

bidder."[15] If no qualified bids are received at competitive auction, lease parcels become available for sale noncompetitively.[16] Under the provisions for noncompetitive leases, "the person first making application for the lease who is qualified to hold a lease under this [Act] shall be entitled to a lease of such lands without competitive bidding."[17] In addition to specifying the leasing system, section 17 also makes several provisions related to environmental protection.[18]

This system where leases are first offered at competitive auction before becoming available for noncompetitive sale is relatively new. It was established on December 22, 1987, when the Federal Onshore Oil and Gas Leasing Reform Act (FOOGLRA)[19] was enacted. This law is codified in several sections of the Mineral Leasing Act and elsewhere, but the most important amendments for purposes of this review were the amendments to subsections 17(b) through 17(h), which deal with the leasing provisions that have been mentioned and environmental protection measures that will be described in more detail below.[20] Prior to FOOGLRA a different leasing system existed.

Under the pre-FOOGLRA system, competitive leasing only occurred if a lease was in a "known geologic structure" (KGS).[21] Otherwise, if the lands were not in a KGS, a lease could be acquired on a noncompetitive basis.[22] The noncompetitive system allowed for two ways to acquire a lease. The first was an over-the-counter purchase based on a first-come, first-served system.[23] The second was based on a lottery system called "SIMO."[24] Over-the-counter leases were available if the land was not in a KGS, had never been leased, and the lands had not received bids in the lottery system.[25] The lottery system was utilized for lands not in a KGS but where the lands had been previously leased.[26]

This pre-FOOGLRA leasing system turned out to have a number of problems. BLM had difficulty defining KGSs, which lead to uncertainty and

---

15 30 U.S.C. § 226(b)(1)(A) (2006).

16 *Id.*

17 *Id.* § 226(c)(1).

18 *Id.* § 226(f)–(h).

19 Federal Onshore Oil and Gas Leasing Reform Act of 1987, Pub. L. No. 100-203, 101 Stat. 1330-256 (codified as amended at 30 U.S.C. §§ 195, 226-3 (2006)).

20 30 U.S.C. § 226(b)–(h) (2006).

21 Act of Feb. 25, 1920, ch. 85, § 17, 41 Stat. 437, 443 (1920) (current version at 30 U.S.C. § 181(b) (2006)).

22 Act of Aug. 8, 1946, ch. 916, § 3, 60 Stat. 950, 951 (1946) (current version at 30 U.S.C. § 181(c) (2006)).

23 4 GEORGE CAMERON COGGINS & ROBERT L. GLICKSMAN, PUBLIC NATURAL RESOURCES LAW § 39:2, at 39-6 (2d ed. 2010).

24 *Id.* at 39-6 to -7. "SIMO" stands for "simultaneous lease drawing," but according to BLM officials the abbreviation is really a shortened reference to "simultaneous." Telephone Interview with William Gewecke, Petroleum Eng'r, Minerals & Realty Mgmt., Bureau of Land Mgmt. (Nov. 12, 2009).

25 Patricia J. Beneke, *The Federal Onshore Oil and Gas Leasing Reform Act of 1987: A Legislative History and Analysis*, 4 J. MIN. L. & POL'Y 11, 15 (1988).

26 *Id.*

abuse, and outright fraud and speculation occurred in the noncompetitive lottery system.[27] It was these problems that led to the enactment of FOOGLRA and the creation of the modern leasing system where competitive leasing is the general rule and noncompetitive leasing only occurs when a qualified bid is not received at a competitive lease sale.[28] The pre-FOOGLRA leasing system, problems that developed under it, and the resulting enactment of FOOGLRA are ably described in three law review articles[29] and in the leading case of *Arkla Exploration Co. v. Texas Oil & Gas Corp.*[30]

The significance of the pre-FOOGLRA versus post-FOOGLRA leasing systems is that oil and gas leases have been issued under two distinctly different systems, one in existence before 1987 and one after. However, according to officials with BLM there have been no differences in the terms of a competitive versus a noncompetitive lease, whether issued pre- or post-FOOGLRA.[31] There has been only one lease form in use at any particular time.[32] Thus, when the provisions of BLM leases in use during different time periods are discussed below in an effort to discern BLM's retained rights, there will be no need to distinguish between competitive- and noncompetitive-issued leases, or—for purposes of ascertaining BLM's retained rights—a need to distinguish between pre- versus post-FOOGLRA leases.[33]

III. THE FEDERAL ONSHORE OIL AND GAS LEASING AND DEVELOPMENT PROCESS

A. The Stages of BLM Oil and Gas Planning, Leasing, and Development

The BLM onshore oil and gas leasing and development process for federally owned oil and gas is comprised of five steps or stages. These include land-use planning, leasing, exploration, full field development, and filing an application for permit to drill (APD).[34]

---

[27] *Id.* at 17–25.

[28] *Id.* at 35–37.

[29] *See generally id.* at 11; Thomas L. Sansonetti & William R. Murray, *A Primer on the Federal Onshore Oil and Gas Leasing Reform Act of 1987 and Its Regulations*, 25 LAND & WATER L. REV. 375 (1990); Abraham E. Haspel, *Drilling for Dollars: The New and Improved Federal Oil Lease Program*, REG., Fall 1990, at 62.

[30] 734 F.2d 347 (8th Cir. 1984) (determining that KGS determinations on the Fort Chaffee Military Reservation in Arkansas were arbitrarily constrained, allowing lands to be inappropriately leased on a noncompetitive basis in an area with strong competition for productive oil and gas properties).

[31] Telephone Interview with Julie Weaver, Chief, Branch of Fluid Minerals Adjudication, Wyo. State Office, Bureau of Land Mgmt. (Oct. 15, 2009).

[32] *Id.*

[33] *Id.* According to Ms. Weaver, in older leases there can be some differences in rental provisions when a lease was in a KGS or in a unitized field, and sometimes different royalty provisions can apply. *Id.* But there are no differences in the environmental protection provisions in competitive versus noncompetitive leases or in pre- versus post-FOOGLRA leases. *Id.*

[34] In *New Mexico ex rel. Richardson v. Bureau of Land Mgmt.* (*Richardson*), 565 F.3d 683 (10th Cir. 2009), the United States Court of Appeals for the Tenth Circuit construed the BLM oil and gas development process as being comprised of three stages: land use planning, leasing, and filing an APD. *Id.* at 689 n.1, 716. However, I believe the five-step process I describe

1. Land-Use Planning

Step one is land-use planning, the development of BLM Resource Management Plans (RMPs). BLM land-use planning is required under the Federal Land Policy and Management Act (FLPMA).[35] At this stage, lands that will be available for oil and gas leasing are identified, and limitations that will be applied to leasing, including applicable stipulations, are specified.[36] In Wyoming, there are ten BLM field offices and each has an RMP in place.[37] Other western states also have a number of field offices and most operate under the guidance of an RMP.[38] Under many of the RMPs in Wyoming, much of the land under the direction of the field office is available for oil and gas leasing, and this is generally true elsewhere in the West.[39] The development of an RMP requires compliance with the National Environmental Policy Act (NEPA)[40] and is therefore accompanied by preparation of an environmental impact statement (EIS).[41]

2. Leasing

The next stage in the oil and gas leasing and development process on BLM lands and mineral estates is the leasing stage. At this stage leases are first offered for sale at competitive auctions and then are available

captures the nuances of the oil and gas leasing and development process; moreover, the court did note that "exploring" needed to occur. *Id.* at 689 n.1.

35 43 U.S.C. §§ 1701–1785 (2006); *see id.* § 1712 (presenting FLPMA's planning requirements); 43 C.F.R. pt. 1600 (2008) (presenting BLM's regulations implementing FLPMA's planning requirements).

36 *Richardson*, 565 F.3d at 689 n.1.

37 The RMP for a BLM field office can be found on that field office's website. For example, the RMP for the Pinedale, Wyoming field office can be found on that field office's website. Pinedale Field Office, Bureau of Land Mgmt., Record of Decision/Approved RMP, http://www.blm.gov/wy/st/en/programs/Planning/rmps/pinedale/rod_armp.html (last visited Apr. 18, 2010).

38 *See, e.g.*, Bureau of Land Mgmt., U.S. Dep't of the Interior, Arizona Resource Management Plans, http://www.blm.gov/az/st/en/info/nepa/environmental_library/arizona_resource_management.html (last visited Apr. 18, 2010) (providing draft and final RMPs for the Arizona state office).

39 *See, e.g.*, PINEDALE FIELD OFFICE, BUREAU OF LAND MGMT., U.S. DEP'T OF THE INTERIOR, RECORD OF DECISION AND APPROVED PINEDALE RESOURCE MANAGEMENT PLAN 2-1 tbl.1-1 (2008), *available at* http://www.blm.gov/pgdata/etc/medialib/blm/wy/programs/planning/rmps/pinedale/rod.Par.45058.File.dat/05_Record_of_Decision_and_Approved_Pinedale_RMP.pdf; *id.* map 1-3, *available at* http://www.blm.gov/pgdata/etc/medialib/blm/wy/programs/planning/rmps/pinedale/rod/maps.Par.50090.File.dat/03_Map1-03.pdf. Areas available for lease can be examined using the GeoCommunicator tool at Bureau of Land Mgmt. & U.S. Forest Serv., U.S. Dep't of the Interior & U.S. Dep't of Agric., GeoCommunicator Home, http://www.geocommunicator.gov (last visited Apr. 18, 2010).

40 National Environmental Policy Act of 1969, 42 U.S.C. §§ 4321–4347 (2006).

41 *See id.* § 4332(2)(C) (2006) (requiring preparation of an EIS when a federal action may significantly affect the quality of the human environment); 43 C.F.R. § 1601.0-6 (2008) ("Approval of a resource management plan is considered a major Federal action significantly affecting the quality of the human environment.").

noncompetitively if a qualified bid is not received at the competitive sale.[42] After an acceptable offer is received, and assuming there are no protests that delay the leasing process, a lease is issued.[43] As has been recognized in numerous court and administrative decisions, the leasing stage is crucial because it represents an "'irreversible and irretrievable commitment[] of resources'" due to the developed rights granted by a federal onshore oil and gas lease, and thus compliance with NEPA is required prior to issuing a lease, at least when the lease does not contain a stipulation specifying there will be no surface occupancy of the leasehold.[44] This issue will be discussed in more detail in Part VII.D.

3. Exploration

Once an oil and gas lease is issued, the next step is often exploration to determine if there are likely to be valuable oil and gas deposits on a lease. BLM has developed regulations that govern exploration, and exploration projects are also subject to NEPA.[45] In general, at least in Wyoming, exploration projects are approved by preparation of a NEPA environmental assessment (EA), not a more detailed EIS.[46] Sometimes a leaseholder does not engage in exploration and proceeds directly to drilling a "wildcat" well, so called because the well is drilled in an area where the potential for production in paying quantities is uncertain.[47]

4. Full-Field Development

If it becomes apparent that oil and gas may be present in an area and that a number of wells are likely to be drilled, the process enters what is called the project level stage. This stage is also sometimes called the "full-field development" stage.[48] NEPA applies to this level of activity because of the BLM approvals required before development can occur, and often an EIS is prepared (sometimes an EA is prepared for smaller fields or

42 Beneke, *supra* note 25, at 43.

43 *See infra* notes 75–81 and accompanying text (discussing lease protests).

44 *See, e.g.*, Sierra Club v. Peterson, 717 F.2d 1409, 1414 (D.C. Cir. 1983) (quoting Mobil Oil Corp. v. Fed. Trade Comm'n, 562 F.2d 170, 173 (2d Cir. 1977)) (holding that issuing an oil and gas lease without a no surface occupancy stipulation represents an irreversible and irretrievable commitment of resources, which requires compliance with NEPA); *Richardson*, 565 F.3d 683, 718 (10th Cir. 2009) (same); Conner v. Burford, 848 F.2d 1441, 1449–50 (9th Cir. 1988) (same); Ctr. for Native Ecosystems, 170 I.B.L.A. 331, 344–45 (2006). These and other cases will be discussed in Part VII.D, *infra*.

45 43 C.F.R. pt. 3150 (2008).

46 *See* 40 C.F.R. §§ 1501.3–.4, 1508.9 (2009) (presenting Council on Environmental Quality regulations governing when to prepare an EA versus an EIS and requirements for these two types of documents); *id.* pt. 1502 (2009) (same).

47 *See* Gates Rubber Co. v. Comm'r, 74 T.C. 1456, 1460 (1980).

48 Rocky Mountain Oil & Gas Ass'n v. Watt, 696 F.2d 734, 742 (10th Cir. 1982).

drilling projects).[49] There have been a number of full-field development EISs prepared in Wyoming in recent years, including, but by no means limited to, analyses of the Jonah Infill project, the Pinedale Anticline project, the Atlantic Rim project, and coal bed methane development in the Powder River Basin; these EISs can be reviewed on BLM field office websites.[50] Approval of these projects through the "record of decision" that accompanies an EIS can allow for the drilling of thousands of wells.[51] Similar full field development EISs in environmentally significant areas have been developed in several of the other western states in recent years, such as the Roan Plateau project in western Colorado.[52]

5. Application for Permit to Drill

Finally, the last stage in the oil and gas development process on BLM lands and mineral estates is called the APD stage. Under BLM's regulations, no well can be drilled until an APD has been approved.[53] Up until now, no actual surface disturbance has occurred (other than the relatively limited disturbance associated with exploration), but after the APD stage, drills can begin to dig into the ground.[54] The APD stage also implicates NEPA, and in many cases an EA is prepared as part of the APD approval to ensure environmental concerns are considered and mitigated on a site-specific basis.[55] However, since passage of the Energy Policy Act of 2005,[56]

---

[49] *See* National Environmental Policy Act of 1969, 42 U.S.C. § 4332(2) (2006) (making NEPA applicable to all federal agencies, of which BLM is one); *id.* § 4332(2)(C) (requiring an EIS for all federal agency actions significantly affecting the quality of the human environment).

[50] *See, e.g.*, BUREAU OF LAND MGMT., U.S. DEP'T OF THE INTERIOR, RECORD OF DECISION FOR THE JONAH INFILL DRILLING PROJECT: ENVIRONMENTAL IMPACT STATEMENT 1 (2006), *available at* http://www.blm.gov/pgdata/etc/medialib/blm/wy/information/NEPA/pfodocs/jonah.Par.5187.File.dat/00rod2.pdf [hereinafter BUREAU OF LAND MGMT., JONAH INFILL ROD] (approving 3100 wells); BUREAU OF LAND MGMT., U.S. DEP'T OF THE INTERIOR, RECORD OF DECISION: FINAL SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT FOR THE PINEDALE ANTICLINE OIL AND GAS EXPLORATION AND DEVELOPMENT PROJECT 4 (2008), *available at* http://www.blm.gov/pgdata/etc/medialib/blm/wy/information/NEPA/pfodocs/anticline/rod.Par.50775.File.dat/00ROD.pdf [hereinafter BUREAU OF LAND MGMT., PINEDALE ANTICLINE ROD] (approving 4399 wells); BUREAU OF LAND MGMT., U.S. DEP'T OF THE INTERIOR, RECORD OF DECISION: ENVIRONMENTAL IMPACT STATEMENT FOR THE ATLANTIC RIM NATURAL GAS FIELD DEVELOPMENT PROJECT 1 (2006), *available at* http://www.blm.gov/pgdata/etc/medialib/blm/wy/information/NEPA/rfodocs/atlantic_rim/rod.Par.46558.File.dat/ROD.pdf [hereinafter BUREAU OF LAND MGMT., ATLANTIC RIM EIS] (approving approximately 2000 wells); *see also* Theodore Roosevelt Conservation P'ship v. Salazar, 605 F. Supp. 2d 263, 269 (D.D.C. 2009) (deciding in a challenge to the Atlantic Rim project that BLM did not violate NEPA or FLPMA).

[51] *See supra* note 50.

[52] *See* BUREAU OF LAND MGMT., U.S. DEP'T OF THE INTERIOR, RECORD OF DECISION FOR THE DESIGNATION OF AREAS OF CRITICAL ENVIRONMENTAL CONCERN FOR THE ROAN PLATEAU: RESOURCE MANAGEMENT PLAN AMENDMENT AND ENVIRONMENTAL IMPACT STATEMENT 1 (2008), *available at* http://www.blm.gov/pgdata/etc/medialib/blm/co/programs/land_use_planning/rmp/roan_plateau/documents.Par.3928.File.dat/FinalRoanRODII_3_13_08.pdf.

[53] 43 C.F.R. § 3162.3-1(c) (2008).

[54] *Id.*

[55] *See* S. Utah Wilderness Alliance, 159 I.B.L.A. 220, 224 (2003).

[56] Pub. L. No. 109-58, 119 Stat. 604 (codified primarily in scattered sections of 42 U.S.C.)

"categorical exclusions" from NEPA compliance at the APD stage have been available in many cases, and NEPA compliance at the APD stage has been made less rigorous.[57] In addition to complying with NEPA, the Mineral Leasing Act provides that when an APD is filed, BLM must provide notice to the public of the proposed action.[58]

The outcome of this multistage oil and gas leasing and development process can be substantial environmental disturbance, such as the thousands of wells that have been planned and drilled in Wyoming's Pinedale Anticline and Jonah fields, and in the Powder River Basin.[59] Similar levels of activity are apparent in other parts of the West, such as in the Farmington area in New Mexico, the Piceance Basin in Colorado, the Uinta Basin in Utah, and in Montana's portion of the Powder River Basin.[60] It is this Article's premise that to prevent substantial environmental harm in these and many other environmentally significant areas, it is crucial that BLM

[57] *See* 42 U.S.C. § 15942(a), (b)(1)–(4) (2006) (presenting the Energy Policy Act of 2005's categorical exclusions). In September 2009, the United States Government Accountability Office (GAO) released a report entitled *Energy Policy Act of 2005: Greater Clarity Needed to Address Concerns with Categorical Exclusions for Oil and Gas Development Under Section 390 of the Act*. U.S. GOV'T ACCOUNTABILITY OFFICE, ENERGY POLICY ACT OF 2005: GREATER CLARITY NEEDED TO ADDRESS CONCERNS WITH CATEGORICAL EXCLUSIONS FOR OIL AND GAS DEVELOPMENT UNDER SECTION 390 OF THE ACT (2009), *available at* http://www.gao.gov/new.items/d09872.pdf. The GAO found that 6100 out of 22,000 APDs, or 28%, that had been filed between 2006 and 2008 were approved via categorical exclusion from NEPA. *Id.* at 12. Categorical exclusions were also used in another 1150 instances. *Id.* at "Highlights" (unnumbered page). The GAO also found that the use of categorical exclusions often was not in compliance with section 390 of the Energy Policy Act or BLM guidance on the use of categorical exclusions. *Id.* at 23. The report recommends that Congress take action to amend section 390 so as to clarify certain key terms, and that BLM take interim action to provide better oversight and guidance on the use of categorical exclusions. *Id.* at 53. BLM indicated to the GAO that it will take immediate steps to ensure the use of section 390 categorical exclusions are consistent with the Energy Policy Act of 2005 and BLM guidance. *Id.* at 54. The Forest Service has also adopted a categorical exclusion from NEPA for oil and gas development projects. 36 C.F.R. § 220.6(e)(17) (2009). This categorical exclusion is not based on the Energy Policy Act of 2005 categorical exclusions and is a separate Forest Service policy. *See* National Environmental Policy Act Procedures, 73 Fed. Reg. 43,084, 43,090–91 (July 24, 2008) (codified at 36 C.F.R. pt. 220). Issues related to Energy Policy Act of 2005 categorical exclusions will be considered further *infra* in the text accompanying notes 221–23.

[58] Mineral Leasing Act, 30 U.S.C. § 226(f) (2006).

[59] *See* W. Org. of Res. Councils v. Bureau of Land Mgmt., 591 F. Supp. 2d 1206, 1208 (D. Wyo. 2008) (reviewing a BLM decision to allow up to 51,000 coal bed methane wells in the Powder River Basin); BUREAU OF LAND MGMT., JONAH INFILL ROD, *supra* note 50, at 1; BUREAU OF LAND MGMT., PINEDALE ANTICLINE ROD, *supra* note 50, at 4.

[60] *See* S. Utah Wilderness Alliance, 177 I.B.L.A. 284, 284–85 (2009); *Gas Gathering Agreement in Powder River Basin: Coal Bed Methane Project Reached Between Pennaco Energy and TransMontaigne Unit, Bear Paw Energy Inc.*, BUS. WIRE, Mar. 24, 1999, http://findarticles.com/p/articles/mi_m0EIN/is_1999_March_24/ai_54191657 (last visited Apr. 18, 2010); Press Release, Nat'l Trust for Historic Pres., Coalition Applauds Bureau of Land Management for Withdrawing Eight Parcels of Land Near Chaco Canyon, New Mexico from Oil and Gas Lease Sale (Oct. 9, 2009), http://www.preservationnation.org/about-us/press-center/press-releases/2009/coalition-applauds-bureau-of.html (last visited Apr. 18, 2010); ExxonMobil, Colorado: Piceance Basin, http://www.exxonmobil.com/corporate/energy_project_piceance.aspx (last visited Apr. 18, 2010).

recognize the retained rights it still enjoys despite having issued an oil and gas lease and regulate this development accordingly.

B. The BLM Onshore Oil and Gas Leasing Process

Numerous provisions that govern oil and gas leasing can be found in the Mineral Leasing Act and in BLM's oil and gas leasing regulations.[61] For purposes of this Article it is not necessary to provide a detailed discussion of the leasing process, but some relevant provisions will be mentioned in this section. A user-friendly description of the leasing process can be found on the BLM website.[62] Information on particular lease sales can be found on BLM state office web pages.[63]

As mentioned, there are two means by which BLM can offer onshore oil and gas leases. Leases must first be made available for sale at a competitive oil and gas auction, which are held at least quarterly.[64] If no legally sufficient bids are received at the competitive sale, BLM can then make the leases available on a noncompetitive basis.[65] Leases not sold at a competitive oil and gas lease sale remain available for noncompetitive leasing for a period of two years after the competitive lease sale.[66]

The maximum size of a competitive lease parcel is 2560 acres (different limits apply in Alaska) and the maximum size of a noncompetitive parcel is 10,240 acres.[67] The primary term of a lease is for ten years and the lease will automatically continue in force so long as there is at least one well on the lease capable of producing oil and gas in paying quantities, or the lease has been committed to a "unitized" group of leases that have at least one well capable of producing in paying quantities.[68] A lease term can be extended for two years if actual drilling is being diligently prosecuted prior to the end of the primary term.[69]

The annual rental on a lease is $1.50 per acre, or fraction thereof, for the first five years of the lease and $2.00 per acre thereafter.[70] Royalties on production must be paid at a rate of 12.5% of the value of production removed.[71] Royalties and other monies received are paid to the United States Department of the Treasury, with fifty percent of that returned to the state

---

61 30 U.S.C. § 226(a)–(e) (2006); 43 C.F.R. pt. 3100 (2008).

62 Bureau of Land Mgmt., U.S. Dep't of the Interior, Oil and Gas, http://www.blm.gov/wo/st/en/prog/energy/oil_and_gas.html (last visited Apr. 18, 2010); *see also* Sansonetti & Murray, *supra* note 29, at 385–403 (discussing, among other things, the leasing process).

63 *See, e.g.*, Bureau of Land Mgmt., U.S. Dep't of the Interior, Competitive Lease Sale Notices & Results, http://www.blm.gov/wy/st/en/programs/energy/Oil_and_Gas/Leasing.html (last visited Apr. 18, 2010) (presenting Wyoming oil and gas lease sale information).

64 30 U.S.C. § 226(b)(1)(A) (2006); 43 C.F.R. §§ 3110.1(b), 3120.1-1 to -2 (2008).

65 30 U.S.C. § 226(b)(1)(A), (c) (2006); 43 C.F.R. §§ 3110.1(b), 3120.6 (2008).

66 30 U.S.C. § 226(b)(1)(A) (2006); 43 C.F.R. §§ 3110.1(b), 3120.6 (2008).

67 30 U.S.C. § 226(b)(1)(A) (2006); 43 C.F.R. §§ 3110.3-3(b), 3120.2-3 (2008).

68 30 U.S.C. § 226(e) (2006); 43 C.F.R. §§ 3107.2-1, 3107.3-1, 3110.3-1, 3120.2-1 (2008).

69 30 U.S.C. § 226(e) (2006); 43 C.F.R. § 3107.1 (2008).

70 30 U.S.C. § 226(d) (2006); 43 C.F.R. § 3103.2-2(a) (2008).

71 30 U.S.C. § 226(b)(1)(A), (c) (2006); 43 C.F.R. § 3103.3-1(a)(1) (2008).

where the oil or gas was produced.[72] In addition to rent and royalties, bonding is required prior to conducting surface disturbing activities to ensure compliance with lease terms and reclamation and restoration of impacted lands.[73] Bonding must be in an amount not less than $10,000 per lease or, in lieu of that, statewide bonds of $25,000 or nationwide bonds of $150,000 can be posted.[74]

Generally, BLM will issue a lease to a successful bidder after it receives the bid form and all money due.[75] A lease is effective the first day of the month following the month in which BLM signs the lease, although there are provisions allowing for the lease to be effective sooner.[76] However, the public can protest the sale of leases.[77] If this is done—and BLM often receives protests of lease parcels offered for sale at auction—the lease will not be issued until the protest is resolved, which often takes several months.[78] If the protest is rejected, BLM can issue the lease.[79] If a protest is upheld, the lease parcel will be withdrawn and fees, rentals, and bonus bids will be returned to the bidder.[80] However, a BLM decision to reject a protest is subject to appeal to the Interior Board of Land Appeals (IBLA).[81]

A BLM oil and gas lease issued as a result of this leasing process is made subject to a number of provisions and it also contains a number of terms. The next Part of this Article will discuss these terms and how they create an array of retained rights for BLM, allowing it to regulate oil and gas development in order to protect the natural environment.

IV. THE TERMS AND CONDITIONS OF BLM ONSHORE OIL AND GAS LEASES

The place to start in determining what rights BLM retains when it issues an onshore oil and gas lease is with the lease itself, the contractual agreement the government enters into when it issues a lease to a private

72 30 U.S.C. § 191(a) (2006).

73 43 C.F.R. § 3104.1(a) (2008).

74 *Id.* §§ 3104.2, 3104.3(a)–(b).

75 *Id.* §§ 3110.4(a), 3120.5-1(a)–(b), 3120.5-2, 3120.5-3(a).

76 *Id.* §§ 3110.3-2, 3120.2-2.

77 *Id.* §§ 4.450-2, 3120.1-3; *see also* BUREAU OF LAND MGMT., U.S. DEP'T OF THE INTERIOR, NOTICE OF COMPETITIVE OIL AND GAS LEASE SALE, at i–ii, viii–ix (2009), *available at* http://www.blm.gov/pgdata/etc/medialib/blm/wy/programs/energy/og/leasing/2009.Par.62062.File.dat/12list.pdf (presenting information on BLM's competitive oil and gas lease sale on December 1, 2009, in Wyoming and describing protest procedures).

78 BUREAU OF LAND MGMT., *supra* note 77, at vi.

79 *Id.* at ix.

80 *Id.*

81 *Id.*; 43 C.F.R. §§ 4.410(a), 3120.1-3 (2008). However, an appeal to the IBLA is not subject to an automatic stay while the appeal is considered, so lease parcels can be issued after a protest is rejected even if an appeal is filed. *See id.* § 3120.1-3 (providing that "[n]o action pursuant to the regulations in this subpart shall be suspended under § 4.21(a) of this title due to an appeal from a decision by the authorized officer to hold a lease sale" and also providing that the authorized officer "may" suspend a lease on a parcel while considering a protest or appeal).

party. BLM's current regulations provide that "[a] lease shall be issued only on the standard form approved by the Director [of BLM]."[82]

A. Versions of the BLM Oil and Gas Lease Form

Over the years since the Mineral Leasing Act was enacted in 1920, BLM has used several lease forms to issue leases under the pre-FOOGLRA and post-FOOGLRA leasing frameworks. Currently, BLM leases are presented on Form 3100-11, the "Offer to Lease and Lease for Oil and Gas."[83] Based on information received from BLM's Forms Manager in Denver, five versions of Form 3100-11 were used between 1984 and 2006.[84] There were no earlier versions of the form on file. The earliest version of Form 3100-11 is dated March 1984.[85] Later versions dated June 1988, October 1992, February 2003, and July 2006 were also on file.[86] In October 2008, BLM adopted a further revision to Form 3100-11, and this is now the most recent version of the standard lease form.[87] Thus, six versions of Form 3100-11 may apply to leases in existence today.

Despite the lack of earlier versions of the lease form that are on file in the BLM archives, upon request I received three examples of earlier leases from the BLM Wyoming state office.[88] These leases were issued in 1954, 1965, and 1971.[89] This sampling of older lease forms coupled with the six archived

---

[82] 43 C.F.R. § 3101.1-1 (2008).

[83] *See* BUREAU OF LAND MGMT., U.S. DEP'T OF INTERIOR, FORM 3100-11, OFFER TO LEASE AND LEASE FOR OIL AND GAS 1 (2008), *available at* http://www.blm.gov/pgdata/etc/medialib/blm/mt/blm_programs/energy/oil_and_gas/leasing/lease_sales/2009/jan.Par.6548.File.dat/3100-11.pdf.

