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April 6, 2007

Matt Anderson  
Bureau of Land Management  
432 E. Mill Street  
P.O. Box 768  
Pinedale, WY 82941

Dear Mr. Anderson:

Audubon Wyoming and the National Audubon Society are writing in response to the Bureau of Land Management's Pinedale Anticline Supplemental Environmental Impact Statement (SEIS). The mineral industry proposal that calls for year-round and expanded drilling in the Pinedale Anticline project area (calling for 4,400 more wells, almost nine times the number currently in place and expanding the impacts beyond those authorized originally by the BLM in 2000) within the SEIS is completely unacceptable. Audubon Wyoming believes that recent scientific evidence has proven that increased drilling within the Pinedale Anticline would negatively impact Sublette County's ability to support abundant wildlife and once pristine air quality.

Audubon supports several of the components included by the Pinedale Anticline operators to reduce surface disturbance (i.e. substantial directional drilling, workforce bussing, water/condensate pipelines, consolidated infrastructure, etc). However, these provisions alone are greatly lacking and do not adequately address the planning, mitigation and reclamation procedures that should be required of industry regarding the protection of our wildlife, including the Greater Sage-grouse and their habitats. Moreover, the "relaxation" of the stipulations within the "core area" (which encompasses big game winter range and critical migration corridors) and business as usual (i.e. enforcing inadequate current wildlife stipulations) outside of the core area or within the "body" of the project area, we ask, how exactly will wildlife benefit?

Alternative B- Proposed Action Alternative would be detrimental to the areas wildlife in the following ways:

1. There would be a substantial increase in well (4,399 new wells) and acres developed (up to 12,278 acres) within critical big game winter range and sage-grouse year-round habitats which could have catastrophic negative effects on those wildlife populations.
2. The planning requirements are indistinct and leave open avenues for full development by gas and oil interests without taking into account important habitat features.
3. Drilling and completions would occur within big game crucial winter habitats in all the proposed development areas.
4. Current wildlife stipulations in place to protect and conserve our natural heritage would be eliminated.
5. There is no requirement for planned, phased development.

6. No minimum measures are incorporated to protect the core survival areas for the species occurring in the area and no distinct, concrete mitigation measures are required.

In addition, Alternative B language regarding operator/industry compliance is loose and full of loopholes for industry. For example, “Operators would attempt (would attempt or WILL) to fully develop each multi-well pad to the approved bottom-hole spacing before moving drilling rigs off of pads” “Where possible (who would make that decision?), the delineation wells would be drilled in accordance with all seasonal stipulations”, and “There may be some instances in the first 5 years where delineation wells must be drilled outside of the CDAs and outside of the core area during the seasonally restricted periods.” Audubon believes it is critical that the operator’s alternative (Alternative B) be completely rejected.

The Alternative A is unacceptable as well. Although Audubon Wyoming does not believe increased development nor an increased pace in mineral development on the Anticline will be beneficial to the wildlife and their habitat, we do not support the “No Action Alternative.” Audubon Wyoming believes that under the “no action” alternative we will continue to see declines and potentially lose the Greater Sage-grouse, mule deer and pronghorn populations in the developing area. This conclusion is based primarily on the fact that the existing wildlife stipulations do not protect and conserve the wildlife enough (as demonstrated in the most recent sage-grouse and mule deer studies).

In addition, as stated in the SEIS No Action Alternative “Development in the PAPA beyond the limits and analysis thresholds specified in the PAPA ROD would require additional environmental review. The PAPA ROD did not specify the type or extent of the additional environmental review that would be required.” We believe this is another shortcoming in the no action alternative. No specificity regarding the type or extent of what would be “additional environmental review” leaves room for excuses and loopholes for the industry and agency both to excuse themselves from the repercussions development will have on the areas habitats and wildlife.

