APPENDIX 3—MITIGATION GUIDELINES AND OPERATING STANDARDS APPLIED TO SURFACE DISTURBING AND DISRUPTIVE ACTIVITIES – ALTERNATIVES 2, 3, AND 4

The Mitigation Guidelines and Operating Standards is a compilation of practices and stipulations employed by the Bureau of Land Management (BLM) to mitigate impacts from surface disturbance. These guidelines, outcomes, and standards would apply to activities such as road or pipeline construction, range improvements, and permitted recreation activities. They are designed to protect resources such as soils and vegetation, wildlife habitat, or cultural or historic properties. Because they apply to many resources and derive from many laws, these guidelines are presented for easy reference as an appendix of the Resource Management Plan (RMP) Environmental Impact Statement (EIS). The guidelines and standards are examples of mitigation measures that could be applied, as appropriate, based on site-specific environmental analysis for individual proposals. The use and application of specific mitigation measures would be made during the environmental process for individual proposals. The mitigation measures or operating standards could change or be modified, based on new information.

Alternatives 2, 3, and 4 analyzed in this Pinedale RMP EIS propose that a range of lands be available for oil and gas leasing and other surface disturbing activities. All future oil and gas leases in the planning area would be subject to prescriptive- and performance-based mitigations designed to protect surface uses and resources from the impacts of surface disturbing activities.

The addition of performance-based stipulations and standards will provide the BLM with greater flexibility in protecting physical, environmental, and cultural resources. The modification from prescriptive-based stipulations toward performance-based stipulations will allow consistent application across the field office and the implementation of adaptive management principles, recognizing that knowledge about natural resource systems is sometimes uncertain and changing. These performance-based stipulations would apply to all surface disturbing activities, for example:

- Oil and gas exploratory drilling
- Oil and gas developmental operations
- Facility design and construction
- Oil and gas reclamation and abandonment.

The traditional prescriptive-based approach to land use planning decisions stipulated a goal, one or more objectives, and several specific, "prescriptive" management actions to accomplish the objective. This traditional method "prescribed" a path to the goal. Although a series of operating standards is proposed, the ***outcome*** is the level at which the effectiveness of land use plan decisions is assessed. If it can be shown that the outcome is achieved, then the land use plan goal is achieved.

The performance-based approach described above would be applied to surface disturbing activities in the planning area. Focusing on outcomes for resources would ensure that mitigations are effective while simultaneously allowing the application of new environmental science to natural resources systems and land use plan decisions. Monitoring would ensure that adaptive management principles are adhered to and that necessary changes to operating standards can be made in a timely and efficient manner.

The mitigation guidelines are used in two ways in the RMP and EIS process: (1) as part of the planning criteria in developing the RMP alternatives and (2) in the analytical processes of both developing the

alternatives and analyzing the impacts of the alternatives. In the first case, an assumption is made that one or more of the mitigations will be appropriately included as conditions of relevant actions being proposed or considered in each alternative. In the second case, the mitigations are used (1) to develop a baseline for measuring and comparing impacts among the alternatives; (2) to identify other actions and alternatives that should be considered, and (3) to help determine whether more stringent or less stringent mitigations should be considered.

The purposes of the Mitigation Guidelines, Outcomes, and Operating Standards are (1) to reserve, for the BLM, the right to modify the operations of all surface and other human presence disturbance activities as part of the statutory requirements for environmental protection, and (2) to inform a potential lessee, permittee, or operator of the requirements that must be met when using BLM-administered public lands. These guidelines have been written in a format that will allow for (1) their direct use as stipulations and (2) the addition of specific or specialized mitigation following the submission of a detailed plan of development or other project proposal, and an environmental analysis.

Those resource activities or programs currently without a standardized set of permit or operation stipulations can use the mitigation guidelines as stipulations or as conditions of approval, or as a baseline for developing specific stipulations for a given activity or program.