[84] Mailed Copies of Lease Forms from Karen Wrenn, Forms Manager, Denver Office, Bureau of Land Mgmt., to Rebekah Smith (Aug. 13, 2008) (on file with author). These forms included versions published in 1984, 1988, 1992, 2003, and 2006. BUREAU OF LAND MGMT., U.S. DEP'T OF INTERIOR, FORM 3100-11, OFFER TO LEASE AND LEASE FOR OIL AND GAS (1984) [hereinafter BUREAU OF LAND MGMT., 1984 LEASE FORM]; BUREAU OF LAND MGMT., U.S. DEP'T OF INTERIOR, FORM 3100-11, OFFER TO LEASE AND LEASE FOR OIL AND GAS (1988) [hereinafter BUREAU OF LAND MGMT., 1988 LEASE FORM]; BUREAU OF LAND MGMT., U.S. DEP'T OF INTERIOR, FORM 3100-11, OFFER TO LEASE AND LEASE FOR OIL AND GAS (1992) [hereinafter BUREAU OF LAND MGMT., 1992 LEASE FORM]; BUREAU OF LAND MGMT., U.S. DEP'T OF INTERIOR, FORM 3100-11, OFFER TO LEASE AND LEASE FOR OIL AND GAS (2003) [hereinafter BUREAU OF LAND MGMT., 2003 LEASE FORM]; BUREAU OF LAND MGMT., U.S. DEP'T OF INTERIOR, FORM 3100-11, OFFER TO LEASE AND LEASE FOR OIL AND GAS (2006) [hereinafter BUREAU OF LAND MGMT., 2006 LEASE FORM].

[85] BUREAU OF LAND MGMT., 1984 LEASE FORM, *supra* note 84.

[86] *See* sources cited *supra* note 84.

[87] *See* BUREAU OF LAND MGMT., *supra* note 83.

[88] Mailed Copies of Lease Forms from Vickie Mistarka, Wyo. State Office, Bureau of Land Mgmt., to author (Feb. 2009) (on file with author). These forms included versions in use in 1954, 1965, and 1971. BUREAU OF LAND MGMT., U.S. DEP'T OF INTERIOR, FORM 4-1158, OFFER TO LEASE AND LEASE FOR OIL AND GAS (1954) [hereinafter BUREAU OF LAND MGMT., 1954 LEASE FORM]; BUREAU OF LAND MGMT., U.S. DEP'T OF INTERIOR, FORM 4-1158, OFFER TO LEASE AND LEASE FOR OIL AND GAS (1965) [hereinafter BUREAU OF LAND MGMT., 1965 LEASE FORM]; BUREAU OF LAND MGMT., U.S. DEP'T OF INTERIOR, FORM 3120-19, LEASE FOR OIL AND GAS (1971) [hereinafter BUREAU OF LAND MGMT., 1971 LEASE FORM].

[89] *See* sources cited *supra* note 88. The 1954 lease was issued on Form 4-1158 (fourth edition), dated September 1953; the 1965 lease was issued on Form 4-1158 (ninth edition), dated August 1961; and the 1971 lease was issued on Form 3120-19, dated May 1968.

versions of Form 3100-11 likely constitute a reasonably complete picture of lease forms that have been used over the years, allowing an analysis of what rights have been retained by BLM when it issues an oil and gas lease. The nine lease forms considered in this Article are on file with the author and are available upon request. In addition, the version of Form 3100-11 currently in use—the October 2008 form—is available via the hyperlink referenced in footnote 83.

Table 1: Number of Currently Active Federal Oil and Gas Leases in the Eleven Western States Issued During the Indicated Time Period when Various BLM Oil and Gas Lease Forms Were in Effect or Presumed to Have Been in Effect[90]

Date Lease Form Was Made Effective	Period of Time Lease Form Was in Effect or Is Presumed to Have Been in Effect	Number of Still-Active Leases in the Eleven Western States Issued During This Time Period
September 1953	1920–1954[91]	4383
August 1961	1955–1965[92]	1948
May 1968	1966–February 1984[93]	6755
March 1984	March 1984–May 1988[94]	889
June 1988	June 1988–September 1992	1113
October 1992	October 1992–January 2003	11,442
February 2003	February 2003–June 2006	13,819
July 2006	July 2006–September 2008	6469
October 2008	October 2008–Present	1524
	TOTAL	48,342

Working from these lease forms, I have assessed the number of leases that are currently active in the eleven western states that were issued in the time periods when the various versions of the leases were in effect or when it is presumed the lease forms were in effect—i.e., the 1954, 1965, and 1971 lease examples have presumed periods of effectiveness; the period when a

[90] *Id.*

[91] The time period the lease is presumed to have been in effect is based on an example of a lease that was issued on July 9, 1954, provided by the BLM Wyoming state office. This lease form is dated September 1953, but it is assumed similar leases were in effect from the enactment of the Mineral Leasing Act in 1920 through the date of this lease.

[92] The time period the lease is presumed to have been in effect is based on an example of a lease that was issued on January 20, 1965, provided by the BLM Wyoming state office. This lease form is dated August 1961, but it is assumed similar leases were in effect from the date of the 1954 lease through the date of this lease.

[93] The time period the lease is presumed to have been in effect is based on an example of a lease that was issued on March 29, 1971, provided by the BLM Wyoming state office. This lease form is dated May 1968, but it is assumed similar leases were in effect from the date of the 1965 lease through the date of the first lease available in BLM's archives, which is March 1984.

[94] This and the subsequent lease forms are available in BLM's archives, so the dates this lease and the subsequent leases were in effect can be determined with assurance and is not presumed.

lease form was in effect is certain with respect to the six 3100-11 forms that have been archived since 1984. Table 1 presents the results of this analysis.[95]

Knowing how many still-active leases were issued during the time periods when each version of the lease was in effect or is presumed to have been in effect allows an analysis of what terms and conditions of a lease were effective at various times and thus allows consideration of what rights have been retained by BLM. While the varying periods when different lease forms were in effect or presumed to have been in effect makes it impossible to discern if there were periods of time when greater rates of leasing were occurring, it is apparent the majority of currently active leases were issued since 1984 when the best records of operative lease forms are available.

B. The Terms of Federal Onshore Oil and Gas Leases

The nine lease forms all start from the proposition that the federal government is granting the lessee the exclusive right to fully develop any oil and gas that may be found on the leasehold and that any necessary facilities that are required to extract the oil and gas can be constructed.[96] The 1954 lease states,

> The lessee is granted the exclusive right and privilege to drill for, mine, extract, remove, and dispose of all the oil and gas deposits, except helium gas, in the lands leased, together with the right to construct and maintain thereupon, all . . . structures necessary to the full enjoyment thereof.[97]

The 1965 and 1971 leases make the same provision.[98] Beginning with the March 1984 lease form it is stated that "[t]his lease is issued granting the exclusive right to drill for, mine, extract, remove and dispose of all the oil and gas (except helium) in the lands described . . . together with the right to build and maintain necessary improvements thereupon."[99] This same language is contained in the June 1988, October 1992, February 2003, July 2006, and October 2008 lease forms.[100]

---

[95] These data were generated from BLM's LR2000 database. Bureau of Land Mgmt., U.S. Dep't of the Interior, Bureau of Land Management's Land & Mineral Legacy Rehost 2000 System–LR 2000, http://www.blm.gov/lr2000/ (last visited Apr. 18, 2010). A search was done for all currently active oil and gas leases within the different time frames by state in the 11 western states.

[96] In addition to granting the right to develop oil and gas, the leases also make provisions for other matters not directly implicating BLM's retained rights relative to protection of the natural environment. These include provisions for payment of rentals, royalties, and bonds, among other things. *See* BUREAU OF LAND MGMT., *supra* note 83, at 1.

[97] BUREAU OF LAND MGMT., 1954 LEASE FORM, *supra* note 88, at 1.

[98] BUREAU OF LAND MGMT., 1965 LEASE FORM, *supra* note 88, at 1; BUREAU OF LAND MGMT., 1971 LEASE FORM, *supra* note 88, at 1.

[99] BUREAU OF LAND MGMT., 1984 LEASE FORM, *supra* note 84, at 1.

[100] BUREAU OF LAND MGMT., 1988 LEASE FORM, *supra* note 84, at 1; BUREAU OF LAND MGMT., 1992 LEASE FORM, *supra* note 84, at 1; BUREAU OF LAND MGMT., 2003 LEASE FORM, *supra* note 84, at 1; BUREAU OF LAND MGMT., 2006 LEASE FORM, *supra* note 84, at 1; BUREAU OF LAND MGMT., *supra* note 83, at 1. The "exclusive right" to develop all of the oil and gas that might be found on

But in all of these lease forms the government also retains a number of rights allowing it to condition development so as to protect the environment. In the 1954 lease form, the lease is made "subject to" the provisions of the Mineral Leasing Act and reasonable regulations not inconsistent with the terms of the lease and the provisions in the lease.[101] The lessee agrees to a number of terms and the lessor reserves several rights. The lessee agrees "[t]o take such reasonable steps as may be needed to prevent operations from unnecessarily" causing or contributing to soil erosion or damaging forage or timber growth, polluting waters, damaging crops, or damaging range improvements.[102] It is also agreed that upon conclusion of operations the lessee will restore the surface to its former condition, and the lessor is permitted to prescribe the steps and restoration to be made.[103] The lessee further agrees that rental and royalty suspension may occur if the Secretary of the Interior finds such is necessary "for the purpose of encouraging the greatest ultimate recovery of oil or gas and in the interest of conservation of natural resources."[104] Moreover, the lessee agrees to "plug properly and effectively all wells ... before abandoning the same."[105] Perhaps most significantly, it is agreed in section 4 of the 1954 lease

> that the rate of prospecting and developing and the quantity and rate of production from the lands covered by this lease shall be subject to control in the public interest by the Secretary of the Interior, and in the exercise of his judgment the Secretary may take into consideration, among other things, Federal laws, State laws, and regulations issued thereunder.[106]

The lessor also reserved the right to dispose of the surface of the leased lands if not necessary for the extraction of the oil and gas and the right "to dispose of any resource in such lands" if it would not "unreasonably interfere" with lease operations.[107]

The 1965 lease provides that the lease is subject to the same conditions, that the lessee agrees to the same provisions, and that lessor has the same reserved rights.[108] The 1971 lease, too, makes these provisions, but the agreement to not unnecessarily damage enumerated natural resources is expanded to include agreeing not to pollute the air as well as water, and to

a lease should probably be viewed as creating a right for the lessee to ensure no other entity seeks to develop oil and gas on a lease, not as creating rights against the government that could prevent it from exercising its retained rights. An exclusive right is "[o]ne which only the grantee thereof can exercise, and from which all others are prohibited or shut out." BLACK'S LAW DICTIONARY 565 (6th ed. 1990).

101 BUREAU OF LAND MGMT., 1954 LEASE FORM, *supra* note 88, at 2.

102 *Id.*

103 *Id.*

104 *Id.*

105 *Id.*

106 *Id.*

107 *Id.*

108 BUREAU OF LAND MGMT., 1965 LEASE FORM, *supra* note 88.

protecting fossil, historic, or prehistoric resources and other antiquities that are found.[109]

Beginning with the March 1984 lease form, the form takes on what might be called its modern form, and it will be referred to as such henceforth.[110] Many of the provisions in the 1954, 1965, and 1971 leases are continued, but often in somewhat modified form. In this modern form, following the statement of what the lease grants—the exclusive right to extract all of the oil and gas on a leasehold—there immediately follows a statement of what the lease is made "subject to." The lease states,

> Rights granted are subject to applicable laws, the terms, conditions, and attached stipulations of this lease, the Secretary of the Interior's regulations and formal orders in effect as of lease issuance, and to regulations and formal orders hereafter promulgated when not inconsistent with lease rights granted or specific provisions of this lease.[111]

This same statement is made in the June 1988, October 1992, February 2003, July 2006, and October 2008 lease forms.[112]

There are several relevant lease terms in the modern lease form that the rights granted to the lessee are made subject to. In section 2 the provision allowing suspension of royalties is maintained. But now, rather than being available "for the purpose of encouraging the greatest ultimate recovery of oil or gas and in the interest of conservation of natural resources,"[113] this action can be taken when necessary "to encourage the greatest ultimate recovery of the leased resources, or [as] is otherwise justified."[114] The agreement to allow the Secretary of the Interior to specify the rate of development is maintained but is slightly modified in section 4 of the modern lease forms: "Lessor reserves right to specify rates of development and production in the public interest . . . if deemed necessary for proper development and operation of area, field, or pool embracing these leased lands."[115] In section 7 of the modern lease forms it is stated that if the impacts from mining "would be substantially different or greater" than normal, "lessor reserves the right to deny approval of such operations."[116]

---

109 BUREAU OF LAND MGMT., 1971 LEASE FORM, *supra* note 88, at 2.

110 *See* BUREAU OF LAND MGMT., *supra* note 83.

111 BUREAU OF LAND MGMT., 1984 LEASE FORM, *supra* note 84, at 1.

112 BUREAU OF LAND MGMT., 1988 LEASE FORM, *supra* note 84, at 1; BUREAU OF LAND MGMT., 1992 LEASE FORM, *supra* note 84, at 1; BUREAU OF LAND MGMT., 2003 LEASE FORM, *supra* note 84, at 1; BUREAU OF LAND MGMT., 2006 LEASE FORM, *supra* note 84, at 1; BUREAU OF LAND MGMT., *supra* note 83, at 1.

113 *See, e.g.*, BUREAU OF LAND MGMT., 1971 LEASE FORM, *supra* note 88, at 1.

114 BUREAU OF LAND MGMT., *supra* note 83, at 2.

115 BUREAU OF LAND MGMT., 1984 LEASE FORM, *supra* note 84, at 2; BUREAU OF LAND MGMT., 1988 LEASE FORM, *supra* note 84, at 2; BUREAU OF LAND MGMT., 1992 LEASE FORM, *supra* note 84, at 2; BUREAU OF LAND MGMT., 2003 LEASE FORM, *supra* note 84, at 2; BUREAU OF LAND MGMT., 2006 LEASE FORM, *supra* note 84, at 3; BUREAU OF LAND MGMT., *supra* note 83, at 3.

116 BUREAU OF LAND MGMT., 1984 LEASE FORM, *supra* note 84, at 2; BUREAU OF LAND MGMT., 1988 LEASE FORM, *supra* note 84, at 2; BUREAU OF LAND MGMT., 1992 LEASE FORM, *supra* note 84,

And in section 12 it is provided that when the leased lands are returned to the lessor, the lessee will reclaim the land as specified by the lessor and remove equipment and improvements not deemed necessary by the lessor for the preservation of producible wells.[117] These same provisions are made in all of the modern lease forms.

But the most significant term in the modern lease forms relative to retained rights allowing protection of the natural environment is section 6 of the lease form. In the March 1984, June 1988, October 1992, and February 2003 forms, this term provides the following:

> Lessee shall conduct operations in a manner that minimizes adverse impacts to the land, air, and water, to cultural, biological, visual, and other resources, and to other land uses or users. Lessee shall take reasonable measures deemed necessary by lessor to accomplish the intent of this section. To the extent consistent with lease rights granted, such measures may include, but are not limited to, modification to siting or design of facilities, timing of operations, and specification of interim and final reclamation measures. Lessor reserves the right to continue existing uses and to authorize future uses upon or in the leased lands, including the approval of easements or rights-of-way. Such uses shall be conditioned so as to prevent unnecessary or unreasonable interference with rights of lessee.[118]

Section 6 goes on to provide that prior to any surface disturbance, "lessee shall contact lessor to be apprised of procedures to be followed and modifications or reclamation measures that may be necessary."[119] This section allows for inventories and studies "to determine the extent of impacts to other resources," although these apparently are limited to "minor inventories" or "short term special studies."[120] Section 6 concludes by requiring that if during the conduct of operations "threatened or endangered species, objects of historic or scientific interest, or substantial unanticipated environmental effects are observed, lessee shall immediately contact the lessor" and "shall cease any operations that would result in the destruction of such species or objects."[121] As indicated, these provisions appeared in the

---

at 2; BUREAU OF LAND MGMT., 2003 LEASE FORM, *supra* note 84, at 2; BUREAU OF LAND MGMT., 2006 LEASE FORM, *supra* note 84, at 3; BUREAU OF LAND MGMT., *supra* note 83, at 3.

117 BUREAU OF LAND MGMT., 1984 LEASE FORM, *supra* note 84, at 1.

118 BUREAU OF LAND MGMT., 1984 LEASE FORM, *supra* note 84, at 1; BUREAU OF LAND MGMT., 1988 LEASE FORM, *supra* note 84, at 1; BUREAU OF LAND MGMT., 1992 LEASE FORM, *supra* note 84, at 1; BUREAU OF LAND MGMT., 2003 LEASE FORM, *supra* note 84, at 1.

119 BUREAU OF LAND MGMT., 1984 LEASE FORM, *supra* note 84, at 2; BUREAU OF LAND MGMT., 1988 LEASE FORM, *supra* note 84, at 2; BUREAU OF LAND MGMT., 1992 LEASE FORM, *supra* note 84, at 2; BUREAU OF LAND MGMT., 2003 LEASE FORM, *supra* note 84, at 2.

120 BUREAU OF LAND MGMT., 1984 LEASE FORM, *supra* note 84, at 2; BUREAU OF LAND MGMT., 1988 LEASE FORM, *supra* note 84, at 2; BUREAU OF LAND MGMT., 1992 LEASE FORM, *supra* note 84, at 2; BUREAU OF LAND MGMT., 2003 LEASE FORM, *supra* note 84, at 2.

121 BUREAU OF LAND MGMT., 1984 LEASE FORM, *supra* note 84, at 2; BUREAU OF LAND MGMT., 1988 LEASE FORM, *supra* note 84, at 2; BUREAU OF LAND MGMT., 1992 LEASE FORM, *supra* note 84, at 2; BUREAU OF LAND MGMT., 2003 LEASE FORM, *supra* note 84, at 2.

March 1984 through February 2003 lease forms; however, the July 2006 and October 2008 lease forms changed the language in Section 6.[122]

In the July 2006 and October 2008 versions of the lease, where previously the word "shall" had been used in section 6 it was replaced with the word "must."[123] So, for example, the prior requirement that lessee "shall" conduct operations so as to minimize adverse impacts was changed to a requirement that lessee "must" conduct operations to minimize such impacts.[124] And the former requirement that lessee "shall" take reasonable measures deemed necessary by lessor to accomplish this intent was replaced with a statement that lessee "must" take reasonable measures so as to accomplish the intent of minimizing adverse impacts.[125]

The significance of this wording change may be debatable but is probably minimal. In construing the word shall, the United States Supreme Court offered that "[t]hough 'shall' generally means 'must,'" the use, or misuse, of the word "shall" was apparent in the usage of some legal writers because they posited less-than-mandatory definitions of "shall."[126] "Must" means to "be obliged or required by morality, law, or custom,"[127] and "shall" means something that will take place or exist in the future or an order, promise, requirement, or obligation.[128] *Black's Law Dictionary* states that "must," "like the word 'shall,' is primarily of mandatory effect,"[129] and that shall "is generally imperative or mandatory."[130] It goes on to state that "shall" "in ordinary usage means 'must' and is inconsistent with a concept of discretion."[131] Standard works presenting the meaning of words as construed by the courts also indicate that "shall" and "must" are generally construed in a mandatory light.[132]

---

122 *Compare* BUREAU OF LAND MGMT., 1984 LEASE FORM, *supra* note 84, at 2, BUREAU OF LAND MGMT., 1988 LEASE FORM, *supra* note 84, at 2, BUREAU OF LAND MGMT., 1992 LEASE FORM, *supra* note 84, at 2, *and* BUREAU OF LAND MGMT., 2003 LEASE FORM, *supra* note 84, at 2, *with* BUREAU OF LAND MGMT., 2006 LEASE FORM, *supra* note 84, at 3, *and* BUREAU OF LAND MGMT., *supra* note 83.

123 *Compare* BUREAU OF LAND MGMT., 2006 LEASE FORM, *supra* note 84, at 3, *and* BUREAU OF LAND MGMT., *supra* note 83, at 3, *with* BUREAU OF LAND MGMT., 1984 LEASE FORM, *supra* note 84, at 2, BUREAU OF LAND MGMT., 1988 LEASE FORM, *supra* note 84, at 2, BUREAU OF LAND MGMT., 1992 LEASE FORM, *supra* note 84, at 2, *and* BUREAU OF LAND MGMT., 2003 LEASE FORM, *supra* note 84, at 2.

124 *Compare* BUREAU OF LAND MGMT., 1984 LEASE FORM, *supra* note 84, at 2, BUREAU OF LAND MGMT., 1988 LEASE FORM, *supra* note 84, at 2, BUREAU OF LAND MGMT., 1992 LEASE FORM, *supra* note 84, at 2, *and* BUREAU OF LAND MGMT., 2003 LEASE FORM, *supra* note 84, at 2, *with* BUREAU OF LAND MGMT., 2006 LEASE FORM, *supra* note 84, at 3, *and* BUREAU OF LAND MGMT., *supra* note 83.

125 *Compare* BUREAU OF LAND MGMT., 1984 LEASE FORM, *supra* note 84, at 2, BUREAU OF LAND MGMT., 1988 LEASE FORM, *supra* note 84, at 2, BUREAU OF LAND MGMT., 1992 LEASE FORM, *supra* note 84, at 2, *and* BUREAU OF LAND MGMT., 2003 LEASE FORM, *supra* note 84, at 2, *with* BUREAU OF LAND MGMT., 2006 LEASE FORM, *supra* note 84, at 3, *and* BUREAU OF LAND MGMT., *supra* note 83.

126 Gutierrez de Martinez v. Lamagno, 515 U.S. 417, 432–33 n.9 (1995).

127 THE AMERICAN HERITAGE DICTIONARY OF THE ENGLISH LANGUAGE 1160 (4th ed. 2000).

128 *Id.* at 1598.

129 BLACK'S LAW DICTIONARY 1019 (6th ed. 1990).

130 *Id.* at 1375.

131 *Id.*

132 *See* 27A WORDS AND PHRASES 663–90 (2007 & Supp. 2009) (presenting constructions of "must"); 39 *id.* at 173–229 (2006 & Supp. 2009) (presenting constructions of "shall").

It is apparent from the nine versions of the lease reviewed that BLM has retained substantial rights allowing it to protect the natural environment despite having granted lessees a right to develop the oil and gas that might be found on a lease. The leases issued prior to 1984 appear to retain somewhat fewer or lesser rights than those issued after 1984, but even in these earlier leases the lessee agreed "[t]o take such reasonable steps" as are needed to prevent certain categories of resource damage.[133] And probably most significantly it was agreed by BLM and the lessee

> that the rate of prospecting and developing and the quantity and rate of production . . . shall be subject to control in the public interest by the Secretary of the Interior, and in the exercise of his judgment the Secretary may take into consideration, among other things, Federal laws, State laws, and regulations issued thereunder.[134]

After March 1984, section 6 of the lease form required that in the conduct of operations, the lessee was required to minimize adverse impacts to a number of resources and specified that reasonable measures deemed necessary by lessor could be specified to ensure this was accomplished, so long as consistent with the lease rights granted.[135] These reasonable measures could include, but were not limited to, modifications to the siting or design of facilities, timing of operations, and the specification of interim and final reclamation measures.[136] The modern lease forms continued to specify that the "[l]essor reserves the right to specify rates of development and production in the public interest."[137] In the modern leases, the entire lease is made "subject to" applicable laws; the terms, conditions, and stipulations of the lease; the regulations and formal orders that are in place when the lease is issued; and later-adopted regulations and formal orders, if not inconsistent with the lease rights granted.[138] So again, all lease forms have retained a number of rights to the government that allow it to substantially protect the natural environment despite having issued a lease that grants the "exclusive right" to remove all of the oil and gas that might be found on a leasehold.

C. BLM's 43 C.F.R. § 3101.1-2 Regulation

Another important determinant of what rights and limitations have been created under a BLM onshore oil and gas lease besides the terms and conditions in the standard lease form are the provisions in the BLM leasing

---

133 *See, e.g.*, BUREAU OF LAND MGMT., 1954 LEASE FORM, *supra* note 88, at 2; BUREAU OF LAND MGMT., 1971 LEASE FORM, *supra* note 88, at 2.

134 BUREAU OF LAND MGMT., 1954 LEASE FORM, *supra* note 88, at 2; BUREAU OF LAND MGMT., 1965 LEASE FORM, *supra* note 88, at 2; BUREAU OF LAND MGMT., 1971 LEASE FORM, *supra* note 88, at 2.

135 *See, e.g.*, BUREAU OF LAND MGMT., *supra* note 83, at 3.

136 *Id.*

137 *Id.*

138 *Id.* at 1.

regulation found at 43 C.F.R. § 3101.1-2.[139] In this Part I will first present the language of the § 3101.1-2 regulation, then discuss its "reasonable measures" provision which mirrors that in section 6 of the modern lease form, and follow that with a consideration of further BLM guidance interpreting the § 3101.1-2 regulation.

1. The Provisions of the § 3101.1-2 Regulation

This regulation in its current form was promulgated on May 16, 1988.[140] Consequently, this regulation would not specifically or necessarily have been made applicable to leases issued prior to May 1988. But, as Table 1 shows, only twenty-nine percent of the leases that are currently in effect in the eleven western states were issued before this regulation was promulgated and seventy-one percent were issued after its adoption. The regulation provides in full that

> [a] lessee shall have the right to use so much of the leased lands as is necessary to explore for, drill for, mine, extract, remove and dispose of all the leased resource in a leasehold subject to: Stipulations attached to the lease; restrictions deriving from specific, nondiscretionary statutes; and such reasonable measures as may be required by the authorized officer to minimize adverse impacts to other resource values, land uses or users not addressed in the lease stipulations at the time operations are proposed. To the extent consistent with lease rights granted, such reasonable measures may include, *but are not limited to*, modification to siting or design of facilities, timing of operations, and specification of interim and final reclamation measures. *At a minimum*, measures shall be deemed consistent with lease rights granted provided that they do not: require relocation of proposed operations by more than 200 meters; require that operations be sited off the leasehold; or prohibit new surface disturbing operations for a period in excess of 60 days in any lease year.[141]

In addition, BLM's regulations define the term "operating right," which is "the interest created out of a lease authorizing the holder of that right to enter upon the leased lands to conduct drilling and related operations, including production of oil or gas from such lands in accordance with the terms of the lease."[142]

2. Reasonable Measures

In addition to making a lease subject to stipulations and specific, nondiscretionary statutes, issues that will be addressed below,[143] the

---

139 43 C.F.R. § 3101.1-2 (2008).

140 Oil and Gas Leasing, Geothermal Resources Leasing, 53 Fed. Reg. 17,340, 17,352 (May 16, 1988).

141 43 C.F.R. § 3101.1-2 (2008) (emphasis added).

142 *Id.* § 3100.0-5(d).

143 *See* discussion *infra* Parts V.B–C.

§ 3101.1-2 regulation provides that "reasonable measures" may be required so as to minimize adverse impacts to the environment and other resources.[144] So long as consistent with the lease rights granted, these reasonable measures may include, "but are not limited to," modification to siting and design of facilities, timing of operations, and specification of reclamation measures.[145] Given that modern versions of the lease form make these same provisions in section 6, it seems unlikely that "reasonable measures" that might be demanded would be inconsistent with the lease rights granted, so long as any oil and gas can still be extracted. And the term in older leases specifying that the rate of prospecting and development is subject to control "in the public interest" does not indicate that reasonable measures could not be required of operations on these older leases as well.

The provisions in the § 3101.1-2 regulation and section 6 of the modern lease appear to be complimentary and should be read together. However, the § 3101.1-2 regulation may attempt to shrink the potential scope of reasonable measures by providing that

> [a]t a minimum, [reasonable] measures shall be deemed consistent with lease rights granted provided that they do not: require relocation of proposed operations by more than 200 meters; require that operations be sited off the leasehold; or prohibit new surface disturbing operations for a period in excess of 60 days in any lease year.[146]

This provision, often called the "200-meter 60-day rule," is sometimes cited as a limit to BLM's ability to condition development. BLM or lessees sometimes claim that, in the absence of a stipulation or specific, nondiscretionary statute, the only "reasonable measures" that can be imposed are those in compliance with the 200-meter 60-day "rule."[147] This restricted view of the regulation is unwarranted.

For one thing, the regulation is specific that these limited measures, which have been defined as consistent with the lease rights granted and thus

---

144 43 C.F.R. § 3101.1-2 (2008).

145 *Id.*

146 *Id.*

147 *See, e.g.*, BUREAU OF LAND MGMT., U.S. DEP'T OF THE INTERIOR, BLM MANUAL HANDBOOK 3110-1, OIL AND GAS ADJUDICATION HANDBOOK: ISSUANCE OF LEASES §§ 3101.06.B, 3101.06.B.1, 3101.12 (1996) (on file with the author) (stating that conditions of approval will impose requirements "by not more than" the limitations in the 200-meter 60-day rule); PINEDALE FIELD OFFICE, BUREAU OF LAND MGMT., DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE PINEDALE RESOURCE MANAGEMENT PLAN app. 7, at A7-1 (2007), *available at* http://www.blm.gov/pgdata/etc/medialib/blm/wy/programs/planning/rmps/pinedale/deis/appendices.Par.48971.File.dat/Appendix07.pdf ("[T]he [standard lease terms] allow the authorized officer to move a well or other facility up to 200 meters or delay operations for up to 60 days in a year."); Instruction Memorandum No. WY-2010-12 from State Dir., Wyo. State Office, Bureau of Land Mgmt., to Dist. Managers & Deputy State Dirs. 12 (Dec. 29, 2009), *available at* http://www.blm.gov/pgdata/etc/medialib/blm/wy/resources/cfoia/IMs/2010.Par.61358.File.dat/wy2010-012.pdf (presenting the BLM Wyoming state office Instruction Memorandum regarding sage-grouse conservationand stating, "BLM may, to some degree, exceed the siting and timing limitations set forth in 43 C.F.R. § 3101.1-2").

are "reasonable," are "a minimum" of what is consistent with lease rights.[148] Moreover, the final rulemaking, which addressed comments in response to the proposed rule about the definition of "reasonable measures," clarifies the meaning of "reasonable" in the context of the § 3101.1-2 regulation.[149] BLM stated, "The final rulemaking provides that the Bureau, at a minimum, can require relocation of proposed operations by 200 meters and can prohibit new surface disturbance for a period of 60 days, and that such requirements are consistent with the lease rights granted."[150] BLM then stated that "the authority of the Bureau to prescribe 'reasonable,' but more stringent, protection measures is not affected by the final rulemaking."[151]

Quite simply, the 200-meter 60-day rule establishes a floor, not a ceiling, as to the reasonable measures BLM may require. The specific terms in section 6 of the standard lease form certainly do not limit BLM's authority to just require reasonable measures that comply with the 200-meter 60-day rule, which the lease contract does not even mention. It may be worth noting that the modern version of the lease form—specifically the March 1984 version—predated the § 3101.1-2 regulation by at least four years, so BLM certainly developed the May 1988 § 3101.1-2 regulation in recognition of the existing provisions in its lease form that were in use at the time, namely those in section 6, which do not limit reasonable measures to just those stated in the 200-meter 60-day rule.[152]

In considering supplemental mitigation measures required by BLM to protect the greater sage-grouse (*Centrocercus urophasianus*), the Interior Board of Land Appeals (IBLA) rejected an interpretation of the § 3101.1-2 regulation that would not allow reasonable measures beyond those mentioned in the 200-meter 60-day rule.[153] It stated, "[This] constrained interpretation of a 'reasonable measure' is at odds with the plain language of the regulation, which describes what measures 'at a minimum' are deemed consistent with lease rights, and does not purport to prohibit as unreasonable *per se* measures that are more stringent."[154] What is reasonable should be determined by what is needed to minimize adverse impacts while still allowing access to any oil and gas, not the predetermined minimum limits mentioned in the 200-meter 60-day rule.

