



THE SECRETARY OF THE INTERIOR
WASHINGTON



MEMORANDUM

To: Director, BLM

From: Secretary *R. Brown*

Date: December 22, 2000

Subject: Jack Morrow Hills Coordinated Activity Plan

By this memorandum, I am transmitting to you the opinion of the Solicitor regarding the draft environmental impact statement for the Jack Morrow Hills Coordinated Activity Plan. I concur in his opinion.

Having reviewed this Plan with my staff, and having visited the area, I am greatly impressed by the unique and outstanding natural resources contained in the planning area. With one of our Nation's largest unfenced areas outside of Alaska, its big game populations are among the largest and healthiest in the lower 48. It contains one of the most diverse and numerous concentrations of raptors anywhere. Significant cultural resources, including remnants of the Oregon and Mormon Pioneer trails and the mining camps of South Pass, only add to the area's allure. Seven wilderness study areas are found here, and are treasured for their aesthetic beauty and the recreational opportunities they afford. It is no wonder that former Governor Leslie Miller recommended this area as the Great Divide Basin National Park as far back as 1935. Others, like Tom Bell, have worked hard for many years to promote special protection for this area.

The planning area contains significant oil and gas resources and, as the Solicitor notes, much of it has already been leased. Some oil and gas development is occurring, especially in its southwestern portion. Any decision to protect the outstanding natural resources of the Red Desert must be accomplished in a manner that protects the valid existing rights of these mineral owners. To the extent it is consistent with our paramount concern for protecting the natural resources in the planning area, some additional leasing might be allowed, but the presence of finite mineral resources should not deprive future generations of the natural and aesthetic wonders of the Great Divide Basin.

A final decision as to how this area should be protected will necessarily be made by a future Administration. Nonetheless, it is my responsibility to place the BLM on a track that helps to insure that, after a full opportunity for the public participation, an appropriate decision will be

made to protect this unique area and its outstanding resources. To that end, I ask that you direct the Wyoming BLM office to propose the conservation alternative as its preferred alternative in the supplemental draft EIS that the Solicitor has determined should be prepared.



United States Department of the Interior

OFFICE OF THE SOLICITOR
Washington, D.C. 20240

MEMORANDUM

To: Secretary
From: Solicitor *John Leiby*
Date: December 22, 2000
Subject: Jack Morrow Hills Coordinated Activity Plan

At your request, I have reviewed the draft environmental impact statement (DEIS) for the Jack Morrow Hills Coordinated Activity Plan and for the reasons that follow, I believe a revised or supplemental draft EIS that would more fully conform to applicable legal requirements should be prepared for public comment and review. Also, because the BLM has revised its land use planning manual and handbook since the first draft DEIS was published, the new draft should conform with the procedures set forth in those documents.

I. Erroneous Assumptions

Several assumptions made in the DEIS are not consistent with existing federal land management laws. These assumptions are especially problematic under the National Environmental Policy Act (NEPA), 42 U.S.C. § 4321 *et seq.*, because they result in the BLM's failure to consider certain management options for the planning area that may be reasonable in light of the significant biological, cultural, and aesthetic resources that are identified in the DEIS. The NEPA regulations adopted by the Council on Environmental Quality, which are binding on federal agencies like the BLM, require agencies to "[r]igorously explore and objectively evaluate all reasonable alternatives." 40 C.F.R. § 1502.14(a).

For example, the DEIS suggests that withdrawing the area from mineral location and closing it to leasing would be "contrary to the BLM's multiple use management mandate in FLPMA." DEIS, p. 12. It also relies on a provision of the BLM Manual which provides that "public lands shall remain open and available for mineral exploration unless [to do otherwise] . . . is clearly justified in the national interest." *Ibid*; BLM Manual, 3000.06A.¹ The DEIS also states that "[r]esource conflicts tend to be located in specific areas, not planning area wide, and closing the entire area [to oil and gas leasing] would not be reasonable." DEIS, p. 12. This statement is

¹ We have been unable to locate a copy of the May, 24, 1987 policy memorandum cited in the DEIS. The language quoted there is, however, found in the referenced section of the BLM Manual.

"[r]esource conflicts tend to be located in specific areas, not planning area wide, and closing the entire area [to oil and gas leasing] would not be reasonable." DEIS, p. 12. This statement is reinforced by a later statement on the same page that "closure to leasing of federal oil and gas resources in the planning area continues to be unacceptable."

FLPMA's definition of multiple use expressly recognizes that the most "judicious use" of land may involve the use of some land "for less than all of the resources," and that consideration must be given "to the relative values of the resources and not necessarily the combination of uses that will give the greatest economic return...." 43 U.S.C. § 1702(c). Thus, foreclosing mineral exploration and development on even a sizeable tract of federal land does not violate the statutory definition of multiple use, and is not *per se* unreasonable.

FLPMA also provides that an area may be withdrawn or "excluded"² from mineral development when such development may be incompatible with "maintain[ing] other public values in the area." See 43 U.S.C. § 1702(j) (definition of withdrawal in FLPMA). FLPMA requires that, for withdrawal proposals exceeding 5,000 acres, the Secretary submit certain kinds of information and analyses to the appropriate congressional committees about the withdrawal. See 43 U.S.C. § 1714(c)(2). But FLPMA does not make mineral activity the preeminent use of federal lands; indeed, FLPMA's statement of policies makes clear that mining activity is only one of many values to be promoted on the public lands. See 43 U.S.C. § 1701(a).

Here, the DEIS identifies significant wildlife and other resource values.³ Whether or not they implicate "the national interest," they are sufficiently significant that BLM is required, in its NEPA documentation, to consider their protection through mineral withdrawals or exclusions. Accordingly, it was not appropriate for the DEIS to refuse to consider such actions.

With regard to non-leasable minerals, it seems an entirely reasonable option to withdraw all or most of the planning area from such mineral development. This is because, as the DEIS notes, the area appears to have limited potential for non-leasable mineral development, and very little current mining activity. DEIS, pp. 217-218; Map 48. Given the uniqueness and importance of the resources that merit protection, NEPA and its implementing regulations require the BLM to consider the withdrawal of any lands where non-leasable mineral development would be inconsistent with protection of other values. Such an alternative is plainly reasonable and, as noted above, the CEQ regulations require agencies to "[r]igorously explore and objectively evaluate all *reasonable* alternatives." 40 C.F.R. § 1502.14(a) (emphasis added). So, for

² As described below, mineral exclusions, which totally eliminate one or more uses from public lands, are provided for in FLPMA's land use planning process under 43 U.S.C. § 1712(e).

³ These resources are described in some detail in the DEIS, and include cultural, archaeological, and historical resources, DEIS at 205-209; recreational resources, DEIS at 219-220; potential wilderness areas, DEIS at 235-244; and significant wildlife resources, including endangered and threatened species, DEIS at 235-244.

example, if hard rock mining is inconsistent with the protection of sage grouse leks, the BLM should consider withdrawing the land around these leks as may be necessary or appropriate to protect sage grouse habitat. Moreover, the fact that the area has a low potential for hard rock mineral development should, if anything, support withdrawal of the lands, since the economic impact of such a withdrawal will likely be minimal.

With regard to leasable minerals, and most specifically to oil and gas leasing, closing much of the planning area would not likely have a significant impact, especially in the short term. This is because approximately two-thirds of the planning area has already been leased, and oil and gas development will still be allowed in those areas even after a closure. As the DEIS correctly notes, lessees will retain development rights on their existing leases. DEIS, p. 13. But the DEIS does not seem to take this point fully into account in predicting the likely impact from closing the area to further leasing. Rather, the DEIS appears to assume that the leasing restrictions imposed under Alternative B would apply as if there were no pre-existing leasing. See DEIS, p. 382. The DEIS analysis should accordingly address the scope of oil and gas development that is likely, given the valid existing rights held by lessees. Under these circumstances, it is not "unacceptable" – as the DEIS assumes – to close the planning area or a substantial portion of the planning area to new mineral leasing. Instead, it is a reasonable alternative that ought to be carefully considered in the NEPA documentation.

BLM has long taken the view that land use plans are an appropriate process by which to decide whether or not to exclude lands from mineral leasing, mineral sales, and other discretionary actions. BLM Land Use Planning Handbook at H-1601-1, II.A. ("Land use plans ... identify lands ... that are closed to certain uses.") This practice of using land use planning to exclude lands from discretionary actions such as mineral leasing is lawful. Section 202(e) of FLPMA authorizes the BLM to make land use planning decisions that totally eliminate certain types of land uses. 43 U.S.C. § 1712(e). The same subsection clearly speaks in discretionary terms for using the formal withdrawal procedures of section 204 of FLPMA to implement management decisions, except where lands are closed to entry and location under the General Mining Law of 1872. See 43 U.S.C. § 1712(e)(3) ("Withdrawals made pursuant to section 1714 of this title may be used in carrying out management decisions, but public lands shall be removed from ... the operation of the Mining Law of 1872 ... only by withdrawal action pursuant to section 1714 of this title or other action pursuant to applicable law.") (Emphasis added.)

Two Wyoming federal district court decisions suggest that, in certain contexts, the BLM must follow FLPMA's withdrawal procedures before it can refuse to process lease applications. *Mountain States Legal Foundation v. Hodel*, 658 F. Supp. 1466 (D. Wyo. 1987); *Mountain States Legal Foundation v. Andrus*, 499 F. Supp. 383 (D. Wyo. 1980). The reasoning of these decisions has been rejected by the Court of Appeals for the Ninth Circuit, see *Bob Marshall Alliance v. Hodel*, 852 F.2d 1223, 1229-1230 (9th Cir. 1988), cert. denied, 489 U.S. 1066 (1989), and I believe the Ninth Circuit correctly states the applicable law.

Even in Wyoming, where the Jack Morrow Hills planning area is found, I believe the two

Mountain States cases are not controlling, for neither involved FLPMA land use planning.⁴ For purposes of land use planning, Section 202(e) of FLPMA authorizes the Secretary to "issue management decisions to implement land use plans." 43 U.S.C. § 1712(e). Such decisions are specifically allowed to include "exclusions (that is, total elimination) of one or more of the principal or major uses." See *Public Lands Council v. Babbitt*, 529 U.S. 728 (2000).⁵ The only limitations on this power are: (1) exclusions of such uses on 100,000 acres or more are subject to congressional notification, 43 U.S.C. § 1712(e)(2); and (2) the withdrawal authority of Section 204 of FLPMA or "other action pursuant to applicable law" must be used for hard rock mining exclusions under the General Mining Law of 1872, 43 U.S.C. § 1712(e)(3). Therefore it seems plain that formal withdrawal under FLPMA section 204 is not required for other types of exclusions (such as mineral leasing exclusions) so long as the requirements of Section 202(e) are met. 43 U.S.C. § 1712(c).

In sum, I believe that applicable public land law gives the Secretary three ways to decide not to lease tracts of public lands for oil and gas or other minerals: (1) exercising his statutory discretion under the Mineral Leasing Act, see *Udall v. Tallman*, 380 U.S. 1 (1965); *United States ex rel. McLennan v. Wilbur*, 283 U.S. 414 (1931); (2) excluding lands from leasing through FLPMA's section 202 planning process; or (3) withdrawing the land through FLPMA's section 204.

The DEIS also suggests that reduction or elimination of livestock grazing is necessary only where it would "significantly" conflict with other management objectives. DEIS, p. 12. Livestock grazing may be reduced or eliminated on BLM-managed land when necessary or appropriate to protect other values, or where rangeland health standards are not being met. Thus, especially in the context of the "conservation alternative" the BLM must not assume that "significant" conflicts with other resources must be shown in order to reduce or eliminate livestock grazing.