Permitting and Authorization Process

The operating standards identified in the following sections would not be attached as conditions of an oil and gas lease. The oil and gas lease is a binding agreement between BLM and the lessee that does not authorize subsequent surface disturbing activity. All surface disturbing activities (e.g., exploratory drilling, road/pipeline construction, or seismic operations) require additional authorization(s) issued subsequent to leasing. This authorization or permitting process, which includes permits, leases, and rights-of-way, is a multistep process as follows:

- **Perform Preapplication Consultation**. The BLM meets and consults with the potential applicant and other affected parties before submission of any written application(s). At the time of the preapplication consultation, the applicant is informed of BLM procedures and operating requirements, including any other federal, state, or local permit requirements so that any inadequacies and deficiencies in the verbal proposal can be addressed with the submittal of the application. Also at this time, the BLM, the applicant, and other affected parties may visit the proposed site to identify unknown issues.
- **Review Written Application for Completeness.** Based on an initial review of the written application, additional information may be requested, or application may be rejected.
- **Evaluate Application.** An Interdisciplinary (ID) Team reviews the proposal to—
  - Determine if the proposal complies with the **Outcome and Operating Standards;** this may be accomplished by adhering to the recommended requirements/standards or by the use of new techniques/practices that meet the objective(s).
  - Based on additional analysis (e.g., National Environmental Policy Act [NEPA] of 1969 environmental assessment [EA] or environmental impact statement [EIS]), identify any new mitigations that may be required based on site and project-specific information, including any new issues identified throughout this process.
  - Identify appropriate monitoring levels to determine the effectiveness of the mitigations.
- **Issue Authorization.** Issue authorization with appropriate terms and conditions of approval identified or attached.

Exception Process

The permitting process, in conjunction with the greater flexibility afforded by the proposed performance-based lease stipulations and operating standards that are focused on resource management *objectives,* should result in the need for fewer exceptions. However, the need to consider exceptions and/or modifications will remain on a case-by-case basis. The following guidelines will be used for considering and granting exceptions to the proposed stipulations or operating standards.

If an exception to a stipulation or operating standard is requested and before an exception may be granted, the lessee and permittee shall demonstrate to the satisfaction of the Authorized Officer (AO) that implementation of the stipulation or operating standard:

- (1) Is technically not feasible, or (2) is economically prohibitive, or (3) an environmentally preferable alternative is available; and
- The alternative proposed by the lessee/permittee fully satisfies the objective/outcome of the lease stipulation or operating standard.

The lessee/permittee shall notify the AO in a timely manner that an exception will be requested. In demonstrating to the AO that the proposal meets the above criteria, the lessee/permittee shall provide sufficient documentation (e.g., technical reports, new/revised procedures, results of scientific research) to allow for a thorough review and evaluation of the proposal.

Before consideration or granting of an exception to an operating standard, consultation requirements must be met. The AO shall consult with appropriate federal, state, and local regulatory and resource agencies before an exception may be granted. The AO's power to grant exceptions to an operating standard is limited to those subjects, uses, and permits over which the BLM has authority. Exceptions to this consultation may be granted in emergencies involving human health and safety. The granting of an exception would not require a modification/amendment to the land use plan as exceptions would be consistent with the land use plan if the goal is achieved.

The BLM may also initiate an exception to an operating standard when information (e.g., technical reports, new/revised procedures, or results of scientific research) becomes available that demonstrates that the proposal satisfies the objective of the operating standard and meets the management objectives for the area in which the alternative is proposed. Before granting an exception (other than those granted for emergencies), whether proposed by the lessee/permittee or the BLM, the action shall undergo appropriate NEPA review.

MITIGATION GUIDELINES

1. Surface Disturbance Mitigation Guideline

Surface disturbance would be prohibited in any of the following areas or conditions, unless or until a permittee or his designated representative and the surface management agency (SMA), prior to development, arrive at an acceptable plan for mitigation of anticipated impacts:

a. Construction with frozen material or during periods when the soil material is saturated or when watershed damage is likely to occur.

2. No Surface Occupancy Guideline

The No Surface Occupancy (NSO) Mitigation Guideline is intended for use only when other mitigation is determined insufficient to adequately protect the public interest and is the only alternative to "no development" or "no leasing." The legal description and resource value of concern must be identified and be tied to an NSO land use planning decision.

Waiver of, or exception(s) to, the NSO requirement will be subject to the same test used to initially justify its imposition. If, upon evaluation of a site-specific proposal, it is found that less restrictive mitigation would adequately protect the public interest or value of concern, then a waiver or exception to the NSO requirement is possible. The record must show that because conditions or uses have changed, less restrictive requirements will protect the public interest. An environmental analysis must be conducted and documented in order to provide the basis for a waiver or exception to an NSO planning decision. Modification of the NSO requirement will pertain only to refinement or correction of the location(s) to which it applied. If the waiver, exception, or modification is found to be consistent with the intent of the planning decision, it may be granted. If the waiver, exception, or modification is found inconsistent with the intent of the planning decision, a plan amendment would be required before the waiver, exception, or modification could be granted.