3. Further BLM Guidance on the § 3101.1-2 Regulation

After issuing the § 3101.1-2 regulation, BLM determined there was potential for confusion and disagreement about how the § 3101.1-2 regulation should be interpreted. In an Instruction Memorandum (IM) issued

148 43 CFR § 3101.1-2 (2008).

149 Oil and Gas Leasing, Geothermal Resources Leasing, 53 Fed. Reg. 17,340, 17,341 (May 16, 1988).

150 *Id.*

151 *Id.*

152 *See id.*; BUREAU OF LAND MGMT., 1984 LEASE FORM, *supra* note 84, at 2.

153 Yates Petroleum Corp., 176 I.B.L.A. 144, 156 (2008).

154 *Id.*

on December 3, 1991, BLM attempted to clarify the requirements of the § 3101.1-2 regulation.[155] Using the term "reserved authority," BLM stated that "[w]ithin this ... authority, the BLM may impose additional mitigation measures [beyond stipulations] to ensure that proposed operations minimize adverse impacts to other resources" so long as consistent with lease rights granted.[156] More specifically, BLM determined that the requirement in the Federal Land Policy and Management Act of 1976 for BLM to "take any action necessary to prevent unnecessary or undue degradation of the [public] lands"[157] served as a basis to require reasonable measures in excess of the 200-meter 60-day rule.[158] Approaching imposition of reasonable measures through use of this FLPMA standard was seen as placing "the resolution of this issue clearly within the concept of striking the best multiple use balance."[159] However, BLM then went on to narrow the application of this FLPMA statutory standard by imposing a requirement that the need for any reasonable measures required to comply with the unnecessary or undue degradation clause must be "clearly and convincingly documented" based on a site-specific analysis.[160]

Under the terms of IM 92-67, its provisions were to be incorporated into BLM Manual MS-3101, and BLM has done this.[161] The manual generally restates the language from the IM, providing that, among other things, "[t]he clear evidence and convincing need" for conditions of approval must be demonstrated on a site-specific basis.[162] And, as was true in the IM, this requirement was focused on providing for compliance with FLPMA unnecessary or undue degradation clause, not any other statutory requirements.

The requirement for clear and convincing evidence made in the IM and the BLM manual creates an unwarranted hurdle for BLM's exercise of its authority to require reasonable measures. The § 3101.1-2 regulation states that the basis for imposing reasonable measures is "to minimize adverse impacts to other resource values."[163] This language is directly comparable to the language in section 6 of the standard lease form, which provides that the lessee shall (or must) conduct operations so as to minimize adverse impacts.[164] Moreover, the § 3101.1-2 regulation and section 6 of the lease form recognize modifications to facility siting and design and timing of operations are means to accomplish these reasonable measures, but options

155 Instruction Memorandum No. 92-67 from Dir., Bureau of Land Mgmt., to All State Dirs. (Dec. 3, 1991) (on file with the author).

156 *Id.* at 1.

157 Federal Land Policy and Management Act of 1976, 43 U.S.C. § 1732(b) (2006). The implications of the FLPMA requirement to prevent unnecessary or undue degradation will be considered further *infra* in Part V.B.3.

158 Instruction Memorandum No. 92-67 from Dir. to All State Dirs., *supra* note 155, at 3.

159 *Id.* at 2.

160 *Id.*

161 *Id.* at 4; BUREAU OF LAND MGMT., *supra* note 147, § 3101.06.

162 BUREAU OF LAND MGMT., *supra* note 147, § 3101.06.B.2.

163 43 C.F.R. § 3101.1-2 (2008).

164 BUREAU OF LAND MGMT., *supra* note 83, at 3.

"are not limited to" these measures.[165] The § 3101.1-2 regulation also explicitly states that the enumerated 200-meter 60-day rule provisions are "[a]t a minimum" of what is consistent with the lease rights. In the final rule adopting the § 3101.1-2 regulation, BLM stated, "[T]he authority of the Bureau to prescribe 'reasonable,' but more stringent, protection measures is not affected by the final rulemaking."[166] Nowhere, other than in the IM and manual, is it indicated that the basis for imposing a reasonable measure that exceeds the 200-meter 60-day rule is found only in assuring compliance with the unnecessary or undue degradation clause of the FLPMA, and more importantly there is no indication the standard of proof should be the heightened clear and convincing evidence test specified in the IM and manual.

IBLA recently recognized BLM's rights to condition postlease development pursuant to the § 3101.1-2 regulation and the unnecessary or undue degradation clause, holding that BLM could require post-lease conditions of approval that were not addressed in lease stipulations to protect sage-grouse.[167] IBLA determined that a claim that conditions of approval were limited to no more than the limits in the 200-meter 60-day rule was unsupported by the § 3101.1-2 regulation and that more stringent limitations were not inconsistent with lease rights.[168] In reaching this conclusion, IBLA did not mention any need for clear and convincing evidence to support BLM's decision to require more stringent mitigation to protect the sage-grouse.[169] Accordingly, there is no underlying basis for requiring clear and convincing evidence before a reasonable measure can be required.[170]

---

165 43 C.F.R. § 3101.1-2 (2008); BUREAU OF LAND MGMT., *supra* note 83, at 3.

166 Oil and Gas Leasing, Geothermal Resources Leasing, 53 Fed. Reg. 17,340, 17,341 (May 16, 1988).

167 Yates Petroleum Corp., 176 I.B.L.A. 144, 155 (2008) (citing 43 C.F.R. § 3101.1-2 and Federal Land Policy and Management Act of 1976, 43 U.S.C. § 1732(b) (2006)).

168 *Id.* at 156 ("'[T]he authority of the Bureau to prescribe 'reasonable,' but more stringent, protection measures is not affected by the final rulemaking.'" (alteration in original) (quoting 53 Fed. Reg. at 17,340–41)).

169 *See id.*

170 IM 92-67 expired by its own terms on September 30, 1992. Instruction Memorandum No. 92-67 from Dir. to All State Dirs., *supra* note 155, at 1. That said, IMs can continue to be treated as operative by BLM even after they nominally expire. *See, e.g.*, Yates Petroleum Corp., 176 I.B.L.A. at 159 n.16 (pointing out that in the request for state director review decision under consideration in that appeal, "IM No. WY-90-231 expired on Sept. 30, 1991, [but] it is BLM practice to continue to use the guidance contained in the memorandum"). BLM has sometimes continued to cite the need for clear and convincing evidence to support its ability to condition development long after IM 92-67 expired. *See* BUREAU OF LAND MGMT, U.S. DEP'T OF THE INTERIOR, FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE JACK MORROW HILLS COORDINATED ACTIVITY PLAN/PROPOSED GREEN RIVER RESOURCE MANAGEMENT PLAN app. 4, at A4-1 (2004), *available at* http://www.blm.gov/pgdata/etc/medialib/blm/wy/field-offices/rock_springs/jmhcap/2004final/vol2.Par.9991.File.dat/106app04.pdf (stating that conditions of approval not provided for by stipulation must be documented through analysis that "must provide clear and convincing evidence showing that undue and unnecessary degradation would result if the [condition of approval] were not applied"). Consequently, IM 92-67 is of continuing concern; BLM Manual MS-3101 has no stated expiration date.

D. Summary of Rights Granted and Rights Retained Under the Modern Lease Form and the § 3101.1-2 Regulation

The § 3101.1-2 regulation expands on or elaborates on the rights that have been granted pursuant to a BLM oil and gas lease and provides further definition of what rights have been retained by BLM. If read with the provisions in the modern version of the standard lease form, it is apparent that three rights are granted pursuant to a BLM onshore oil and gas lease: 1) an "exclusive right" to remove all of the oil and gas on the leasehold;[171] 2) the right to "use" as much of the leasehold as is "necessary" to recover all of the leased resource;[172] and 3) the right to build and maintain "necessary" improvements to extract the leased resource.[173] Thus, the lessee has a right to exclude others from developing the lease during his removal of all of the oil and gas that might be found on the lease, a right to use no more of the lease than is "necessary" to retrieve all of the leased oil and gas, and a right to build only "necessary" improvements. Lessees have not been granted a right to develop the oil and gas in exactly the place they desire, the manner they desire, or on the exact timeline they may desire.

Conversely, when the § 3101.1-2 regulation is considered with the terms and conditions in the standard lease form operative since 1984, it is apparent BLM has retained a number of rights allowing it to limit or condition development. Under the modern versions of the standard lease form in effect since 1984 and the § 3101.1-2 regulation in effect since 1988, BLM has made development of the lease and removal of any oil and gas "subject to" a number of provisions that allow BLM to condition development, including the following:

- Applicable laws;[174]
- Terms, conditions, and stipulations in the lease;[175]
- Regulations and formal orders in effect when the lease is issued;[176]
- Regulations and formal orders issued afterward, if not inconsistent with lease rights granted and specific provisions in the lease;[177]
- Specific, nondiscretionary statutes;[178] and
- Reasonable measures.[179]

171 BUREAU OF LAND MGMT., *supra* note 83, at 1.

172 43 C.F.R. § 3101.1-2 (2008).

173 BUREAU OF LAND MGMT., *supra* note 83, at 1.

174 *Id.*

175 *Id.* at 1; *see also* 43 C.F.R. § 3101.1-2 (2008) (providing that the lease is made subject to "[s]tipulations attached to the lease").

176 BUREAU OF LAND MGMT., *supra* note 83, at 1.

177 *Id.*

178 43 C.F.R. § 3101.1-2 (2008).

179 *Id.*; *see* BUREAU OF LAND MGMT., *supra* note 83, at 3 (providing in section six that the lessee must take reasonable measures deemed necessary by the lessor to minimize adverse impacts).

This constellation of rights granted and rights retained that are stated in the lease contract and in the regulatory provision largely define the scope and nature of BLM's retained rights. As will be discussed next, these rights allow BLM to substantially protect the natural environment when oil and gas development is proposed on an onshore oil and gas lease.

V. BLM'S RETAINED RIGHTS UNDER A FEDERAL ONSHORE OIL AND GAS LEASE

Under the terms of the modern lease form and the 43 C.F.R. § 3101.1-2 regulation, BLM retains several rights because the lease is made "subject to" these reservations of authority. The lease rights granted are subject to: applicable laws; terms, conditions, and stipulations of the lease; regulations and formal orders in effect when the lease is issued; regulations and formal orders issued afterward, if not inconsistent with lease rights granted or provisions in the lease; stipulations attached to the lease; specific, nondiscretionary statutes; and reasonable measures that BLM might require.[180] While older leases may not as clearly have been made subject to these conditions, the rights granted in those leases are also conditioned to a significant degree.

In this Part, after a brief review of the Supreme Court's view of the rights retained under a federal onshore oil and gas lease, I will review each of the conditions on the right to develop oil and gas. Based on this review, it will be clear BLM has very substantial retained rights that allow it to regulate oil and gas development so as to protect the natural environment.

A. The Supreme Court's View of the Rights Granted and Rights Retained Under a Federal Onshore Oil and Gas Lease

The scope of retained rights under a federal onshore oil and gas lease was outlined many years ago by the Supreme Court in *Boesche v. Udall*,[181] where the Court stated:

> Unlike a land patent, which divests the Government of title, Congress under the Mineral Leasing Act has not only reserved to the United States the fee interest in the leased land, but has also subjected the lease to exacting restrictions and continuing supervision by the Secretary. . . . [The Secretary] may prescribe, as he has, rules and regulations governing in minute detail all facets of the working of the land. In short, a mineral lease does not give the lessee anything approaching the full ownership of a fee patentee, nor does it convey an unencumbered estate in the minerals.[182]

---

180 43 C.F.R. § 3101.1-2 (2008); BUREAU OF LAND MGMT., *supra* note 83, at 1.

181 373 U.S. 472 (1963).

182 *Id.* at 477–78 (citation omitted) (holding that the Secretary of the Interior has broad administrative powers allowing him to cancel a lease he determined was improperly issued); *accord* Udall v. Tallman, 380 U.S. 1, 19 (1965) ("An oil and gas lease does not vest title to the

Accordingly, it is clear BLM has very expansive retained rights under a federal onshore oil and gas lease that allow it to condition development so as to protect natural resources and values. The recognition by the Supreme Court of these expansive rights retained by the government occurred long before the modern lease form was put in place in 1984 with its explicit list of authorities a lease is made "subject to."

B. Applicable Laws and Specific, Nondiscretionary Statutes

Modern leases issued since March 1984 are made subject to "applicable laws" under the terms of the lease form.[183] In addition, leases issued since May 1988 are made subject to "restrictions deriving from specific, nondiscretionary statutes" under the terms of the § 3101.1-2 regulation.[184] "Applicable laws" would seem to be a category of statutes the lease has been made subject to that is broader than "specific, nondiscretionary statutes." I believe that both of these provisions guide what retained rights BLM enjoys, not one to the exclusion of the other, at least with regard to the 34,367 currently active leases in the eleven western states issued since June 1988, when both reservations were in place (see Table 1).

BLM's commentary when it adopted the § 3101.1-2 regulation indicates it was not the intent of this regulation to replace or supplant the "applicable laws" language in the lease form.[185] While the commentary focuses on the "reasonable measures" language in the regulation, the overall thrust of this regulation was to "establish the measures over which the Bureau has clear authority" and to "establish minimum parameters" for purposes of specifying site-specific mitigation measures.[186] Consequently, the "specific, nondiscretionary statute" language in the regulation is probably best interpreted as setting a baseline from which BLM has "clear authority," and not an attempt to exclude other applicable laws that are perhaps less mandatory. Furthermore, BLM's leasing regulations provide that "[a] lease shall be issued only on the standard form approved by the Director" of BLM.[187] This regulation was also adopted on May 16, 1988, when the current version of the § 3101.1-2 regulation was adopted,[188] so it seems unlikely BLM was attempting to nullify the "applicable laws" language that was already in its existing lease forms through use of the "specific, nondiscretionary statutes" language in the § 3101.1-2 regulation. The "applicable laws" language was present in leases from March 1984 onward, so if BLM intended

lands in the lessee." (citing *Boesche*, 373 U.S. at 477–78)); *id.* at 22 (stating that an oil and gas lease gives the lessee "no right in the land itself").

183 *See* BUREAU OF LAND MGMT., *supra* note 83, at 1.

184 43 C.F.R. § 3101.1-2 (2008).

185 Oil and Gas Leasing, Geothermal Resources Leasing, 53 Fed. Reg. 17,340, 17,341–42 (May 16, 1988).

186 *Id.* at 17,341.

187 43 C.F.R. § 3101.1-1 (2008).

188 53 Fed. Reg. at 17,352.

to modify or limit this language in the § 3101.1-2 regulation adopted in May 1988 it would have done so explicitly.

Because I view most currently active leases as being subject to both applicable laws and specific, nondiscretionary statutes, I will review both of these kinds of laws. Myriad laws are applicable to environmental protection on a leasehold, and there are several statutes that are specific and nondiscretionary. Some of these laws have been in place for many years—one was enacted prior to the Mineral Leasing Act—and thus would apply to all or most active leases.[189] Many were enacted in the 1960s and 1970s, and thus would have been laws in place when both the "applicable laws" language was introduced in March 1984 and when the "specific, nondiscretionary statutes" language was introduced in May 1988.[190] Thus, many of the laws that will be discussed below at a minimum help define BLM's retained rights on the 35,256 out of 48,342 currently active leases in the eleven western states that have been issued since March 1984 (see Table 1).[191]

1. The Mineral Leasing Act

As discussed, the Mineral Leasing Act provides for the "disposition" of oil and gas through a leasing system.[192] The Mineral Leasing Act also contains several other provisions that are applicable to oil and gas development that implicate environmental protection, and one provision appears to be specific and nondiscretionary.

First, "[e]ach lease shall contain provisions for the purpose of insuring the exercise of reasonable diligence, skill, and *care* in the operation of said property."[193] The courts do not appear to have interpreted the meaning of the word "care" in this passage, but it could allow for protection of the natural environment in the operation of a lease.[194] Second, "[t]he Secretary of the Interior is authorized to prescribe necessary and proper rules and regulations and to do any and all things necessary to carry out and accomplish the purposes of this [Act], also to fix and determine the boundary lines of any structure, or oil or gas field."[195] The courts have recognized this provision grants broad authority to the Secretary of the Interior to regulate oil and gas development.[196] It obviously allows great

189 *See infra* Part V.B.1–6.

190 *See infra* Part V.B.1–6.

191 *But see* BUREAU OF LAND MGMT., *supra* note 147, § 3101.12.B (stating that with respect to specific, nondiscretionary laws, "the requirements of the law shall be met by all oil and gas leases regardless of when the leases were issued").

192 Mineral Leasing Act, 30 U.S.C. §§ 181, 226(a)–(c) (2006); *see* discussion *supra* Parts II, III.A–B.

193 30 U.S.C. § 187 (2006) (emphasis added).

194 However, the Supreme Court said in a case involving leases "located in a mouth of the Mississippi River" in Louisiana that the Mineral Leasing Act "controls in some measure the actual use of the leased tract, to promote goals such as conservation and safety," but did not identify particular language in 30 U.S.C. § 187 supporting this view. Wallis v. Pan Am. Petroleum Corp., 384 U.S. 63, 64, 69 (1966).

195 30 U.S.C. § 189 (2006).

196 *See* Arch Mineral Corp. v. Lujan, 911 F.2d 408, 415 (10th Cir. 1990) (recognizing in a coal leasing case that § 189 "is a broad grant of authority"); Getty Oil Co. v. Clark, 614 F. Supp.

discretion in rulemaking, and the regulations applicable to oil and gas leasing and lease operations will be discussed below.[197] But the additional authority to "determine the boundary lines of any structure, or oil or gas field"[198] could directly allow for environmental protection by authorizing BLM to specify the locations of structures and oil and gas fields. A third reservation of authority provided by the Mineral Leasing Act is that "[t]he Secretary of the Interior, for the purpose of encouraging the greatest ultimate recovery of [leasable minerals], and *in the interest of conservation of natural resources*, is authorized to waive, *suspend*, or reduce the rental, or minimum royalty, or reduce the royalty on an entire leasehold."[199] In *Copper Valley Machine Works, Inc. v. Andrus*[200] and *Getty Oil Co. v. Clark*,[201] the courts recognized and approved the government's authority to suspend leases so as to conserve environmental resources based on this statutory provision.[202]

And in what is likely a specific, nondiscretionary provision, the Mineral Leasing Act requires that "[t]he Secretary of the Interior . . . shall *regulate* all surface-disturbing activities conducted pursuant to any lease issued under this chapter, and shall determine reclamation and other actions as required *in the interest of conservation of surface resources*."[203] This addition to the Mineral Leasing Act was adopted in 1987 in the Federal Onshore Oil and Gas Leasing Reform Act (FOOGLRA).[204] Accordingly, this provision may only create retained rights on leases issued after 1987. But even if this is true, approximately 34,367 of the 48,342 currently active leases in the eleven western states are subject to this provision (see Table 1).

904, 916 (D. Wyo. 1985) ("This provision grants the Secretary broad powers and authority commensurate with the broad responsibilities imposed upon his office."), *aff'd sub nom.* Texaco Producing, Inc., 84 F.2d 776 (10th Cir. 1988).

197 *See* discussion *infra* Part V.D.1.a–b.

198 30 U.S.C. § 189 (2006).

199 *Id.* § 209 (emphasis added); *see also* 43 C.F.R. § 3103.4-4 (2008) (providing a companion regulatory provision authorizing suspension of all operations and production on a lease "in the interest of conservation of natural resources").

200 653 F.2d 595 (D.C. Cir. 1981).

201 614 F. Supp. 904 (D. Wyo. 1985).

202 *Copper Valley Machine Works, Inc.*, 653 F.2d at 600 (determining that the "ordinary meaning" of the term "in the interest of conservation" in § 209 of the Mineral Leasing Act allows suspension of operations so as to avoid environmental harm); *Getty Oil Co.*, 614 F. Supp. at 916–17 (holding § 189 and § 209 of the Mineral Leasing Act provide broad grants of authority allowing conditioning of development to protect the environment, even allowing denial of drilling operations to protect wilderness values when a suspension is requested by the lessee).

203 30 U.S.C. § 226(g) (2006) (emphasis added) (requiring further that a "plan of operations" exist before a drilling permit can be issued and that bonding be in place "to ensure the complete and timely reclamation of the lease tract, and the restoration of any lands or surface waters adversely affected by lease operations after the abandonment or cessation of oil and gas operations on the lease").

204 Federal Onshore Oil and Gas Leasing Reform Act of 1987, Pub. L. No. 100-203, § 5102(g), 101 Stat. 1330, 1330-257 to -258 (codified as amended at 30 U.S.C. § 226(g) (2006)); *see supra* notes 19–20 and accompanying text (discussing the enactment of FOOGLRA).

2. The National Environmental Policy Act

Although it is well settled that NEPA does not mandate particular results to protect the environment but rather prescribes the necessary process for environmental review, NEPA is also referred to as our nation's basic environmental charter.[205] NEPA provides that "to the fullest extent possible" the laws and policies of this country are to be interpreted and administered in accordance with the policies set forth in NEPA, which include environmental protection goals.[206] In carrying out the policy of NEPA, agencies must "use all practicable means" consistent with other considerations of national policy to achieve six specified ends aimed at environmental protection.[207] The Council on Environmental Quality regulations implementing NEPA reinforce the obligation to pursue protection of the natural environment that NEPA mandates.[208]

While NEPA may not be specific and nondiscretionary, there is no doubt it is applicable to oil and gas development decision making on BLM lands. The prominent role NEPA plays at the leasing stage will be discussed *infra* in Part VII.D. However, the courts also recognize that the purposes and goals of NEPA control BLM's oil and gas development decisions. In *Getty Oil Co.*, the court determined that "[t]he Secretary [of the Interior] is not only permitted, but is required, to take environmental values into account in carrying out his regulatory functions [related to oil and gas development], unless there is a clear and unavoidable statutory authority prohibiting the Secretary from complying with NEPA's mandate."[209]

In a case originating in an important natural area in Michigan that included brown trout (*Salmo trutta*) waters described as perhaps "the best east of the Rockies," the court considered BLM's and the

---

205 *See* Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 348, 350 (1989) (stating that "[s]ection 101 of NEPA declares a broad national commitment to protecting and promoting environmental quality," but holding "it is now well settled that NEPA itself does not mandate particular results, but simply prescribes the necessary process"); 40 C.F.R. § 1500.1 (2009) (providing that NEPA "is our basic national charter for protection of the environment").

206 National Environmental Policy Act of 1969, 42 U.S.C. § 4332 (2006). The continuing policy of the federal government is "to use all practicable means and measures" to achieve three stated goals, one of which is "to create and maintain conditions under which man and nature can exist in productive harmony." *Id.* § 4331(a).

207 *Id.* § 4331(b) (providing that all practicable means are to be used to achieve the ends of fulfilling responsibilities to succeeding generations, assuring pleasing surroundings, attaining the widest range of beneficial uses of the environment without undesirable and unintended consequences, preserving our national heritage, achieving balance that permits high standards of living and sharing of amenities, and enhancing the quality of renewable resources and achieving maximum recycling of depletable resources).

208 *See, e.g.*, 40 C.F.R. § 1500.2 (2009) ("Federal agencies shall to the fullest extent possible . . . [u]se all practicable means . . . to restore and enhance the quality of the human environment and avoid or minimize any possible adverse effects of their actions upon the quality of the human environment.").

209 *Getty Oil Co.*, 614 F. Supp. 904, 920 (D. Wyo. 1985) (citing Flint Ridge Dev. Co. v. Scenic Rivers Ass'n, 426 U.S. 776, 787–88 (1976), *aff'd sub nom.* Texaco Producing, Inc., 840 F.2d 776 (10th Cir. 1988); Grindstone Butte Project v. Kleppe, 638 F.2d 100, 103 (9th Cir. 1981); Detroit Edison Co. v. U.S. Nuclear Reg. Comm'n, 630 F.2d 450 (6th Cir. 1980)).

Forest Service's obligations under NEPA when lease development activities are pursued, in this case approval of exploratory drilling.[210] The Forest Service's no significant impact determination allowing it to avoid preparation of an EIS was arbitrary and capricious because it failed to adequately consider four of the "intensity" factors for determining environmental significance that the Council on Environmental Quality NEPA regulations say should be considered.[211]

The range of alternatives considered in the EA underlying the approval of this project was also deficient. First, the no action alternative of not permitting drilling was improperly rejected from full consideration because the Forest Service felt it was obligated to approve drilling.[212] But the court held that "none of the cited authorities [mandate] approval of proposed mineral extraction, forecloses a decision of No Action, or places the Forest Service's objectives at odds with environmental preservation."[213] Moreover, in considering BLM's regulation at 43 C.F.R. § 3161.2, which directs the authorized officer to require that operations protect environmental quality and which will be discussed in more detail below,[214] the court held that "[t]he plain language of the regulation makes [it] clear that approval is not appropriate in all cases, particularly cases where the project poses a threat to environmental quality."[215] Second, the court held that the range of alternatives considered was deficient "because it impermissibly limited the range of alternatives to only those that would meet [the project proponent's] project objectives, rather than alternatives that might better serve Forest Service goals."[216]

However, the court rejected a claim that the regulation at 43 C.F.R. § 3161.2, which again will be discussed in more detail below, was violated by the Forest Service's approval of the project.[217] The basis for this holding was the court's conclusion that violating NEPA did not demonstrate a violation of BLM's substantive environmental protection regulation.[218] Compliance with BLM's oil and gas operations regulations relating to environmental protection obligations was also considered in a case that originated in New Mexico; this case will be considered *infra* in Part V.D.1.b.

---

210 Anglers of the Au Sable v. U.S. Forest Serv. (*Au Sable*), 565 F. Supp. 2d 812, 815, 818 (D. Mich. 2008).

211 *Id.* at 824–33 (identifying issues related to uniqueness, controversy and uncertainty; potential for setting precedent and cumulative impacts; and impacts to endangered species as having been insufficiently considered); *see* 40 C.F.R. § 1508.27(b)(1)–(10) (2009) (presenting the 10 Council on Environmental Quality intensity factors that guide determination of whether an agency action will significantly affect the environment, and thus whether an EIS needs to be prepared rather than a less rigorous EA).

212 *Au Sable*, 565 F. Supp. 2d at 834.

213 *Id.*

214 *See* discussion *infra* Part V.D.1.b.

215 *Au Sable*, 565 F. Supp. 2d at 835.

216 *Id.* at 836.

217 *Id.* at 840 (citing 43 C.F.R. § 3161.2 (2008), which provides that the BLM authorized officer is directed to require that operations protect natural resources and environmental quality).

218 *Id.*

Given this precedent, it is clear that when operations are proposed on a lease, BLM must interpret and implement its obligations in light of the policies established by NEPA, particularly if the lease was issued after 1969 when NEPA was enacted.[219] NEPA is an "applicable law" that a lease is "subject to."[220]

But as explained above, the role of NEPA at the APD stage of oil and gas development has recently been reduced due to the availability of "categorical exclusions" from NEPA compliance that were created by the Energy Policy Act of 2005.[221] Twenty-eight percent of the APDs that BLM approved between 2006 and 2008 were relieved of further NEPA compliance through the use of these categorical exclusions.[222] But categorical exclusions should not be viewed as completely eliminating application of NEPA in the oil and gas development process. These exclusions are available under five specified circumstances, and two of the conditions require that there has been prior NEPA compliance before an exclusion can be invoked.[223] And in the majority of field offices, any oil and gas development will occur pursuant to an RMP that was developed in compliance with NEPA.[224] Consequently, NEPA remains an "applicable law" that leases are made "subject to."

3. The Federal Land Policy and Management Act

FLPMA, BLM's organic act, establishes policy and requirements to protect the natural environment, including the policy that

> the public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values; that, where appropriate, will preserve and protect certain public lands in their natural condition; that will provide food and habitat for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use.[225]

219 National Environmental Policy Act of 1969, Pub. L. No. 91-190, 83 Stat. 852 (1970) (codified as amended at 42 U.S.C. §§ 4321–4347 (2006)).

220 *See* discussion *supra* Parts IV.D, V.A.

221 *See supra* note 57 and accompanying text.

222 *See supra* note 57 and accompanying text.

223 Energy Policy Act of 2005, 42 U.S.C. § 15942(b) (2006) (making provisions in subdivisions 1 and 3 that require prior NEPA compliance before the enumerated activity can be categorically excluded from further NEPA compliance).

224 *See* National Environmental Policy Act of 1969, 42 U.S.C. § 4332 (2006) (requiring compliance with NEPA for major federal actions significantly affecting the quality of the human environment); Federal Land Policy and Management Act of 1976, 43 U.S.C. § 1712 (2006) (requiring BLM to develop land use plans); 43 C.F.R. § 1601.0-6 (2008) ("Approval of a resource management plan is considered a major Federal action significantly affecting the quality of the human environment.").

225 43 U.S.C. § 1701(a)(8) (2006).

There is no doubt FLPMA is an applicable law that leases have been made subject to, at least if the lease was issued after 1976, which includes the majority of currently active leases in the eleven western states (see Table 1).