The DEIS inappropriately limits the scope of the analysis to the "framework of the *Record of Decision and approved Green River RMP*." DEIS, p. 14 (emphasis in original). Specifically, it states that for the "no action" alternative, management would be based on implementing the Green River RMP. For all of the other alternatives, the goal is to "stay[] within the framework of the *Record of Decision and approved Green River RMP* ... as much as possible." *Id.* This is not

⁴ *Mountain States v. Andrus*, 499 F. Supp. 383 (D. Wyo. 1980) arose in the context of an administrative review of the suitability of certain national forest lands for inclusion in the wilderness system. *Mountain States Legal Foundation v. Hodel*, 668 F. Supp. 1466 (D. Wyo. 1987) involved a decision by the Forest Service to suspend leasing pending completion of land use planning activities under the Rangeland Resources Planning Act, 16 U.S.C. § 1604, as amended by the National Forest Management Act of 1976, 16 U.S.C. § 1604.

⁵ The Court noted that "the Secretary . . . was authorized to reclassify and withdraw land from grazing altogether and devote it to a more valuable or suitable use" 529 U.S. 728, ___ (2000), (slip op. at 9). The same reasoning applies to mining.

accurate. BLM prepared the Jack Morrow Hills Coordinated Activity Plan in response to concerns raised during the development of the Green River RMP. DEIS, p. 1. As the DEIS notes, the CAP was designed to "provide more specific management direction to prevent or address conflicts among potential development of energy resources, recreational activities and facilities, and more specific management direction for other land and resource uses in the planning area, including livestock grazing, important wildlife habitat and other important resources." *Ibid.* The Green River RMP was completed in 1997 but it deferred certain mineral development decisions until completion of the Jack Morrow Hills CAP. *Ibid.* As the DEIS itself recognizes, "the JMHCAP will amend the Green River RMP," *id.*, p. 2, and thus it was unnecessary to limit the scope of the DEIS to the framework of the RMP. Moreover, as noted earlier, NEPA requires the BLM to consider *all* reasonable alternatives, including those outside the framework of the RMP. 40 C.F.R. § 1502.14. Thus, it was not proper to design the alternatives so that they all fit within that framework.

A related concern is BLM's statement that it "will not consider any additions or changes to the existing WSAs in the planning area" because such consideration would be inconsistent with the record of decision on the Green River RMP and a wilderness inventory that was prepared in 1978-1979. DEIS, p. 13. As indicated above, consistency with the RMP is not a proper basis upon which the BLM may refuse to address issues raised during the planning process. Moreover, because the location of WSA boundaries within the planning area could very well affect planning decisions, the JMHCAP should address new information regarding WSA boundaries.

Section 603(c) of FLPMA prohibits the BLM from eliminating or reducing existing WSAs that were identified under section 603(a). Such WSAs must be managed so as not to impair their suitability for designation as wilderness "until Congress has determined otherwise." 43 U.S.C. 1782(c). But BLM does have the authority, under section 202 of FLPMA, to designate new WSAs, which can be adjacent to existing section 603 WSAs. Thus, while existing WSAs cannot be eliminated in the JMHCAP, the BLM may designate new WSAs in accordance with section 202. In deciding whether to do so, the BLM may rely upon existing WSA information to the extent that it remains accurate. But the BLM may not refuse to consider credible new information which suggests that the WSA boundaries identified in the late 1970's do not include all public lands within the planning area that have wilderness characteristics and are suitable for management as wilderness.

II. Alternatives

While the range of the four alternatives addressed in the EIS seems reasonable, the erroneous assumptions identified above resulted in unnecessarily limiting the conservation focus of both the preferred alternative and Alternative B. To address this problem, the BLM should prepare a supplemental EIS that more clearly describes the focus or theme of each alternative, and insures that the discussion of each alternative clearly reflects that theme and is consistent with the law as explicated in this memorandum.

For example, instead of obliquely stating that Alternative A "would generally reduce the level of land use restrictions and allow more development of mineral resources," Alternative A should be described as focusing on resource development. The DEIS should make clear, in this alternative as in all others, that conservation of wildlife and aesthetic resources would be assured to the extent that such protections are either required by law, or otherwise compatible with a resource development focus. (This will help insure that the alternative is "reasonable.")

Likewise, Alternative B should be described as focusing on the protection of biological, aesthetic, and cultural resources, rather than on "increas[ing] the level of restrictions on land uses and allow[ing] less development of mineral resources." This discussion should indicate that reasonable development activities might still be allowed, but only to the extent that such activities are consistent with this alternative's paramount concern for resource conservation.

What is now described in the DEIS as the preferred alternative should be clarified as accommodating both resource development and resource conservation, recognizing that such accommodation will likely lead to some unavoidable conflicts in favor of one or the other objectives.

To provide further clarity, descriptive terms should be used to identify the alternatives. For example, alternative A might be called the resource development alternative, Alternative B the conservation alternative, and what is now the preferred alternative the accommodation alternative. As described above, all of these alternatives are consistent with FLPMA's definition of "multiple use," so it would not be accurate to describe the accommodation alternative as the "multiple use" alternative.

III. Conciseness

The CEQ regulations provide that the text of a final EIS "shall normally be less than 150 pages and for proposals of unusual scope or complexity shall normally be less than 300 pages." 40 C.F.R. § 1502.7. This EIS addresses some complex issues, but at 719 pages (counting appendices, with well over 400 pages of basic text), it is not sufficiently concise. In an attachment to this memorandum, I have offered several suggestions for shortening this document, and I urge the BLM to consider these and other measures for making this document less cumbersome.

I understand that substantial work has gone in to producing this draft EIS, and it contains much useful information. Given the importance of this matter and the high level of public interest, however, I recommend that the BLM prepare a second draft document for public review and comment, as described in this memorandum.

I concur:


Secretary


Date

ATTACHMENT
SUGGESTIONS FOR IMPROVING AND SHORTENING THE JACK MORROW HILLS DEIS

Set forth below are several suggestions for shortening and improving the Jack Morrow Hills DEIS. First, the section analyzing alternatives and describing environmental consequences both contain significant redundancies. Each subject area is addressed four separate times (in conjunction with the discussion of each alternative), often with identical or very similar language each time. I recommend that each of these issues be discussed just once in the alternatives section and once in the environmental consequences section. This will significantly reduce the size of the document and make it easier for the public to understand the difference between each of the alternatives with respect to each issue.

Second, the CEQ regulations provide that the "Affected Environment" and "Environmental Consequences" sections of the EIS "should present the environmental impacts in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decisionmaker and the public." 40 C.F.R. § 1502.14. The DEIS will be more consistent with these regulations, and it will be much easier for the public to understand the differences in the environmental consequences for each alternative approach to livestock grazing, for example, if one needs to read only one section of the DEIS, rather than flipping back and forth among four separate sections.

Third, Table 2-1, which was apparently designed to make it easier for the public to compare alternatives, cannot fairly serve that purpose because, at more than 100 pages, it is simply too long. The first four pages do not even purport to offer a comparison and can probably be eliminated entirely. Consider trying to recast this Table so that there is only one fairly general statement under each resource category. The size of this Table could be dramatically reduced if it referenced pages in the EIS where one could find further details. It might also be easier to understand if it were reorganized to indicate alternatives from the least to most restrictive alternative (or vice versa). Also, instead of repeating the same information with just slight variations, the Table would be easier to follow if the first box were used as a benchmark, and the boxes after the first column simply indicated the differences from the first box.

Fourth, Table 4 (which is 61 pages long) could probably be eliminated in its entirety if the narrative portion of the DEIS is recast, as suggested above, with the environmental consequences of each alternative analyzed together in the text.

Finally, to the extent possible, maps that contain similar or related data should be combined and produced in color. This will allow the interested public to better understand the cumulative and interrelated nature of such disparate matters as the biological resources and mineral resources of the area, while reducing the length of the DEIS.

By Certified Mail, Return Receipt Requested
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By FAX to 307-352-0329

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May 23, 2003

Renee Dana, Team Leader
Bureau of Land Management
Rock Springs Field Office
280 Highway 191 North
Rock Springs, WY 82901

Re: 1610 (930) Jack Morrow Hills CAP – Citizens' Wildlife & Wildlands Alternative

Dear Ms. Dana:

On behalf of the tens of thousands of businesses, organizations and individuals that have spoken and written in support of preserving the Jack Morrow Hills area of the Red Desert, including the undersigned, I am pleased to submit for your consideration the Citizens' Wildlife and Wildlands Alternative, attached as Exhibit A, for the Jack Morrow Hills Coordinated Activity Plan and Supplemental Draft Environmental Impact Statement.

We respectfully request, in accordance with the Council on Environmental Quality's regulations implementing the National Environmental Policy Act, 40 C.F.R. 1500.1 et seq., that the Citizens' Wildlife and Wildlands Alternative be included in the Final EIS and be given full consideration and careful review commensurate with the area's outstanding natural features.

As you know, public comment -- measuring in the tens of thousands -- on the JMH draft plan strongly favors maintaining and protecting the cultural and biologic integrity of the Red Desert's Jack Morrow Hills area. With one of our nation's largest unfenced areas outside of Alaska, the area's big game populations are among the largest and healthiest in the lower 48. It contains one of the most diverse and numerous concentrations of raptors anywhere. Significant cultural resources, including some of the the largest intact remnants of the Oregon and Mormon Pioneer trails, the mining camps of South Pass, and Native American holy sites further distinguish the area. Seven wilderness study areas are found here, and are treasured for their aesthetic beauty and the recreational opportunities they afford.

During the summer and fall of 2000, unprecedented numbers of citizens from all across the United States and abroad urged the BLM to adopt the Citizens Red Desert Protection Alternative. Incredibly, the BLM flatly rejected the citizens' request, deeming elements of the Citizens' Alternative "unreasonable." See JMH SDEIS at 2-3. Not only did this decision to dismiss the alternative violate NEPA, it ignored specific direction from then Secretary of Interior



Bruce Babbitt who admonished the BLM in a December 22, 2000, memorandum (attached as Exhibit B) to "protect this unique area and its outstanding resources" by proposing "the conservation alternative as its preferred alternative."

Although Secretary Babbitt elected not to identify the precise elements that should be contained in a conservation alternative, it was clear from the tone and content of the Secretary's letter that the alternative would, above all else, provide for the protection of the unique and irreplaceable natural values in the planning area. Indeed, he recognized this as the "paramount concern."

The Secretary's memo was transmitted to the BLM Director along with a legal memorandum, with which the Secretary expressly concurred, drafted by then Interior Solicitor John Leshy. See Exhibit C. Among other things, the Solicitor's memo criticized the BLM's draft EIS for "erroneous assumptions" and failure to include and clearly identify an appropriate conservation alternative. According to the Solicitor, the BLM's adherence to faulty assumptions caused the agency to reject reasonable management options advocated by the public, such as closing some or all of the JMH CAP planning area to further oil and gas leasing and hard rock mineral entry. The Solicitor couldn't have been more clear in saying that "it was not appropriate for the DEIS to refuse to consider such actions." "Under these circumstances," he wrote, "it is not 'unacceptable' - as the DEIS assumes - to close the planning area or a substantial planning area to new mineral leasing. Instead, it is a reasonable alternative that ought to be carefully considered in the NEPA documentation." Unfortunately, despite the specific recommendations for improving the DEIS, the supplemental DEIS suffers from many of the same serious flaws.

We are confident that the Citizens' Wildlife and Wildlands Alternative corrects the legal deficiencies identified by the Solicitor in the initial draft EIS. But more importantly, it presents a plan and a vision for the Jack Morrow Hills area that enjoys overwhelming public support and one that provides for continued and sustainable multiple use of the area for generations to come. We believe it represents the best choice for management of this spectacular area and urge you to adopt the alternative in the final Record of Decision and Green River Resource Management Plan amendment.