Although the final alternative presented, Alternative C, is similar to the Proposed Action (B) in number of wells, drilling rigs, number of new well pads, it does attempt to specify certain areas that year-round drilling would not occur which would only “minimize development in other areas, especially in portions of big game crucial winter ranges”. However, again, trying to enforce the same seasonal wildlife stipulations that have been proven to be inadequate to ensure the persistence of our grouse and other species is not acceptable. In addition, the Performance Based Objectives (PBO) outlined in Appendix E of the SEIS does not go far enough. For example, the “Planning” PBO, specifies well placement, however there is no mention concerning mitigation measures to be taken. Also, the PBO states Operators will “submit a Plan of Development within each Development Area that has been designated by BLM for year-round drilling. The plan would address Operator(s) actions for the annual cycle beginning (May or April or June) 2007 following authorization by BLM in the SEIS ROD.” These are short-term (1-year) plans and do not take into account any long-term, pre-planning document that would clearly define development plans, it’s impacts and action taken that would be taken in the face of those development impacts. Another example of the shortcoming within the PBO is the reclamation section. This section does specify how it will reclaim as far as timeframes and topsoil but makes no mention of any type of inventory to be done BEFORE development occurs, so the Operators and agencies alike know what they need to be reclaiming the area back to (i.e. percent of sagebrush, density and diversity of brush grasses and forbs were there before development began).

Audubon Wyoming believes Alternative C needs to be amended to include set aside areas for wildlife and create more stringent wildlife stipulations among other issues, which the plan currently fails to do.

Audubon Wyoming has also reviewed the Draft EIS for the Pinedale Resource Management Plan (RMP) in order to examine how the RMP and SEIS may work together to compliment each other. Unfortunately, after reviewing the document, Audubon Wyoming believes that the RMP contains the same fatal flaws concerning sage-grouse and other wildlife protections for the entire area as the SEIS does for the Pinedale Anticline Project Area. For example, the same “equivocal” (e.g. “when necessary, and when possible or feasible”) can be found throughout the document, again creating many loopholes for the land managers and land users. In addition, mitigation and reclamation are not clearly defined and the reader is left to wonder who will determine what exactly constitutes correct mitigation and reclamation practices for the area during and after a disturbance. However, the most obvious missing component as in the SEIS is the lack of an overall pre-planning document that should be required before an area is disturbed. This pre-planning document should encompass *all* the elements concerning the impacts to an area and its development including: again, clearly defining the mitigation and reclamation, use of adaptive management techniques (i.e. monitoring pre, during and post disturbance events to evaluate management actions), pre-disturbance inventories so the area is reclaimed to pre-disturbance habitat components, and identification of wildlife set-asides (areas that would not be disturbed until developed area is done and completely reclaimed).

In general Audubon Wyoming believes that the Pinedale SEIS Alternative C needs to be amended so that mineral development pre-planning document is required to initiate approval of development. A comprehensive pre-planning document must be mandated as part of the requirements to begin developing the area. One example of the stipulations concerning transportation and adaptive management that should be incorporated into the preplanning document can be found within the draft RMP on pages A3-6 and A3-4. Other stipulations that should be included within the pre-planning document include:

Pre-planning Elements:

**1. Mitigation**

- Clearly define mitigation. All mitigation of adverse impacts to wildlife habitat from development activities shall be based on the following principles: (a) avoid adverse impacts from oil and gas operations on wildlife resources to the maximum extent practicable; (b) minimize the extent and severity of those impacts that cannot be avoided (minimize footprint); and (c) mitigate the effects of unavoidable remaining impacts through compensatory measures (on and off site). On-site impacts should be reduced to the maximum extent practicable.
- Research: Research needs to be done demonstrating what “sagebrush improvement” techniques work and which should not be used (i.e. chaining/burning of decadent sage). So we do not end up destroying/eliminating double or triple the grouse habitat within and outside of the development areas while hoping to improve the area for all affected species.
  - *Paid for by operators*
- Annual monitoring Reports: Regular, consistent monitoring reports need to be required that evaluate population responses to development. If the reports are not given within the designated timeframe, a stop-work will be the consequence.

- W-4 | W-3 | G-3 | EG-2-2
- Retiring and buying leases: Operators will be encouraged (as good mitigation strategies, i.e.: a means of ensuring protection of habitat for wildlife) to retire or buy leases to be set-aside.
  - Habitat Improvement: Habitat improvement projects should conclusively establish what the limiting seasonal habitat is for the species of interest, establish the component of that habitat making it limiting, propose management options aimed at that component and make sure that management option is proven to succeed.
  - Refuge establishment: Create Set-asides or Grouse Refuges to conserve/ protect all seasonal habitats needed by affected species such that wildlife populations residing in the area (not try and mitigate for what has been destroyed in another area) is maintained or enhanced as a reservoir population to reestablish the developed field.