While FLPMA also establishes a policy that "recognizes the Nation's need for domestic sources of minerals . . . including implementation of the Mining and Minerals Policy Act of 1970 as it pertains to the public lands,"[226] it seems clear the commodity development and environmental protection policies must be viewed as companion goals. Under FLPMA, BLM is required to manage the public lands under a multiple use and sustained yield mandate,[227] which requires, among other things, the

> harmonious and coordinated management of the various resources without permanent impairment of the productivity of the land and the quality of the environment with consideration being given to the relative values of the resources and not necessarily to the combination of uses that will give the greatest economic return or the greatest unit output.[228]

And most importantly, FLPMA requires that "[i]n managing the public lands the Secretary [of the Interior] shall, by regulation or otherwise, take any action necessary to prevent unnecessary or undue degradation of the lands."[229] There is little doubt that BLM views this provision as a specific, nondiscretionary statute.[230]

FLPMA's mandate to prevent unnecessary or undue degradation imposes *dual* action requirements on BLM. It must take any action needed to prevent both unnecessary degradation as well as undue degradation of the public lands. This dual obligation was confirmed in *Mineral Policy Center v. Norton*.[231] Addressing this requirement, the court held that "Congress's intent was clear: Interior is to prevent, not only unnecessary degradation, but also degradation that, while necessary to mining, is undue or excessive."[232] While the unnecessary degradation prong may only prevent activities that are not generally recognized or used to pursue mining operations, the undue degradation prohibition establishes a further requirement to prevent activities that would unduly harm or degrade the public land. As stated by

226 *Id.* § 1701(a)(12) (citation omitted); *see infra* text accompanying notes 283–84.

227 43 U.S.C. § 1732(a) (2006) ("The Secretary shall manage the public lands under principles of multiple use and sustained yield, in accordance with the land use plans . . . .").

228 *Id.* § 1702(c); *see also id.* § 1702(h) (defining "sustained yield").

229 *Id.* § 1732(b).

230 *See* BUREAU OF LAND MGMT., *supra* note 147, §§ 3101.06.B.2, 3101.06.B.2.a, 3101.06.B.3, 3101.12.A, 3101.13.A (making references to the unnecessary or undue degradation clause as being a basis for conditioning development, including statements that it "is within the terms of the lease, because all leases are subject to applicable laws and regulations" and "mitigation required to protect the lands from unnecessary and undue degradation is consistent with the lease rights granted"); Instruction Memorandum No. 2003-234 from Dir., Bureau of Land Mgmt., to All Field Officials (July 28, 2003) (on file with author) (stating that conditions of approval are not to exceed the limitations in the lease terms and conditions "unless warranted to prevent unnecessary and undue degradation or meet other regulatory requirements").

231 292 F. Supp. 2d 30, 42 (D.D.C. 2003).

232 *Id.* at 43.

the court, "FLPMA, by its plain terms, vests the Secretary of the Interior with the authority—and indeed the obligation—to disapprove of an otherwise permissible mining operation because the operation, though necessary for mining, would unduly harm or degrade the public land."[233]

BLM has adopted regulations that define unnecessary or undue degradation (UUD) for purposes of hardrock mining pursuant to the General Mining Law,[234] but has no regulations that define UUD relative to oil and gas development. But one court agreed that "[a] reasonable interpretation of the word 'unnecessary' is that which is not necessary for mining. 'Undue' is that which is excessive, improper, immoderate or unwarranted."[235] And IBLA determined that "Congress . . . recognized that the mere act of approving oil and gas development does not constitute unnecessary or undue degradation under [the] FLPMA, and that something more than the usual effects anticipated from such development, subject to appropriate mitigation, must occur for degradation to be 'unnecessary or undue.'"[236] Despite these limited interpretations of the UUD clause, there is no doubt that this provision is specific and nondiscretionary and thus its requirements must be complied with when lease development is proposed.[237]

4. The Endangered Species Act

The Endangered Species Act of 1973 (ESA),[238] which of course seeks to protect threatened or endangered species listed under the Act, calls for special mention. BLM may recognize this law more than any other as being a "specific, nondiscretionary statute," which thus guides (or limits) its management of oil and gas leases to a degree perhaps not reflected in its decision making for other resources.[239] The ESA was enacted in 1973, and thus, at a minimum, is applicable to the roughly 38,000 currently active leases in the eleven western states issued since 1973 (see Table 1). There is no doubt the ESA's section 7 "jeopardy standard" and its section 9 prohibition on taking endangered species are specific and nondiscretionary

233 *Id.* at 42.

234 43 C.F.R. subpt. 3809 (2008) (presenting BLM's hardrock mining regulations). "Unnecessary or undue degradation" is defined at *id.* § 3809.5.

235 Utah v. Andrus, 486 F. Supp. 995, 1005 n.13 (D. Utah 1979) (quoting Brief for American Mining Congress as Amicus in Opposition to the United States' Request for Permanent Injunction at 9, Utah v. Andrus, 486 F. Supp. 995 (Nos. C 79-0037, C 79-0307)).

236 Biodiversity Conservation Alliance, 174 I.B.L.A. 1, 4–8 (2008) (applying a rational basis standard to determine whether BLM's determination that a project would not cause UUD was permissible).

237 *See* discussion *supra* Part IV.C.3 (reviewing the guidance in IM 92-67 and BLM Manual MS-3101 as to reasonable measures developed to comply with the UUD clause).

238 16 U.S.C. §§ 1531–1544 (2006).

239 *See generally* BUREAU OF LAND MGMT., U.S. DEP'T OF THE INTERIOR, BLM MANUAL MS-6840, SPECIAL STATUS SPECIES MANAGEMENT (2008), *available at* http://www.blm.gov/pgdata/etc/medialib/blm/wo/Information_Resources_Management/policy/blm_manual.Par.43545.File.dat/6840.pdf (presenting BLM's special status species manual, MS-6840, including policy regarding the ESA).

provisions.[240] In addition, the Act requires the Secretary of the Interior to further the purposes of the ESA, including conserving the ecosystems upon which listed species depend and providing for their conservation.[241] Given these mandatory provisions, there is no doubt BLM has the authority, and in fact the obligation, to ensure compliance with the ESA when it makes development decisions related to federal oil and gas leases that could affect listed species.

The ESA establishes a number of requirements intended to foster the conservation of listed species, particularly regarding the prohibition under section 7 on federal actions that cause jeopardy to the continued existence of listed species.[242] Under these provisions, an agency can be required to prepare a biological assessment that considers the effects of an agency action on a listed species and engage in consultation with the United States Fish and Wildlife Service (FWS) regarding the effects of the action.[243] Consultation can result in an FWS biological opinion specifying mandatory terms and conditions for any incidental take of a listed species, recommended conservation measures intended to further protection and recovery of the species, and even a "jeopardy opinion," which can effectively preclude the action.[244]

The courts have considered the requirements of the ESA in the context of the leasing decision in areas where listed species such as grizzly bears (*Ursus arctos horribilis*) and spectacled eiders (*Somateria fischeri*) exist.[245] Consultation with FWS must occur at the leasing stage, and the consultation must consider not only the effects of leasing on listed species, but also "all phases of the agency action, which includes post-leasing activities."[246]

---

240 *See* 16 U.S.C. § 1536(a)(2) (2006) ("Each Federal agency shall . . . insure that any action authorized, funded, or carried out by such agency . . . is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined by the Secretary . . . to be critical . . . ."); *id.* § 1538(a)(1)(B) (making it unlawful for any person to "take any [endangered] species within the United States or the territorial sea of the United States"); *see also* Tenn. Valley Auth. v. Hill, 437 U.S. 153, 173 (1978) ("One would be hard pressed to find a statutory provision whose terms were any plainer than those in § 7 of the Endangered Species Act. Its very words affirmatively command all federal agencies 'to *insure* that actions *authorized, funded,* or *carried out* by them do not *jeopardize* the continued existence' of an endangered species or '*result* in the destruction or modification of habitat of such species . . . .' This language admits of no exception." (alteration in original) (citation omitted) (quoting 16 U.S.C. § 1536 (1976))).

241 16 U.S.C. § 1536(a)(1) (2006) ("The Secretary [of the Interior] shall review other programs administered by him and utilize such programs in furtherance of the purposes of this chapter."); *id.* § 1531(b) (providing that two purposes of the ESA are to provide a means for the conservation of ecosystems upon which listed species depend, and to provide a program for the conservation of listed species).

242 *Id.* § 1536(a)(2).

243 *Id.* § 1536(c).

244 *See id.* § 1536(a)(3), (b)–(c); *see also* 50 C.F.R. § 402 (2008) (presenting FWS's biological assessment, consultation, and biological opinion regulations).

245 *See, e.g.*, N. Alaska Envtl. Ctr. v. Kempthorne, 457 F.3d 969, 981 (9th Cir. 2006); *Conner*, 848 F.2d 1441, 1453–54 (9th Cir. 1988).

246 *Conner*, 848 F.2d at 1453–54 (holding that failure to prepare a "comprehensive" biological opinion considering all stages of oil and gas development failed to adequately consider the

In a challenge to the sale of sixteen lease parcels in an area of Colorado where the threatened hookless cactus (*Sclerocactus glaucus*) occurred, the court held BLM's consultation with FWS was inadequate because the consultation failed to consider the full "action area" encompassed by all sixteen parcels, having considered only the nine parcels where the cactus occurred, and thus not recognizing potential indirect effects to the species.[247] But other courts have held that ESA challenges to leasing were not ripe for judicial resolution, and thus denied motions for summary judgment.[248] In *Wyoming Outdoor Council v. Bosworth*, however, the court recognized the ESA is a specific, nondiscretionary statute.[249]

5. Other Laws Applicable to Protection of the Public Lands

Besides these four overarching statutes, there are other laws that are at least applicable to federal oil and gas leases, and some are in all likelihood specific and nondiscretionary. In the interest of space I will not discuss these laws in detail but will note some of them:

- Under section 106 of the National Historic Preservation Act of 1966,[250] BLM must take into account the effect of its undertakings on sites that are eligible for or included in the National Register of Historic Places.[251] And prior to approval of a federal undertaking that may

potential for jeopardizing listed species, which violated the ESA); *N. Alaska Envtl. Ctr.*, 457 F.3d at 981 (approving use of a leasing biological opinion based on a reasonable and foreseeable development scenario to meet the requirement to make projections of the impacts of production on protected species); Bob Marshall Alliance v. Hodel, 852 F.2d 1223, 1228 (9th Cir. 1988) (holding a leasing biological opinion must consider postleasing activities, which was absent in this case, so the ESA was violated); *see also* Mont. Wilderness Ass'n v. Fry, 310 F. Supp. 2d 1127, 1150 (D. Mont. 2004) (holding the scope of the leasing action for ESA purposes "includes activities from leasing through post-production and abandonment," but this requirement was not met in this case). In 1992, the Director of BLM issued an Information Bulletin to all BLM State Directors in response to the decision in *Conner*. Information Bulletin No. 92-198 from Dir., Bureau of Land Mgmt., to All State Dirs. (Jan. 21, 1992) (on file with author). In this Bulletin BLM stated, "The simple rule coming out of the *Conner v. Burford* case is that we will comply with NEPA and ESA prior to leasing." *Id.* at 1. And, "[l]easing in areas where [listed species] are known to exist requires [FWS] Section 7 consultation." *Id.* at 2. Thus, BLM seems to view at least *Conner* as having application beyond the Ninth Circuit.

247 Wilderness Soc'y v. Wisely, 524 F. Supp. 2d 1285, 1304–06 (D. Colo. 2007) (holding also that NEPA compliance was insufficient because a no surface occupancy alternative for the leases had been improperly rejected).

248 Wyo. Outdoor Council v. Bosworth, 284 F. Supp. 2d 81, 90–93 (D.D.C. 2003) (holding in a case where earlier consultation had occurred when identifying areas that would be open for leasing, but which had not occurred when the decision to issue leases was made, that because BLM and the Forest Service retained authority to condition and even prohibit development, ESA challenges were not ripe); Wyo. Outdoor Council v. Dombeck, 148 F. Supp. 2d 1, 10 (D.D.C. 2001) (holding ESA challenges not ripe because leases had been sold but not actually issued).

249 *Bosworth*, 284 F. Supp. 2d at 91.

250 16 U.S.C. §§ 470–470x-6 (2006). Section 106 is found at *id.* § 470f.

251 *Id.*

affect a National Historic Landmark, the agency must minimize harm to the landmark "to the maximum extent possible."[252]

- The Archeological Resources Protection Act of 1979[253] provides that "[n]o person may excavate, remove, damage, or otherwise alter or deface . . . any archeological resource located on public lands . . . unless such activity is pursuant to a permit" and also prohibits attempting to do so.[254]
- The Migratory Bird Treaty Act[255] has been in place since 1918 and makes it unlawful to take, kill, or otherwise possess or interfere with a number of migratory bird species subject to treaties between the United States and several countries unless done under the governing regulations of the Secretary of the Interior.[256] Similarly, the Bald and Golden Eagle Protection Act of 1940[257] makes it illegal to take or otherwise possess or interfere with bald eagles (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos*) unless done under permit.[258]
- The National Trails System Act of 1968[259] established recreation, scenic, and historic trails.[260] Section 7(i) allows regulation of the use and protection of the trails,[261] and particularly with respect to historic trails such as the Oregon Trail, the provisions of the National Historic Preservation Act may also apply. Provisions of the National Wild and Scenic Rivers Act of 1968[262] might be applicable to some federal oil and gas leases.[263]
- The Clean Air Act[264] declared a national purpose to protect and enhance air quality so as to promote the public health and welfare and a national goal of protection of visibility in highly scenic Class I areas, which include many wilderness areas and national parks.[265] It establishes a massive regulatory and permitting regime to ensure compliance with National Ambient Air Quality Standards for several "criteria" pollutants and provides for a number of other pollution control requirements.[266] These requirements are primarily implemented by the states, but the Clean Air Act also provides that all federal agencies having jurisdiction over a property or facility

252 *Id.* § 470h-2(f).
253 *Id.* §§ 470aa–470mm.
254 *Id.* § 470ee(a).
255 *Id.* §§ 703–712.
256 *Id.* §§ 703, 704.
257 *Id.* §§ 668–668d.
258 *Id.* §§ 668(a), 668a.
259 *Id.* §§ 1241–1251.
260 *Id.* § 1244(a).
261 *Id.* § 1246(i).
262 *Id.* §§ 1271–1287.
263 *See id.* § 1273(b).
264 42 U.S.C. §§ 7401–7671q (2006).
265 *Id.* §§ 7401(b)(1), 7491(a)(1).
266 *See id.* §§ 7408(a), 7409 (establishing the National Ambient Air Quality Standards); *id.* § 7411 (establishing new source performance standards for stationary sources).

that may result in the discharge of air pollutants shall be subject to, and comply with, all requirements "respecting the control and abatement of air pollution in the same manner, and to the same extent as any nongovernmental entity."[267]

- The Clean Water Act[268] has as its objective attempting "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters," and to achieve this objective it establishes goals that the discharge of water pollutants be eliminated, that fish and wildlife be protected, and that recreation be provided for in and on the water.[269] Like the Clean Air Act, a massive regulatory and permitting regime primarily administered by the states was created.[270] Under this regime several kinds of water quality standards or programs are created and enforced.[271] And using language that is the same as that found in the Clean Air Act, the Clean Water Act also makes its provisions for abatement of water pollution applicable to federal agencies "in the same manner, and to the same extent as any nongovernmental entity."[272]
- Several federal statutes respecting the management, control, cleanup, and reporting of chemicals and hazardous wastes or substances have been enacted. These include the Resource Conservation and Recovery Act of 1976 (RCRA);[273] the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA),[274] also known as the Superfund; the Toxic Substances Control Act;[275] and the Emergency Planning and Community Right-To-Know Act of 1986.[276] Many of these statutes contain explicit exemptions for the oil and gas industry, and thus they may not be applicable laws relative to BLM oil and gas leases.[277] Nevertheless, chemicals and hazardous waste are subject to controls by BLM; some of the authorities establishing these rights will be discussed.[278] While these federal statutes may not be applicable laws in some cases, it is also

---

267 *Id.* § 7418(a).

268 Federal Water Pollution Control Act, 33 U.S.C. §§ 1251–1387 (2006).

269 *Id.* § 1251(a).

270 *See, e.g.*, *id.* § 1311(a) (prohibiting the discharge of any pollutants except when in compliance with the Act); *id.* § 1342 (establishing the National Pollution Discharge Elimination System and allowing states to administer the permit program).

271 *See, e.g.*, *id.* § 1313(d) (requiring states to identify state waters and establish for each the "total maximum daily load" of pollutants); *id.* § 1342 (establishing the National Pollution Discharge Elimination System, which requires a permit for specified discharges); *id.* § 1365 (authorizing citizen suits against any person for violations of an effluent standard or limitation).

272 *Id.* § 1323(a).

273 42 U.S.C. §§ 6901–6992k (2006) (amending Solid Waste Disposal Act, Pub. L. No. 89-272, 79 Stat. 992 (1965)).

274 42 U.S.C. §§ 9601–9675 (2006).

275 15 U.S.C. §§ 2601–2692 (2006).

276 42 U.S.C. §§ 11001–11050 (2006).

277 *See generally* Envtl. Prot. Agency, Crude Oil and Natural Gas Waste, http://www.epa.gov/osw/nonhaz/industrial/special/oil/index.htm (last visited Apr. 18, 2010) (presenting provisions and policies related to exploration, development, and production of oil and gas under RCRA).

278 *See infra* Part VIII.D.

apparent there are provisions dealing with hazardous wastes that are applicable.

- Even noise pollution has come to the attention of Congress. Congress has found that inadequately controlled noise presents a danger to public health and welfare and has declared a policy "to promote an environment for all Americans free from noise that jeopardizes their health or welfare."[279] And thus, "Congress authorizes and directs that Federal agencies shall, to the fullest extent consistent with their authority under Federal laws administered by them, carry out the programs within their control in such a manner as to further [this] policy."[280]

It is apparent there is a wide range of environmental protection laws that are applicable to development of federally owned oil and gas resources, and a number of these are "specific, nondiscretionary statutes."[281]

6. Energy Policy Statutes

In addition to the numerous environmental protection statutes that are "applicable" to federal oil and gas leases, provisions of federal energy policy are also applicable and evidence a goal of pursuing energy development on federal lands. Despite this goal, however, these laws have not repealed or amended the environmental protection statutes that have been discussed. Congress has declared a policy of support for energy development but also stated this would advance the goals of "protecting[] and enhancing environmental quality," and assuring public health.[282] In the Mining and Minerals Policy Act of 1970,[283] Congress provided that it is the continuing policy of the federal government to "foster and encourage private enterprise" in the pursuit of minerals development.[284] Congress has sought to increase the recoverability of energy resources.[285] Section 604 of the Energy Policy and Conservation Act Amendments of 2000 (EPCA)[286] required an inventory of onshore federal lands to identify oil and gas resources underlying those lands, including an assessment of "the extent and nature of any restrictions or impediments to the development of the resources."[287]

279 Noise Control Act of 1972, 42 U.S.C. § 4901(a)–(b) (2006).

280 *Id.* § 4903(a).

281 43 C.F.R. § 3101.1-2 (2010).

282 Energy Reorganization Act of 1974, 42 U.S.C. § 5801(a) (2006).

283 Mining and Minerals Policy Act of 1970, 30 U.S.C. §§ 21a, 1901–1905 (2006).

284 *Id.* § 21a.

285 *See* Energy Policy Act of 1992, 42 U.S.C. § 13411(a) (2006) (directing the Secretary of Energy to seek to increase the recoverability of domestic oil resources); *id.* § 13413(a) (directing the Secretary of Energy to increase the recoverable natural gas resource base).

286 42 U.S.C. §§ 6201–6422 (2006). Section 604 of the Energy Policy and Conservation Act Amendments of 2000 is at *id.* § 6217 (2006).

287 *Id.* § 6217(a). In response to this mandate, BLM has issued three reports intended to document the extent that federal onshore oil and gas resources are unavailable for development due to "restrictions or impediments," having released those reports in three phases. *See* Bureau of Land Mgmt., U.S. Dep't of the Interior, EPCA Phase III Inventory, http://www.blm.gov/wo/st/

Probably most significantly, in the Energy Policy Act of 2005 Congress established several policies related to oil and gas development on the public lands. To ensure timely action on leases and APDs, the Secretary of the Interior is to "ensure expeditious compliance" with NEPA and take several other actions.[288] Best management practices (BMPs) are to be developed and implemented in order to improve the leasing program and ensure timely action on APDs.[289] Using these BMPs as guidance, regulations setting forth timeframes for processing leases and APDs are to be developed, and deadlines are to be established for approving or disapproving resource management plans, lease applications, APDs, surface use plans, and related administrative appeals.[290] And in section 390 of the Energy Policy Act of 2005, rebuttable presumptions allowing the use of categorical exclusions to meet NEPA obligations under five enumerated circumstances were established for oil and gas exploration or development activities.[291] Nevertheless, while Congress sought to speed up oil and gas development on the public lands through enactment of the Energy Policy Act of 2005, it did not require accomplishment of this goal by repealing the numerous applicable environmental protection laws that a lease might be subject to.

Based on this review of potentially "applicable laws" oil and gas leases have been made "subject to," as well as a number of "specific, nondiscretionary statutes" that leases have also been made "subject to," it is apparent BLM has many retained rights allowing it to protect the natural environment despite having granted a right to develop the oil and gas that might be found on a lease.[292] The federal government has retained significant rights allowing it to protect threatened or endangered species, prevent air and water pollution, control hazardous substances, regulate noise, ensure "care" is exercised in operations on a leasehold, regulate operations in order to conserve surface resources, protect historic trails and other cultural and archeological resources, prevent unnecessary or undue degradation of the public lands, and ensure the policies of NEPA are adhered to, among other things.[293] When coupled with the substantial rights retained under the "terms, conditions, and stipulations in the lease" and "regulations and formal orders" in effect when the lease was issued and even afterward if not inconsistent with the lease rights granted, it is apparent BLM has significant retained rights allowing it to specify to a significant degree the time, place, and manner

---

en/prog/energy/oil_and_gas/EPCA_III.html (last visited Apr. 18, 2010) (presenting a BLM website containing the results of the EPCA inventories). BLM's analyses have been subject to criticism. *See* THE WILDERNESS SOC'Y, "EPCA III" FACT SHEET 2 (2008), *available at* http://wilderness.org/files/EPCA_III_fact_sheet.pdf (arguing that 88% of onshore federal gas resources and 68% of onshore federal oil resources are available for development, contrary to BLM's claims in its "EPCA III" report that only 59% of the gas and 37.8% of the oil is "accessible").

288 Energy Policy Act of 2005, 42 U.S.C. § 15921(a)(1) (2006).

289 *Id.* § 15921(b)(1).

290 *Id.* § 15921(b)(3).

291 *Id.* § 15942(a)–(b)(5); *see supra* notes 57, 221–23 and accompanying text (discussing the Energy Policy Act categorical exclusions).

292 BUREAU OF LAND MGMT., *supra* note 83, at 1.

293 *See supra* Part V.B.

of oil and gas development on a lease.[294] Retained rights stemming from lease terms, conditions, and stipulations will be considered next.

C. Terms, Conditions, and Attached Stipulations of BLM Oil and Gas Leases

As discussed in detail above, BLM's leases, whether of the modern form or what is apparent in the examples of older leases, retain many rights to the federal government to protect the natural environment.[295] The terms and conditions in the leases provide that the rate of development and production can be specified; especially in the modern leases there are requirements to minimize adverse impacts to the environment, lease suspensions can be required, reclamation measures can be specified, and in some instances operations can be denied.[296] It is apparent that the contractual relationship established between BLM and its oil and gas lessees allows BLM to regulate the time, place, and manner of oil and gas development to a substantial degree under the terms and conditions of the lease.

But in addition to making the rights granted under a lease subject to the terms and conditions in the lease, the modern versions of the lease form operable since March 1984 state that the rights granted are subject to "attached stipulations of this lease."[297] The § 3101.1-2 regulation in place since 1988 also makes leases "subject to" stipulations attached to the lease.[298] Stipulations have not been discussed previously.

BLM regulations provide that "[s]tipulations shall become part of the lease and shall supersede inconsistent provisions of the standard lease form."[299] The lessee is deemed to agree to the terms of a stipulation.[300] There are three types of stipulations BLM requires: 1) no surface occupancy (NSO) stipulations, 2) timing limitation stipulations (TLS), and 3) controlled surface use (CSU) stipulations.[301] NSO stipulations prohibit drilling on the surface of a lease or a described portion of it and are reserved for the most sensitive landscapes.[302] A TLS limits the time periods when drilling—but not operations and maintenance of production facilities—can occur, such as prohibiting drilling on big game crucial winter ranges between November 15th and April 30th.[303] A CSU stipulation prohibits surface occupancy unless certain operating constraints are met, such as limiting surface occupancy or use within 500 feet of riparian areas unless an acceptable mitigation plan is arrived at first.[304] There are many stipulations currently in use, protecting such things as historic trails and resources, threatened, endangered or

294 BUREAU OF LAND MGMT., *supra* note 83, at 1.
295 *See* discussion *supra* Part IV.B; *see also* BUREAU OF LAND MGMT., *supra* note 83, at 3.
296 BUREAU OF LAND MGMT., *supra* note 83, at 3.
297 *Id.* at 1.
298 43 C.F.R. § 3101.1-2 (2008).
299 *Id.* § 3101.1-3.
300 *Id.*
301 BUREAU OF LAND MGMT., *supra* note 147, § 3101.13A.
302 *Id.* § 3101.13A1(c).
303 *Id.* § 3101.13A1(a).
304 *Id.* § 3101.13A1(b).

special status species, high quality visual environments, raptors, and special management areas, among others.[305] In Wyoming, it is not unusual for a current lease to have between four to seven stipulations attached to it.[306] Examples of these stipulations can be seen in any BLM Notice of Competitive Oil and Gas Lease Sale.[307] BLM's manual governing issuance of leases contains a number of provisions regarding stipulations.[308]

In addition to stipulations, current leases also often have "information notices" attached to them.[309] There are currently three lease notices in use in Wyoming: one applicable to protections for steep slopes and certain other resources, one applicable to historic trails, and one applicable to the greater sage-grouse.[310] While these notices express an intent to protect these resources, they probably have little or no legal consequence:

> An information notice has no legal consequences, except to give notice of existing requirements, and . . . [only] convey[s] certain operational, procedural or administrative requirements relative to lease management within the terms and conditions of the standard lease form. Information notices shall not be a basis for denial of lease operations.[311]

"The issuance of the Information Notices therefore establishe[s] no binding policy or practice . . . ."[312] So while these notices certainly express a goal of BLM's to protect resources like the sage-grouse, the legal authority for any resulting actions must be found in the lease itself, in the § 3101.1-2 regulation, or in other law, not in the lease notice.

D. Regulations and Formal Orders

With respect to modern versions of the lease form issued since 1984, the rights granted under the lease are made subject to two conditions related to compliance with regulations and formal orders, one applicable to regulations and formal orders in place when the lease is issued, and the other to later-adopted regulations and formal orders. In the modern lease forms, the rights granted are subject to "the Secretary of the Interior's regulations and formal orders in effect as of lease issuance" and are additionally subject to "regulations and formal orders hereafter promulgated when not inconsistent with lease rights granted or specific provisions of this

---

305 *See, e.g.*, WYO. STATE OFFICE, BUREAU OF LAND MGMT., NOTICE OF COMPETITIVE OIL AND GAS LEASE SALE (2010), *available at* http://www.blm.gov/pgdata/etc/medialib/blm/wy/programs/energy/og/leasing/2010.Par.40252.File.dat/02list.pdf (presenting the different types of lease stipulations for BLM lease sales in Wyoming).

306 *See id.* at 1–31.

307 *See, e.g.*, *id.* (presenting lease stipulations for BLM lease sales in Wyoming).

308 BUREAU OF LAND MGMT., *supra* note 147, § 3101.13A.

309 *Id.* § 3101.13B.

310 WYO. STATE OFFICE, *supra* note 305, at 44–46.

311 43 C.F.R. § 3101.1-3 (2008).

312 Cont'l Land Res., 162 I.B.L.A. 1, 5 (2004).

lease."[313] The older versions of the lease from 1954, 1965, and 1971 provide that the offer to lease is pursuant and subject to the rules and regulations of the Secretary of the Interior "now or hereafter in effect" when not inconsistent with the lease rights granted.[314] These conditions on the exercise of lease rights will be considered next.

1. Regulations

a. The Regulations at 43 C.F.R. Part 3100

BLM's current leasing regulations are found at 43 C.F.R. part 3100. The § 3101.1-2 regulation that elaborates on the rights granted to the lessee and BLM's retained rights when an oil and gas lease is issued was discussed in some detail above,[315] as was the § 3101.1-1 regulation that provides that leases shall be issued only on standard forms.[316] In addition, the regulations applicable to stipulations were just discussed.[317] An additional regulation in this part provides that "[a] suspension of all operations and production may be directed or consented to by the authorized officer only in the interest of conservation of natural resources."[318] Suspension of lease operations is a significant means by which BLM can exercise its retained rights to protect the natural environment.[319] When a suspension occurs, the term of the lease is extended by the period of time of the suspension, and rental and minimum royalty payments are also suspended.[320] Few other regulations in part 3100 likely implicate BLM's retained rights with respect to environmental protection after issuing an oil and gas lease.[321]

The current version of BLM's oil and gas leasing regulations was promulgated in 1988.[322] Thus, the current version of the part 3100 regulations

313 BUREAU OF LAND MGMT., *supra* note 83, at 1.

314 BUREAU OF LAND MGMT., *supra* note 147, § 3101.11B; BUREAU OF LAND MGMT., 1954 LEASE FORM, *supra* note 88, at 1; BUREAU OF LAND MGMT., 1965 LEASE FORM, *supra* note 88, at 1; BUREAU OF LAND MGMT., 1971 LEASE FORM, *supra* note 88, at 1.

315 *See* discussion *supra* Part IV.C.