Very Truly Yours,


Tom Bell
Lander, Wyoming

840 Kimberly Ct.
Lander, WY 82520


Marian Doane
Friends of the Red Desert

Citizens' WILDLIFE AND WILDLANDS ALTERNATIVE

INTRODUCTION AND BACKGROUND

Located in the heart of the eight million acre Greater Red Desert, the 622,330-acre Jack Morrow Hills Study Area contains one of the most impressive combinations of historical, natural and scenic values in the American West. The area contains seven Wilderness Study Areas - the largest cluster in Wyoming; the largest desert elk herd in the world; part of the largest migratory game herd in the lower 48 states - the 50,000 strong Sublette pronghorn antelope herd; one of the last strongholds of the greater sage grouse in the Rocky Mountains; the largest active sand dune system in North America; numerous American Indian holy sites such as the White Mountain petroglyphs and the Boar's Tusk; and historic icons such as the South Pass Landscape and the Emigrant Trails. Additionally, over 350 wildlife species inhabit the Jack Morrow Hills Study Area including ferruginous hawks, golden eagles, mountain lions, black bears and coyotes. Of these wildlife species, many are species of concern including burrowing owls, mountain plover, pygmy rabbits, flannel mouth suckers, eastern short-horned lizards and Great Basin gopher snakes.

The Jack Morrow Hills area is home to a large number of rare and imperiled plants and plant communities. At least 14 rare, imperiled and plant species of concern have been identified in the study area, including the Nelson's milkvetch, the meadow pussytoes, the large-fruited bladderpod, Payson's beardtongue and alkali wild rye. The area also contains the only known occurrence of the basin big sagebrush/lemon scurfpea association in the world.

Citizen-led efforts to protect the Red Desert date back to 1898 when Lander sportsman Dr. Frank Dunham and other Wyoming hunters tried to designate much of the desert a Winter Game Preserve. This first conservation proposal included a large swath of land through the Greater Green River Basin all the way up to Yellowstone National Park, encompassing the migratory corridors used by elk, antelope and deer to travel back and forth between the desert and the Greater Yellowstone Ecosystem. In 1935, Wyoming Governor Leslie Miller unsuccessfully attempted to preserve a portion of the desert as part of a larger nationwide "Western Trails National Park" which would have protected land adjacent to the Emigrant Trails. In 1968, local rancher and wildlife advocate Tom Bell



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courageously attempted to advance a Congressional proposal to designate part of the desert as a North American Antelope Range. There have been other efforts over time to protect the area as a Wild Horse Refuge, a National Wildlife Refuge, a National Park, a National Monument and a National Natural Landscape. Although former President Bill Clinton would likely have designated the Jack Morrow Hills Area of the Red Desert a National Monument in 2001, he was unable to do so due to a 1950 amendment to the Antiquities Act forbidding the further expansion of national parks and monuments in Wyoming without full Congressional approval. Today, there is a growing movement to protect the Jack Morrow Hills Study Area and other parts of the Red Desert as a National Conservation Area.

HERITAGE RESOURCES

The Citizens' Wildlife and Wildlands Alternative provides enhanced protection for culturally significant areas revered by Native Americans.

The Jack Morrow Hills Study Area is rich in nationally significant cultural and historic resources. The area is home to such icons as the South Pass Historic Landscape, the Outlaw Trail, the Pony Express, Point of Rocks – South Pass Stage road, Mormon Pioneer, Oregon and California Pioneer Trails in addition to such sites as the Tri-Territory Marker- the juncture of the Oregon Territory, the Louisiana Purchase and the newly formed Mexican Republic; and the Oregon Buttes- the gateway to the Great Divide Basin. Legendary figures such as Chief Washakie, Butch Cassidy, Jedediah Smith, Jim Bridger and Kit Carson all strode this landscape and the wagon ruts left behind by over 450,000 pioneers emigrating through South Pass may still be seen today in some locations.

Although only 2% of the study area has been surveyed for resources of cultural importance, the area is home to "cultural evidence from some of the earliest inhabitants of the North America continent and are some of the most intact manifestations of such archaeological evidence known anywhere on the continent." Volcanic formations in the study area such as the Boar's Tusk are central to Shoshone creation mythology and holy sites and areas of cultural importance abound through the area, including the Indian Gap Trail, Steamboat Mountain, White Mountain Petroglyphs, Joe Hay Rim, Killpecker Creek and the Sands. Rock art, burial sites, cairns, tipi rings and campsites anywhere from

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several hundred years old to several thousand years old have been identified in the Jack Morrow Hills Study Area. It should be remembered that the vast landscape of the Red Desert, with its shifting sand dunes, flat top mesas, volcanic cones and mountain vistas, has sacred meaning to many Native American Indian Tribes and can not necessarily be separated into pieces and parcels. The Shoshone, Ute, Arapaho and Crow used the area for hunting and gathering of medicine, as did other tribes.

The Citizens' Wildlife and Wildlands Alternative adopts the management objective for Heritage Resources described in the BLM's Preferred Alternative: "The planning area would be managed to protect important heritage resources (cultural, historic, archaeological, and unique geological features) while allowing for educational research and appropriate interpretive uses."

Native American traditional elders have identified a number of sites important for traditional, sacred or religious uses by Native peoples. Elders in this region have referred to these sites as "respected places." SDEIS at 4-89. Native American respected places (see Glossary at G-7) located within the planning area would be managed to achieve the highest level of protection -- comparable to nationally-important historic trails and sites, such as South Pass and the Oregon, Pony Express, and Mormon Pioneer Trails, found within the planning area.

Specific management prescriptions for respected places include:

- Consultation with Tribal traditional elders or other designated representatives of the Tribes prior to any activity that could negatively impact, or interfere with use of, a respected place.
- VRM Class I (for pristine, undeveloped sites); VRM Class II (for sites with minor intrusions or existing development).
- Exclusion area for pipeline ROWs, utility lines and other linear features.
- Communication sites prohibited.
- Existing oil and gas leases remain under suspension pending site-specific analysis to determine if development can occur without adverse impacts. Lease exchange and buy outs pursued.

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- Surface disturbance and disruptive activities would be prohibited within viewshed or three miles of respected places.
- Federal ownership retained.
- Withdrawn from locatable mineral entry.
- Closed to leasable solid and fluid minerals.
- Closed to mineral material sales.
- Seismic exploration using vibroseis buggies and other ground disturbing techniques prohibited.
- Increased agency enforcement to ensure artifact poachers are deterred or prosecuted.
- Indian Gap Trail and viewshed is surveyed, mapped and added to National Historic Trails system, achieving level of protection equivalent to Oregon, Pony Express, Mormon Pioneer trails.

The Citizens' Wildlife and Wildlands Alternative provides increased protection for nationally significant trails like the Pony Express Trail and the Oregon Pioneer Trail.

Heritage resources not specifically addressed above would be managed in accordance with JMH Alternative 2.

AIR RESOURCES MANAGEMENT

The Citizens' Wildlife and Wildlands Alternative gives priority to the restoration and protection of air and water quality.

The Citizens' Wildlife and Wildlands Alternative adopts the BLM's management objectives for air and water quality. For air resources, that objective provides: "The planning area would be managed to maintain and, where possible, enhance present air quality levels and, within the scope of BLM's authority, minimize emissions that may add to acid rain, cause violations of air quality standards, or reduce visibility."

However, unlike the BLM's alternatives, the Citizens' Alternative adopts aggressive management actions implemented in close coordination with state and federal regulatory agencies to achieve the stated objectives:

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- New emission sources are not permitted until/unless state and federal regulatory agencies perform major and minor source increment consumption analyses for PSD I and PSD II areas.
- Best available control technology (BACT) is applied to existing "grandfathered" major emission sources located in Southwest Wyoming.
- Best available retrofit technology (BART) is applied to all emission sources in Southwest Wyoming causing or contributing to visibility reduction in pristine Class I areas in the Bridger and Fitzpatrick Wilderness areas.
- Emissions of hazardous air pollutants, such as benzene, from mineral and energy production facilities are reduced and, where possible, eliminated through application of new technologies and industrial processes.
- BLM shall enforce Standard Federal Oil and Gas Lease Term # 6 (Conduct of operations) to control operations in a manner that minimizes impacts to air resources.
- Particulate emissions (PM 10 and PM 2.5) are controlled by ensuring timely and complete reclamation of disturbed areas and adequate dust control measures.
- The planning area is re-designated PSD Class I.

WATERSHED RESOURCES

The Citizens' Wildlife and Wildlands Alternative gives priority to the restoration and protection of air and water quality.

The Citizens' Wildlife and Wildlands Alternative adopts the management objective for watershed resources: "The planning area would be managed to maintain or enhance land and water resources using ecological principles and science-based performance criteria," and adds a number of controls and prescriptions to restore and maintain watershed health and ecological functions.

- Total Maximum Daily Loads would be established under section 303(d) of the Clean Water Act for all perennial water bodies in the planning area to ensure applicable DEQ water quality standards are met.
- Herbicide loading areas would be prohibited within 1000 feet of water sources, wetlands, riparian areas, floodplains and special status plant species.

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- Site-specific activity and implementation plans are developed for riparian areas not meeting proper functioning condition.
- Noxious weed and chemical treatment guidelines in Appendix 8 are revised to provide the highest degree of protection for wetlands, riparian areas, surface waters and sensitive plant and aquatic species. Minimum buffer for such resources is 500 feet for ground application, 1000 feet for aerial spraying.
- Wetlands and riparian areas would be exclusion areas for surface disturbing activities. Exceptions granted on case-by-case basis for environmental restoration projects.
- Areas within 500 feet of wetlands and riparian areas would be avoidance areas for surface disturbing activities and permanent structures.
- Special biological studies of the Sands' unique dunal ponds and wetlands' flora and fauna would be initiated by BLM. Appropriate measures to protect these dunal flocks would be initiated if overgrazing, off-road vehicle use, recreation or other activities threaten their ecological integrity.
- New permanent facilities and structures would be prohibited in 100-year floodplains, wetlands, and riparian areas. Linear crossings would be allowed only in previously disturbed sites or designated ROW corridors.
- Areas within 100 feet of the edge of the inner gorge of intermittent and large ephemeral drainages would be avoidance areas for surface disturbing areas.
- Minerals mining and energy development activities would be prohibited in aquifer recharge areas.

VISUAL RESOURCE MANAGEMENT

The Citizens' Wildlife and Wildlands adopts the BLM's management objectives for the protection of visually sensitive areas: "To maintain or improve scenic value and overall visual quality by managing impacts of human activities and other intrusions on the visual landscape." To achieve this objective, the following actions are recommended:

- Wilderness Study Areas (WSA) and WSA expansions recommended by the Wyoming Wilderness Coalition (SDEIS Vol. 2 at A18-1) are managed VRM Class I.

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- National Historic and Scenic Trails and viewsheds (5 miles either side) managed VRM Class I.
- VRM Class I (for pristine, undeveloped sites); VRM Class II (for sites with minor intrusions or existing development).
- Backcountry byways and their viewsheds designated VRM I;
- Areas of Critical Environmental Concern (ACECs) whose designation is based in whole or in part on scenic and aesthetic value would be managed as VRM Class I; all other ACECs would be designated VRM Class II.
- Eden Valley managed as VRM Class III.
- All remaining areas managed as VRM Class II.
- Except as otherwise provided, no areas in the Jack Morrow Hills planning area would be managed as VRM Class III or IV.

LIVESTOCK GRAZING

The Citizens' Wildlife and Wildlands Alternative promotes responsible livestock grazing.

Livestock grazing would continue in the planning area as described in the BLM's Preferred Alternative. Emphasis would be placed on restoring rangeland health and proper functioning condition of riparian areas. Upland and riparian vegetation would be managed to achieve desired plant community objectives.