## 2. Reclamation

- RC-1 | RC-2 | RC-3 | RC-4 | RC-5 | EG-2-3
- Define Reclamation: Reclamation must include a system to follow well development regardless of ownership, including sufficient financial guarantees to restore habitat to its original condition and establish viable populations of native vegetation.
  - Research: Research needs to be done that demonstrate/back-up validity and success of what reclamation is described in reports.
    - *Paid for by operators*
  - Annual monitoring Reports: Regular, consistent monitoring reports need to be required that evaluate population responses to development. If the reports are not given within the designated timeframe, a stop-work will be the consequence.
  - Predevelopment Inventory: An inventory before development is begun to know what we must reclaim back to (i.e. species diversity, abundance, cover and density), with clear reclamation techniques that work, with set dates for compliance and mandated actions if not met. Identification of important wildlife use patterns in area (i.e. corridors) also need to be addressed.
  - Phased development: Development in gas fields should not be permitted until development in previously-disturbed areas has been fully reclaimed and ongoing disturbances minimized Reclamation also needs to be done as development is occurring within a field.

## 3. Limit Development to Core Area/Spine:

- G-4 | EG-2-4
- Only the crest should be developed in a phased-development manor and impose a moratorium on leasing (NO development) outside the “core area” (i.e. body of site). The lower-gas-potential “body” of the project area must be explicitly closed to new development until industry’s “core development area” has been fully developed and reclaimed. Travel corridors within the body of the site should be planned and only implemented once approved.
    - Requirements for corridors:
      - Complete comprehensive pre-development plan, including baseline inventory of resource and habitat (see above).
      - Enforceable, non-waivable, and scientifically-proven limits on extent of disturbance in identified habitats (including seasonal ranges and migration corridors)
      - Establish limits on # of pads
      - Establish limits on length of road
      - Establish overall footprint of development limits

AQ-1W-5  
 W-6  
 W-7  
 G-5  
 G-6  
 W-8  
 EG-2-4  
 EG-2-5  
 EG-2-6  
 EG-2-7  
 EG-2-8

- Define species, habitat and air **Thresholds** that if reached would trigger immediate reduction in development levels and/or pace. A comprehensive and ongoing monitoring program must also be required to support an adaptive management approach when threshold issues arise (i.e. if thresholds are reached within the area of development (for any reason), then BLM needs to reevaluate development scale and rate. The threshold system will work on a tiered system: tier one would slow or limit development and tier two would entail a cease work order).
- Development needs to be phased to keep critical habitats and migration corridors available to wildlife.

**4. Reduce Impacts Thru Coordination Among Operators (reduced footprint where developing):**

- Impacts to wildlife necessitate implementation of directional drilling, use of shared infrastructure (including condensate pipelines, smallest # of pads and smallest size to reduce habitat disturbance), remote monitoring, and centralized liquid and gathering process.

**5. Greater Transparency When Deviation from Development Plan:**

- Increased Formality, transparency, and public involvement in all decisions involving requests for variances, exceptions, exclusions, etc. from any plan provisions, decisions, lease stipulations, or conditions of approval that limit the timing, location, or footprint of oil and gas development activities.

**6. Adoption of Audubon Wyoming’s Mitigation Measures to be incorporated into the pre-planning process (see attached document).**

**7. Adoption of all the components of Wyoming Game and Fish Department’s Minimum Recommendations report (including any updates to that report).**

In conclusion, the Pinedale Anticline Project Areas habitats and wildlife has been proven to be under significant threat from the current development actions, the most recent scientific studies have demonstrated tremendous negative effects from gas and oil development on the Greater Sage-grouse (“The evidence suggests that current natural gas development techniques lead to greater sage-grouse population declines.” – Dr. Matthew Holloran PhD Dissertation) and a 46% decline in mule deer populations in the area of development -Hall Sawyer PhD. Audubon believes that Alternative B and current requirements of A and C would only cause further decline of our precious western natural resources and wildlife. These lands and wildlife are already struggling to survive under the rapid pace of mineral development in the area.

We cannot risk further reckless and environmentally unsound development practices to continue. Therefore we propose amendments of Alternative C – WITH the consideration and incorporation of the above comments and the following mitigation measures when managing the current and future development of the site and within this critical population of Greater Sage-grouse.