PERFORMANCE-BASED MITIGATIONS

Operating standards that are presented in this appendix are given as an acceptable method to mitigate anticipated effects and achieve the desired plan outcomes, but are not prescribed as the only method to achieve the outcomes.

These measures differ from the prescriptive-based stipulations developed for the 1988 Pinedale RMP (and which also make up the No Action Alternative), in that they—

- Exclude actions that already exist in the form of regulation or law; and
- Provide the BLM and other land users, including industry, greater adaptability in protecting surface resources by emphasizing the intent or outcome of mitigation. These "Adaptive Management" principles will help the BLM make decisions effectively by using a rigorous combination of management, research, and monitoring so that credible information is gained and management activities can be modified, over time, based on continuous experience.

The mitigations are requirements, procedures, management practices, or design features that the BLM, through the Record of Decision (ROD), could adopt as operational requirements. These requirements would be addressed through the permitting process. An oil and gas lease does not in itself authorize any on-the-ground activity. Seismic operations, drilling, pipeline construction, and other development activities require additional land use authorizations. Any applicant requesting such authorization must address the operating standards either before submitting the application (e.g., for wildlife surveys) or as part of the application proposal. Requirements that are met before submission of the application, as well as procedures, practices, and design features that are an integral part of a proposal, do not need to be stipulated in a permit or lease. Because mitigating operating standards will be identified in the ROD as operational requirements, and not as general lease stipulations, their applicability goes beyond the oil and gas lease to any permitted activity where the requirement is relevant.

BLM may add additional site-specific restrictions as deemed necessary by further environmental analysis and as developed through consultation with other federal, state, and local regulatory and resource agencies. Laws or regulations may require other federal, state, and local permits (e.g., Clean Water Act

Section 404) for an oil and gas project to proceed. Specific state permits may be required when the state has primary authority, under federal or state law or regulation, to enforce the provision in question. Specific permits issued by federal agencies other than the BLM could include permit conditions that are more stringent than those presented below.

For alternatives 2, 3, and 4, operating standards are listed that would apply to exploratory oil and gas drilling and other operations. When drilling intensity proceeds to the development stage, additional environmental analysis would be necessary. The operating standards could be revised at the gas field development EIS stage if necessary.

Soils, Watershed, and Water

Public lands will benefit in the long term from enhanced habitat integrity, productivity, reestablishment of the vegetative community, and control of erosion.

Effect: Water velocity will cause surface disturbance and bare ground exposed in a stream channel to erode.

> ***Mitigation:*** Approved surface disturbing management actions in stream corridors (within the "high bank" of any ephemeral or intermittent stream course, or within the high bank +50 ft of any perennial stream) and must protect fish spawning, fry, and other important fish life stages and habitats within the stream or connected streams.
>
> ***Mitigation:*** Any approved disturbance occurring in a stream corridor must be finally reclaimed to achieve PFC as a minimum standard.

Effect: Linear stream crossings of perennial streams can obstruct fish passage and isolate fish habitats.

> ***Mitigation:*** Crossings of perennial streams must be designed and be effective in allowing the passage of fish.
>
> ***Mitigation:*** Crossings of perennial streams may be specified to occur within a "linear disturbance corridor".

Effect: Upland disturbances on erosive soils may cause increased soil erosion and runoff of water.

> ***Mitigation:*** Upland erosion from surface disturbance (anthropogenic disturbance) must be effectively controlled and not allowed to be transported to perennial streams.
>
> ***Mitigation:*** Exposed upland soils must be effectively revegetated within one growing season.
>
> ***Mitigation:*** Upland soils classified as highly erodible in the order three soil survey would be avoided.
>
> ***Mitigation:*** Slopes greater than 10 percent, with south facing aspects, and in areas of soils classified as highly erodible in the order 3 soil survey should be avoided and alternate routes or locations sought when and where practicable.

Roads and Transportation

Effect: Wildlife, particularly big game species, avoid areas adjacent to access roads and timber harvest areas because of the associated increase in activity.

Mitigation: Commercial users of roads on or through public lands may be required to impose appropriate corporate limits on commercial vehicle speeds or on personal vehicles used for access to worksite on public lands.

Mitigation: Roads created for commercial timber harvesting would be closed and rehabilitated as soon as possible after the end of timber harvesting to promote a multiseral-stage ecosystem. Closing and rehabilitating roads would affect big game by eliminating disturbance from vehicles, reestablishing vegetation for forage and cover, and eliminating the roads as erosion/sediment sources (MDFWP 1985).