316 *See supra* Part IV.

317 *See supra* text accompanying notes 299–308.

318 43 C.F.R. § 3103.4-4(a) (2008); *see also* Mineral Leasing Act, 30 U.S.C. § 209 (2006) (providing that the Secretary of the Interior is authorized to suspend leases "in the interest of conservation of natural resources").

319 *See supra* notes 200–02 and accompanying text (citing Copper Valley Mach. Works, Inc., 653 F.2d 595, 600 (D.C. Cir. 1981), and its approval of the use of suspensions to avoid environmental harm as consistent with the ordinary meaning of the term "in the interest of conservation" of natural resources in 30 U.S.C. § 209).

320 43 C.F.R. § 3103.4-4(b), (d) (2008).

321 However, there are provisions in the regulations that provide for consultation with non-BLM surface managing agencies prior to leasing and even a prohibition on leasing over surface managing agency objection in some cases (including Forest Service objection), and there are also special regulations that apply to leasing on National Wildlife Refuges. 43 C.F.R. §§ 3101.5-1, .5-2, .5-4, .7-1, .7-2 (2008).

322 Oil and Gas Leasing, Geothermal Resources Leasing, 53 Fed. Reg. 17,340 (May 16, 1988) (codified at 43 C.F.R. pts. 3000–3260); Minerals Management, 53 Fed. Reg. 22,814 (June 17, 1988) (codified at 43 C.F.R. pts. 3000–3280). Limited amendments that do not implicate BLM's

would clearly apply to the 34,367 currently active leases in the eleven western states issued since that date (see Table 1). Most significantly, the § 3101.1-2 regulation applies to these leases, which represent seventy-one percent of the currently active leases in the eleven western states (see Table 1).

Prior to adoption of the 1988 version of the leasing regulations, which were promulgated to comply with FOOGLRA,[323] several iterations of the leasing regulations had been in place. Regulations governing oil and gas leases were in place in 1938, and notices of modifications to the regulations were published in the Federal Register in 1946, 1954, 1964, 1970, and 1983.[324] The 1983 regulations contained a provision in § 3101.1-2, but it was amended when the 1988 version that has been discussed extensively was adopted. The 1983 version provided that stipulations could be attached to a lease only if either "the stipulations did not absolutely bar exploration" or the lease as stipulated remained acceptable to the offeror.[325] With respect to provisions allowing BLM to ensure protection of the environment, many of the older versions of the leasing regulations provided for suspensions and stipulations.[326]

Whether leases issued prior to 1988 are subject to the current leasing regulations, particularly the § 3101.1-2 regulation, is debatable, but the broad reservations contained in the 1954, 1965, and 1971 leases, such as the term allowing the rate of prospecting and development and the quantity and rate of production to be subject to BLM control in the public interest, [327] suggest that these leases could be subject to the later-adopted regulations. The older leases provide that reasonable regulations "hereafter in force" apply to the

retained rights relative to environmental protection have been made since 1988. *See, e.g.*, Oil and Gas Lease Acreage Limitation Exemptions and Reinstatement of Oil and Gas Leases, 71 Fed. Reg. 14,821, 14,821–23 (Mar. 24, 2006) (codified at 43 C.F.R. pt. 3100); Oil and Gas Leasing, 70 Fed. Reg. 58,854, 58,874–75 (Oct. 7, 2005) (codified at 43 C.F.R. pts. 3000–3870); Oil and Gas Leasing: Onshore Oil and Gas Operations, 66 Fed. Reg. 1883, 1892–94 (Jan. 10, 2001) (codified at 43 C.F.R. pts. 3100–3160); Promotion of Development, Reduction of Royalty on Heavy Oil, 61 Fed. Reg. 4748, 4750–52 (Feb. 8, 1996) (codified at 43 C.F.R. pt. 3100).

323 *See* Thomas L. Sansonetti & William R. Murray, *A Primer on the Federal Onshore Oil and Gas Leasing Reform Act of 1987 and Its Regulations*, 25 LAND & WATER L. REV. 375–76, 383 (1990) (discussing the adoption of FOOGLRA and related regulations).

324 *See* 43 C.F.R. pt. 192 (1939); Minerals Management and Oil and Gas Leasing, 48 Fed. Reg. 33,648, 33,662–75 (July 22, 1983) (codified at 43 C.F.R. pts. 3100–3150); Reorganization and Revision of Chapter, 35 Fed. Reg. 9503, 9670 (June 13, 1970) (codified at 43 C.F.R. pts. 3100–3109); Revision of Regulations—Continued, 29 Fed. Reg. 4507 (Mar. 31, 1964) (codified at 43 C.F.R. pts. 3000–3129); Editorial Revision of Regulations, 19 Fed. Reg. 8835, 9011–19 (Dec. 23, 1954) (codified at 43 C.F.R. pt. 192); General Regulations Applicable to Mineral Permits, Leases and Licenses, 11 Fed. Reg. 12,952 (Nov. 1, 1946) (codified at 43 C.F.R. pts. 191–192); Oil and Gas Leases, 11 Fed. Reg. 9760 (Sept. 5, 1946) (codified at 43 C.F.R. pt. 192).

325 43 C.F.R. § 3101.1-2 (1983).

326 *E.g.*, 11 Fed. Reg. at 12,953 (requiring special stipulations for lands in national forests and reclamation projects); *id.* at 12,954 (providing for suspension of operations, production, and rental payments).

327 *See supra* notes 106–09, 134 and accompanying text.

lease if not inconsistent with the provisions in the lease.[328] Section 6 of the 1984 version of the lease form already allowed for reasonable measures to be required, even before the § 3101.1-2 regulation was promulgated in 1988.[329] Accordingly, the current version of the leasing regulations could well apply to leases issued prior to 1988. However, as will be discussed below, in some circumstances the courts have not been receptive to allowing later-enacted statutes to govern a lease.[330]

b. The Regulations at 43 C.F.R. Part 3160 and Other BLM Regulations

In addition to its leasing regulations, BLM also has an extensive body of regulations governing onshore lease operations. These regulations are found at 43 C.F.R. part 3160.[331] BLM's current operating regulations are replete with provisions allowing BLM to protect the natural environment when operations are proposed, including the following:

- "The authorized officer is authorized and directed to . . . require compliance with lease terms, with the regulations in this title and all other applicable regulations promulgated under the cited laws; and to require that all operations be conducted in a manner which protects other natural resources and the environmental quality . . . ."[332]
- "Before approving operations on [a] leasehold, the authorized officer shall determine . . . that the proposed plan of operations is sound both from a technical and environmental standpoint."[333]
- Operators are to comply with applicable laws, regulations, lease terms, onshore oil and gas orders, notices to lessees, and other orders and instructions from BLM, including but not limited to conducting all operations in a manner that "protects other natural resources and environmental quality."[334]
- The regulations make extensive provisions regarding submission of APDs, including requiring submission of a surface use plan of operations which must contain information regarding roads and drill pads, methods for containment and disposal of waste materials, and reclamation plans.[335]
- "The operator shall conduct operations in a manner which protects the mineral resources, other natural resources, and environmental

328 *See* BUREAU OF LAND MGMT., *supra* note 147, § 3101.1.11B; *see also* BUREAU OF LAND MGMT., 1954 LEASE FORM, *supra* note 88, at 2; BUREAU OF LAND MGMT., 1965 LEASE FORM, *supra* note 88, at 2; BUREAU OF LAND MGMT., 1971 LEASE FORM, *supra* note 88, at 2.

329 BUREAU OF LAND MGMT., 1984 LEASE FORM, *supra* note 84, at 1.

330 *See* discussion *infra* Parts VI, VII.B.

331 43 C.F.R. pt. 3160 (2008).

332 *Id.* § 3161.2.

333 *Id.*

334 *Id.* § 3162.1(a).

335 *Id.* § 3162.3-1(f); *see also* Mineral Leasing Act of 1920, 30 U.S.C. § 226(g) (2006) (requiring "a plan of operations covering proposed surface-disturbing activities").

quality," which obligates the operator to comply with all pertinent orders, applicable laws, regulations, lease terms and conditions, and the approved drilling plan.[336] BLM is to prepare an environmental review to ensure compliance with NEPA, and this environmental review can be used to determine terms and conditions of approval of the proposed drilling plan.[337]

- "The operator shall exercise due care and diligence to assure that leasehold operations do not result in undue damage to surface or subsurface resources or surface improvements."[338]
- Operators may be subject to penalties for noncompliance with these regulations, including shut down or shut-in of operations where significant environmental impacts are occurring.[339]

While these regulations clearly create mandatory obligations to protect the environment, that is not their sole purpose. The regulations at 43 C.F.R. §§ 3161.2 and 3162.1(a) require actions to protect the environment, but they also specifically provide that an objective of operations is to maximize oil and gas recovery.[340]

Moreover, one court, in *Blancett v. U.S. Bureau of Land Management*,[341] determined many of these regulations do not provide a basis for a "failure to act" claim pursuant to the Administrative Procedure Act.[342] This case concerned claims that BLM had failed to protect the environment from oil and gas operations that affected a ranch in New Mexico.[343] The court ruled that while the regulations at 43 C.F.R. §§ 3161.2, 3162.1(a), and 3162.5-1(a)–(b) established broad objectives, "none of the regulations in Part 3160 imposes a mandatory duty on BLM to protect the environment with the specificity required to support a claim under § 706(1) of the [Administrative Procedure

336 43 C.F.R. § 3162.5-1(a) (2008).

337 *Id.* "Conditions of approval" is a term of art in BLM and means requirements that BLM can impose based on a site-specific review but which were not necessarily provided for by stipulation. Presumably the "conditions of approval" referenced in 43 C.F.R. § 3162.5-1(a) are one form of a "reasonable measure[]" that can be required pursuant to 43 C.F.R. § 3101.1-2 and section six of the modern lease forms. 43 C.F.R. § 3102.1-2 (2009); BUREAU OF LAND MGMT., *supra* note 83. Best Management Practices (BMPs) are another type of protective measure that BLM encourages and can require, and is increasingly emphasizing. *See supra* text accompanying notes 289–90 (discussing BMP provisions in the Energy Policy Act of 2005); *infra* text accompanying notes 429–34, 577–81 (discussing BMPs and BMP provisions in *The Gold Book*).

338 43 C.F.R. § 3162.5-1(b) (2008).

339 *Id.* § 3163.1(a)(3).

340 *Id.* §§ 3161.2, 3162.1(a) (providing in both instances that operations are to result in the maximum ultimate recovery of oil and gas); *see also id.* § 3160.0-4 (providing that the objective of BLM's oil and gas operations regulations "is to promote the orderly and efficient exploration, development and production of oil and gas").

341 No. Civ.A. 04-2152 (JDB), 2006 WL 696050 (D.D.C. Mar. 20, 2006).

342 5 U.S.C. §§ 551–559, 701–706, 1305, 3105, 3344, 4301, 5335, 5362, 7521 (2006); *Blancett*, 2006 WL 696050, at *6; *see* 5 U.S.C. § 706(1) (2006) (authorizing a reviewing court to "compel agency action unlawfully withheld or unreasonably delayed"); *see also id.* § 551(13) (defining "agency action" that is subject to judicial review under the Administrative Procedure Act as including five particular activities, including a "failure to act").

343 *Blancett*, 2006 WL 696050, at *1.

Act]."[344] It found the regulations did not specify discrete agency action and did not define actions that were legally required.[345] Thus, the plaintiffs' lawsuit failed the two-part test under the Supreme Court's precedent in *Norton v. Southern Utah Wilderness Alliance*[346] that is required to support a § 706(1) claim.[347] Consequently, the court granted BLM's motion to dismiss the lawsuit based on the pleadings and found that it did not have subject matter jurisdiction. However, because the dismissal without prejudice did not constitute a decision on the merits,[348] the precedential value of this unpublished decision is limited. BLM's obligations to protect the environment will be considered further in Part IX.[349]

Despite the decision in *Blancett*, it seems clear that even if BLM's operations regulations do not mandate *particular* actions by BLM that can be enforced in court, the regulations nevertheless provide that BLM is *obligated* to require environmental protection when it permits oil and gas development. As the court recognized in *Blancett*, defendant BLM "acknowledge[s] that the regulations charge BLM with requiring operator compliance with lease terms and regulations and with requiring that operations be conducted in a manner that protects environmental quality."[350]

A form of the part 3160 regulations that closely approximates the current version of the regulations with respect to environmental protection obligations has been in place since 1982 when the Minerals Management Service (MMS) amended the predecessor regulations.[351] The 1982 regulations were intended to be codified at 30 C.F.R. part 221, and at that time onshore operations were under the direction of MMS, not BLM.[352] However, the 1982 regulations were amended again in August 1983. In the 1983 revision the regulations were transferred from 30 C.F.R. part 221 and redesignated as 43 C.F.R. part 3160, and the management authority was transferred to

344 *Id.* at *11.

345 *Id.* at *6, *10.

346 542 U.S. 55 (2004).

347 *Blancett*, 2006 WL 69050, at *6; *see Norton*, 542 U.S. at 64 (requiring that a cause of action under 5 U.S.C. § 706(1) "can proceed only where a plaintiff asserts that an agency failed to take *discrete* agency action that it is *required to take*" (emphasis added)).

348 *Blancett*, 2006 WL 696050, at *11.

349 *See* discussion *infra* Part IX. The court in *Au Sable*, 565 F. Supp. 2d 812 (E.D. Mich. 2008), also held claims that BLM and Forest Service actions violated 43 C.F.R. § 3161.2 were unsubstantiated. *Id.* at 840. However, that holding was based on a determination that "plaintiffs have not alleged any facts that would establish a violation of this regulation independent of their [successful] NEPA claim." *Id. Au Sable* was not based on a consideration of whether the requirements to sustain a "failure to act" claim were met. *Id.*; *see* discussion *supra* Part V.B.2 (considering the court's decision in *Au Sable*).

350 *Blancett*, 2006 WL 696050, at *8.

351 Oil and Gas Operating Regulations, 47 Fed. Reg. 47,758, 47,765–76 (Oct. 27, 1982) (codified at 43 C.F.R. pt. 3160 (1983)) (adopting final rule that, among other things, amended the language of 30 C.F.R. §§ 221.11, 221.12, 221.20, 221.23, and 221.30 with language identical to or similar to that found in the current regulations at 43 C.F.R. §§ 3161.2, 3162.1, 3162.3-1, and 3162.5-1).

352 *See id.* at 47,758 (indicating rulemaking was undertaken by the Minerals Management Service).

BLM.[353] In 1988, as part of the regulatory revisions needed to conform to FOOGLRA, the operating regulation governing APDs was modified to its current form by adding requirements related to surface use plans of operation, as well as other provisions.[354] Thus, with respect to environmental protection provisions, the current version of the operations regulations has been fully in place since 1988,[355] but regulations quite similar to, and often identical to, the current regulations have been in place since 1982.[356] Consequently, the vast majority of currently active leases in the eleven western states are subject to the current operating regulations or a version very similar to them (see Table 1).

Prior to the 1982 revision of the regulations, MMS managed oil and gas operations under regulations adopted in 1942.[357] The 1942 regulations, which were in place for forty years,[358] provided for less in the way of environmental protection than the current regulations, but they did provide that "[t]he lessee shall not pollute streams or damage the surface or pollute the underground water of the leased or other land."[359] More generally, the old operations regulations required compliance with lease terms, regulations, and applicable law.[360]

In addition to the part 3160 regulations, BLM also promulgated regulations governing approval of land use authorizations. With respect to provisions that are relevant here, these regulations have been in place since 1981.[361] These regulations provide that the United States reserves the right to use the public lands or authorize the use of the public lands by the general public in ways that are compatible or consistent with the land-use authorization.[362] They also provide that each land-use authorization shall contain terms and conditions that shall minimize damage to scenic, cultural, and aesthetic values and wildlife habitat and that "otherwise protect the environment";[363] require compliance with air and water quality standards;[364]

---

353 Onshore Oil and Gas, General, 48 Fed. Reg. 36,582, 36,583 (Aug. 12, 1983) (codified at 43 C.F.R. pt. 3160 (1983)) (establishing, among other things, a form of the regulation at 43 C.F.R. § 3161.2 that is identical to the current version); *see also* 43 C.F.R. § 3161.2 (2006).

354 *See, e.g.*, Minerals Management, 53 Fed. Reg. 22,814, 22,846 (June 17, 1988) (codified at 43 C.F.R. pt. 3160 (1988)).

355 *Compare* 43 C.F.R. pt. 3160 (1988), *with* 43 C.F.R. pt. 3160 (2008).

356 *Compare* 43 C.F.R. pt. 3160 (1983), *with* 43 C.F.R. pt. 3160 (1988), *and* 43 C.F.R. pt. 3160 (2008).

357 Oil and Gas Operating Regulations, 7 Fed. Reg. 4132 (June 2, 1942) (codified at 30 C.F.R. pt. 221 (1944)).

358 *See supra* text accompanying note 351.

359 30 C.F.R. § 221.32 (1944).

360 *Id.* §§ 221.4, .18. An even older version of the operating regulations is found at 30 C.F.R. §§ 221.1–.56 (1939).

361 Leases, Permits, and Easements, 46 Fed. Reg. 5772, 5777 (Jan. 19, 1981) (codified at 43 C.F.R. pt. 2920 (1981)).

362 43 C.F.R. § 2920.7(a) (2008). "Land use authorization" means "any authorization to use the public lands issued under this part" and "lease" means "an authorization to possess and use public lands for a fixed period of time." *Id.* § 2920.0-5(c), (*l*).

363 *Id.* § 2920.7(b)(2).

364 *Id.* § 2920.7(b)(3).

and require compliance with state environmental protection standards that are more stringent than federal standards.[365] Land-use authorizations shall also contain provisions that "[r]equire the use to be located in an area which shall cause least damage to the environment, taking into consideration feasibility"[366] and to "[o]therwise protect the public interest."[367] Other provisions provide for inspection and monitoring during construction, operation, and maintenance of the land-use authorization so as to protect the environment.[368]

In sum, BLM's oil and gas leasing regulations, its oil and gas operations regulations, and the land-use authorization regulations provide an additional and substantial basis for BLM to assert retained rights so as to protect the natural environment. The leasing regulations have existed in their present form since 1988, the operations regulations have been in essentially their current form since 1982, and the relevant land-use authorization regulations have been in place since 1981. Consequently the majority of currently active leases in the eleven western states are subject to these provisions without need to consider the question of whether later-adopted regulations were incorporated into a lease or were consistent with lease rights previously granted (see Table 1).

2. Formal Orders

Beyond these regulatory provisions are a number of authorities that could be "formal orders," which many leases are also subject to—particularly leases issued since 1984 when this condition on the granted lease rights was introduced.[369] These formal orders could include BLM Resource Management Plans (RMPs) developed pursuant to FLPMA, onshore oil and gas orders, notices to lessees, provisions in the BLM manual and handbook, BLM instruction memoranda, BLM's "Gold Book," Executive Orders, and Department of the Interior Solicitor opinions and Secretarial orders. These sources of authority will be considered next.

a. Resource Management Plans

BLM RMPs are required by FLPMA,[370] and their role in the oil and gas leasing and development process was discussed above.[371] Once an RMP is developed, the Secretary of the Interior shall manage the public lands

365 *Id.* § 2920.7(b)(4).

366 *Id.* § 2920.7(c)(5).

367 *Id.* § 2920.7(c)(6).

368 *Id.* §§ 2920.9-1(c), -2.

369 *See supra* notes 111–12, 176–77 and accompanying text.

370 Federal Land Policy and Management Act of 1976, 43 U.S.C. § 1712(a) (2006) (stating that the Secretary of the Interior "shall . . . develop, maintain, and, when appropriate, revise land use plans"). *See generally id.* § 1712 (specifying land-use planning requirements); 43 C.F.R. §§ 1601.1-1 to -8 (2008) (presenting the objectives and policies for BLM's planning regulations).

371 *See* discussion *supra* Part III.A.1.

governed by the plan in accordance with the plan.[372] There seems to be little doubt that an RMP constitutes a formal order that an oil and gas lease issued since 1984 is subject to.

The first RMPs were adopted in the early to mid-1980s.[373] Accordingly, oil and gas leases have been made subject to these formal orders since approximately the mid-1980s. As indicated several times above, it seems likely that older leases are also subject to the provisions in a later-adopted RMP because the expansive language in older leases—"not inconsistent with any express and specific provisions herein"[374]—arguably makes the older leases subject to the later-adopted RMP provisions. For RMPs adopted after 1984, the RMP provisions could well be "not inconsistent with lease rights granted or specific provisions of this lease," as provided for in the modern lease form in place since 1984.[375]

RMPs provide general guidance for oil and gas development that might occur pursuant to them.[376] Under the BLM handbook governing land-use planning, an RMP should identify areas open to leasing subject to various constraint levels—for example, an area may be open to leasing with "moderate constraints" such as seasonal and controlled surface-use restrictions; identify areas closed to leasing; identify lease stipulations, conditions of approval, and best management practices that will be employed; identify "[w]hether constraints identified in the land use plan for new leases also apply to areas currently under lease"; and define "resource condition objectives for areas under development to guide reclamation activities in these areas."[377] Thus, RMPs contain considerable guidance that oil and gas leases are subjec to.

b. Onshore Oil and Gas Orders

BLM is authorized to issue Onshore Oil and Gas Orders when necessary to implement or supplement the oil and gas operations regulations.[378]

372 43 U.S.C. § 1732(a) (2006); *see also* 43 C.F.R. § 1610.5-3(a) (2008) ("All future resource management authorizations and actions . . . shall conform to the approved plan.").

373 *See* 2 COGGINS & GLICKSMAN, *supra* note 23, § 16:18, at 16-31 (noting that by 1987, BLM had completed only 12 of 162 RMPs).

374 BUREAU OF LAND MGMT., 1954 LEASE FORM, *supra* note 88, at 1; BUREAU OF LAND MGMT., 1965 LEASE FORM, *supra* note 88, at 1; BUREAU OF LAND MGMT., 1971 LEASE FORM, *supra* note 88, at 1.

375 BUREAU OF LAND MGMT., *supra* note 83, at 1.

376 *See* discussion *supra* Part III.A.1.

377 BUREAU OF LAND MGMT., U.S. DEP'T OF THE INTERIOR, LAND USE PLANNING HANDBOOK 23–24 (2005), *available at* http://www.blm.gov/pgdata/etc/medialib/blm/ak/aktest/planning/planning_general.Par.65225.File.dat/blm_lup_handbook.pdf; *see also* BUREAU OF LAND MGMT., U.S. DEP'T OF THE INTERIOR, BLM PLANNING FOR FLUID MINERAL RESOURCES (1990) [hereinafter BUREAU OF LAND MGMT., FLUID MINERAL HANDBOOK] (outlining similar provisions). Provisions in this handbook are discussed below. *See infra* Part V.D.2.d.

378 43 C.F.R. § 3164.1(a) (2008).

Seven onshore orders are currently in effect.[379] They deal with drilling and disposal of produced water, site security, and other issues. An onshore order is "binding on operating rights owners and operators."[380]

The most significant onshore order for purposes of this discussion is Onshore Oil and Gas Order Number 1.[381] This order was first adopted on October 21, 1983,[382] and it was most recently revised on March 7, 2007.[383] It governs approval of oil and gas exploratory, development, and service wells and most subsequent well operations on essentially all federal onshore oil and gas leases.[384] The order governs APDs including their accompanying drilling plans and surface use plan of operations.[385] Among other things, the order describes a number of requirements for the surface-use plan of operations.[386] These include provisions for revegetation of disturbed areas and the safe containment and disposal of waste material (including chemicals).[387] The processing of APDs is discussed and prescribed in detail, including requirements for on-site inspections.[388] BLM can approve, defer, or deny an APD depending on whether certain requirements have been met; this includes a provision that "BLM cannot approve an APD or Master Development Plan until the requirements of certain other laws and regulations including NEPA, the National Historic Preservation Act, and the Endangered Species Act have been met."[389] Onshore Order Number 1 then makes this provision:

> The approved APD will contain Conditions of Approval that reflect necessary mitigation measures. In accordance with 43 CFR 3101.1-2 . . . , the BLM . . . may require reasonable mitigation measures to ensure that the proposed operations minimize adverse impacts to other resources, uses, and users, consistent with granted lease rights. The BLM will incorporate any mitigation requirements, including Best Management Practices, identified through the APD review and appropriate NEPA and related analyses, as Conditions of Approval to the APD.[390]

379 *See* Bureau of Land Mgmt., U.S. Dep't of the Interior, Onshore Operations, http://www.blm.gov/wy/st/en/programs/energy/Oil_and_Gas/Onshore_Operations.html (listing BLM's active onshore orders) (last visited Apr. 18, 2010).

380 43 C.F.R. § 3164.1(b) (2008).

381 *See generally* Bureau of Land Mgmt., U.S. Dep't of the Interior, Onshore Oil and Gas Order No. 1, http://www.blm.gov/wo/st/en/prog/energy/oil_and_gas/Onshore_Order_no1.html (last visited Apr. 18, 2010) (containing links to background information regarding Onshore Oil and Gas Order Number 1).

382 Onshore Oil and Gas Order No. 1, 48 Fed. Reg. 48,916 (Oct. 21, 1983).

383 Onshore Oil and Gas Operations, 72 Fed. Reg. 10,308 (Mar. 7, 2007).

384 *Id.*

385 *Id.*

386 *Id.* at 10,331–33.

387 *Id.* at 10,332–33 (subsections describing methods for handling waste and plans for surface reclamation).

388 *Id.* at 10,333–34 (subsections describing APD posting and processing and APD approval).

389 *Id.* at 10,334.

390 *Id.*

It is noteworthy that the "reasonable mitigation measures" referred to here are not confined to the "200-meter 60-day rule" limitations mentioned in the § 3101.1-2 regulation, and thus these reasonable mitigation measures are arguably not limited accordingly; this is consistent with both the language in the § 3101.1-2 regulation and section 6 of the standard lease form in use since 1984.[391] Moreover, there is no indication in Onshore Order Number 1 that the heightened clear and convincing evidence standard presented in IM 92-67 and BLM Manual MS-3101 is applicable for determining reasonable measures.[392]

Onshore Order Number 1 also specifies several general operating requirements. It provides that "[t]he operator must conduct operations to minimize adverse effects to surface and subsurface resources, prevent unnecessary surface disturbance, and conform with currently available technology and practice."[393] Furthermore, "[t]he operator must comply with the provisions of the approved APD and applicable laws, regulations, Orders, and Notices to Lessees, including but not limited to [several specified provisions, including provisions related to cultural and historic resources, ESA compliance, and surface protection]."[394]

While the current version of Onshore Order Number 1 has only been in place since March 2007, as noted, it has been in place in some form since October 1983.[395] Thus, the roughly 36,000 leases issued since 1983 are subject to this formal order in one of its previous versions (see Table 1). As claimed elsewhere, it is not clear that the newest version of Onshore Order Number 1 would necessarily be inconsistent with lease rights granted in older leases since those older leases contain at least somewhat expansive reservations of authority allowing actions to be taken to protect the environment and other resources.[396]

c. Notices to Lessees

Another kind of formal order that is recognized is the notice to lessee (NTL). The BLM authorized officer may issue an NTL "when necessary to implement the onshore oil and gas orders and the regulations in this part."[397] NTLs "implement the regulations in [part 3160] and operating orders, and

391 *See* discussion *supra* Part IV.C.2–3 (arguing reasonable measures are not limited to those specified in the 200-meter 60-day rule).

392 *See* Onshore Oil and Gas Operations, 72 Fed. Reg. at 10,335; *see also* discussion *supra* Part IV.C.3 (arguing the clear and convincing evidence standard in IM 92-67 and BLM Manual MS-3101 is unwarranted).

393 Onshore Oil and Gas Operations, 72 Fed. Reg. at 10,335.

394 *Id.* Onshore Order Number 1 also makes provisions related to waiver, exemption, or modification of lease stipulations. *Id.* at 10,337; *see also* 43 C.F.R. § 3101.1-4 (2008) (establishing similar provisions for modification and waiver of stipulations).

395 *See* Onshore Oil and Gas Order No. 1, 48 Fed. Reg. 48,916 (Oct. 21, 1983); *supra* notes 381–83 and accompanying text.

396 *See supra* Part IV.B.

397 43 C.F.R. § 3164.2(a) (2008).

serve as instructions on specific item(s) of importance within a State, District, or Area."[398]

There are three operable NTLs in Wyoming, which are posted on BLM's website.[399] One of these addresses flow meters,[400] another deals with reporting "undesirable events,"[401] and the last deals with royalties from lost oil and gas.[402] The flow meter NTL is applicable in Wyoming and the other two NTLs apply nationwide.[403] According to BLM personnel, there is a trend to convert NTLs to onshore oil and gas orders and many are only applicable in a particular state.[404]

d. The BLM Manual and Handbook

BLM also has an agency manual and handbook.[405] The BLM manual "provides policy, procedures, and instructions to manage programs."[406] The BLM handbook is a "source of detailed instructions for performing specialized procedures to carry out policy and direction described in the Manual Section."[407] According to the BLM handbook, "[H]andbooks are considered part of the Manual."[408] It is debatable whether the provisions in

398 *Id.* § 3160.0-5.

399 Bureau of Land Mgmt., U.S. Dep't of the Interior, Oil & Gas Operations, http://www.blm.gov/wy/st/en/programs/energy/Oil_and_Gas/Onshore_Operations.html (last visited Apr. 18, 2010).

400 *See* BUREAU OF LAND MGMT., U.S. DEP'T OF THE INTERIOR, NOTICE TO LESSEE/OPERATORS OF ONSHORE FEDERAL AND INDIAN OIL AND GAS LEASES WITHIN THE JURISDICTION OF THE WYOMING STATE OFFICE (NTL 2004-1) (2004), *available at* http://www.blm.gov/pgdata/etc/medialib/blm/wy/programs/energy/og/ogdocs.Par.7786.File.dat/04wy-efcntl.pdf.