Thank you very much for your time and consideration.

Sincerely,

Brian Rutledge  
Executive Director  
Audubon Wyoming

Alison Lyon-Holloran  
Conservation Programs Manager  
Audubon Wyoming

## **Audubon Wyoming's Greater Sage-grouse Suggested Mineral Development Mitigation Measures**

### **Goal:**

**To maintain a viable population of Greater Sage-grouse within the developed area during the development phases of a natural resource field.**

*To accomplish this goal Audubon Wyoming feels it is the responsibility of the BLM and Mineral Interests to create a comprehensive pre-development plan that would address all aspects of the proposed mineral development on Greater Sage-grouse populations in the area. The following pre-planning efforts should be included in the document.*

### **Mineral Pre-planning Development Elements**

**Goal:** Comprehensively describe past, present, and future developments and land uses including the potential locations and scale of oil and gas developments. Identify direct, indirect, and cumulative effects of development and land uses, concentrating on aspects that may impair the condition or function of the various ecological components for Greater Sage-grouse. Include management options that mitigate for any declines in sage-grouse populations resulting from impacts incurred through development (including all indirect and cumulative impacts). (*Note:* There may be many causative effects influencing populations declines, however mineral development has been proven to have negative impacts on grouse and therefore when a population is declining in relation to a developing mineral area is observed, mineral interests need to act on those declines (see threshold section below) until the measures taken reverse the declining trend). Finally, mitigation measures for those effects should be an adaptive management process and mitigation and reclamation procedures clearly defined.

### **General landscape planning principles and concepts:**

We recommend that a detailed conservation plan be done within and areas adjacent to mineral development as part of the pre-development process. The landscape analysis/planning should be done as part of cumulative analysis for the EIS/NEPA process. We recommend that planning, analysis, and mitigation of large, intense energy developments be done at a landscape scale appropriate to address the total local grouse population and geographic impacts to the region that are realized.

### **The following steps should be taken when initiating landscape pre-development conservation plan:**

- a. Consult the appropriate state and federal wildlife agencies early in the planning process, during the pre-planning phase;
- b. Identify and delineate appropriate landscape planning units for sage-grouse and total locale of mineral development area;
- c. Inventory:
  - Gather existing information or comprehensively inventory the biological and physical components of those units (including vegetation cover types, grouse seasonal habitats, current land uses, existing patterns of development, etc.). If adequate resource data are not available, include a means of collecting the information;

- Describe how those key physical and biological components are functionally interconnected or interdependent, for example, the seasonal ranges and migration patterns of sage-grouse;
- d. Identify landscape goals and objectives based on the desired condition of grouse habitats;
  - As necessary, design and conduct research to study and evaluate presently unquantified effects, resource conditions, and key ecological processes; the study(s) should be designed as a research project(s) with the objective of quantifying if the development plan is working as desired;
- e. Formulate effective management and mitigation to avoid, minimize, rectify, or compensate adverse impacts – the overall objective is to maintain all grouse seasonal habitat components;
- f. Monitor: As reclamation and mitigation action is initiated, design a technically sound monitoring plan that will enable managers to refine their assessments of impacts, evaluate the effectiveness of mitigation, and detect unforeseen conditions;
- g. Adapt development protocol in a timely manner to counteract recognized deficiencies in the original development plan (i.e. adaptive management);
- h. To avoid or reduce unnecessary disturbances, wildlife conflicts, and habitat impacts, coordinate planning among companies operating in the same oil and gas field; clump leases at time of sale to facilitate this process;
- i. Include city planners, transportation department; police department; emergency responders etc. in pre-development process to address cumulative effects.

*(Reference: WGFDD Recommendations for Development of Oil and Gas Resources within Crucial and Important Wildlife Habitats, May 2006).*

### **Specific Mitigation Measures within the Pre-Plan**

**Goal:** Employ mitigation measures/ methods that are effective and proven successful that will maintain local grouse populations in areas of development.