Mitigation: Review of road design criteria and incorporation of fish passage needs would minimize this impact for linear disturbance in streams.

Mitigation: Areas could be subject to travel exclusions, closures, and/or other travel restrictions during sensitive periods.

Effect: Vehicle-wildlife collisions may increase in areas of high wildlife use and high human activity.

Mitigation: The project proponent could be required to develop a coordinated travel management plan before surface disturbing activities are authorized.

Mitigation: Transportation planning would be required, before disturbance, which demonstrates maximization of acres of remnant, undisturbed blocks of habitat.

Mitigation: Transportation planning would be required, before disturbance, which demonstrates minimization of linear disturbance, including roads, pipelines, and power lines, within and associated with the project area.

Mitigation: Closure and reclamation of unnecessary roads could be required to reduce fragmentation and restore habitat integrity while reducing the potential for wildlife disturbances.

Mitigation: Roads with a planned life greater than 5 years should meet the design requirements of the 9113 BLM manual. Unimproved single use roads should be built/designed/placed to minimize erosion, have ease of reclamation, be safe for the prescribed use, and minimize vegetation removal. Excessive erosion from these roads will be immediately and effectively controlled.

Fire and Forestry

Effect: Silvicultural activities would alter seasonal elk habitat and affect winter range.

Mitigation: Coniferous timber stands should contain a 40-percent or greater post- harvest canopy cover with patch sizes between 26 and 60 acres to meet seasonal elk habitat requirements where feasible, possible, and compatible with other timber management goals (USDA 1981).

Mitigation: The leaving of dead and dying trees, trees with heart rot, and other standing unmerchantable timber may be required to meet the ecological needs of numerous wildlife species, including woodpeckers, owls, and many neotropical migrants, in all timber management activities.

Mitigation: Where possible, topographic features should provide a line-of-sight barrier between big game and the human disturbances (Confederated Salish and Kootenai Tribe et al. 1978).

Mitigation: Prescription burning would be conducted when soil moisture is adequate for the regrowth of plants in arid regions, provided this requirement is compatible with other prescription burn needs (USDA 2004).

Livestock Grazing

With proper planning and management, productive livestock ranges can be productive wildlife ranges; the key is to create a livestock range improvement project that is not detrimental to wildlife, particularly big game and sage grouse. Improving nonlimiting factors without improving limiting factors will do little to enhance the overall habitat or improve the conditions for the key habitat users (USDA 2004).

Effect: Range improvements affect fish and wildlife habitats and wildlife needs.

Effect: The creation of reservoirs in big game crucial winter range would encourage big game to remain in these areas for longer periods of time during the spring months, which would result in decreased quantity and quality of available forage the following winter.

Effect: New water developments could also bring livestock use into previously unused areas, decreasing available forage during critical time periods.

Mitigation: Livestock grazing management timing and utilization (improvements) would be conducted to meet the Standards for Healthy Rangelands.

Mitigation: Fencing of springs and seeps to protect water sources would help to maintain flow conditions supportive of fish populations.

Mitigation: The use or implementation of grazing BMPs would help to maintain or restore habitat conditions for various fish and wildlife species.

Mitigation: Rangeland and vegetation monitoring would be conducted to detect changes in grazing use, trend, and range conditions. These data would be used to support and direct grazing management decisions consistent with national policy. These efforts would help to ensure that livestock grazing does not significantly impact wildlife habitats.

Mitigation: Existing fences could be reconstructed or modified to meet BLM “wildlife friendly” standards where this would reduce or offset impacts to wildlife.

Effect: It is estimated that livestock well developments would result in approximately 3.2 acre-feet of water depletion to the Colorado River System and contribute to the reduced and regulated flows in the remaining reaches of the fragmented river systems that the Colorado squawfish, bonytail chub, humpback chub, and razorback sucker still inhabit (Stanford and Nelson 1994).

Mitigation: All activities must comply with all USEPA fees and prescribed mitigations to offset water depletion in the Colorado River.

Effect: Surface disturbing activities can reduce AUMs of permittees and can disrupt other approved ranch operations.

Mitigation: Any surface disturbing activities will be coordinated with other permittees to minimize the effects of the surface disturbance on other approved operations. To the maximum extent practicable, this effort would include consulting on scheduling of operations to mutually minimize effects.