401 *See* U.S. GEOLOGICAL SURVEY, U.S. DEP'T OF THE INTERIOR, NOTICE TO LESSEES AND OPERATORS OF ONSHORE FEDERAL AND INDIAN OIL AND GAS LEASES (NTL-3A) (1979), *available at* http://www.blm.gov/pgdata/etc/medialib/blm/co/programs/oil_and_gas.Par.49503.File.dat/ntl3a.pdf. Undesirable events include spills of toxic liquids of 100 or more barrels, equipment failures or other accidents that result in the venting of certain volumes of gas, fires, blowouts of wells, accidents involving fatal injuries, and "[a]ny spill, venting, or fire, regardless of the volume involved, which occurs in a sensitive area, e.g., areas such as parks, recreation sites, wildlife refuges, lakes, reservoirs, streams, and urban or suburban areas." *Id.* at 1–2.

402 *See* BUREAU OF LAND MGMT., U.S. DEP'T OF THE INTERIOR, NOTICE TO LESSEES AND OPERATORS OF ONSHORE FEDERAL AND INDIAN OIL AND GAS LEASES (NTL-4A) (1980), *available at* http://www.blm.gov/pgdata/etc/medialib/blm/ak/aktest/energy/og_forms.Par.32669.File.dat/ntl4a.pdf.

403 Bureau of Land Mgmt., *supra* note 399.

404 Telephone Interview with Julie Weaver, Chief, Branch of Fluid Minerals Adjudication, Wyo. State Office, Bureau of Land Mgmt. (Oct. 8, 2009) (on file with author).

405 Bureau of Land Mgmt., U.S. Dep't of the Interior, BLM Manual, http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/blm_manual.html (last visited Apr. 18, 2010) [hereinafter BLM Manual]; Bureau of Land Mgmt., U.S. Dep't of the Interior, BLM Handbooks, http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/ blm_handbooks.html (last visited on Apr. 18, 2010) [hereinafter BLM Handbooks]. The Department of Interior also has a manual. U.S. Dep't of the Interior, ELIPS Electronic Library of Interior Policies, http://206.131.241.18/app_dm/index.cfm?fuseaction=home (last visited Apr. 18, 2010).

406 BLM Manual, *supra* note 405.

407 BLM Handbooks, *supra* note 405.

408 *Id.*

the manual and handbook constitute formal orders since they are not developed pursuant to the formal notice-and-comment rulemaking procedures specified by the Administrative Procedure Act,[409] however there is no doubt these internal sources of guidance play a major role in BLM's day-to-day decision making.[410]

Potentially relevant manual sections that could constitute formal orders that a lease has been made subject to include but are not limited to the following: MS-1601 (land-use planning); MS-1703 (hazardous materials management and resource restoration); MS-3150 (onshore oil and gas geophysical exploration surface management requirements); MS-6840 (special status species management); and MS-8110, -8130, -8140, and -8150 (relating to various aspects of cultural resources management).[411] Potentially relevant handbook sections include but are not limited to H-1601-1 (land-use planning), H-1740-2 (integrated vegetation management), H-1790-1 (NEPA), H-3070-2 (economic evaluation of oil and gas properties), H-3101-1 (issuance of leases), H-3110-1 (noncompetitive leases), H-3150-1 (onshore oil and gas geophysical exploration surface management requirements), and H-3203-1 (leasing terms).[412]

In the interest of space, I will make no effort to review all of the provisions in this guidance. This would be a daunting task, and it might well be virtually impossible to determine what versions of these documents were in place at various times in the past. However, there are potentially a number of relevant provisions that could constitute formal orders, perhaps most significantly those found in the handbook section entitled "Planning for Fluid Minerals Resources."[413] The provisions in BLM Manual MS-3101, relating to issuance of leases, are also relevant and some have been discussed.[414]

e. BLM Instruction Memoranda

In addition to manual and handbook provisions, BLM also has an extensive library of "Instruction Memoranda" (IMs), which may also be formal orders that a lease is subject to, at least if the lease was issued since 1984 when the "formal orders" language was adopted in the standard lease form. IMs "are temporary directives that supplement the Bureau Manual

409 *See* 5 U.S.C. § 553 (2006) (specifying the Administrative Procedure Act rulemaking provisions).

410 *See* 43 C.F.R. § 3162.1(a) (2008) (providing that operating rights owners shall comply "with *other orders and instructions* of the authorized officer" (emphasis added)).

411 *See* BLM Manual, *supra* note 405 (presenting BLM manual sections).

412 *See* BLM Handbooks, *supra* note 405 (presenting BLM handbook sections).

413 BUREAU OF LAND MGMT., FLUID MINERAL HANDBOOK, *supra* note 377. It makes many provisions, including specifying that stipulations are to be the least restrictive possible, *id.* at III-11, providing for certain determinations in the RMP for some oil and gas lease decision making, *see id.* at IV-1, and providing that "[c]onstraints in the form of conditions of approval (COAs) on applications for permit to drill (APD's) are site specific requirements or measures imposed to protect resources or resource values. COAs must be reasonable and consistent with lease rights." *Id.* at IV-2.

414 *See supra* notes 147, 191, 314 and accompanying text.

Sections."[415] The BLM website presents IMs that have been issued since 1999.[416] Generally they are directives from the BLM Director to BLM state directors and field office officials, although state offices may also issue IMs.[417] Most, if not all, IMs have associated expiration dates,[418] so it is debatable whether they have continuing force after they expire, even if the IM was in force when a lease was issued. But BLM sometimes continues to treat IMs as effective after they have nominally expired.[419] At this time, IMs 2009-225, 2009-078, 2009-044, and 2009-011 are operational at a minimum (all expire on September 30, 2010).[420] These IMs address a range of topics including oil and gas inspection and enforcement strategies,[421] processing APDs that employ directional drilling from well pads on nonfederal lands,[422] the use of categorical exclusions from NEPA compliance for geophysical exploration,[423] and assessment and mitigation of

[415] Bureau of Land Mgmt., U.S. Dep't of the Interior, National Instruction Memoranda, http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instruction.html (last visited Apr. 18, 2010).

[416] *Id.*

[417] *See, e.g.*, Instruction Memorandum No. 2010-037 from Dir., Bureau of Land Mgmt., to All State Directors (Dec. 18, 2009), http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instruction/2010/im_2010-037__tribal.html (last visited Apr. 18, 2010); Instruction Memorandum No. 2009-167 from Dir., Bureau of Land Mgmt., to All Field Officials (July 7, 2009), http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instruction/2009/IM_2009-167.html (last visited Apr. 18, 2010); Instruction Memorandum No. WY-2010-017 from State Dir., Bureau of Land Mgmt., Wyo. State Office to All Employees (Jan. 26, 2010), *available at* http://www.blm.gov/pgdata/etc/medialib/blm/wy/resources/efoia/IMs/2010.Par.14095.File.dat/wy2010-017.pdf.

[418] *See, e.g.*, Instruction Memorandum No. 2010-025 from Assistant Dir., Minerals & Realty Mgmt., Bureau of Land Mgmt., to All Field Officials (Dec. 4, 2009), http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instruction/2010/IM_2010-025.html (last visited Apr. 18, 2010) (expiring September 30, 2011).

[419] *See* Yates Petroleum Corp., 176 I.B.L.A. 144, 159 n.16 (2008) (pointing out that it was "BLM practice to continue using the guidance contained in [a] memorandum" issued by the BLM Wyoming State Office (IM No. WY-90-231) even though the IM had expired).

[420] *See* Instruction Memorandum No. 2009-225 from Assistant Dir., Minerals & Realty Mgmt., Bureau of Land Mgmt., to All Field Officials (Sept. 30, 2009), http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instruction/2009/IM_2009-225.html (last visited Apr. 18, 2010); Instruction Memorandum No. 2009-078 from Assistant Dir., Minerals & Realty Mgmt., Bureau of Land Mgmt., to All Field Officials (Feb. 20, 2009), http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instruction/2009/IM_2009-078.html (last visited Apr. 18, 2010); Instruction Memorandum No. 2009-044 from Dir., Bureau of Land Mgmt., to All Wash. Office & Field Officials (Dec. 19, 2008), http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instruction/2009/IM_2009-044.html (last visited Apr. 18, 2010); Instruction Memorandum No. 2009-011 from Assistant Dir., Renewable Res. & Planning, Bureau of Land Mgmt., to All State Dirs. (Oct. 10, 2008), http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instruction/2009/IM_2009-011.html (last visited Apr. 18, 2010).

[421] Instruction Memorandum No. 2009-225 from Assistant Dir. to All Field Officials, *supra* note 420.

[422] Instruction Memorandum No. 2009-078 from Assistant Dir. to All Field Officials, *supra* note 420.

[423] Instruction Memorandum No. 2009-044 from Dir. to All Wash. Office & Field Officials, *supra* note 420.

impacts to paleontological resources.[424] Many other nominally expired IMs relate to oil and gas development.[425]

f. The BLM "Gold Book"

An additional BLM document that could constitute a formal order is *The Gold Book* (actually entitled *Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development: The Gold Book*).[426] While this document also has not been adopted through formal notice-and-comment rulemaking, it is an important source of information and guidance for BLM decision making regarding operations on an oil and gas lease.[427] It is essentially a user-friendly companion to Onshore Oil and Gas Order Number 1.

The Gold Book provides a wide array of guidance (and requirements) relative to all phases of oil and gas development operations. It was "developed to assist operators by providing information on the requirements for obtaining permit approval and conducting environmentally responsible oil and gas operations on Federal lands."[428] It defines "Best Management Practices" as measures that "minimiz[e] undesirable impacts to the environment" and promotes the use of best management practices to

[424] Instruction Memorandum No. 2009-011 from Assistant Dir. to All State Dirs., *supra* note 420.

[425] *See, e.g.*, Instruction Memorandum No. 2002-053, from the Dir., Bureau of Land Mgmt., to All State Dirs., Assistant Dirs. & Field Officials (Dec. 12, 2001) (expiring September 30, 2003) (on file with author) (requiring preparation of a statement of adverse energy impacts); Instruction Memorandum No. 2003-233, from Dir., Bureau of Land Mgmt., to State Dirs. (July 28, 2003) (expiring September 30, 2004) (on file with author) (requiring use of the least restrictive mitigation); Instruction Memorandum No. 2003-234, from Dir., Bureau of Land Mgmt., to All Field Officials (July 28, 2003) (expiring September 30, 2004) (on file with author) (requiring use of the least restrictive mitigation); Instruction Memorandum No. 2004-110, from Dir., Bureau of Land Mgmt., to All WO & FO Officials (Feb. 23, 2004) (expiring September 30, 2005) (on file with author) (guiding leasing decisions during RMP revision); Instructional Memorandum No. 2004-110 Change 1, from Dir., Bureau of Land Mgmt., to All WO & FO Officials (Aug. 13, 2004) (expiring September 30, 2005) (on file with author) (guiding leasing decisions during RMP revision); Instruction Memorandum No. 2005-235, from Dir., Bureau of Land Mgmt., to AFOs (Sept. 13, 2005) (expiring September 30, 2006) (on file with author) (presenting APD processing timelines to comply with the Energy Policy Act of 2005); Instruction Memorandum No. 2007-021, from Dir., Bureau of Land Mgmt., to All Field Officials (Nov. 8, 2006) (expiring September 30, 2008), http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instruction/2007/im_2007-021__.html (last visited Apr. 18, 2010) (providing for the use of best management practices). As mentioned, IMs issued since 1999 are available on the BLM website. *See supra* text accompanying note 415. See *supra* Part IV.C.3 for a discussion of IM 92-67, which is not available on the BLM website.

[426] BUREAU OF LAND MGMT., SURFACE OPERATING STANDARDS AND GUIDELINES FOR OIL AND GAS EXPLORATION AND DEVELOPMENT: THE GOLD BOOK (4th ed. 2007), *available at* http://www.blm.gov/pgdata/etc/medialib/blm/wo/MINERALS__REALTY__AND_RESOURCE_PROTECTION_/energy/oil_and_gas.Par.18714.File.dat/OILgas.pdf.

[427] *See* 43 C.F.R. § 3162.1(a) (2008) (providing that operating rights owners shall comply "with *other orders and instructions* of the authorized officer" (emphasis added)).

[428] BUREAU OF LAND MGMT., *supra* note 426, at 1.

achieve this end.[429] *The Gold Book* states that "[c]onstraints . . . may be imposed on the location of access roads, well sites, and facility sites or the timing of geophysical exploration, well drilling, or other operations" and "may result from lease stipulations, the surface management agency's review and environmental analysis of the proposed operations, Notices to Lessees, Onshore Orders, or regulations."[430] *The Gold Book* specifies that environmental concerns might be addressed through conditions of approval or best management practices that result from a site-specific analysis.[431] Thus, design and construction techniques for well sites should "minimize surface disturbance and the associated effects of proposed operations and maintain the reclamation potential of the site."[432] There are a number of specific considerations related to construction of well sites, reserve pits, roads and access ways, and drainage and drainage structures.[433] Guidance for drilling and production operations is also specified, as "[o]nshore oil and gas lease operations are subject to applicable laws, regulations, lease terms, the [APD], APD conditions of approval, Onshore Oil and Gas Orders, Notices to Lessees, and orders and instructions of the authorized officer."[434] These obligations aim to ensure that the conduct of operations protects "natural resources, environmental quality, life, and property."[435] Maximizing oil and gas recovery with minimum adverse effect on the environment is "[t]he primary objective."[436] To achieve these objectives, *The Gold Book* details measures for disposal of produced water, pollution control and hazardous waste management, noise control, protection of visual and scenic resources, and even how facilities should be painted.[437] *The Gold Book* also specifies reclamation measures.[438]

g. Presidential Executive Orders

Executive Orders (EOs) issued by the President of the United States are official documents by which the President manages the operations of the executive branch. A number of these relate to obligations of the federal government to protect the natural environment. There is no doubt they are formal orders that many leases are subject to.

A few of the active EOs indicate the extent to which BLM retains rights in areas that have been leased for oil and gas development. President Carter issued EOs 11,990 and 11,988 in 1977 to guide and establish requirements for

429 *Id.* at 2.
430 *Id.* at 3.
431 *See id.* at 9.
432 *Id.* at 15.
433 *See id.* at 15–36.
434 *Id.* at 37.
435 *Id.*
436 *Id.*
437 *Id.* at 38–41.
438 *See id.* at 43–47, 49.

federal protection of floodplains and wetlands.[439] EO 12,088, issued by President Carter in 1978, provides that "[t]he head of each Executive agency is responsible for ensuring that all necessary actions are taken for the prevention, control, and abatement of environmental pollution with respect to Federal facilities and activities under the control of the agency."[440] President Nixon issued EO 11,593 in 1971 to guide and establish obligations for the protection of cultural and historical resources.[441] EO 13,186, issued by President Clinton in 2001, provides for the conservation of migratory birds.[442]

In addition to EOs aimed at protecting the natural environment, there are EOs that address energy development. President George W. Bush issued EO 13,211 in 2001 to require the preparation of a Statement of Energy Effects for federal regulatory actions that can have significant adverse effects on the supply, distribution, or use of energy.[443] EO 13,212, also issued by President Bush in 2001, requires federal agencies to expedite permitting of energy projects.[444] It states, "For energy-related projects, agencies shall expedite their review of permits or take other actions as necessary to accelerate the completion of such projects, while maintaining safety, public health, and environmental protections."[445] These directives to further energy production have not eliminated requirements to protect the natural environment when federal oil and gas leases are developed.

h. Solicitor Opinions and Secretarial Orders

Finally, two additional types of formal orders that a lease may be subject to are opinions of the Solicitor of the U.S. Department of the Interior and orders issued by the Secretary of the Interior. A list of, and access to, many of these opinions and orders can be found online.[446] On January 6, 2010, Secretary of the Interior Ken Salazar issued Secretarial Order 3294, which established an Energy Reform Team in the Department of the Interior that will oversee evaluation and reform of Department energy policies.[447] Part and parcel of this reform effort was the establishment of new policies regarding onshore oil and gas leasing under the management of BLM. This includes a requirement for "Master Leasing and Development Plans" prior to

439 Exec. Order No. 11,990, 3 C.F.R. 121 (1978), *reprinted as amended in* 42 U.S.C. § 4321 (2006); Exec. Order No. 11,988, 3 C.F.R. 117 (1978), *reprinted as amended in* 42 U.S.C. § 4321 (2006).

440 Exec. Order No. 12,088, 3 C.F.R. 243 (1979), *reprinted as amended in* 42 U.S.C. § 4321 (2006).

441 Exec. Order No. 11,593, 3 C.F.R. 559 (1971–1975), *reprinted in* 16 U.S.C. § 470 (2006).

442 Exec. Order No. 13,186, 3 C.F.R. 719 (2002), *reprinted in* 16 U.S.C. § 701 (2006).

443 Exec. Order No. 13,211, 3 C.F.R. 767 (2002), *reprinted in* 42 U.S.C. § 13201 (2006).

444 Exec. Order No. 13,212, 3 C.F.R. 769 (2002), *reprinted as amended in* 42 U.S.C. § 13201 (2006).

445 *Id.*

446 U.S. Dep't of Interior, ELIPS Electronic Library of Interior Policies: Secretary's Orders, http://elips.doi.gov/app_so/index.cfm?fuseaction=home (last visited Apr. 18, 2010) (listing orders issued by the Secretary of the Interior); U.S. Dep't of Interior, Office of the Solicitor—Solicitor's Opinions, http://www.doi.gov/solicitor/opinions.html (last visited Apr. 18, 2010) (listing opinions of the Solicitor of the U.S. Department of the Interior).

447 Sec'y of the Interior, Order No. 3294 (Jan. 6, 2010), *available at* http://www.interior.gov/documents/Order_3294.pdf.

leasing in areas where intensive new oil and gas development is anticipated, and increased environmental review of lease parcels leading to identification of mitigation measures.[448] This new policy direction could lead to substantial changes in BLM's oil and gas program and to issues related to BLM's assertion of its retained rights. This new direction will be discussed further in Part VIII.B.

E. Reasonable Measures

"Reasonable measures" is the last of the several conditions that a BLM oil and gas lease is subject to. This option for ensuring environmental protection when operations are proposed on a lease, which is provided for by both the § 3101.1-2 regulation and section 6 of the modern lease form, has been discussed in some detail above.[449] BLM can require reasonable measures to minimize adverse effects to the environment that include, but are not limited to, modifying the siting and design of facilities, timing of operations, and specifying interim and final reclamation measures, so long as the reasonable measures are consistent with the lease rights granted.[450]

As is apparent from this lengthy discussion of legal authorities, BLM has substantial retained rights under the lease contract that allow it to protect the natural environment when lease development is proposed. But furthermore, in addition to what is apparent from this analysis, basic principles of contract law may also help define or illuminate BLM's retained rights. These principles will be considered next.

VI. GENERAL PRINCIPLES OF CONTRACT LAW WILL HELP DEFINE BLM'S RETAINED RIGHTS

A. Court Decisions Related to Federal Oil and Gas Leases Have Relied on General Principles of Contract Law

Courts evaluating the federal government's rights and duties under federal oil and gas leases have considered basic principles of contract law. Consequently, it is appropriate to not only consider the provisions and legal authorities lease contracts are specifically subject to when determining BLM's retained rights in leased land, but to also consider more general contract law principles. There is, of course, a large body of law that has been developed around contracts.

In *Mobil Oil Exploration and Producing Southeast, Inc. v. United States* (*Mobil Oil*),[451] the United States Supreme Court considered oil and gas

448 *See* Press Release, U.S. Dep't of Interior, Secretary Salazar Launches Onshore Oil and Gas Leasing Reforms to Improve Certainty, Reduce Conflicts and Restore Balance on U.S. Lands (Jan. 6, 2009), http://www.interior.gov/news/09_News_Releases/010610.html (last visited Apr. 18, 2010) (presenting new policies that apply to BLM oil and gas leasing).

449 *See* discussion *supra* Parts IV.B, IV.C.2–3.

450 *See* discussion *supra* Part IV.C.1.

451 530 U.S. 604 (2000).

leases off the North Carolina coast that were issued pursuant to the Outer Continental Shelf Leasing Act (OCSLA) and held that repudiation of the leases occurred when the federal government refused to take a required action (approval of an exploration plan) within a specified timeline.[452] The Court noted, "[W]hen the United States enters into contract relations, its rights and duties therein are governed generally by the law applicable to contracts between private individuals."[453] Based on this, the Court looked to the *Restatement (Second) of Contracts* for a definition of when repudiation and breach of contract occurs, and also stated that "[t]he Restatement of Contracts reflects many of the principles of contract law that are applicable to this action."[454] *Mobil Oil* will be considered further in Part VII.B.

Similarly, in another offshore leasing case that dealt with OCSLA leases off the California coast, *Amber Resources Co. v. United States*,[455] the United States Court of Appeals for the Federal Circuit ruled that the government had breached the lease contracts when it altered the terms of suspensions.[456] Again, the court looked to the *Restatement (Second) of Contracts* for guidance on when repudiation and breach occurs. The court relied on the Supreme Court's analysis in *Mobil Oil* to reach its conclusion.[457]

In considering state law claims related to assignments of leases and royalty interests based on BLM onshore oil and gas leases, the District Court in Wyoming determined that reservation language should be examined "in accordance with the general principles of contract interpretation."[458] Relying on Wyoming Supreme Court precedent, the court determined the prime focus should be on the intent of the parties and where the language of a contract is unambiguous, intent should be gathered from the contract itself, although the context within which the document was written can be considered.[459] If contract language is ambiguous, extrinsic evidence can be considered.[460]

Another case originating in Wyoming stemmed from BLM decisions to suspend oil and gas leases in an area with rich trona deposits so that trona mining could occur prior to oil and gas development.[461] The United States Court of Federal Claims observed that when determining whether the suit was timely filed, repudiation of a contract occurs when the government announces it will not perform contractual obligations and a breach of

---

452 *Id.* at 604, 618, 620, 621, 624.

453 *Id.* at 607 (quoting United States v. Winstar Corp., 518 U.S. 839, 895 (1996) (plurality opinion) (internal quotation marks omitted)).

454 *Id.* at 608 (citing RESTATEMENT (SECOND) OF CONTRACTS §§ 243, 250, 373 (1981), to explain remedies for a repudiation and define the terms "total breach" and "repudiation").

455 538 F.3d 1358 (Fed. Cir. 2008).

456 *Id.* at 1374.

457 *Id.* at 1368, 1371–74.

458 Followwill v. Merit Energy Co., 371 F. Supp. 2d 1305, 1309 (D. Wyo. 2005).

459 *Id.* (citing Wyoming Supreme Court cases).

460 *Id.*

461 Barlow & Haun, Inc. v. United States, 87 Fed. Cl. 428, 431–32 (2009). Trona is a sodium-rich mineral that is processed into soda ash, which is used in manufacturing many products, such as glass, soap, and paper. *Id.* at 431.

contract occurs when the government actually fails to honor its obligations or when the promisee brings suit in the face of a repudiation.[462]

Given this precedent it is appropriate to consider underlying principles of contract law that might help define the scope and nature of obligations under a federal onshore oil and gas lease, and thus BLM's retained rights and duties pursuant to a lease. This will be done next by briefly considering some of the relevant guidance in the *Restatement (Second) of Contracts* and *American Jurisprudence 2d Contracts*.

B. Contract Principles Presented in the Restatement of Contracts and American Jurisprudence

The initial question in construction of a contract is a determination of whether the contract is ambiguous.[463] Contract language is unambiguous when it has a "definite and precise meaning," and if the contract is unambiguous "the rules governing the interpretation of ambiguous contracts do not come into play."[464] The meaning of an unambiguous contract is determined without reference to extrinsic facts or aids and "it must be enforced as written."[465] Ambiguity is determined objectively through the eyes of a reasonably intelligent person, considering the entire written agreement.[466] Ambiguity is not created just because a contract will work hardship on one party, or the parties disagree over the meaning of a contract, or urge varying interpretations.[467] Ambiguity must emanate from the language used in the contract, "rather than from one party's subjective perception of its terms."[468]

Where there is ambiguity, the intention of the parties to the contract will be sought; "the fundamental and cardinal rule in the construction or interpretation of contracts is that the intention of the parties is to be ascertained."[469] If the contract is not ambiguous, intent is determined from the language used in the contract.[470] The intention or meaning of a contract can be conveyed by implication if such is plainly required by the language in the contract.[471]

Other principles of contract law can also affect construction and interpretation. Ambiguous language is interpreted most strongly against the

462 *Id.* at 435–36.

463 17A AM. JUR. 2D *Contracts* § 329 (2004).

464 *Id.*

465 *Id.* § 330; *see also* RESTATEMENT (SECOND) OF CONTRACTS ch. 9, topic 5, introductory note (1979) ("The terms of the agreement or promise to a large extent define the obligation created.").

466 17A AM. JUR. 2D *Contracts* § 331 (2004).

467 *Id.*

468 *Id.*

469 *Id.* § 345.

470 *Id.* § 348.

471 *Id.* § 368. Conditions in a contract may also be express or implied. *Id.* § 454; *see also* RESTATEMENT (SECOND) OF CONTRACTS § 204 (1979) (stating that, where a term is essential to the determination of rights and duties under a contract, "a term which is reasonable in the circumstances is supplied by the court").

drafting party, which is certainly BLM when it comes to onshore oil and gas leases.[472] However, in contracts where the government enters into the contract on behalf of the public, the contract is liberally construed in favor of the government.[473] There is an implied covenant of good faith and fair dealing in every contract, but this duty does not alter a contract's express provisions.[474] Parties to a contract are presumed to contract with reference to existing law.[475] Existing law is made part of the contract, but subsequent law is not made part of a contract unless there is clear expression in the contract to do so.[476]

A federal onshore oil and gas lease is, undoubtedly, a written, integrated agreement between the government and the lessee.[477] Thus, the language used in the lease will likely determine which rights to condition development are retained by BLM, an issue which has been discussed at length elsewhere. The language in a federal onshore oil and gas lease is arguably unambiguous, so interpretation of what rights BLM retains will likely be based on consideration of that language and not extrinsic evidence. But that of course could be subject to debate; a claim might be made in a particular circumstance that ambiguity exists and extrinsic evidence needs to be considered to interpret the contract.

The intent of the parties to a BLM oil and gas lease is to allow for, and even promote, oil and gas development on public lands.[478] Modern versions of the lease form state, "This lease is issued granting the exclusive right to drill for, mine, extract, remove and dispose of all the oil and gas (except helium) in the lands described . . . together with the right to build and maintain necessary improvements thereupon."[479] The three older versions of

---

472 17A AM. JUR. 2D *Contracts* § 343 (2004).

473 *Id.* § 397; *see id.* § 339 ("A contract should be construed liberally to protect the public interest where that is involved in the case."); RESTATEMENT (SECOND) OF CONTRACTS § 207 (1979) ("In choosing among the reasonable meanings of a promise or agreement or a term thereof, a meaning that serves the public interest is generally preferred.").

474 *See* 17A AM. JUR. 2D *Contracts* § 370 (2004); RESTATEMENT (SECOND) OF CONTRACTS § 205 (1979).

475 17A AM. JUR. 2D *Contracts* § 371 (2004).

476 *Id.* §§ 371–372.

477 *See* RESTATEMENT (SECOND) OF CONTRACTS ch. 9, topic 3, introductory note (1979) (discussing the effects of adoption of a writing as the final expression of agreement, referred to as an "integrated agreement," the principal effect of which is "to focus interpretation on the meaning of the terms embodied in the writing").

478 *See, e.g.*, *Conner*, 848 F.2d 1441, 1453 (9th Cir. 1988) (analyzing onshore leases and agreeing with the District of Columbia Circuit Court of Appeals' view expressed in an offshore leasing case that "[p]umping oil and not leasing tracts is the aim of congressional [mineral leasing] policy" (quoting N. Slope Borough v. Andrus, 642 F.2d 589, 608 (D.C. Cir. 1980) (internal quotation marks omitted))); *see also* Devon Energy Corp. v. United States, 45 Fed. Cl. 519, 521 (1999) (finding that in passing the Mineral Leasing Act, Congress "sought to promote the orderly development of oil and gas deposits in publicly owned lands of the United States" (citation omitted)).

479 BUREAU OF LAND MGMT., *supra* note 83, at 1; *see also* 43 C.F.R. § 3101.1-2 (2008) ("A lessee shall have the right to use so much of the leased lands as is necessary to explore for, drill for, mine, extract, remove and dispose of all the leased resource in a leasehold . . . .").

the lease form make a nearly equivalent grant.[480] Yet, in the next sentence following this grant, modern versions of the lease state "[r]ights granted are subject to" the authorities discussed above at length—applicable laws; lease terms, conditions, and stipulations; regulations and formal orders in place when the lease is issued; and regulations and formal orders issued afterward if not inconsistent with the lease rights granted.[481] The § 3101.1-2 regulation adds to this list.[482] And while older versions of the lease form may be less explicit, they nevertheless provide that "lessee agrees" to take reasonable steps to prevent certain specified types of environmental damage, "lessor reserves" certain rights, and that "it is agreed" that the rate of prospecting and development and the quantity and rate of production are subject to control in the public interest by the Secretary of the Interior.[483]

Parties to an onshore federal oil and gas lease intend to allow for oil and gas resource development; however, they also understand that, or should understand that, any such development is conditional.[484] Consequently, when general principles of contract law are considered, it is apparent that BLM has significant retained rights under a lease allowing it to condition development to protect the natural environment. The provision in section 6 of the modern version of the standard lease form, stating that BLM can specify reasonable measures to minimize adverse impacts to resources, is perhaps the provision that is most likely to be challenged as ambiguous. However, the language that appears in section 6 of the October 2008 standard lease form states that the "[l]essee must take reasonable measures *deemed necessary by lessor* to accomplish the intent of this section."[485]

---

480 BUREAU OF LAND MGMT., 1954 LEASE FORM, *supra* note 88, at 2; BUREAU OF LAND MGMT., 1965 LEASE FORM, *supra* note 88, at 2; BUREAU OF LAND MGMT., 1971 LEASE FORM, *supra* note 88, at 2.

481 BUREAU OF LAND MGMT., *supra* note 83, at 1.

482 43 C.F.R. § 3101.1-2 (2008) (making leases subject to stipulations, specific, nondiscretionary statutes, and reasonable measures that might be required).