- a. Clearly define MITIGATION. Clear direction needs to be provided regarding defining mitigation; which would include studies demonstrating what “sagebrush improvement” techniques work and which should not be used (i.e. chaining/burning of decadent sage) so we do not end up destroying/eliminating the only grouse habitat remaining within and outside of the development areas. Habitat improvement projects should conclusively establish limiting seasonal habitat(s) (e.g., nesting habitat), establish the component of that habitat making it limiting (e.g., low grass cover), propose management options aimed at that component (e.g., what management practice enhances grass cover within sage-grouse nesting habitat) and make sure that management option has a high probability of success. Construct an adaptive monitoring plan that enables managers to refine their assessments of impacts of the project has on the habitat and grouse through the realized life of the project (e.g., if sagebrush is influenced by habitat treatment, post-treatment monitoring should occur until sagebrush densities are functionally equivalent to pre-treatment levels).

### **Questions that should be raised before beginning an “improvement project”:**

1. Project Justification: Does the area need habitat improvement or is it functioning effectively without intervention? Does the proposed treatment target the habitat component limiting the sage-grouse population, and has the proposed treatment been successful in other similar habitat types? When a treatment is proposed, what information is used to justify the need for the treatment (i.e. is limiting habitat is inadequate)?

2. Method Justification: Where was that information collected? Was it collected in the same sort of vegetation and environment for which the treatment is proposed (i.e. will the proposed method ensure desired results)?
3. If thinking of “improving habitat” and removing “decadent sage”: What does “decadent” mean when applied to species of sagebrush in the area?
4. What evidence is there that sagebrush in general, or sagebrush in specific locations, is decadent? Is decadent sagebrush bad for grouse (no, if nesting or wintering is limiting grouse population)?
5. Are there specific and measurable goals for the treatment? What information (data) will be collected for judging the success or failure of the treatment? How, where, and how often will that information be collected?
6. Has thought been given to the possibility that treatment will hasten the spread of undesirable exotic plants? Will data be collected after the treatment that allows us to know whether exotic plants are invading or spreading? What if exotic plants do invade the treated area -- what steps can be taken to address the invasion?

**b. Create Set-asides or Grouse Refuges:**

**Goal:** To conserve/ protect all seasonal habitats needed by grouse such that the population of birds residing in the developing area is maintained or enhanced as reservoir populations to reestablish areas of the field where grouse populations are negatively impacted or extirpated.

One way to allay unavoidable wildlife impacts with intensive development such as with oil and gas or coal bed methane development is to protect and conserve in field and/or nearby habitat. If effective mitigation is to be included in project development areas, BLM must go further to ensure that such on or off site mitigation at least in part includes the acquisition or permanent protection of important habitat from future energy development.

**Steps:**

1. Through the landscape planning process, ensure that the set aside will result in a viable, maintainable population through perpetuity, including not only seasonal habitats but migration or genetic dispersal corridors so a viable genetic population is maintained (e.g., a migratory population does so between winter to summer habitat, and both seasons are needed to keep individuals alive. Set asides should be thought of as a series of protected areas interconnected by dispersal corridors at least 1.6 km (1 mile) wide; these protected areas and corridors should contain no anthropogenic sources of disturbance (e.g., roads, power lines, buildings), and should be protected in such a state (Braun 2006). The COMBINATION of these areas and corridors represents the refuge meant to keep a viable population of sage-grouse within a developed area;
2. Propose critical sage-grouse areas for “no lease” before the “auction phase” of the BLM leasing procedure;
3. Make sure planning areas/landscape plans include not only set aside areas, but areas to be developed (i.e., the landscape plan needs to be completely inclusive in terms of spatial orientation of developed and non-developed areas, and the corridors to connect these).

**Pre-planning Reclamation and Threshold Mitigation Measures**

**Goal:** To effectively reclaim developed areas to previous existing habitat components for grouse as well as have population and habitat “trigger points” when development should be halted to ensure grouse populations persist in the developing area.