- All grazing allotments must meet the Fundamentals of Rangeland Health, the Properly Functioning Condition of riparian areas, and other statewide standards and guidelines.
- The condition of all allotments and riparian areas in the planning area will be reviewed at least every three years for compliance with the statewide standards and guidelines. Rehabilitation of those allotments or riparian areas that are not in compliance with these requirements will be instituted no later than the start of the next grazing season. The adoption of rehabilitation measures will be a public process.

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- Evaluations required under the National Environmental Policy Act and the Endangered Species Act for grazing activities on the Jack Morrow Hills will be completed within three years of adoption of the final CAP.

RECREATION RESOURCES MANAGEMENT

The Citizens' Wildlife and Wildlands Alternative promotes responsible recreation, hunting, vehicle use and continued access via existing, designated roads.

The Citizens' Wildlife and Wildlands Alternative adopts the BLM's management objective for recreation resources: "The planning area would be managed to accommodate opportunities for recreational resources while protecting other resource values and minimizing conflicts with other resource uses."

Except as indicated below, the Citizens' Wildlife and Wildlands Alternative adopts the BLM's Preferred Alternative as the best management approach for recreation resources within the planning area.

- Recreational mining activity would be limited to a five-acre site that would be designated in the Dickie Springs-Oregon Gulch Gold Placer Mining District area outside elk calving habitat. A recreation site plan would be prepared and implemented to manage the site for recreational purposes. (JMH Alternative 3).

WILD HORSE MANAGEMENT

The Citizens' Wildlife and Wildlands Alternative adopts the BLM's Preferred Alternative for the management of wild horses: "The Divide Basin Wild Horse Herd Management Area (Map 62) boundaries would remain unchanged and the Appropriate Management Level (AML) would be maintained at 415-600 horses."

TRAVEL MANAGEMENT, ACCESS AND REALTY

The Citizens' Wildlife and Wildlands Alternative promotes responsible recreation, hunting, vehicle use, grazing and continued access via existing, designated roads.

The Citizens' Wildlife and Wildlands Alternative adopts -- with revisions to emphasize resource protection -- the BLM's management objective for travel management, access and realty: "Consistent with the highest degree of protection for crucial habitats and sensitive resources, [t]he planning area would be managed to accommodate access needs

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for approved public land uses and to manage access where appropriate to protect other resource values."

To achieve this objective, the Citizens' Wildlife and Wildlands Alternative adopts the BLM's Preferred Alternative, with the following modifications:

- Geophysical and related detonation would be excluded from areas with no surface occupancy requirements, WSAs, ACECs, and other sensitive resources. Seasonal limitations would apply. (JMH Alt. 2).
- Right-of-way (ROW) exclusion and avoidance areas would be as shown in Map 27 (JMH Alt. 2).
- Off-road vehicle (ORV) use would be managed in accordance with a transportation plan that limits use to designated areas, roads and trails.
- A transportation plan would be completed as part of the JMH CAP, consistent with the terms set out in Alternative 2.

WILDLIFE

The Citizens' Wildlife and Wildlands Alternative ensures the long-term survival of the Red Desert elk and pronghorn antelope herds and other wildlife, and it restores and protects wildlife habitat damaged by roads and pipelines.

Over 350 different wildlife species are found within the planning area. (SDEIS, Vol. 1 at 3-14). The area provides "crucial habitat" for all three major game species, elk, antelope and mule deer. Approximately 187,000 acres of the study area are crucial winter or crucial yearlong range for elk, including the much acclaimed resident Steamboat Mountain elk herd (the largest desert elk herd in the world), which contains between 1000 and 2000 individuals. The area also provides habitat to the largest migratory game herd in the lower 48 states - the 50,000 strong Sublette pronghorn antelope herd.

Seventeen raptor species inhabit the Jack Morrow Hills Study Area including ferruginous hawks, golden eagles, prairie falcons, Swainson's hawks, short-eared owls and burrowing owls. Additionally, numerous species of concern such as flannelmouth suckers, pygmy rabbits, Eastern short horned lizards, Great Basin gopher snakes, and Wortman's ground squirrels find shelter in the study area. Both the greater sage grouse and mountain plover, species that have experienced precipitous declines in most of their range- both

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candidates for listing under the Endangered Species Act- still enjoy fairly sizeable populations in the Red Desert. The area provides an oasis for other sage-brush obligates besides the sage grouse, including sage sparrows, sage thrashers and sage lizards.

In recognition of this extraordinary resource, Wildlife Habitat is added as a separate resource category (SDEIS at 2-2) for which the following resource objective is established:

- The management objective for wildlife habitat contained in the Citizens' Wildlife and Wildlands Alternative provides that fish and wildlife habitat shall be managed to maintain viable populations of existing native and desired non-native species in the planning area.
- A Habitat Management Plan would be prepared for the entire planning area to mitigate wildlife habitat losses. (JMH Alt. 2).
- The habitat management plan would include habitat expansion efforts, threatened and endangered species reintroduction, and population goals and objectives designed to achieve and maintain viable populations of native and desired non-native species.
- Suitable wildlife habitat and forage would be provided to support the Wyoming Game and Fish Department's Strategic Plan objectives.
- Big game, sensitive species and their habitat, threatened and endangered species, special status wildlife and fish species, water developments and predators would be managed in accordance with JMH Alternative 2, except that big game connectivity areas would also be considered "sensitive habitat" and managed accordingly.
- Sage grouse and raptors would be managed in accordance with JMH Alternative 2, except that:
 - Long-term or permanent above-ground surface occupancy would be prohibited within a 2-mile radius of sage grouse leks, or on nesting habitat and winter concentration areas. Seasonal limitations on disturbing and disruptive activities would apply within two (2) miles of leks, and on nesting and concentration areas, and would be applied 24 hours daily.
 - Permanent or high profile structures would be prohibited within 1-2 miles of active and historic raptor nests, depending on species (2-miles for ferruginous

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hawks); temporary disturbances associated with placement of facilities would be prohibited within 1-2 miles of active raptor nests; and disruptive activities would be seasonally restricted within 1-2 miles of occupied raptor nesting sites. Precise distance within this range would be determined on a case-by-case basis and would depend on the raptor species involved, natural topographic barriers, line of sight distances, population status, etc.

- As determined by transportation planning, unnecessary roads would be obliterated and reclaimed to a natural, pre-disturbance condition.
- Timely and complete reclamation of disturbed areas is conducted in accordance with Appendix 9 and remains an ongoing liability of the operator until released by BLM.
- Previously disturbed areas and pipeline rights-of-way that have not been successfully reclaimed (i.e. to meet goals and standards in Appendix 9) are identified and scheduled for reclamation consistent with Appendix 9 standards.
- Fences on public lands would be removed, modified or reconstructed where they impede wildlife movement or constitute threats to viability objectives.
- New fence construction in crucial big game wildlife habitats and connectivity areas would only be considered if alternatives, such as herding and other controls, are not possible. Fence construction and reconstruction would be in accordance with Wyoming Game and Fish Department design standards.

SPECIAL MANAGEMENT AREA MANAGEMENT

The Citizens' Wildlife and Wildlands Alternative adopts the BLM's management objectives for special management areas: "The planning area would be managed to protect unique resource values of special management areas."

In accordance with Section 202 of the Federal Land Policy Management Act, which directs the Secretary of the Interior to "give priority to the designation and protection of areas of critical environmental concern," the Citizens' Wildlife and Wildlands Alternative adopts JMH Alternative 2.

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WILDERNESS STUDY AREA MANAGEMENT

The Citizens' Wildlife and Wildlands Alternative would prevent new roads and developments in roadless areas, increase the size of some Wilderness Study Areas, establish new WSAs for lands identified for Wilderness designation by citizens' inventories, and recommend that all deserving WSAs and wildlands be designated as wilderness by Congress.

- Roadless areas identified by the Wyoming Wilderness Coalition would be managed as wilderness study areas.

MINERALS AND ALTERNATIVE ENERGY DEVELOPMENT

The Citizens' Wildlife and Wildlands Alternative calls for the trade or buy-out of mineral leases in the area while prohibiting all new oil and gas leasing and large-scale mining.

The Citizens' Wildlife and Wildlands Alternative adopts the BLM's management objectives for minerals and alternative energy resources management with one small yet significant revision, indicated in italics, below: "To provide *limited* opportunities for mineral extraction and energy development while protecting other resource values."

This revised management objective would reduce the potential for future conflict in the planning area due to large-scale oil and gas and mining activities authorized under the BLM's Preferred Alternative.

Actions to implement the revised management objective for minerals and energy development include:

- The planning area would be closed to new leasing.
- Suspended leases in the planning area would remain under suspension while funding is pursued for lease buy out or exchange. Because future development would likely lead to resource conflicts, efforts would be placed on reacquiring both producing and non-producing leases.
- On producing leases where buy out or exchange cannot be accomplished, level and pace of development would be both controlled and limited to avoid significant impact and resource conflicts by a combination of regulatory mechanisms

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including, but not limited to, lease suspensions, well spacing orders, unitization, conditions of approval and adaptive management, in a manner consistent with valid existing rights.

- The entire planning area would be closed to coal exploration activity. (JMH Alternative 2).
- Federal coal lands within the Coal Occurrence and Development Potential Area would be closed to leasing and development to protect other resource values in the planning area. (JMH Alternative 2).
- Withdrawals from mineral location would be pursued over the entire planning area, except for a five-acre site designated for recreational mining.
- The entire planning area would be closed to mineral material sales. Extraction of saleable materials would be allowed as required to meet other planning objectives, such as maintenance of existing roads in the approved transportation plan. Mining and reclamation plans would be required for each use of saleable mineral materials. (JMH Alternative 2).
- Alternative energy proposals would be managed pursuant to the Preferred Alternative, except that sensitive areas would be off-limits, including but not limited to VRM Class I, Native America Indian respected places, raptor concentration areas, WSAs, ACECs, and sensitive wildlife habitats.
- Coal bed methane development on existing leases is deferred pending revision to Green River RMP.
- The Citizens' Wildlife and Wildlands Alternative for minerals and energy development is consistent with federal law and policy:

"FLPMA's definition of multiple use expressly recognizes that the most 'judicious use' of land may involve the use of some land 'for less than all of the resources,' and that consideration must be given 'to the relative values of the resources and not necessarily the combination of uses that will give the greatest economic return...' 43 U.S.C. § 1702(c). Thus, foreclosing mineral exploration and development on even a sizeable tract of federal land does not violate the statutory definition of multiple use, and is not per se unreasonable." *Memorandum from John Lesky, Solicitor for the Department of the Interior*

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to Bruce Babbitt, Secretary of the Interior, December 22, 2000 (Commenting on the Jack Morrow Hills Coordinated Activity Plan DEIS).

COMMUNICATION SITES

Except for the existing White Mountain communication site, the planning area is closed to communication sites.

ADAPTIVE MANAGEMENT AND MONITORING

The Citizens' Wildlife and Wildlands Alternative adopts an Adaptive Management Strategy (AMS) substantially different from that described in the Preferred Alternative:

- The Citizen's Alternative rejects the notion, set out in the BLM's Preliminary Adaptive Management Implementation Strategy, that "it is impossible to predict how future development will proceed." (A17-1). Under the Citizens' Alternative, BLM exercises its regulatory authority to control and limit the pace, location and level of development in a manner that is consistent with valid existing rights and protection of the environment. Through a combination of lease suspensions, lease stipulations, conditions of approval, monitoring, mitigation measures and other mechanisms, the BLM will assure that future development on existing leases does not conflict with or adversely impact other uses and resource values.
- New leases will not be issued in the planning area during the life of the plan.
- Development on existing leases (those that could not be purchased or exchanged) would be controlled and limited to provide for staged development on a lease-by-lease basis, ensuring minimal environmental impacts and resource conflicts.
- The list of monitored "resource indicators" (Table A17-1) would be expanded to include: 1) air and water quality, including compliance with CAA State Implementation Plans and DEQ water quality standards; 2) threatened and endangered species; 3) sensitive species representative of various habitat types in the planning area; 4) significant heritage resources; 5) reclamation success; 6) invasive weeds and exotic species.
- The management objectives and goals (A-17-2) are revised to conform to those set out in the Citizens' Alternative. Wildlife resources is added as a discrete resource for which management objectives shall be established.