483 BUREAU OF LAND MGMT., 1954 LEASE FORM, *supra* note 88, at 2 ("The lessee agrees . . . [t]o take such reasonable steps as may be needed to prevent operations from unnecessarily: (1) Causing or contributing to soil erosion or damaging any forage and timber growth thereon, (2) polluting the waters of the reservoirs, springs, streams, or wells . . . ."); BUREAU OF LAND MGMT., 1965 LEASE FORM, *supra* note 88, at 2 (requiring the same "reasonable steps"); BUREAU OF LAND MGMT., 1971 LEASE FORM, *supra* note 88, at 2 (same).

484 Boesche v. Udall, 373 U.S. 472, 477–78 (1963) (finding that onshore leases are subjected to exacting restrictions and are governed by the Secretary of the Interior in minute detail); *see supra* Part V.A.

485 BUREAU OF LAND MGMT., *supra* note 83, at 3 (emphasis added); *see also* 43 C.F.R. § 3101.1-2 (2008) (stating that the right to develop oil and gas is subject to "such reasonable measures as may be required by the authorized officer to minimize adverse impacts to other resource values, land uses, or users" and that such reasonable measures include "but are not limited to" modification of the siting or design of facilities, timing of operations, and specification of reclamation measures); *supra* Parts IV.B, IV.C.2–3 (analyzing the reasonable measures provision). This same language is used in the July 2006 version of the modern lease form. BUREAU OF LAND MGMT., 2006 LEASE FORM, *supra* note 84, at 2. In the March 1984, June 1988, October 1992, and February 2003 versions of the modern lease form, "shall" was used rather than "must." BUREAU OF LAND MGMT., 1984 LEASE FORM, *supra* note 84, at 2; BUREAU OF

The intent specified is to "conduct operations in a manner that *minimizes* adverse impacts" to various resources, and it is stated that reasonable measures "include, *but are not limited to*, modification to siting or design of facilities, timing of operations, and specification of interim and final reclamation measures" so long as consistent with the lease rights granted.[486] Therefore, it would appear that reasonable measures could include any measures that BLM might require so long as they did not take away the exclusive right to remove all of the oil and gas on a leasehold or prohibit the construction of necessary improvements. Any condition short of this appears to be within BLM's discretion and within the meaning of the term reasonable measures as used in the standard lease form. In *Yates Petroleum Corp.*,[487] the Interior Board of Land Appeals (IBLA) rejected an attempt to limit BLM's imposition of reasonable measures to nothing more stringent than those mentioned in the 200-meter 60-day rule and recognized BLM could restrict the siting or timing of lease activities.[488] Thus, a highly constrained interpretation of what constitutes reasonable measures likely will not succeed, especially in light of the general contract principle that when the government enters into a contract on behalf of the public, then the contract is construed in favor of the public.[489]

VII. POTENTIAL LIMITATIONS ON BLM'S ABILITY TO EXERCISE ITS RETAINED RIGHTS

I have discussed in detail the authorities that support BLM's assertion of considerable retained rights in areas it has leased for oil and gas development, allowing it to protect the natural environment through the exercise or implementation of those retained rights. But of course, this is not a one-way street, and consideration must be given to contrary authority that could limit the exercise of any asserted retained rights. Some of these possible contrary authorities will be considered in this section.

A. The Lessee Has Been Granted the Right to Use as Much of the Leased Lands as Is Necessary to Remove All of the Oil and Gas and the Right to Build Necessary Improvements

Modern versions of the lease form in use since 1984 grant the exclusive right to remove all of the oil and gas on a leasehold and the right to build and maintain necessary improvements thereupon.[490] The § 3101.1-2 regulation supplements this grant by providing that "[a] lessee shall have the right to

LAND MGMT., 1988 LEASE FORM, *supra* note 84, at 2; BUREAU OF LAND MGMT., 1992 LEASE FORM, *supra* note 84, at 2; BUREAU OF LAND MGMT., 2003 LEASE FORM, *supra* note 84, at 2.

486 BUREAU OF LAND MGMT., *supra* note 83, at 3 (emphasis added).

487 176 I.B.L.A. 144 (2008).

488 *Id.* at 155–56; *see also* Nat'l Wildlife Fed'n, 169 I.B.L.A. 145, 164 (2006) (holding BLM has authority to restrict the siting and timing of lease activities).

489 17A AM. JUR. 2D *Contracts* § 397 (2004).

490 *See* BUREAU OF LAND MGMT., *supra* note 83, at 1.

use so much of the leased lands as is necessary to [remove] all the leased resource in a leasehold."[491] As discussed, under the modern lease forms and the § 3101.1-2 regulation three rights have been granted: 1) the exclusive right to use the leasehold for the removal of all oil and gas; 2) the right to "use" as much of the leasehold as is "necessary" to remove "all" of the oil and gas; and 3) a right to build "necessary" improvements.[492] The three older versions of the lease grant similar rights, but these lease forms were in use prior to promulgation of the § 3101.1-2 regulation in 1988. The 1954, 1965, and 1971 versions of the lease form all provide that the lessee is granted the "exclusive right and privilege to [remove] all the oil and gas . . . in the lands leased, together with the right to construct and maintain [structures] necessary to the full enjoyment thereof."[493]

In considering whether these granted rights might limit BLM's ability to assert retained rights to limit or guide development, it seems unlikely there will often be dispute that a particular lessee has the exclusive right to access the oil and gas on a leasehold. Thus, the more critical questions likely relate to what actions might be "necessary" for the use of the leasehold for the removal of all the oil and gas, and what might constitute "necessary" improvements.

The right to do what is necessary to access all of the oil and gas that may be found on a lease and the right to build and maintain necessary improvements should not be viewed as granting an unfettered right to do anything the lessee may desire to extract the oil and gas. The word "necessary" gathers meaning from the connection in which it is used.[494] It can mean absolute physical necessity or inevitability, or it can mean only that which is "convenient, useful, appropriate, suitable, proper, or conducive to the end sought."[495] This latter construction probably defines the word "necessary" in the context of BLM's standard lease form and the § 3101.1-2 regulation given the significant conditions the lease is subject to.

The connection in which the word "necessary" is used includes the provision in the next sentence of the modern lease forms that makes the rights granted subject to applicable laws; the terms, conditions, and stipulations found in the lease; regulations and formal orders in place when the lease is issued; and regulations and formal orders issued afterward if not inconsistent with the lease rights granted.[496] The § 3101.1-2 regulation adds to or elaborates on this list by providing that the rights granted are subject to stipulations attached to the lease; specific, nondiscretionary statutes; and

491 43 C.F.R. § 3101.1-2 (2008).

492 *See supra* Part IV.D.

493 BUREAU OF LAND MGMT., 1954 LEASE FORM, *supra* note 88, at 2; BUREAU OF LAND MGMT., 1965 LEASE FORM, *supra* note 88, at 2; BUREAU OF LAND MGMT., 1971 LEASE FORM, *supra* note 88, at 2.

494 BLACK'S LAW DICTIONARY 1029 (6th ed. 1990).

495 *Id.*; *see also* 28 WORDS & PHRASES 188–236 (perm. ed. 2003) (presenting judicial interpretations of the word "necessary" that generally indicate it does not mean an absolute right); *id.* at 23–31 (Supp. 2009) (presenting additional judicial interpretations of the word "necessary" that generally indicate it does not mean an absolute right).

496 BUREAU OF LAND MGMT., *supra* note 83, at 1.

"such reasonable measures as may be required by the authorized officer to minimize adverse impacts."[497] Therefore, the context of any rights granted is that they have been made conditional on compliance with an array of external authorities, and what is "necessary" should be interpreted in this context. As discussed in detail above, many of these external sources of authority that have been incorporated into the lease include *mandatory* obligations to protect the environment that are imposed on BLM, the lessee, or both.[498]

Accordingly, the term "necessary" should not be viewed as strongly limiting BLM's retained rights. Lessees can take actions to access the oil and gas and to build related improvements only to the extent these activities can be conducted in a manner that is in compliance with the substantial reservations of authority found in the lease. What is necessary is better viewed as being defined by actions that are "appropriate" or "proper" in light of what the rights granted are subject to rather than an absolute right to pursue any activity that is desired by the lessee.[499]

B. Breach and Repudiation of Contract Claims

Perhaps the ultimate limit on efforts by BLM to exert its retained rights would be a successful claim by a lessee asserting BLM had repudiated the lease contract or breached it through the actions it took, with attendant monetary damages awarded. A repudiation of a contract occurs when there is a "statement by the obligor to the obligee indicating that the obligor will commit a breach that would of itself give the obligee a claim for damages for total breach" or "a voluntary affirmative act which renders the obligor unable or apparently unable to perform without such a breach."[500] A total breach is defined as a breach that "so substantially impairs the value of the contract to the injured party at the time of the breach that it is just in the circumstances to allow him to recover damages based on all his remaining rights to performance."[501]

Probably the most significant case that has considered the issue of repudiation and breach of contract in the context of federal oil and gas leases was *Mobil Oil*, although it considered offshore leases issued pursuant to the OCSLA, not onshore Mineral Leasing Act leases. In *Mobil Oil* the government entered into lease contracts with the petitioners for oil exploration and development off the coast of North Carolina.[502] Due to provisions in the later-enacted Outer Banks Protection Act (OBPA)[503] that prohibited approval of required exploration, development, and production

497 43 C.F.R. § 3101.1-2 (2008).

498 *See* discussion *supra* Part V.

499 *See* BLACK'S LAW DICTIONARY 1029 (6th ed. 1990) (defining "necessary").

500 RESTATEMENT (SECOND) OF CONTRACTS § 250(a)–(b) (1979).

501 *Id.* § 243.

502 *Mobil Oil*, 530 U.S. 604, 609 (2000).

503 Outer Banks Protection Act, Pub. L. No. 101–380, § 6003, 104 Stat. 555, 556 (1990), *repealed by* Pub. L. No. 104–134, § 109, 110 Stat. 1321, 1321-177 (1996).

plans until specified new requirements were met, the government refused to approve an exploration plan within a specified timeline and placed the leases in suspension.[504] On these facts the Supreme Court ruled a repudiation of contract had occurred and awarded the petitioners compensation.[505] The Court's analysis provides guidance as to when repudiation or breach of a federal oil and gas lease contract might be deemed to occur.

The contracts at issue in *Mobil Oil* provided the leases were "subject to" several statutory and regulatory provisions, and the Court recognized that these provisions "in effect were incorporated into the contracts."[506] However, the Court refused to allow the later-enacted OBPA to control these leases, because it determined the OBPA was not a statute the leases were made subject to.[507] Besides the fact that the OBPA was not a statute referenced in the lease contracts, the Court also determined that the "catchall provision" specifying the leases were subject to applicable statutes and regulations did not extend to the later-enacted OBPA and the leases were not subject to the later-enacted OBPA.[508] The Court found that without a contractual limitation on the government's ability to impose "new and different requirements," such as those in the newly-enacted OBPA, the companies would have received "next to nothing" when they entered into the leases.[509]

Mobil Oil teaches that care must be exercised in attempting to incorporate later-adopted regulations and statutes into a lease. The provision in modern leases that the lease is made subject to applicable laws likely includes only laws in existence when the lease is issued. The only regulations that a lease may be subject to, whether in existence at lease formation or adopted afterward, are "the Secretary of the Interior's regulations and formal orders" as specifically provided for in the modern lease forms.[510] Nevertheless, *Mobil Oil* does not teach that BLM will be greatly limited in exercising its retained rights.

The Court in *Mobil Oil* recognized that the statutes and regulations referenced in the leases contained terms "which in effect were incorporated into the contracts" and that these "made clear that obtaining the necessary permissions [to conduct postlease activities] might not be an easy matter."[511] Furthermore, the Court did not hold that later-adopted statutes or regulations could *never* be made part of a lease contract; it only held the leases created a promise not to impose *new* approval procedures and standards beyond those in the underlying statues and regulations in effect

504 *Mobil Oil*, 530 U.S. at 609–14.

505 *Id.* at 607, 618, 620, 624.

506 *Id.* at 609, 615.

507 *Id.* at 615–17. The leases were made subject to the OCSLA, sections 302 and 303 of the Department of Energy Organization Act, 42 U.S.C. §§ 7152–7153 (2006), regulations issued pursuant to these statutes in existence when the lease was issued, future regulations issued under these statues that provided for the prevention of waste and conservation of resources, and "all other applicable statutes and regulations." *Id.* at 615.

508 *Id.* at 616.

509 *Id.*

510 *E.g.*, BUREAU OF LAND MGMT., *supra* note 83, at 1.

511 *Mobil Oil*, 530 U.S. at 609.

when the leases were executed and which had been specifically incorporated into the leases.[512] While acknowledging that the lease contracts "gave the companies rights to explore for, and to develop oil," the Court also pointed out that

> the need to obtain Government approvals so qualified the likely future enjoyment of the exploration and development rights that the contract, in practice, amounted primarily to an *opportunity* to try to obtain exploration and development rights in accordance with the procedures and under the standards specified in the cross-referenced statutes and regulations.[513]

Under the facts in *Mobil Oil*, the Court determined this "gateway" had been significantly narrowed by the government's actions and thus determined that a repudiation had occurred.[514] But if the government does not deviate significantly from the procedures and standards stated in the contract or incorporated into it when it is initially formed, a breach is unlikely to be found.

Given that 35,256 of the 48,342 currently active leases in the eleven western states have been issued since 1984 when the "applicable laws" language was introduced (see Table 1), that many of the "applicable laws" were adopted prior to 1980, and that BLM's oil and gas operating regulations have been in place in nearly their present form since 1982 (and the relevant land use authorization regulations since 1981), it seems likely that most BLM oil and gas leases will survive claims that BLM actions pursuant to these authorities are a repudiation. More generally, so long as BLM takes care not to make leases worth "next to nothing," its actions are unlikely to constitute a breach of contract. It must ensure that the gateway for seeking approval of activities on the lease is not so substantially narrowed that the legal regime that served as the basis for the bargained for right to explore for and extract oil and gas is lost or significantly altered. But given the significant number of conditions that an onshore lease is subject to, as in *Mobil Oil*, BLM oil and gas leases represent an *opportunity* to seek approval for development, not an unqualified right. As long as that opportunity is not entirely foreclosed BLM should be within its rights to demand protection of the environment, and no breach or repudiation of the contract would occur.

C. Reasonable Measures

The import of the term "reasonable measures," which appears in section 6 of the modern lease forms as well as in the § 3101.1-2 regulation,

---

512 *See id.* at 616.

513 *Id.* at 620.

514 *Id.* at 620–21. While the Court's statements regarding a "gateway" and the contract creating only an "opportunity" to pursue development were made in the context of outer continental shelf leases issued under the OCSLA, not onshore Mineral Leasing Act leases, this language probably has application to onshore leases as well, which are also conditional in nature. *See* Boesche v. Udall, 373 U.S. 472, 477–78 (1963) (describing how onshore lease rights are subject to "restrictions and continuing supervision"); *see* discussion *supra* Part V.A.

was discussed above.[515] If a narrow view—such as that indicated in the 200-meter 60-day rule—were adopted, it could limit BLM's ability to effectively assert its retained rights under an onshore oil and gas lease. But, as discussed,[516] a narrow interpretation seems unfounded. Section 6 of the modern lease form provides that reasonable measures are those "deemed necessary by lessor" and the regulation provides these measures are "as may be required by the authorized officer."[517] Both the modern lease form and the § 3101.1-2 regulation state that reasonable measures within BLM's discretion may include, but are not limited to, modification of the siting or design of facilities and timing of operations so long as they are consistent with the lease rights granted.[518] Moreover, the § 3101.1-2 regulation provides that the limits stated in the 200-meter 60-day rule are "[a]t a minimum" of what is consistent with lease rights.[519] Consequently, it seems unlikely that the discretion to impose reasonable measures on lease operations would be construed in such a narrow manner as to greatly limit BLM's retained rights to condition development. This view is supported by recent IBLA precedent.[520]

D. Courts Have Found BLM Cannot Completely Prohibit Development When It Issues a Non-No Surface Occupancy Lease, Which Represents an Irreversible and Irretrievable Commitment of Resources That Requires Compliance with NEPA

The federal courts have held that when BLM and the Forest Service engage in oil and gas leasing activities that do not preclude surface disturbance, they make an irreversible and irretrievable commitment of resources that triggers NEPA requirements because the government has committed itself to allowing some level of disturbance.[521] The leases at issue have not provided for "no surface occupancy;" the leases have been "non-NSO" leases.[522] This view of the nature of an oil and gas lease could limit BLM's ability to exercise its retained rights because the vast majority of federal onshore leases are non-NSO.

In *Sierra Club v. Peterson*, concerning a BLM and Forest Service leasing action on roadless lands in the Targhee and Bridger-Teton National Forests

515 *See* discussion *supra* Parts IV.B, IV.C.2–3.

516 *See* discussion *supra* Part IV.C.2.

517 BUREAU OF LAND MGMT., *supra* note 83, at 3; 43 C.F.R. § 3101.1-2 (2008).

518 BUREAU OF LAND MGMT., *supra* note 83, at 3; 43 C.F.R. § 3101.1-2 (2008).

519 43 C.F.R. § 3101.1-2 (2008).

520 *E.g.*, Yates Petroleum Corp., 176 I.B.L.A. 144, 155–56 (2008).

521 *See, e.g.*, *Bob Marshall Alliance*, 852 F.2d 1223, 1227 (9th Cir. 1988); *Conner*, 848 F.2d 1441, 1451 (9th Cir. 1988); *Sierra Club*, 717 F.2d 1409, 1414–15 (D.C. Cir. 1983). Use of the terms "irreversible" and "irretrievable" in these cases is likely linked to the provision in NEPA that requires an EIS to consider "any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented." National Environmental Policy Act of 1969, 42 U.S.C. § 4332(2)(C)(v) (2006).

522 *Bob Marshall Alliance*, 852 F.2d at 1227; *Conner*, 848 F.2d at 1444–45; *Sierra Club*, 717 F.2d at 1414.

in Idaho and Wyoming, the D.C. Circuit determined that, with respect to the non-NSO leases that were challenged, "[e]ven assuming, *arguendo*, that all lease stipulations are fully enforceable, once the land is leased the Department no longer has the authority to *preclude* surface disturbing activities even if the environmental impact of such activity is significant."[523] Consequently, preparation of an EIS was necessary to support the leasing decision.[524] In *Conner v. Burford*, involving leasing on Forest Service lands with important wildlife and natural values in Montana, the Ninth Circuit determined that the sale of non-NSO leases "constitutes the point of commitment; after the lease is sold the government no longer has the ability to prohibit potentially significant inroads on the environment."[525] So, again, preparation of an EIS was necessary prior to leasing.[526] In *Bob Marshall Alliance v. Hodel*, the Ninth Circuit reached the same conclusion with respect to leasing on "wild, mountainous terrain" in the Lewis and Clark National Forest in Montana.[527]

More recently, in *Northern Alaska Environmental Center v. Kempthorne* (*Northern Alaska*),[528] involving the National Petroleum Reserve in Alaska, the Ninth Circuit again ruled that leasing represented an irretrievable commitment of resources and thus required preparation of an EIS.[529] But in this case, the court held that a parcel-by-parcel NEPA analysis was not required because impacts were unidentifiable at the leasing stage on a parcel-by-parcel basis.[530] The United States Court of Appeals for the Tenth Circuit, in *New Mexico ex rel. Richardson v. BLM*,[531] also concluded that issuing an oil and gas lease without an NSO stipulation in a biologically diverse Chihuahuan Desert grassland can constitute an irretrievable commitment of resources and thus require site-specific NEPA analysis prior to lease issuance. The court recognized that "[b]ecause BLM could not prevent the impacts resulting from surface use after a lease issued, it was required to analyze any foreseeable impacts of such use before committing the resources."[532] The IBLA has reached the same conclusions.[533]

---

523 *Sierra Club*, 717 F.2d at 1414 (determining also that the decision to allow surface disturbance has been made at the leasing stage absent an NSO stipulation and that this represents an "irrevocable commitment" to allow some surface disturbance).

524 *Id.* at 1415.

525 *Conner*, 848 F.2d at 1451 (internal quotation marks omitted) (recognizing also that leasing that does not absolutely preclude surface disturbance represents an irretrievable commitment of resources).

526 *Id.* at 1450.

527 *Bob Marshall Alliance*, 852 F.2d at 1225, 1227.

528 457 F.3d 969 (9th Cir. 2006).

529 *Id.* at 976.

530 *Id.* at 975–77.

531 565 F.3d 683 (10th Cir. 2009).

532 *Id.* at 718–19. *New Mexico ex rel. Richardson* appears to differ from, or certainly elaborate on, Tenth Circuit precedent. *See* Park County Res. Council, Inc. v. U.S. Dep't of Agric., 817 F.2d 609, 624 (10th Cir. 1987), *overruled on other grounds by* Vill. of Los Ranchos de Albuquerque v. Marsh, 956 F.2d 970, 973 (10th Cir. 1992). In *Park County Resource Council*, the Tenth Circuit allowed leasing to go forward prior to preparation of a leasing EIS. *Id.* at 624. The court determined that the leasing was not "unreasonable" because of the preparation of a

While these cases have clearly determined that when BLM issues leases that do not include an NSO stipulation it has committed itself to allowing some level of development, these rulings probably will not greatly limit BLM's ability to exercise its retained rights to protect the natural environment. In the majority of these cases, the leasing decisions implicated many lease parcels and thousand of acreas of public land were at issue.[534] The question before these courts was whether an EIS was needed before this far-reaching action could be taken when the leases did not preclude surface occupancy.[535] The courts concluded that an EIS was required if the leases being issued were non-NSO because the courts did not believe any reservation of authority was sufficient to assure impacts would be insignificant *for purposes of NEPA* over the the numerous lease parcels and large areas at issue.[536] But this determination of the need for NEPA compliance when a Federal leasing action affects public land does not necessarily stand for the proposition that BLM cannot limit development as needed on specific lease parcels. In fact, in most of these cases the courts recognized that BLM still retained rights to protect the environment, even if development could not be entirely precluded on all leases.[537]

In *Sierra Club* the court recognized that mitigation measures could be required, but because surface disturbance could not be absolutely precluded, it determined BLM needed to prepare an EIS.[538] In *Conner*, the court recognized that reasonable regulation of surface-disturbing activities

substantial EA, the requirements for further mitigation measures prior to surface disturbance, the nebulousness of future drilling plans at the leasing stage, and the continuing supervision by federal agencies. *Id.*; *see also* Pennaco Energy, Inc. v. U.S. Dep't of the Interior, 377 F.3d 1147, 1161–62 (10th Cir. 2004) (discussing NEPA requirements at the leasing stage in the context of coal bed methane leases and distinguishing *Park County Resource Council*). In another case, a challenge to 16 leases sold and issued in Utah, a district court held that the preleasing NEPA analysis was insufficient where the underlying land use plans used to support the leasing decision had not considered a no-leasing alternative and where BLM's NEPA analysis was not supplemented to consider new information regarding wilderness characteristics on the lands at issue. S. Utah Wilderness Alliance v. Norton, 457 F. Supp. 2d 1253, 1264, 1267, 1269 (D. Utah 2006).

533 Wilderness Society v. Salazar, 603. F. Supp. 2d 52, 60 (D.D.C. 2009) (presenting in both cases further analyses of NEPA compliance requirements at the leasing stage, including site-specific impact analysis needs and consideration of the irreversible and irretrievable commitment of resources question); *see also* Pit River Tribe v. U.S. Forest Serv., 469 F.3d 768, 785–86 (9th Cir. 2006) (same); Ctr. for Native Ecosystems, 170 I.B.L.A. 331, 345 (2006) (citing S. Utah Wilderness Alliance, 166 I.B.L.A. 270, 276–77 (2005)).

534 *See Richardson*, 565 F.3d at 689; *Bob Marshall Alliance*, 852 F.2d 1223, 1227 (9th Cir. 1988); *Conner*, 848 F.2d 1441, 1443 (9th Cir. 1988); *Sierra Club*, 717 F.2d 1409, 1410 (D.C. Cir. 1983); *Park County Res. Council*, 817 F.2d at 612–13; *Northern Alaska*, 457 F.3d at 976; *Pennaco Energy*, 377 F.3d at 1161–62; *see also* Marla E. Mansfield, *Through the Forest of the Onshore Oil and Gas Leasing Controversy Toward a Paradigm of Meaningful NEPA Compliance*, 24 LAND & WATER L. REV. 85 (1989) (analyzing the decisions in *Conner*, *Sierra Club*, and *Park County Resource Council* and suggesting approaches to NEPA compliance at the leasing stage).

535 *Richardson*, 565 F.3d at 716; *Bob Marshall Alliance*, 852 F.2d at 1225; *Conner*, 848 F.2d at 1448–49; *Sierra Club*, 717 F.2d at 1412.

536 *Richardson*, 565 F.3d at 718–19; *Bob Marshall Alliance*, 852 F.2d at 1225, 1227; *Conner*, 848 F.2d at 1449–50; *Sierra Club*, 717 F.2d at 1415.

537 *See Conner*, 848 F.2d at 1444; *Park County Res. Council*, 817 F.2d at 622.

538 *Sierra Club*, 717 F.2d at 1411–12, 1414.

was allowed but again determined this did not assure impacts would be reduced to insignificance for purposes of NEPA, and it therefore required an EIS to be prepared at the leasing stage.[539] In *Northern Alaska* the court concluded that, although surface disturbance could not be precluded, "[t]he government can condition permits for drilling on implementation of environmentally protective measures, and we assume it can deny a specific application altogether if a particularly sensitive area is sought to be developed and mitigation measures are not available."[540]

The extent of BLM's retained rights in the context of non-NSO leases garnered discussion in a challenge to BLM and Forest Service compliance with the ESA at the leasing stage in *Wyoming Outdoor Council v. Bosworth*.[541] In *Wyoming Outdoor Council* the district court found that when the reservations of authority in the § 3101.1-2 regulation as well as the requirements related to APDs and the need for NEPA compliance at the APD stage were considered, "these reservations and procedural hurdles demonstrate that while the lessee clearly has a legal right to apply for permission to conduct oil and gas operations, his right to development of the lease parcel is far from certain."[542] Thus, while there may be a need to prepare an EIS at the leasing stage so as to comply with NEPA, especially when numerous parcels or large areas are approved for lease sales and development cannot be absolutely precluded on all the leases, BLM still retains substantial rights to condition development on particular parcels, up to and including the prohibition of development in some circumstances.

E. Takings Claims

I have interacted with a number of BLM field personnel throughout Wyoming on a number of oil and gas projects. In response to a suggestion to assert BLM's retained rights, BLM field personnel have sometimes commented that such action could be challenged as an illegal "taking" and BLM is limited in its rights due to this perceived barrier. The U.S. Constitution provides that "no private property be taken for public use, without just compensation."[543] This prohibition on the federal government "taking" property without just compensation is, however, unlikely to be a basis for successfully asserting legal claims against the government if it asserts its retained rights under an oil and gas lease.

Generally speaking, if claims were made against the government if it asserted its retained rights, those claims would likely have to be based on breach of contract claims, not constitutional takings claims. In a case challenging BLM actions related to onshore oil and gas leases issued in

539 *Conner*, 848 F.2d at 1448, 1450.

540 *Northern Alaska*, 457 F.3d 969, 976 (9th Cir. 2006).

541 284 F. Supp. 2d 81 (D.D.C. 2003).

542 *Id.* at 92. *See generally* Michael D. Axline, *Private Rights to Public Oil and Gas*, 19 IDAHO L. REV. 505 (1983) (arguing BLM has authority to preclude lease development based on protective stipulations, particularly when engaging in NEPA analysis at the APD stage).

543 U.S. CONST. amend V.

Wyoming, the Federal Court of Claims observed that "the concept of a taking as a compensable claim theory has limited application to the relative rights of party litigants when those rights have been voluntarily created by contract."[544] "Ordinarily, the government's interference with contractual rights arising under a contract with the government will give rise to a breach of contract action rather than a taking claim."[545] And, as discussed, when the Supreme Court considered challenges to the government's actions affecting offshore leases in *Mobil Oil*, the Court addressed the matter as a question of contract law, not constitutional law.[546]

Despite this general principal, concurrent takings claims can be pursued if the property right that is asserted is not governed by the terms of the contract.[547] Thus, while it is unlikely that takings claims will generally have viability because the standard lease contract has reduced the parties' agreement to writing, it is possible a takings claim might be viable if the lessee can identify a property interest that has been interfered with that is not governed by the contract. But such claims would seem to have a remote chance of widespread success given the apparent comprehensive nature of BLM oil and gas leases.[548] To the extent a regulatory taking claim was successfully advanced, the Supreme Court has developed an extensive body of law specifying what is required to establish that a Fifth Amendment regulatory taking has occurred.[549]

F. Lessees Must Exercise Diligence to Develop Leases

Under section 4 of the modern lease forms, the lessee "must exercise reasonable diligence in developing and producing."[550] Under section 2(j) of the 1954, 1965, and 1971 lease forms, the lessee agrees "[t]o exercise reasonable diligence in drilling and producing the wells herein provided for."[551] The Mineral Leasing Act also requires reasonable diligence in the

544 *Barlow & Haun*, 87 Fed. Cl. 428, 438 (2009) (quoting Hughes Commc'ns Galaxy, Inc. v. United States, 271 F.3d 1060, 1070 (Fed. Cir. 2001) (internal quotation marks omitted)); *see supra* note 461 and accompanying text (discussing *Barlow & Haun*).

545 *Barlow & Haun*, 87 Fed. Cl. at 438 (citing Sun Oil Co. v. United States, 572 F.2d 786, 818–19 (Ct. Cl. 1978)).

546 *See supra* text accompanying notes 451–54, 502–13 (discussing *Mobil Oil*, 530 U.S. 604 (2000)).

547 *Barlow & Haun*, 87 Fed. Cl. at 439–40 (holding at the motion to dismiss stage of a case involving BLM oil and gas leases that "[t]he Court is unable to ascertain . . . whether all the rights that plaintiffs allege have been taken were reduced to writing by the parties" and therefore denying the motion to dismiss the takings claims at that stage of the proceedings).