- a. Define RECLAMATION: Define reclamation requirements that include an inventory before development has begun to know what we must reclaim back to (i.e. species diversity, abundance, cover and density). Clear reclamation techniques that have been proven to be effective should be employed, with set dates for compliance and mandated actions if not met. Monitoring and treatment of reclaimed areas should continue until the pre-determined % by pre-development inventory of plant cover, composition, and diversity standards have been met;
- b. Development in gas fields should not be permitted until development in previously disturbed areas has been fully reclaimed and ongoing disturbances in those areas minimized;
- c. Establish effective, interim reclamation on all surface disturbances associated with ancillary facilities including equipment staging areas. Interim reclamation should be achieved using a variety of *native* grasses and forbs;
- d. Increase reclamation bond on well pad sites from 1954 standards of \$24,000 to fair current market price to assure mineral interests will not abandon reclamation process after development is completed;
- e. Define species and habitat **THRESHOLDS** (declines in a population should be 10% or less of the estimated population over 3 years (Connelly et al. 2000)) that if reached would trigger immediate reduction in development levels and/or pace. A comprehensive and ongoing monitoring program must also be required to support an adaptive management approach when threshold issues arise. *NOTE:* There may be many causative effects influencing populations declines, however mineral development has been proven to have negative impacts on grouse and therefore when a population is declining in relation to a developing mineral area is observed, development needs to be reduced or halted until measures are taken to reverse this trend.

### **Surface activity Pre-plan Mitigation Measures**

**Goal:** To minimize impacts to grouse populations and habitats within development fields.

- a. All existing and new compressor stations should add noise abatement devices (mufflers) (not exceed 10 dBA to reduce audible noise within 5.5 km of active leks.
- b. All surface activity should be prohibited within 5 km during the drilling phase of development (increasing it from the current .25-mile buffer stipulation) and minimize surface occupancy to 1 well per section within 3 km of an active grouse lek (Holloran and Anderson 2004, 2005);
- c. No surface occupancy is preferred to simply limiting use of areas to specific periods,
- d. Roads should not be placed within 5.5 km (3.3 miles) of active leks. If roads are present, they should be seasonally closed during the sage-grouse breeding season from 1 March to 20 June (Braun 2006);
- e. Require transportation plans in each resource area, both permanent and seasonal road/trail closures should be considered to reduce disturbance to sage-grouse during breeding activities and winter (Braun 2006). Secondary roads within 5 km of active leks should be closed during the 1 March-20 June period as well as during winter - i.e. December-February (Braun 2006);
- f. All secondary roads and trails within critical sage-grouse habitat should be reviewed and considered for permanent closure and re-vegetation (Braun 2006);

- g. Avoid placement of well pads, roads and other well field facilities within identified winter concentration areas. Avoid human and equipment activity within winter concentration areas from 15 November through 14 March (USDI/BLM 2004c);
- h. Confine development to *concentrated development areas*, cluster drill pads, roads and facilities. New drilling, pad construction, and road building should be explicitly limited to the industry-identified “concentrated development area”;
- i. Salvage topsoil from all road construction and re-apply during interim and final reclamation;
- j. Centralize and combine pipeline systems and other facilities and infrastructure to minimize disturbance during development and production;
- k. All employees should receive environmental awareness training during orientation. BLM should fund development of an environmental awareness video for use by all companies. The video should provide information about native wildlife, sensitivity to various kinds of impacts, effects and consequences of poaching, information about wildlife laws, licensing and residency requirements, and outdoor recreation opportunities;
- l. Employees should be instructed to avoid walking away from vehicles or facilities into view of wildlife, especially during winter months and breeding (courtship, nesting) seasons;
- m. Employees should not be allowed to carry firearms while on the job or riding in company vehicles.
- n. Best available control technology (BACT) should be applied to all gas-well operations. Stringent dust-control measures should be pursued, along with industrial processes that reduce emissions of hazardous pollutants.
- o. No development should take place in aquifer recharge zones, on grades exceeding 25 percent, within 500 feet of riparian areas, or when soil is saturated;
- p. Consolidate and locate collection facilities including tanks, transfer stations, shops, equipment shelters, utility towers, etc. in the least environmentally sensitive areas, well away from riparian habitats, streams or drainages, below ridge lines, away from important sources of forage, cover, reproductive habitats, winter habitats, parturition areas, brood-rearing habitats, etc.
- q. Condensate removal: pipe rather than truck condensate off site.
- r. Remote monitoring: Install remote monitoring instrumentation to reduce or eliminate travel by persons and vehicles for the purpose of manually inspecting and reading instruments.

*NOTE: Not all mitigation/reclamation measures are outlined in this document. This document is meant to serve as a base to begin the conservation planning process. As stated previously, agencies and industry should use adaptive management techniques to address problems and issues that arise as development and impacts are realized.*