Mitigation: Any damage to the function of range improvements (e.g., fence damage, cattle guard cleaning, livestock loss) from other approved operations is the offending operator's responsibility.

Minerals

Effect: Operational and surface disturbing activity from oil and gas development, mining, and salable mineral extraction that occurs on crucial winter range during the winter months would contribute to wildlife disturbances, habitat loss, and fragmentation.

Mitigation: Each new lease would be reviewed on its own merits to ensure the appropriate protective measures/stipulations are applied (see Appendices 2, 5, 12, and 18).

Mitigation: Drilling of multiple well bores from a single well pad could reduce impacts to wildlife by reducing the number of surface locations and surface area disturbance.

Mitigation: Any known, nonexperimental, proven, cost-effective method to reclaim disturbance may be proposed and evaluated to maintain the viability and function of the public lands, including critical wildlife habitats.

Mitigation: Experimental methods to maintain or reclaim wildlife habitat or improve reclamation science are encouraged to be tested on small areas within the planning area. When scientifically proven effective for a reclamation objective, these methods may be incorporated into proven reclamation methods.

Mitigation: Reclamation in critical wildlife habitats may be required to return suitable habitat, similar in function to predisturbance habitat.

Mitigation: Any reclamation must be successful. Successful reclamation must control erosion and restore pre-disturbance land.

Mitigation: Well locations and associated disturbances that are dry holes or abandoned producers would be reclaimed as soon as practicable.

Mitigation: All reclamation of disturbed lands will be conducted with a diverse mix of noninvasive, certified weed-free seed demonstrated effective for post-disturbance land uses and approved by the AO. In designated critical wildlife habitats, this seed mix must be proven effective for the predisturbance wildlife use.

Effect: Evaporation ponds built for condensate water from producing natural gas wells contain waters that are highly alkaline and contain very high concentrations of salt. Waterfowl and shorebirds become attracted to these ponds and may become encrusted and die, drown from the excess weight, or suffer from cold stress from the loss of insulation. (USFWS 2006).

Mitigation: All evaporation ponds will incorporate effective measures that make evaporation ponds for condensate water unattractive and/or less accessible to birds and waterfowl.

Wildlife

BLM-authorized actions can affect wildlife through alteration of wildlife habitat. All laws (e.g., ESA, MBTA) must be complied with.

Effect: Approved activities in crucial wildlife habitat may negatively affect the ability of wildlife to effectively use the habitat.

> ***Mitigation:*** Activities in crucial habitat (that limit the effectiveness of the habitat) should be avoided when practicable.
>
> ***Mitigation:*** Activities in crucial habitat, when unavoidable, should be minimized by any reasonable measure.
>
> ***Mitigation:*** The affected habitat will be contemporaneously mitigated using mitigations from the affected resource.
>
> ***Mitigation:*** Where habitat effects are unavoidable, effective wildlife refuge areas that contain alternate habitat should be available.
>
> ***Mitigation:*** Although unlikely, locatable mineral development activities should not be allowed within identified big game parturition areas between May 1 and June 30 or within raptor nesting areas from February 1 to July 31, which would eliminate disturbance of these species during these periods.

Effect: Approved activities in crucial wildlife habitat may negatively affect BLM's ability to support Wyoming Game and Fish herd numbers.

> ***Mitigation:*** BLM will consult with WGFD on all actions where this effect is likely. Nothing in this consultation will prohibit BLM from approving actions that comply with existing laws and prior existing rights or that are consistent with the BLM mandate of multiple use of the public lands.

Reclamation

The primary goal of reclamation activities will be to avoid and minimize approved surface disturbing activities to the maximum extent practicable, to successfully reclaim approved disturbances in a timely manner, and to return the predisturbance land uses.

Effect: The ecological integrity of disturbed areas would be altered.

> ***Mitigation:*** All disturbance would be limited to the minimum necessary to enable production of the resource.
>
> ***Mitigation:*** All disturbances would be returned to the approximate pre-disturbance contour of the land.
>
> ***Mitigation:*** Predisturbance land use would be returned to the maximum extent practicable.
>
> ***Mitigation:*** Where approved disturbance prohibits maintenance of use, off-site mitigation could be considered.

Effect: Surface disturbing activities increase erosion and would alter the land uses in the disturbed area.

> ***Mitigation:*** The affected land uses would be restored following reclamation. While surface-disturbing or disruptive activities continue, land uses would be mitigated using revegetation, stabilization, erosion control, and habitat enhancement or substitution.