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- The "overall approach" under the Citizens' Alternative is modified significantly to retain all existing lease suspensions in the planning area while lease exchange and/or buy out is pursued, and site-specific lease development plans are created.
- In accordance with BLM's regulations at 43 CFR § 1610.4-9, intervals and standards for monitoring would be established and displayed in the Adaptive Management Plan.
- The adaptive management strategy is completed and included in the Final EIS for public review and comment. The AMS is incorporated into the Record of Decision as a binding and enforceable instrument. Pending completion of the AMS and issuance of the ROD, existing oil and gas leases remain under suspension, and no new leases are offered.

**RESOURCES NOT EXPRESSLY ADDRESSED IN THE CITIZENS'
 WILDLIFE AND WILDLANDS ALTERNATIVE WOULD BE MANAGED IN
 ACCORDANCE WITH JMH SDEIS ALTERNATIVE 2.**

RESPECTFULLY SUBMITTED, THIS 23rd DAY OF MAY, 2003


 Tom Bell
 Lander, Wyoming

840 Kimberly Ct.
 Lander, WY 82520


 Marian Doane
 Friends of Red Desert


 Mac Blewer
 Outreach Coordinator
 Wyoming Outdoor Council



THE SECRETARY OF THE INTERIOR
WASHINGTON

MEMORANDUM

To: Director, BLM

From: Secretary *[Signature]*

Date: December 22, 2000

Subject: Jack Morrow Hills Coordinated Activity Plan

By this memorandum, I am transmitting to you the opinion of the Solicitor regarding the draft environmental impact statement for the Jack Morrow Hills Coordinated Activity Plan. I concur in his opinion.

Having reviewed this Plan with my staff, and having visited the area, I am greatly impressed by the unique and outstanding natural resources contained in the planning area. With one of our Nation's largest unfenced areas outside of Alaska, its big game populations are among the largest and healthiest in the lower 48. It contains one of the most diverse and numerous concentrations of raptors anywhere. Significant cultural resources, including remnants of the Oregon and Mormon Pioneer trails and the mining camps of South Pass, only add to the area's allure. Seven wilderness study areas are found here, and are treasured for their aesthetic beauty and the recreational opportunities they afford. It is no wonder that former Governor Leslie Miller recommended this area as the Great Divide Basin National Park as far back as 1935. Others, like Tom Bell, have worked hard for many years to promote special protection for this area.

The planning area contains significant oil and gas resources and, as the Solicitor notes, much of it has already been leased. Some oil and gas development is occurring, especially in its southwestern portion. Any decision to protect the outstanding natural resources of the Red Desert must be accomplished in a manner that protects the valid existing rights of these mineral owners. To the extent it is consistent with our paramount concern for protecting the natural resources in the planning area, some additional leasing might be allowed, but the presence of finite mineral resources should not deprive future generations of the natural and aesthetic wonders of the Great Divide Basin.

A final decision as to how this area should be protected will necessarily be made by a future Administration. Nonetheless, it is my responsibility to place the BLM on a track that helps to insure that, after a full opportunity for the public participation, an appropriate decision will be



made to protect this unique area and its outstanding resources. To that end, I ask that you direct the Wyoming BLM office to propose the conservation alternative as its preferred alternative in the supplemental draft EIS that the Solicitor has determined should be prepared.



United States Department of the Interior

OFFICE OF THE SOLICITOR
Washington, D.C. 20240

MEMORANDUM

To: Secretary
From: Solicitor *John D. Leiby*
Date: December 22, 2000
Subject: Jack Morrow Hills Coordinated Activity Plan

At your request, I have reviewed the draft environmental impact statement (DEIS) for the Jack Morrow Hills Coordinated Activity Plan and for the reasons that follow, I believe a revised or supplemental draft EIS that would more fully conform to applicable legal requirements should be prepared for public comment and review. Also, because the BLM has revised its land use planning manual and handbook since the first draft DEIS was published, the new draft should conform with the procedures set forth in those documents.

I. Erroneous Assumptions

Several assumptions made in the DEIS are not consistent with existing federal land management laws. These assumptions are especially problematic under the National Environmental Policy Act (NEPA), 42 U.S.C. § 4321 *et seq.*, because they result in the BLM's failure to consider certain management options for the planning area that may be reasonable in light of the significant biological, cultural, and aesthetic resources that are identified in the DEIS. The NEPA regulations adopted by the Council on Environmental Quality, which are binding on federal agencies like the BLM, require agencies to "[r]igorously explore and objectively evaluate all reasonable alternatives." 40 C.F.R. § 1502.14(a).

For example, the DEIS suggests that withdrawing the area from mineral location and closing it to leasing would be "contrary to the BLM's multiple use management mandate in FLPMA." DEIS, p. 12. It also relies on a provision of the BLM Manual which provides that "public lands shall remain open and available for mineral exploration unless [to do otherwise] . . . is clearly justified in the national interest." *Ibid*; BLM Manual, 3000.06A.¹ The DEIS also states that "[r]esource conflicts tend to be located in specific areas, not planning area wide, and closing the entire area [to oil and gas leasing] would not be reasonable." DEIS, p. 12. This statement is

¹ We have been unable to locate a copy of the May, 24, 1987 policy memorandum cited in the DEIS. The language quoted there is, however, found in the referenced section of the BLM Manual.



"[r]esource conflicts tend to be located in specific areas, not planning area wide, and closing the entire area [to oil and gas leasing] would not be reasonable." DEIS, p. 12. This statement is reinforced by a later statement on the same page that "closure to leasing of federal oil and gas resources in the planning area continues to be unacceptable."

FLPMA's definition of multiple use expressly recognizes that the most "judicious use" of land may involve the use of some land "for less than all of the resources," and that consideration must be given "to the relative values of the resources and not necessarily the combination of uses that will give the greatest economic return...." 43 U.S.C. § 1702(c). Thus, foreclosing mineral exploration and development on even a sizeable tract of federal land does not violate the statutory definition of multiple use, and is not *per se* unreasonable.

FLPMA also provides that an area may be withdrawn or "excluded"² from mineral development when such development may be incompatible with "maintain[ing] other public values in the area." See 43 U.S.C. § 1702(j) (definition of withdrawal in FLPMA). FLPMA requires that, for withdrawal proposals exceeding 5,000 acres, the Secretary submit certain kinds of information and analyses to the appropriate congressional committees about the withdrawal. See 43 U.S.C. § 1714(c)(2). But FLPMA does not make mineral activity the preeminent use of federal lands; indeed, FLPMA's statement of policies makes clear that mining activity is only one of many values to be promoted on the public lands. See 43 U.S.C. § 1701(a).

Here, the DEIS identifies significant wildlife and other resource values.³ Whether or not they implicate "the national interest," they are sufficiently significant that BLM is required, in its NEPA documentation, to consider their protection through mineral withdrawals or exclusions. Accordingly, it was not appropriate for the DEIS to refuse to consider such actions.

With regard to non-leasable minerals, it seems an entirely reasonable option to withdraw all or most of the planning area from such mineral development. This is because, as the DEIS notes, the area appears to have limited potential for non-leasable mineral development, and very little current mining activity. DEIS, pp. 217-218; Map 48. Given the uniqueness and importance of the resources that merit protection, NEPA and its implementing regulations require the BLM to consider the withdrawal of any lands where non-leasable mineral development would be inconsistent with protection of other values. Such an alternative is plainly reasonable and, as noted above, the CEQ regulations require agencies to "[r]igorously explore and objectively evaluate all *reasonable* alternatives." 40 C.F.R. § 1502.14(a) (emphasis added). So, for

² As described below, mineral exclusions, which totally eliminate one or more uses from public lands, are provided for in FLPMA's land use planning process under 43 U.S.C. § 1712(e).

³ These resources are described in some detail in the DEIS, and include cultural, archaeological, and historical resources, DEIS at 205-209; recreational resources, DEIS at 219-220; potential wilderness areas, DEIS at 235-244; and significant wildlife resources, including endangered and threatened species, DEIS at 235-244.

example, if hard rock mining is inconsistent with the protection of sage grouse leks, the BLM should consider withdrawing the land around these leks as may be necessary or appropriate to protect sage grouse habitat. Moreover, the fact that the area has a low potential for hard rock mineral development should, if anything, support withdrawal of the lands, since the economic impact of such a withdrawal will likely be minimal.

With regard to leasable minerals, and most specifically to oil and gas leasing, closing much of the planning area would not likely have a significant impact, especially in the short term. This is because approximately two-thirds of the planning area has already been leased, and oil and gas development will still be allowed in those areas even after a closure. As the DEIS correctly notes, lessees will retain development rights on their existing leases. DEIS, p. 13. But the DEIS does not seem to take this point fully into account in predicting the likely impact from closing the area to further leasing. Rather, the DEIS appears to assume that the leasing restrictions imposed under Alternative B would apply as if there were no pre-existing leasing. See DEIS, p. 382. The DEIS analysis should accordingly address the scope of oil and gas development that is likely, given the valid existing rights held by lessees. Under these circumstances, it is not "unacceptable" – as the DEIS assumes – to close the planning area or a substantial portion of the planning area to new mineral leasing. Instead, it is a reasonable alternative that ought to be carefully considered in the NEPA documentation.

BLM has long taken the view that land use plans are an appropriate process by which to decide whether or not to exclude lands from mineral leasing, mineral sales, and other discretionary actions. BLM Land Use Planning Handbook at H-1601-1, II.A ("Land use plans ... identify lands ... that are closed to certain uses.") This practice of using land use planning to exclude lands from discretionary actions such as mineral leasing is lawful. Section 202(e) of FLPMA authorizes the BLM to make land use planning decisions that totally eliminate certain types of land uses. 43 U.S.C. § 1712(e). The same subsection clearly speaks in discretionary terms for using the formal withdrawal procedures of section 204 of FLPMA to implement management decisions, except where lands are closed to entry and location under the General Mining Law of 1872. See 43 U.S.C. § 1712(e)(3) ("Withdrawals made pursuant to section 1714 of this title *may* be used in carrying out management decisions, but public lands *shall* be removed from ... the operation of the Mining Law of 1872 ... *only* by withdrawal action pursuant to section 1714 of this title or other action pursuant to applicable law.") (Emphasis added.)

Two Wyoming federal district court decisions suggest that, in certain contexts, the BLM must follow FLPMA's withdrawal procedures before it can refuse to process lease applications. *Mountain States Legal Foundation v. Hodel*, 668 F. Supp. 1466 (D. Wyo. 1987); *Mountain States Legal Foundation v. Anarua*, 499 F. Supp. 383 (D. Wyo. 1980). The reasoning of these decisions has been rejected by the Court of Appeals for the Ninth Circuit, see *Bob Marshall Alliance v. Hodel*, 852 F.2d 1223, 1229-1230 (9th Cir. 1988), *cert. denied*, 489 U.S. 1066 (1989), and I believe the Ninth Circuit correctly states the applicable law.