548 *See, e.g.*, BUREAU OF LAND MGMT., *supra* note 83 (presenting the current version of BLM's standard oil and gas leasing form).

549 See, for example, Tahoe-Sierra Pres. Council, Inc. v. Tahoe Reg'l Planning Agency, 535 U.S. 302 (2002), and cases cited therein.

550 BUREAU OF LAND MGMT., *supra* note 83, at 3.

551 BUREAU OF LAND MGMT., 1954 LEASE FORM, *supra* note 88, at 2; BUREAU OF LAND MGMT., 1965 LEASE FORM, *supra* note 88, at 2; BUREAU OF LAND MGMT., 1971 LEASE FORM, *supra* note 88, at 2.

operation of leased property.[552] Moreover, a lessee can be required to develop wells "in accordance with good economic operating practices" and must ensure that drainage of oil and gas from a lease is not occurring due to development on adjacent leases.[553]

It is conceivable that these obligations to pursue production could limit or at least get in the way of BLM's asserting retained rights to protect the natural environment. Nevertheless, these provisions do not specifically limit BLM's retained rights or modify other obligations BLM operates under, so in all likelihood these requirements will have little impact on BLM's exercise of its retained rights. And if development is essentially mandated or if BLM perceives a need to require development, it is more likely that BLM will be *forced* to assert its retained rights because development might occur in areas where there was otherwise less interest in pursuing development.

G. Split Estate Issues

BLM manages approximately 58 million acres of land where the surface is privately owned but the federal government owns the rights to the minerals underlying the land.[554] These lands are called split estates.[555] While BLM operates under many of the same legal requirements on split estate lands as it does on lands wholly owned by the federal government (the oil and gas lease forms used on split estates do not differ from those used in other situations), and enjoys many of the same legal rights, the simple fact that the surface is privately owned—often by a rancher or farmer whose family has lived on the land for several generations—could affect how BLM asserts its retained rights.[556]

BLM guidance provides that it must fulfill the requirements of NEPA, the National Historic Preservation Act, the ESA, the Clean Water Act, and "other applicable laws" when it engages in permitting on split estates.[557] The guidance states that during permit review, BLM "offers the surface owner the same level of resource protection provided on federally owned surface."[558] Additionally, BLM will also invite the surface owner to on-site inspections, seek the owner's input on development and reclamation issues, carefully consider the surface owner's views and the effects on the surface owner's use of the land "before determining mitigation requirements and approving operations," and carefully consider the surface owner's views on reclamation requirements and seek concurrence that final reclamation is

552 Mineral Leasing Act, 30 U.S.C. § 187 (2006).

553 *See* 43 C.F.R. §§ 3162.2-1 to -15 (2008) (presenting BLM's drilling and producing requirements and regulations governing drainage).

554 BUREAU OF LAND MGMT., SPLIT ESTATE: RIGHTS, RESPONSIBILITIES, AND OPPORTUNITIES 2 (2007), *available at* http://www.blm.gov/pgdata/etc/medialib/blm/wo/MINERALS__REALTY__AND_RESOURCE_PROTECTION_/bmps.Par.57486.File.dat/SplitEstate07.pdf.

555 *Id.*

556 *Id.*

557 *Id.*

558 *Id.* (emphasis omitted).

satisfactory.[559] Consequently, while BLM enjoys the same retained rights on split estates that it enjoys elsewhere and may well exercise those rights, it is equally clear that the private surface owner will exert a strong influence over the measures that BLM prescribes. Overall, it is probably unlikely that BLM will require lesser environmental protections on split estate lands than on wholly federally owned lands, but it is possible that its approach to exerting its retained rights will differ on split estate lands.

VIII. MEANS BY WHICH BLM CAN EXERCISE ITS RETAINED RIGHTS

In this Part, I will briefly describe some of the means by which BLM could exercise its retained rights on federal onshore oil and gas leases. This will not be an exhaustive review; the goal is only to give the reader a sense of the options that are available to BLM to protect the natural environment. Undoubtedly more options exist than those that will be discussed. I will also present several policy changes BLM might consider that would make it better able to exercise its retained rights.

A. Options Available for Regulating Oil and Gas Development on the Public Lands That Would Help Protect the Natural Environment

BLM has substantial authority to regulate the time, place, and manner of oil and gas development.[560] It can regulate the siting of development, the design of facilities, and the timing of operations.[561] It can specify the rates of oil and gas development and production.[562] There is no doubt BLM can specify the conditions of oil and gas development on a federal onshore lease to a considerable degree.

One of the most important means by which environmental values can be protected is by requiring phased or paced development in environmentally sensitive areas. This is an "obvious" way to manage oil and gas development, according to the IBLA.[563] In Montana, the federal district court found that an EIS that had not considered phased development for coal bed methane development in Montana's portion of the Powder River Basin failed to meet the requirements of NEPA.[564] Using this approach BLM can ensure that development activities are staggered over time, or take place in prescribed areas, until reclamation and other measures of environmental recovery indicate development can proceed in other areas.

Another important means to achieve environmental protection is to require clustered development and the related measure of directional

559 *Id.*

560 *See* discussion *supra* Parts IV.B–C, V.

561 *See* discussion *supra* Part IV.B–C.

562 *See supra* Part V.C.

563 Powder River Basin Res. Council, 120 I.B.L.A. 47, 55 (1991) ("[A]n alternative under which development would be limited was both obvious and reasonable.").

564 Northern Plains Res. Council v. U.S. Bureau of Land Mgmt., No. CV 03-69-BLG-RWA, 2005 U.S. Dist. LEXIS 25238, at *7–8 (D. Mont. Apr. 5, 2005).

drilling. Directional drilling, also called horizontal, deviated, or slant drilling, allows for hydrocarbon deposits that are not directly under a well pad to be accessed.[565] Using this technology, it is possible to concentrate wells on a more limited number of well pads yet still reach the oil and gas, which reduces the environmental impacts of drilling.[566] The technology and practicality of directional drilling is improving and at this point hydrocarbon deposits several thousand feet, and even more, from a well pad can be reached.[567] On the Pinedale Anticline natural gas field in western Wyoming, directional drilling will allow for thirty-two wells to be drilled from a single, consolidated well pad.[568]

Lease suspension is another means at BLM's disposal to ensure environmental protection is achieved in leased areas. As has been discussed, both the Mineral Leasing Act and BLM's supporting regulations allow BLM to suspend lease operations "in the interest of conservation," as do terms in BLM's leases.[569] One court has held that "suspending operations to avoid environmental harm is definitely a suspension in the interest of conservation in the ordinary sense of the word."[570] Suspending leases so as to protect the natural environment is a recognized means to protect the natural environment, having been employed by BLM in the Jack Morrow Hills and Pinedale Anticline areas in Wyoming, for example.[571]

Another mechanism that could be utilized to protect environmentally sensitive areas is unitization of leases. When a group of leases are "unitized," the leases can be maintained in force through the drilling and operation of a few, or even one, well which reduces pressure on lessees to drill or produce on their individual leases so as to maintain them in effect.[572] More efficient management is possible when a group of leases are managed collectively

---

565 KEN KRECKEL, THE WILDERNESS SOC'Y, DIRECTION DRILLING: THE KEY TO SMART GROWTH OF OIL AND GAS DEVELOPMENT IN THE ROCKY MOUNTAIN REGION 14 (2007), *available at* http://wilderness.org/files/Directional-Drilling.pdf.

566 *Id.* at 25.

567 *Id.* at 15.

568 2 BUREAU OF LAND MGMT., U.S. DEP'T OF THE INTERIOR, FINAL SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT FOR THE PINEDALE ANTICLINE OIL AND GAS EXPLORATION AND DEVELOPMENT PROJECT 7-4 (2008), *available at* http://www.blm.gov/pgdata/etc/medialib/blm/wy/information/NEPA/pfodocs/anticline/fseis.Par.82863.File.dat/vol2_app.pdf.

569 Mineral Leasing Act, 30 U.S.C. § 209 (2006); BUREAU OF LAND MGMT., *supra* note 83, at 1–2; 43 C.F.R. § 3103.4-4 (2008).

570 *Copper Valley Mach. Works, Inc.*, 653 F.2d 595, 600 (D.C. Cir. 1981).

571 *See* BUREAU OF LAND MGMT., U.S. DEP'T OF INTERIOR, RECORD OF DECISION AND JACK MORROW HILLS COORDINATED ACTIVITY PLAN/GREEN RIVER RESOURCE MANAGEMENT PLAN AMENDMENT 3, 52 (2006), *available at* http://www.blm.gov/pgdata/etc/medialib/blm/wy/field-offices/rock_springs/jmhcap/rod.Par.9393.File.dat/00rod_cap.pdf (providing that leases that had been placed in suspension for nearly 10 years while the plan was developed for this 622,000-acre area would be reinstated within three years of adoption of the July 2006 record of decision); BUREAU OF LAND MGMT., PINEDALE ANTICLINE ROD, *supra* note 50, at 4 (providing that 49,903 acres of leases in this 198,037-acre project area would be placed in suspension as part of the decision allowing increased development in this area).

572 *See generally* Getty Oil Co. v. Clark, 614 F. Supp. 904, 915–18 (D. Wyo. 1985) (discussing leases subject to a unitization agreement), *aff'd sub nom.* Texaco Producing, Inc., 84 F.2d 776 (10th Cir. 1988).

(unitized) rather than individually. Unitization can allow for lease holders to enjoy the benefits of a lease while achieving protection of sensitive areas. Pursuing unitization allows for orderly development with less infrastructure and disturbance, while helping to eliminate concerns such as those related to drainage of oil and gas from a lease, which sometimes creates pressure to develop a lease. BLM has authority to require unitization pursuant to section 4 of the modern leases.[573] The 1954, 1965, and 1971 leases also allow for unitization to be required.[574]

BLM can exert its retained rights by other means, including the imposition of reasonable measures,[575] conditions of approval,[576] best management practices (BMPs),[577] and the retention and enforcement of lease stipulations.[578] These conditions could affect an array of practices related to the time, place, or manner of oil and gas development. Examples include limiting the size of well pads, requiring "closed-loop" drilling fluid systems to control hazardous chemicals, using remote (computerized) means to monitor well conditions, requiring carpooling and other traffic reduction measures, requiring "liquids gathering systems" (piping hydrocarbons and perhaps produced water from scattered well locations to a centralized gathering facility so as to reduce activity at individual wells),[579] and requiring netting to be placed over "reserve" (waste) pits so as to protect birds, bats, and other wildlife. A number of additional measures could be added to this list, including, but not limited to, requiring "green completions" to reduce air pollution when wells are brought into production following drilling, dust control measures, the use of protective mats to reduce surface disturbance when drilling is occurring, using existing roads and minimizing the level of road construction used to access well pads, and reinjecting produced water rather than disposing of it on the surface. Assuring effective reclamation with native plant species (especially shrubs such as sagebrush (*Artemesia*)) is also important. BLM has developed a website devoted to BMPs, and these

573 BUREAU OF LAND MGMT., *supra* note 83, at 3; *see also* 30 U.S.C. § 226(m) (2006) ("The Secretary may provide that oil and gas leases hereafter issued . . . shall contain a provision requiring the lessee to operate under such a reasonable cooperative or unit plan, and he may prescribe such a plan under which such lessee shall operate . . . ."). BLM has regulations related to unitization agreements that are published at 43 C.F.R. § 3180.0-2 (2008).

574 BUREAU OF LAND MGMT., 1954 LEASE FORM, *supra* note 88, at 2; BUREAU OF LAND MGMT., 1965 LEASE FORM, *supra* note 88, at 2; BUREAU OF LAND MGMT., 1971 LEASE FORM, *supra* note 88, at 2.

575 *See* BUREAU OF LAND MGMT., *supra* note 83, at 3; 43 C.F.R. § 3101.1-2 (2008).

576 43 C.F.R. § 3162.5-1(a) (2008) (providing that environmental review documents prepared when an APD is filed can be used to determine "any appropriate terms and conditions of approval"); Onshore Oil and Gas Operations, 72 Fed. Reg. 10,308, 10,334 (Mar. 7, 2007) (providing for the imposition of conditions of approval when an APD is approved).

577 Onshore Oil and Gas Operations, 72 Fed. Reg. at 10,334 (providing that BLM will incorporate any mitigation requirements, including BMPs, as conditions of approval for an APD); BUREAU OF LAND MGMT., *supra* note 426, at 2 (recommending the "proactive incorporation" of BMPs by the operator).

578 43 C.F.R. § 3101.1-3 (2008) (providing for lease stipulations).

579 BUREAU OF LAND MGMT., *supra* note 426, at 3, 17, 40–41.

measures should be vigorously employed.[580] The University of Colorado Law School has also developed a website devoted to BMPs applicable to oil and gas development and these too can be employed.[581]

One of the most important means by which BLM can protect the natural environment is to ensure that stipulations oriented toward the protection of wildlife and other resources are not abandoned and are, in fact, vigorously enforced. In Wyoming, BLM has shown an increasing tendency to eliminate these important protections, to grant exceptions and waivers to them, or both.[582] This is an unfortunate trend that should not be perpetuated if protection of other resources is desired.[583]

Other options that could be considered by BLM when operations are proposed in sensitive areas include pursuing lease buyout and trade. Lease buyout likely would require the approval of Congress, not to mention congressional authorization of funding, but lease trades could be pursued administratively by BLM if a company was willing to exchange its leases.

B. Policy Changes

BLM could make several policy changes which would enable it to better exert its retained rights so as to ensure protection of the natural environment. While, as argued above, the 200-meter 60-day rule establishes a floor to the reasonable measures BLM can require, not a ceiling,[584] this provision in the § 3101.1-2 regulation is nevertheless sometimes treated by BLM as imposing limits on its discretion.[585] The § 3101.1-2 regulation should therefore be rewritten to eliminate the 200-meter 60-day rule. The provision stating that reasonable measures deemed consistent with the lease rights granted "[a]t a minimum" include limitations that do not "require relocation

---

[580] *See* Bureau of Land Mgmt., U.S. Dep't of the Interior, Best Management Practices, http://www.blm.gov/wo/st/en/prog/energy/oil_and_gas/best_management_practices.html (last visited Apr. 18, 2010) (providing links to BLM BMPs).

[581] Univ. of Colo. Law School, Oil & Gas Drilling Best Management Practices in Colorado, Wyoming, Montana, New Mexico, Utah, http://www.oilandgasbmps.org (last visited Apr. 18, 2010).

[582] For example, when BLM approved expanded development on the Pinedale Anticline in western Wyoming, it allowed "exceptions" to (essentially elimination of) long-standing seasonal timing limitation stipulations used to protect big game on crucial winter ranges and greater sage-grouse breeding areas. *See* 2 BUREAU OF LAND MGMT., *supra* note 568, at 4-19; *see also* Bureau of Land Mgmt., U.S. Dep't of the Interior, 2009–2010 Wildlife Exceptions, http://www.wy.blm.gov/pfo/wildlife/2009_10_exceptions.php (last visited Apr. 18, 2010) (presenting information on exceptions to stipulations granted in the Pinedale, Wyoming and Rawlins, Wyoming BLM Field Offices and noting BLM granted the majority of requests); Bureau of Land Mgmt., U.S. Dep't of the Interior, 2008–2009 Wildlife Exceptions, http://www.wy.blm.gov/pfo/wildlife/2008_09_exceptions.php (last visited Apr. 18, 2010) (same).

[583] *See, e.g.*, Hall Sawyer et al., *Influence of Well Pad Activity on Winter Habitat Selection Patterns of Mule Deer*, 73 J. WILDLIFE MGMT. 1052, 1059 (2009) ("[O]ur results suggest that wintering mule deer are sensitive to varying levels of disturbance and the indirect habitat loss may increase by a factor of >2 when seasonal restrictions are waived.").

[584] *See supra* text accompanying notes 150–52.

[585] *See supra* note 147 (citing provisions and instances where BLM adheres to the 200-meter 60-day rule).

of proposed operations by more than 200 meters; require that operations be sited off the leasehold; or prohibit new surface disturbing operations for a period in excess of 60 days in any lease year"[586] creates tension with the prior two sentences in the regulation. The first sentence provides that reasonable measures to minimize adverse impacts can be imposed "as may be required by the authorized officer," and then the next sentence states, "Such reasonable measures may include, but are not limited to, modification to siting or design of facilities, timing of operations, and specification of interim and final reclamation measures."[587] This tension should be eliminated from the regulation, and BLM should simply provide for taking reasonable measures as it deems necessary to minimize adverse impacts, consistent with the lease rights granted.[588]

BLM should also take action to ensure IM 92-67 and similar provisions in BLM Manual MS-3101 have no continuing force.[589] While the IM nominally expired in 1992, it seems to have some continuing influence over BLM oil and gas development decision making.[590] And the manual section has no stated expiration date.[591] In particular, the requirement that the need for stipulations or conditions of approval "must be clearly and convincingly documented" or that there be "clear evidence and convincing need" for a condition of approval should be eliminated.[592] This elevated burden of proof is not justified.[593] BLM decision making regarding what measures are needed to minimize adverse impacts when it approves oil and gas development should be subject to the arbitrary and capricious standard that applies to all agency actions, not a heightened clear and convincing evidence standard.[594]

It would also be useful if BLM developed regulations defining what constitutes "unnecessary or undue degradation" (UUD) in the context of oil and gas development, as it has done for hardrock minerals.[595] Given the importance of this "specific, nondiscretionary statute" under FLPMA[596] it would be helpful to have a formal definition of what constitutes UUD in the context of oil and gas development. As recognized in *Mineral Policy Center*, any such regulation should recognize that both unnecessary degradation of

586 43 C.F.R. § 3101.1-2 (2008).

587 *Id.*

588 *See* discussion *supra* Part IV.C.2 (presenting arguments why the 200-meter 60-day rule does not preclude other more stringent reasonable measures).

589 *See* discussion *supra* Part IV.C.3 (reviewing IM 92-67 and BLM Manual MS-3101).

590 *See supra* note 170 (presenting an example of BLM citing the requirements of IM 92-67 long after its expiration date).

591 *See* BUREAU OF LAND MGMT., *supra* note 147.

592 *See supra* Part IV.C.3 (discussing this language in IM 92-67 and BLM Manual MS-3101).

593 *Id.* (presenting arguments why this standard of proof is unwarranted).

594 *See* Administrative Procedure Act, 5 U.S.C. § 706(2)(A) (2006) (providing that a reviewing court shall set aside agency action found to be "arbitrary, capricious, an abuse of discretion or otherwise not in accordance with law").

595 43 C.F.R. § 3802.0-5(l) (2009).

596 *See* BUREAU OF LAND MGMT., *supra* note 147, §§ 3101.06.B.2, 3101.06.B.3, 3103.12.A, 3101.13.A (presenting statements of BLM's views on the importance of the UUD clause in BLM oil and gas development decision making).

the public lands and undue degradation of the lands must be prevented.[597] Provisions related to unnecessary degradation could prevent activities that are not necessary for mining while the undue degradation prong of any regulation should prevent excessive or unwarranted harm to the public lands.[598] The numerous environmental protection laws applicable to oil and gas development on the public lands could help define what impacts are excessive or unwarranted.

More generally, BLM should consider issuing IMs that fully explain BLM's retained rights and its authority to exercise its retained rights so as to protect the natural environment. Likewise, the Secretary of the Interior or the Interior Department Solicitor should consider issuing similar orders or opinions. The extent of BLM's retained rights should be fully explained and apparent in agency policy.

In October 2009, BLM issued a report regarding seventy-seven lease parcels in Utah that had been offered for sale at the December 2008 lease sale but were withdrawn due to court action and other controversy.[599] In this report the agency made a number of recommendations for improvement of its leasing program with regard to the Utah lease parcels.[600] One recommendation made by the reviewing team of BLM and other agency personnel was this: "BLM and others would benefit by guidance from the Solicitor's Office on the nature of the right created by issuance of a lease."[601] The team noted that it had heard varying opinions expressed by personnel in the BLM Utah state office regarding what rights were granted by a lease, ranging from views that a lease was a "compensable property right" that could only be extinguished by paying just compensation, to views that a lease is a "contingent right" that could be extinguished.[602] There were also various opinions expressed regarding what level of development constituted enjoyment of lease rights.[603] The review team concluded that "[t]he nature of a lease right is a fundamental issue that underlies the Bureau's oil and gas leasing program."[604] The findings and differences of opinion in the report emphasize the need for formal statements from BLM via IMs, or from the Department of Interior via Solicitor's opinions or Secretarial orders, regarding the nature of the rights granted under a federal onshore oil and gas lease, and, just as importantly, the rights that BLM retains and will exert despite having issued a lease.

---

597 *See supra* text accompanying notes 231–33 (discussing the decision in *Minerals Policy Ctr.*, 292 F. Supp. 2d 30, 42–43 (D.D.C. 2003)).

598 *See supra* text accompanying notes 234–35 (discussing interpretations of the unnecessary or undue degradation clause by the courts).

599 BUREAU OF LAND MGMT., U.S. DEP'T OF THE INTERIOR, FINAL BLM REVIEW OF 77 OIL AND GAS LEASE PARCELS OFFERED IN BLM-UTAH'S DECEMBER 2008 LEASE SALE 2 (2009), *available at* http://www.doi.gov/documents/BLM_Utah77LeaseParcelReport.pdf.

600 *Id.* at 6–14, 23–33.

601 *Id.* at 30.

602 *Id.*

603 *Id.*

604 *Id.*

Any BLM IMs and Department of the Interior Solicitor opinions or Secretarial orders related to BLM's retained rights could be made part of the oil and gas reform effort the Department of the Interior is now pursuing.[605] In particular, they could support or be a component of the Master Leasing and Development Plans that will now be required.[606]

IX. BLM HAS AN OBLIGATION TO FULLY ASSERT ITS RETAINED RIGHTS

In this Article I have largely expressed the degree of BLM's retained rights under an oil and gas lease and its ability to exercise them in somewhat conditional terms. BLM "has" retained rights; it "can" or even "should" exercise them, but I generally have not said BLM *must* exert those retained rights. In this Part, however, I will argue BLM *must* fully exert its retained rights and I will explain the basis for this view.

Fundamentally, it is my view that not only does BLM *have* retained rights allowing it to protect the natural environment in areas where it has issued an oil and gas lease that grants the right to develop those minerals, it in fact has an *obligation* to fully assert those rights. The reason I take this view is because many of the authorities that the right to develop has been made subject to are stated in mandatory terms or establish specific, nondiscretionary obligations.

Under the Mineral Leasing Act, BLM "shall" regulate surface disturbing activities in the interest of conservation of surface resources.[607] Under FLPMA, BLM "shall" take any action necessary to prevent unnecessary or undue degradation of the public lands.[608] Under the ESA, BLM "shall" further the purposes of the ESA, "shall" ensure its actions do not jeopardize the continued existence of listed species or destroy or adversely modify their critical habitat, and it is unlawful for BLM to take a listed species.[609] The National Historic Preservation Act, Migratory Bird Treaty Act, and the Bald and Golden Eagle Protection Act contain various mandatory requirements or prohibitions.[610] The Clean Air Act and Clean Water Act provide that federal agencies "shall" be subject to laws for the control and abatement of air and water pollution.[611] A number of other applicable laws discussed in Part V.B are also framed in mandatory terms.

---

605 *See supra* text accompanying notes 447–48 (discussing Secretary of the Interior Salazar's energy reform efforts).

606 *See supra* text accompanying notes 447–48 (discussing Secretary of the Interior Salazar's energy reform efforts).

607 Mineral Leasing Act, 30 U.S.C. § 226(g) (2006).

608 Federal Land Policy and Management Act of 1976, 43 U.S.C. § 1732(b) (2006).

609 Endangered Species Act of 1973, 16 U.S.C. §§ 1536(a)(1)–(2), 1538(a)(1)(B) (2006).

610 *See* National Historic Preservation Act, 16 U.S.C. § 470h-2(f) (2006); Bald and Golden Eagle Protection Act of 1940, 16 U.S.C. § 668 (2006); Migratory Bird Treaty Act, 16 U.S.C. § 703(a) (2006).

611 Federal Water Pollution Control Act, 33 U.S.C. § 1323(a) (2006); Clean Air Act, 42 U.S.C. § 7418(a) (2006).

Many of BLM's oil and gas operating regulations related to protection of the natural environment are also mandatory.[612] For example, in approving oil and gas operations, BLM is directed to protect natural resources and environmental quality and operators are subject to a number of other obligations (which BLM is charged with enforcing). BLM's land-use authorization regulations require mandatory terms and conditions for the protection of a number of environmental attributes and benefits.[613] Some of the terms and conditions in the lease forms are stated in mandatory terms, especially in modern versions of the lease. Section 6 of the modern leases in use since March 1984 provides that lessees "shall" (or "must") take reasonable measures to minimize adverse impacts to the environment, with the determination of what is reasonable being as "deemed necessary by lessor to accomplish the intent of this section."[614] Provisions in Onshore Oil and Gas Order Number 1 include mandatory obligations for BLM.[615]

Modern versions of the lease form make any rights granted under the lease subject to these various mandatory conditions.[616] The § 3101.1-2 regulation contains a similar provision making the lease rights granted subject to stipulations attached to the lease; specific, nondiscretionary statutes; and reasonable measures required by the authorized officer to minimize adverse impacts.[617] It seems clear that BLM is obliged to meet a number of mandatory requirements for environmental protection under the terms of a federal onshore oil and gas lease and the authorities that have been incorporated into it.

This is not to say these mandatory obligations eliminate or override BLM's obligation to manage the public lands for multiple use and sustained yield[618] or to meet the energy development goals expressed in several statutes and BLM's regulations.[619] Assertion of its retained rights relative to environmental protection will have to be done in recognition of these obligations. But it is equally clear that the mineral policies of this country have been formulated in recognition of a need for substantial

612 *See* 43 C.F.R. §§ 3161.2, 3162.1(a), 3162.3-1(f), 3162.5-1(a)–(b) (2008) (making mandatory provisions for environmental protection).

613 *Id.* § 2920.7(b)–(c) (providing for mandatory terms and conditions for land-use authorizations so as to protect numerous environmental attributes and qualities).

614 *See, e.g.*, BUREAU OF LAND MGMT., *supra* note 83, at 3; *see also* discussion *supra* Part IV.B (considering the *shall* versus *must* language in the different versions of the standard lease form).

615 *See, e.g.*, Onshore Oil and Gas Operations, 72 Fed. Reg. 10,308, 10,334 (Mar. 7, 2007) (providing that approved APDs "will" contain conditions of approval that reflect necessary mitigation measures and will incorporate BMPs as conditions of approval).

616 BUREAU OF LAND MGMT., *supra* note 83, at 1.

617 43 C.F.R. § 3101.1-2 (2008).

618 *See* Federal Land Policy and Management Act of 1976, 43 U.S.C. § 1702(c) (2006) (providing that, among other things, multiple use includes renewable and nonrenewable resources such as recreation, range, timber, minerals, watershed, wildlife and fish, and natural scenic, scientific, and historical values); *see also id.* § 1732(a) (providing that management of the public lands is to be done under principles of multiple use and sustained yield).

619 *See id.* § 1701(a)(12) (2006) (stating that under FLPMA one policy of the United States is to manage the public lands in recognition of the nation's need for domestic minerals); *supra* Parts V.B.6, V.D.1 (discussing energy statutes and BLM regulations).

environmental protection. Accordingly, when BLM issues an oil and gas lease it does not grant an unqualified right to development. It has retained many rights to condition development so as to protect the natural environment. And many of these retained rights are grounded in mandatory environmental protection obligations.

It is not my contention that a successful "failure to act" lawsuit charging violation of § 706(1) of the Administrative Procedure Act could necessarily be launched against BLM in order to force it to assert particular retained rights.[620] One court rejected this proposition with respect to BLM's operations regulations.[621] Rather, my contention is that BLM has substantial retained rights allowing it to protect the environment when oil and gas operations are proposed on an onshore lease, and given the mandatory nature of many of the underlying authorities that have been incorporated into the lease, it must fully exert those retained rights, even if the agency retains discretion to determine exactly what those measures might be.[622]

Given the wide array of mandatory provisions requiring strong measures to protect the environment, which attach to a lease and govern lease operations, it is clear that not only does BLM *have* discretion to condition lease development and operations pursuant to its retained rights in order to protect the natural environment, it in fact has an *obligation* to do so, even if the *details* of what those actions might be remain within BLM's discretion.

X. CONCLUSION

There are approximately 39,000,000 acres of federal mineral estate in the eleven western states subject to onshore oil and gas leases issued by the Bureau of Land Management. The leases grant the lessee the right to extract any oil or natural gas that may be found on the leased land. However, the leases also make the grant of rights subject to a number of reservations of authority to the federal government. The rights that BLM retains stem from laws, regulations, terms in the lease contract, and other authorities. A review of the provisions in these authorities shows that BLM retains substantial rights to regulate the time, place, and manner of oil and gas development, despite having granted rights allowing oil and gas development. Development can be conditioned through regulation of the siting and design of facilities and the timing of operations, as well as specification of the rates of oil and gas development and production so as to minimize adverse impacts to the environment, other resource values, land uses, and land

620 *See* 5 U.S.C. § 706(1) (2006) (providing that a reviewing court can compel agency action unlawfully withheld or unreasonably delayed).

621 *Blancett*, No. Civ.A. 04-2152(JDB), 2006 WL 696050, at *6 (D.D.C. Mar. 20, 2006); *see supra* notes 341–48 and accompanying text (discussing *Blancett*).

622 As stated by the Supreme Court, these requirements are "mandatory as to the object to be achieved," even if they leave discretion as to how to achieve the object. Norton v. S. Utah Wilderness Alliance, 542 U.S. 55, 66 (2004); *see also Blancett*, 2006 WL 696050, at *8 (quoting this passage from the Supreme Court's decision).

users. If BLM fully exercises this array of retained rights it can considerably reduce environmental disturbance caused by oil and gas development on the public lands. Given the mandatory, nondiscretionary nature of many of the authorities that a federal onshore oil and gas lease is subject to, BLM has an obligation to fully exert its retained rights.