Even in Wyoming, where the Jack Morrow Hills planning area is found, I believe the two

Mountain States cases are not controlling, for neither involved FLPMA land use planning.⁴ For purposes of land use planning, Section 202(e) of FLPMA authorizes the Secretary to "issue management decisions to implement land use plans." 43 U.S.C. § 1712(e). Such decisions are specifically allowed to include "exclusions (that is, total elimination) of one or more of the principal or major uses." See *Public Lands Council v. Babbitt*, 529 U.S. 728 (2000).⁵ The only limitations on this power are: (1) exclusions of such uses on 100,000 acres or more are subject to congressional notification, 43 U.S.C. § 1712(e)(2); and (2) the withdrawal authority of Section 204 of FLPMA or "other action pursuant to applicable law" must be used for hard rock mining exclusions under the General Mining Law of 1872, 43 U.S.C. § 1712(e)(3). Therefore it seems plain that formal withdrawal under FLPMA section 204 is not required for other types of exclusions (such as mineral leasing exclusions) so long as the requirements of Section 202(e) are met. 43 U.S.C. § 1712(e).

In sum, I believe that applicable public land law gives the Secretary three ways to decide not to lease tracts of public lands for oil and gas or other minerals: (1) exercising his statutory discretion under the Mineral Leasing Act, see *Udall v. Tallman*, 380 U.S. 1 (1965); *United States ex rel. McLennan v. Wilbur*, 283 U.S. 414 (1931); (2) excluding lands from leasing through FLPMA's section 202 planning process; or (3) withdrawing the land through FLPMA's section 204.

The DEIS also suggests that reduction or elimination of livestock grazing is necessary only where it would "significantly" conflict with other management objectives. DEIS, p. 12. Livestock grazing may be reduced or eliminated on BLM-managed land when necessary or appropriate to protect other values, or where rangeland health standards are not being met. Thus, especially in the context of the "conservation alternative" the BLM must not assume that "significant" conflicts with other resources must be shown in order to reduce or eliminate livestock grazing.

The DEIS inappropriately limits the scope of the analysis to the "framework of the *Record of Decision and approved Green River RMP*." DEIS, p. 14 (emphasis in original). Specifically, it states that for the "no action" alternative, management would be based on implementing the Green River RMP. For all of the other alternatives, the goal is to "stay[] within the framework of the *Record of Decision and approved Green River RMP* ... as much as possible." *Id.* This is not

⁴ *Mountain States v. Andrus*, 499 F. Supp. 383 (D. Wyo. 1980) arose in the context of an administrative review of the suitability of certain national forest lands for inclusion in the wilderness system. *Mountain States Legal Foundation v. Hodel*, 668 F. Supp. 1466 (D. Wyo. 1987) involved a decision by the Forest Service to suspend leasing pending completion of land use planning activities under the Rangeland Resources Planning Act, 16 U.S.C. § 1604, as amended by the National Forest Management Act of 1976, 16 U.S.C. § 1604.

⁵ The Court noted that "the Secretary . . . was authorized to reclassify and withdraw land from grazing altogether and devote it to a more valuable or suitable use." 529 U.S. 728. (2000). (slip op. at 9). The same reasoning applies to mining.

accurate. BLM prepared the Jack Morrow Hills Coordinated Activity Plan in response to concerns raised during the development of the Green River RMP. DEIS, p. 1. As the DEIS notes, the CAP was designed to "provide more specific management direction to prevent or address conflicts among potential development of energy resources, recreational activities and facilities, and more specific management direction for other land and resource uses in the planning area, including livestock grazing, important wildlife habitat and other important resources." *Ibid.* The Green River RMP was completed in 1997 but it deferred certain mineral development decisions until completion of the Jack Morrow Hills CAP. *Ibid.* As the DEIS itself recognizes, "the JMHCAP will amend the Green River RMP." *id.*, p. 2, and thus it was unnecessary to limit the scope of the DEIS to the framework of the RMP. Moreover, as noted earlier, NEPA requires the BLM to consider *all* reasonable alternatives, including those outside the framework of the RMP. 40 C.F.R. § 1502.14. Thus, it was not proper to design the alternatives so that they all fit within that framework.

A related concern is BLM's statement that it "will not consider any additions or changes to the existing WSAs in the planning area" because such consideration would be inconsistent with the record of decision on the Green River RMP and a wilderness inventory that was prepared in 1978-1979. DEIS, p. 13. As indicated above, consistency with the RMP is not a proper basis upon which the BLM may refuse to address issues raised during the planning process. Moreover, because the location of WSA boundaries within the planning area could very well affect planning decisions, the JMHCAP should address new information regarding WSA boundaries.

Section 603(c) of FLPMA prohibits the BLM from eliminating or reducing existing WSAs that were identified under section 603(a). Such WSAs must be managed so as not to impair their suitability for designation as wilderness "until Congress has determined otherwise." 43 U.S.C. 1782(c). But BLM does have the authority, under section 202 of FLPMA, to designate new WSAs, which can be adjacent to existing section 603 WSAs. Thus, while existing WSAs cannot be eliminated in the JMHCAP, the BLM may designate new WSAs in accordance with section 202. In deciding whether to do so, the BLM may rely upon existing WSA information to the extent that it remains accurate. But the BLM may not refuse to consider credible new information which suggests that the WSA boundaries identified in the late 1970's do not include all public lands within the planning area that have wilderness characteristics and are suitable for management as wilderness.

II. Alternatives

While the range of the four alternatives addressed in the EIS seems reasonable, the erroneous assumptions identified above resulted in unnecessarily limiting the conservation focus of both the preferred alternative and Alternative B. To address this problem, the BLM should prepare a supplemental EIS that more clearly describes the focus or theme of each alternative, and insures that the discussion of each alternative clearly reflects that theme and is consistent with the law as explicated in this memorandum.

For example, instead of obliquely stating that Alternative A "would generally reduce the level of land use restrictions and allow more development of mineral resources," Alternative A should be described as focusing on resource development. The DEIS should make clear, in this alternative as in all others, that conservation of wildlife and aesthetic resources would be assured to the extent that such protections are either required by law, or otherwise compatible with a resource development focus. (This will help insure that the alternative is "reasonable.")

Likewise, Alternative B should be described as focusing on the protection of biological, aesthetic, and cultural resources, rather than on "increas[ing] the level of restrictions on land uses and allow[ing] less development of mineral resources." This discussion should indicate that reasonable development activities might still be allowed, but only to the extent that such activities are consistent with this alternative's paramount concern for resource conservation.

What is now described in the DEIS as the preferred alternative should be clarified as accommodating both resource development and resource conservation, recognizing that such accommodation will likely lead to some unavoidable conflicts in favor of one or the other objectives.

To provide further clarity, descriptive terms should be used to identify the alternatives. For example, alternative A might be called the resource development alternative, Alternative B the conservation alternative, and what is now the preferred alternative the accommodation alternative. As described above, all of these alternatives are consistent with FLPMA's definition of "multiple use," so it would not be accurate to describe the accommodation alternative as the "multiple use" alternative.

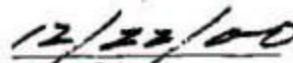
III. Conciseness

The CEQ regulations provide that the text of a final EIS "shall normally be less than 150 pages and for proposals of unusual scope or complexity shall normally be less than 300 pages." 40 C.F.R. § 1502.7. This EIS addresses some complex issues, but at 719 pages (counting appendices, with well over 400 pages of basic text), it is not sufficiently concise. In an attachment to this memorandum, I have offered several suggestions for shortening this document, and I urge the BLM to consider these and other measures for making this document less cumbersome.

I understand that substantial work has gone in to producing this draft EIS, and it contains much useful information. Given the importance of this matter and the high level of public interest, however, I recommend that the BLM prepare a second draft document for public review and comment, as described in this memorandum.

I concur


Secretary


Date

ATTACHMENT
SUGGESTIONS FOR IMPROVING AND SHORTENING THE JACK MORROW HILLS DEIS

Set forth below are several suggestions for shortening and improving the Jack Morrow Hills DEIS. First, the section analyzing alternatives and describing environmental consequences both contain significant redundancies. Each subject area is addressed four separate times (in conjunction with the discussion of each alternative), often with identical or very similar language each time. I recommend that each of these issues be discussed just once in the alternatives section and once in the environmental consequences section. This will significantly reduce the size of the document and make it easier for the public to understand the difference between each of the alternatives with respect to each issue.

Second, the CEQ regulations provide that the "Affected Environment" and "Environmental Consequences" sections of the EIS "should present the environmental impacts in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decisionmaker and the public." 40 C.F.R. § 1502.14. The DEIS will be more consistent with these regulations, and it will be much easier for the public to understand the differences in the environmental consequences for each alternative approach to livestock grazing, for example, if one needs to read only one section of the DEIS, rather than flipping back and forth among four separate sections.

Third, Table 2-1, which was apparently designed to make it easier for the public to compare alternatives, cannot fairly serve that purpose because, at more than 100 pages, it is simply too long. The first four pages do not even purport to offer a comparison and can probably be eliminated entirely. Consider trying to recast this Table so that there is only one fairly general statement under each resource category. The size of this Table could be dramatically reduced if it referenced pages in the EIS where one could find further details. It might also be easier to understand if it were reorganized to indicate alternatives from the least to most restrictive alternative (or vice versa). Also, instead of repeating the same information with just slight variations, the Table would be easier to follow if the first box were used as a benchmark, and the boxes after the first column simply indicated the differences from the first box.

Fourth, Table 4 (which is 61 pages long) could probably be eliminated in its entirety if the narrative portion of the DEIS is recast, as suggested above, with the environmental consequences of each alternative analyzed together in the text.

Finally, to the extent possible, maps that contain similar or related data should be combined and produced in color. This will allow the interested public to better understand the cumulative and interrelated nature of such disparate matters as the biological resources and mineral resources of the area, while reducing the length of the DEIS.



MEMORANDUM

To: Renee Dana, BLM Team Leader
From: Robert E. Yuhnke, Robert E. Yuhnke and Associates (303-499-0425)
Date: May 23, 2003
Re: 1610 (930) Supplemental Draft Environmental Impact Statement for the Jack Morrow Hills Coordinated Activity Plan.

COMMENTS RELATED TO AIR QUALITY IMPACTS AND MITIGATION

SUMMARY

Biodiversity Conservation Alliance, The Wilderness Society, Wilderness Support Center, and the Wyoming Outdoor Council (the "parties") file the following comments objecting to the adequacy of the air quality impact analysis, and the failure to identify, assess and adopt mitigation measures sufficient to satisfy BLM's obligations under the Federal Land Policy Management Act, NEPA, the Clean Air Act, and applicable State and federal requirements adopted pursuant to those governing statutes. Based on these protests, the parties request that the above-captioned SDEIS be supplemented by—

- 1) The preparation of a complete emissions inventory for air quality assessment purposes that includes (i) all permitted and unpermitted sources (e.g., mobile sources, area sources) of emissions that consume increment since the minor source baseline dates were established for PM, SO₂ and NO₂, (ii) all reasonably foreseeable sources that are expected to be developed as part of projects that have been approved or proposed for environmental review since the air quality analysis was performed for the Pinedale Anticline Project in 1999;
- 2) The performance of a complete increment consumption analysis based on the complete emissions inventory since the minor source baseline dates were established (as described in ¶(1)) to identify areas where PSD increments have previously been fully consumed by prior development, and/or will be fully consumed by the additional emissions from the proposed Jack Morrow Hills CAP and other reasonably foreseeable oil and gas development projects within the area likely to cause or contribute to adverse impacts on air quality and air quality related values in Class I areas;
- 3) analyses of control strategies, including but not limited to emissions control technologies, work practices, and/or the phasing of project development to identify mitigation strategies sufficient to avoid contributing to adverse impacts from oil, gas and coal developments expected in other parts of Wyoming outside the project area, including but not limited to (i) exceedances of the PM-10 NAAQS identified in the Powder River Basin EIS for CBM development ("PRB EIS"), (ii) exceedances of the allowable Class I increments at the Northern Cheyenne Indian Reservation, and USFS Class I wilderness areas as identified in the PRB EIS; (iii) exceedances of the Class II increments at receptor areas of concern as identified in the PRB EIS; and (iv) impairment of visibility and implementation of the national visibility goal at mandatory Class I

- areas that are likely to be affected by emissions from the proposed project, and reasonably foreseeable projects not identified in the air quality analysis for the proposal; and
- 4) identifying and analyzing the recent evidence of adverse health effects associated with exposure to PM-10 and PM2.5 that has become available since EPA completed its last final revision of the Criteria Document for Particulate Matter in 1996 for the purpose of informing the public of adverse health effects and adverse effects on public welfare that may be experienced by local populations even in the event of full compliance with the NAAQS and applicable PSD increments.

The parties' specific protests to the air quality portions of the SDEIS and, as more specifically described below, are based generally on the failure of BLM to satisfy three basic duties prescribed by law:

A) the failure to fully characterize under NEPA the cumulative impacts of the proposed projects when considered together with other polluting activities that have been permitted or undertaken or are proposed in areas which will add cumulative impacts to the area to be affected by the proposed projects;

B) the failure to satisfy BLM's affirmative duty under FLPMA to adopt an RMP that "provides for compliance with applicable pollution control laws including State and Federal air ... pollution standards or implementation plans," and the closely related obligation under NEPA to identify mitigation measures sufficient to ensure compliance with the various standards and visibility protection requirements under the Clean Air Act; and

(C) the failure of the Secretary to perform her "affirmative responsibility to protect the air quality related values (including visibility)" in areas designated as mandatory Class I under the Clean Air Act.

In addition, the parties request that mitigation measures sufficient to "provide for compliance with ... air pollution standards," including both the NAAQS, PSD increments, and visibility impairment, as required by FLPMA be adopted by BLM in the ROD for the Jack Morrow Hills Project, or in the ROD for other projects that cause or contribute to adverse air quality impacts in areas to be affected by emissions from Jack Morrow Hills. Such mitigation measures must be adequate to prevent (i) exceedances of the PM-10 NAAQS, (ii) exceedances of the allowable Class I increments at the Northern Cheyenne Indian Reservation, (iii) exceedances of the Class II increments within the project area and at other identified receptor areas of concern where Jack Morrow Hills emissions may contribute to exceedances; and (iv) impairment of visibility at mandatory Class I areas. In addition, mitigation should be identified to prevent the adverse effects on public health attributable to the large increase in exposure to daily concentrations of fine particles, and the adverse effects of emissions on acid-sensitive watersheds, that will result from the cumulative effects of emissions from Jack Morrow Hills when combined with other developments in Wyoming and Montana that are outside the modeling domain used for this EIS.

I. EISs FAIL TO FULFILL BLM'S DUTY TO ENSURE COMPLIANCE WITH POLLUTION STANDARDS.

BLM's primary statutory obligation is to adopt "land use plans" pursuant to 43 USC §1712(a) that comply with the directives of FLPMA. An RMP is the framework for the adoption of the "land use plans" required by the Act. RMPs must achieve the management objectives established by Congress, which require plans that "protect the quality of ... ecological, environmental, air and atmospheric, water resource and archeological values; [and] that where appropriate will preserve and protect certain public lands in their natural condition;..." 43 USC §1701(a)(8). The Act also requires that "in the development and revision of land use plans [RMPs], the Secretary shall— *** (8) provide for compliance with applicable pollution control laws, including State and Federal air, water, noise or other pollution standards or implementation plans." 43 USC §1712(c)(8).

These statutory directives have been implemented by regulation:

Each land use authorization shall contain terms and conditions which shall: (3) Require compliance with air and water quality standards established pursuant to applicable Federal and State law. 43 CFR §2920.7.

BLM has confirmed its obligation to satisfy these statutory and regulatory standards in the FEIS for the Wyoming PRB CBM Project. The BLM acknowledges that "under both FLPMA and the CAA, BLM cannot authorize any activity which does not comply with all the applicable local, state, tribal, and federal air quality laws, statutes, regulations, standards, and implementation plans." PRB FEIS, 4-379. "These requirements include the NAAQS and WAAQS which set the maximum limits for several air pollutants, and PSD increments which limit the incremental increase in certain air pollutants (including NO₂, PM₁₀, and SO₂) above legally defined baseline concentration levels." *Id.* BLM affirms this obligation in Appendix 6 (at A6-2) and Appendix 15 (Air Quality Regulations) of the Jack Morrow Hills SDEIS.

A. Failure to Conduct Complete Increment Consumption Analysis Violates FLPMA and NEPA.

The JMH EIS acknowledges that the air quality assessment fails to include a complete increment consumption analysis. The JMH EIS states that it relies upon the air quality analyses performed for the Pinedale Anticline Oil and Gas Development Project. The results of those analyses are reported in the Technical Report prepared by BLM for the Pinedale Project in November 1999.

The Technical Report, at 3-3, explains that only the "new and expected sources since June 30, 1995 are included in the cumulative impact assessment." Sources permitted or starting operation prior to 1995 are not analyzed for their consumption of increment after the baseline dates for the PSD increments were established.

No reason is given for the failure to perform a comprehensive analysis of increment consumption as part of the EIS. Indeed, in the Wyoming PRB FEIS, at p.3-298, BLM acknowledges that "[a] regulatory PSD Increment Consumption analysis may be conducted as part of a New Source Review, or independently." BLM's NEPA documents for the Pinedale Anticline Project and the JMH Project provide no rational basis for not performing an independent increment consumption analysis as part of the EIS review.

1. Protection of Air Quality Increments is the Heart of PSD.

In a recent brief filed in the Ninth Circuit Court of Appeals, the U.S. Department of Justice provided a good summary of the PSD increment enforcement process.

In determining what level of deterioration to permit in a given air quality planning area, there needs to be a starting point of air pollution -- a "baseline" concentration level -- against which to assess expected emission increases. The CAA limits the amount of permissible increase in air pollution concentration over a baseline, and these caps are known as the "PSD increments." See 42 U.S.C. § 7473(a)-(b) (increments for particulate matter and SO₂); 40 C.F.R. § 52.21(c) (increments for NO₂). As with the NAAQS, increment is expressed in terms of micrograms of a pollutant per cubic meter of air ("ug/m³").

Determining the "baseline concentration" for an air quality planning area necessarily involves collecting air quality data and conducting technical analyses. See Alabama Power Co. v. Costle, 636 F.2d 323, 374 (D.C. Cir. 1980) ("The increment concept incorporates the idea of a baseline from which deterioration is calculated, by models or monitors, to determine whether it is permissible."). Under the Act, this assessment is keyed to "the first permit applicant" in that area. *Id.* at 376. That is, "baseline concentration" is the ambient concentration level which exists at the time of the first PSD permit application. 42 U.S.C. § 7479(4); 40 C.F.R. § 52.21(b)(13)(i). The date on which this first PSD permit application is submitted is known as the "minor source baseline date." 40 C.F.R. § 52.21(b)(14)(ii).¹⁷ This date applies to the "baseline area," which essentially tracks the border of an air quality planning (section 107(d)) area. 40 C.F.R. § 52.21(b)(15)(i).

Filed on behalf of the U.S. Environmental Protection Agency October 7, 2002, in Reno Sparks Indian Colony v. EPA, No. 02-71503.

This description makes clear that the essential element of an increment consumption analysis is a determination of the extent to which the permissible increase in pollution has been "consumed," i.e., filled up with new pollution, since the baseline was set for the area affected by the proposed projects. The EIS does not conduct an increment consumption analysis which requires a determination of how much pollution has been added to an area since the "minor source baseline date" was established. In fact, neither the Pinedale nor the JMH EIS even bothers to identify the minor source baseline dates for any of the three pollutants subject to PSD increments in Wyoming.

The NO₂ baseline area in Wyoming is Statewide. The minor source baseline date was set February 28, 1988, soon after the February 8, 1988, trigger date established by EPA. See 53 Fed. Reg. 40656 (October 17, 1988). See letter from Bill Yellowtail, Regional Administrator, EPA Region VIII.

¹⁷ Although the PSD program regulates major emitting facilities, the "minor source baseline date" relates to smaller emitting facilities because after the first PSD permit application both types of facilities subsequently constructed count toward consumption of whatever increment remains available for that particular baseline area. Likewise, prior to the first permit application in a baseline area, minor sources may generally be constructed there without having their emissions affect the ability of a major emitter to come to the area later.

For Particulate Matter ("PM") and SO₂, EPA's trigger date was in 1978, and the minor source baseline dates were set soon thereafter in Wyoming. Thus all new sources, both major and minor stationary sources, as well as additional mobile source emissions,^{2/} consumed the allowable increment by adding additional pollution to the baseline after those dates.

2. EIS Fails to Analyze Increment Consumed By All Sources Since Baseline Dates.

The air quality analysis performed for the JMH EIS considered new emissions as beginning with the permitted and "reasonably foreseeable" new sources after June 30, 1995. Pinedale Technical Report, 3-3. No inventory of emissions from PM and SO₂ sources permitted or beginning operation from 1979 until June 30, 1995, or NO₂ emissions sources from 1988 until June 30, 1995, was developed or modeled to determine the extent to which these sources consumed increment prior to 1995.

Instead, the air quality analysis was performed using ambient air quality measurements made at various locations during various period from 1983 until 1997. Technical Report, Table 4-2. These monitored concentrations were assumed to account for all emissions from sources operating in 1995. The modeling analysis was then performed to show the air pollutant concentrations that would be expected when the allowable emissions from the post-June 30, 1995, new sources are added to existing emissions as monitored at the various monitoring locations. This method of analysis effectively treated the year when air quality monitoring data was collected as the baseline period because it failed to account for any of the emissions added by sources that were permitted after the regulatory baselines were set in 1979 (for PM and SO₂) and 1988 (for NO₂). As a result, the modeling approach is generally reasonable for the purpose of determining compliance with absolute limits in the ambient air such as the NAAQS and State AAQS, but not for the permissible increases in pollution which are not set based upon absolute concentrations in the ambient air. The approach used in the Pinedale analysis provides only a highly truncated assessment of the consumption of the allowable increments during the years since June 30, 1995, while omitting any assessment of the increment consumed after the establishment of the minor source baseline dates but before 1995.

The sources omitted from the consumption analysis are likely highly significant since they include some of the large increment consuming coal mines, iron mines and processing plants, expanded refinery capacity in the region and regional growth in vehicle miles traveled ("VMT"), as well as the Colestrip and Roundup Power Plants to the north of the north of the Class I areas affected by emissions from all the projects in the Green River Basin. The sources accounted for in the EIS are likely much less than half of the emissions added into the modeling domain during the period since the minor source baselines were set.

This has significant consequences for the EIS because Class I increments, such as the PM increment in the Washakie WA have already been partially consumed, and the Class II increments in areas such as Cloud Peaks and Fort Belknap I.R. have been substantially consumed by Colestrip, Roundup, the approved PRB CBM development, other earlier new sources and

^{2/} However, in both Wyoming and Montana the baseline area is the entire project area. Montana baseline area for NO₂ is "statewide," 40 CFR §81.327.

increased traffic emissions. For example, the increment consumption analysis performed for the recently permitted Roundup Power Plant shows that all of the SO₂ increment, half of the NO₂ increment and 27% of the PM-10 24-hr increment have been consumed by previously permitted sources. See Roundup Power Project, Draft EIS, Appendix B, Table B-2. The analysis does not show NO₂ increment consumption at Washakie WA, but it must be a substantial portion of that increment as well because of the proximity of Colestrip to the WA.

The failure to include a comprehensive increment consumption analysis renders the EISs inadequate because without such analysis it is impossible to determine whether increments have been consumed by prior development, or whether the proposed actions will cause the increments to be exceeded.

The magnitude of prior increment consumption is further demonstrated by the air quality analyses performed for the PRB EIS. The PRB analysis demonstrates that post-1997 emissions when combined with new emissions from CBM development, will result in barely marginal compliance with the Class II increment for PM-10 (24-hr) at Ft Belknap (29.7 µg/m³ predicted compared to an increment of 30 µg/m³), and a marginal violation for that increment in the near field analysis in Wyoming (30.8 vs. 30 µg/m³). These results, taken alone, demonstrate a significant misrepresentation of the magnitude of increased pollution if all new emissions sources had been accounted for since the regulatory baseline dates in the 1970s and 80s.

Similarly, the PRB EIS predicted violations of the Class I increments for PM-10 (12.8 vs 8 µg/m³) and NO₂ (4.2 vs 2.5 µg/m³) at the N. Cheyenne IR, and for PM-10 (9.2 vs 8 µg/m³) at the Washakie WA, and the near-field exceedances of the PM-10 and increments in the Montana project area are all likely to be far greater when the effects of coal mine emissions, Colestrip and other emissions sources are added to the increment consumption analysis. This is best demonstrated by the evidence in the EIS showing that even the NAAQS are being exceeded at monitors located near current coal mining operations. In those areas, air quality violating the NAAQS is violating the increments by factors of 2 or more. Thus the analysis performed for PRB CBM development has already provided evidence that PSD increments are being, or will be, violated by new developments approved or permitted only since 1997.

3. EIS Fails to Analyze Cumulative Impacts of Sources on Both Sides of the Continental Divide.

To demonstrate that emissions from developments in the Green River Basin, including JMH, will not exacerbate predicted increment violations in the Washakie WA or contribute to increment violations in other Class I areas along the Continental Divide, BLM must perform a comprehensive increment consumption analysis that considers the cumulative impacts of all emissions from major and minor emissions sources permitted or commencing operation after the minor source baseline dates, proposed new developments and reasonably foreseeable developments in both the area covered by the Pinedale Anticline modeling analysis and the area included in the PRB EIS. The air quality analyses performed for PRB EIS not only omitted the emissions from pre-1997 sources that consume increment, but also omitted emissions from post-1997 sources located west of the Continental Divide. Although the modeling domain for the PRB air quality analysis included the Green River Basin, the emissions inventory did not include

sources in the GRB. See "Air Quality Impact Assessment for the Montana Final Statewide Oil and Gas EIS and Proposed Amendment of the Powder River and Billings Resource Management Plans and the Wyoming Final EIS and Planning Amendment for the Powder River Basin Oil and Gas Development Project," Appendix B.1.5.1 Wyoming New Source Emission Inventory; and Appendix B.1.5.2 Wyoming RFFA Source Emission Inventory. No permitted or RFFA sources from Sublette, Teton, Lincoln, Uinta or western Sweetwater Counties are included in the inventories used in the PRB EIS modeling analysis. In fact, the only RFFA source in Wyoming for the entire analysis is the WYGEN 2 power plant.

Thus neither air quality analysis, i.e. neither for the Pinedale Anticline EIS nor the PRB EIS, considered the cumulative impacts of emissions from both sides of the Continental Divide on increments within the Class I areas that straddle the Divide. The PRB EIS air quality analysis demonstrates that these Class I areas are clearly affected by emissions from the east, and the Pinedale analysis demonstrates that they are affected by emissions from the Green River Basin. No assessment of PSD increments in these Class I areas can be complete until the cumulative impacts from emissions emitted on both sides of the Divide are assessed. This cumulative analysis is especially important for determining whether annual increments are exceeded since emissions from both sides of the Divide contribute additively to annual pollutant concentrations.

When emissions from pre-1995 sources west of the Divide and pre-1997 sources east of the Divide are added to the inventory, and the cumulative impacts from both sides of the Divide are included in the analysis, the increment violations shown by the PRB EIS will be far greater and other Class I areas are likely to show violations as well. All of these emissions must be accounted for in the JMH EIS. To the extent that emissions from pre-1995 projects or recently approved projects are causing violations of increments, those emissions must be reduced to ensure that violations will be remedied before new RMPs may be adopted or new projects approved for development.

4. EPA Requires Comprehensive Assessment of Increment Consumption.

EPA has for many years brought this obligation to perform a full increment consumption analysis to BLM's attention with regard to oil and gas developments. In the context of the EIS for the Jonah II Natural Gas Development Project in Wyoming's Green River Basin, EPA's Regional Administrator informed BLM that NEPA requires BLM to conduct "a PSD increment consumption analysis [f]or [sic] NOx [that] should be completed for all sources to the west and southwest of the Bridger Wilderness Area and all sources to the east of the Fitzpatrick and Popo Agie Wilderness Areas that could reasonably have an impact." Letter from Bill Yellowtail to Arlen G. Hiner, BLM Team Leader, October 3, 1997. BLM has yet to comply with this requirement.

5. NEPA and FLPMA Require Identification of Mitigation Measures to Prevent Adverse Impacts.

The CEQ regulations interpreting NEPA require that the EIS identify the "means to mitigate adverse environmental impacts," 40 CFR 1502.16(h), and "include appropriate mitigation measures already included in the proposed action or alternatives." 40 CFR 1502.14(f).

"Mitigation" is defined to include "(a) avoiding the impact altogether by not taking a certain action," and "(b) minimizing impacts by limiting the degree or magnitude of the action." 40 CFR §1508.20. Where federal environmental standards are shown to be adversely affected by the proposed action, the NEPA review must at least identify sufficient mitigation measures that will prevent the adverse impact. This obligation is reinforced by FLPMA which establishes the obligation to adopt RMPs that "provide for compliance with pollution standards." Thus the EIS is inadequate both because it fails to describe the full magnitude of the exceedances of increments that will or may result from adding emissions from the proposed projects, and it fails to identify the mitigation measures that will effectively prevent those adverse impacts. Furthermore, under FLPMA the obligation to adopt RMPs that "provide for compliance" with standards also requires that the plans for these areas adopt mitigation measures to correct NAAQS and increment violations that are currently caused by mining operations on the federal lands within the planning area or that extract federal coal under private surface.

EPA has interpreted the CEQ regulations to require identification of the measures needed to prevent adverse impacts. "CEQ clearly states that mitigation measures must cover the 'range of impacts' of the proposed action and that the DEIS must identify the 'relevant', reasonable mitigation measures that could improve the project...even if they are outside the jurisdiction of the lead agency..." Yellowtail letter, *supra*. EPA also called on BLM to identify mitigation measures sufficient to prevent the adverse impacts on visibility identified in the EIS, and also to prevent NOx increment violations.

The kinds of mitigation measures that should have been identified and evaluated for effectiveness in the EIS include the types of measures identified by EPA in the comments of the Jonah II Gas Field Development. See Yellowtail letter [attached]. These include phased development of the fields, emissions reductions from other stationary sources, and more stringent emission control technologies.

Where a full emissions analysis demonstrates that increments have already been consumed, such as the Class II areas in the vicinity of the major coal mines and in Class I areas impacted by large stationary sources such as the areas impacted by emissions from the coal mines and power plants, the only remedy may be to obtain emissions reductions from existing sources to create room for further emissions increases. Where this is the case, the ROD must require that evidence of enforceable emissions reductions be included in the record prior to granting any approvals for new emitting activities.

Where the increment consumption analysis demonstrates that increments are not currently exceeded, but will be as a result of the proposed action, then the scale of the action must be limited to ensure that emissions do not exceed the levels that will cause or contribute to NAAQS or increment violations. These limitations must also be incorporated into the ROD.

The parties protest the failure to perform an AQ assessment sufficient to identify the full consumption of increment, and the failure to identify mitigation measures sufficient to prevent future violations and correct existing violations of the increments.

6. BLM May Not Rely on State Permitting Process to Fulfill Obligations Under FLPMA and NEPA.

Neither the JMH EIS nor the Pinedale Anticline EIS state that BLM intends to rely on Wyoming to perform a comprehensive analysis of increment consumption as described above. Accordingly, there is no rational basis in these documents for BLM's failure to perform such an analysis.

However, BLM may offer as an excuse for its failure to perform such an analysis that it may rely on the State's permitting process. The Wyoming permit process does not satisfy the affirmative duty imposed on BLM to "provide for compliance" with NAAQS and the PSD increments, both because FLPMA requires that the RMPs contain the measures necessary to ensure compliance, and because BLM has no assurance that the States will perform a complete increment consumption analysis before the proposed actions are substantially underway and contributing to additional emissions that may add to further exceedances of increments or cause increments to be violated. For these reasons, the EISs must include the increment consumption analysis so that BLM's obligation to develop and adopt sufficient mitigation measures may be performed as part of the project NEPA analyses and adopted as conditions in the ROD.

In other actions, BLM has stated that it need not conduct a "regulatory" increment consumption analysis because "the determination of PSD increment consumption is a legal responsibility of the applicable air quality regulatory agencies, with EPA oversight." Wy FEIS, p.3-298. The fact that the State has a legal responsibility to protect increments does not mean that BLM is thereby relieved of its independent responsibility under FLPMA to adopt RMPs that "provide for compliance with pollution standards," or its obligation under NEPA to fully describe the cumulative impacts of the proposed projects and identify mitigation measures to prevent adverse impacts. The parties protest BLM's failure to perform these obligations imposed on BLM itself under federal law.

The failure of Wyoming to require adequate increment consumption analyses for the WYGEN 2 project caused BLM's sister agency, the National Park Service, to recently request an appeal from the WYGEN 2 permit issued by the WDEQ. This failure is consistent with Wyoming's failure to ever require a comprehensive increment consumption analysis for any Class I area. There is no past example that BLM can identify to demonstrate that BLM may reasonably rely upon WDEQ to require that such a comprehensive analysis will be performed.

7. BLM May Not Rely on State SIP Programs Because Those Programs Do Not Require Full Increment Consumption Analyses.

The requirements of the WY PSD SIP, with regard to the sources that are expected to be developed as part of the oil and gas projects under review, do not require the comprehensive assessment of increment consumption and visibility impacts that are required to fulfill BLM's affirmative obligation under FLPMA. The SIP requires the kind of analysis generally discussed in this protest for major stationary sources, but BLM has not determined that emissions from the projects under review are associated with a sources that are expected to exceed the threshold for "major stationary source." Minor sources, however, do consume increment and their cumulative

impacts must be assessed to ensure that their development will not cause standards under the Clean Air Act to be violated.

The Wyoming PSD SIP only requires that major sources perform an increment consumption analysis and an assessment of visibility impairment in Class I areas. See Chapter 6, Permitting Requirements, Section 4 PSD. The provisions governing the permitting of minor sources only require that the applicant demonstrate that "the proposed facility will not cause significant deterioration of existing ambient air quality in the Region as defined by any Wyoming standard or regulation that might address significant deterioration." Chapter 6, Section 2(c)(iii). This provision does not explain what standard, if any, applies, nor does it describe the "region" that must be considered, whether emissions from the minor source must be considered together with emissions from other permitted and reasonably anticipated sources, or what pollutants are to be considered. There is clearly no obligation to conduct an increment consumption analysis as described in this protest. Furthermore, this provision does not address visibility impacts in Class I areas at all. Visibility is addressed only in Chapter 9 of the WY SIP rules. That provision applies exclusively to "major stationary sources." Chapter 9, Section 2(e).

BLM has already conceded that it is not permissible to adopt RMPs that provide for approval of the development of tens of thousands of minor air pollutant sources without an assessment of whether the emissions from those sources will exceed the maximum allowable increments and without determining their impact on visibility in Class I areas. Clearly it is not permissible to rely on the project source developers to perform increment consumption analyses and visibility impairment assessments during the agency permitting process when the EIS does not identify any expected major sources that would trigger full PSD review, and when the State SIP does not require such analyses to be performed by minor source permit applicants.

Nor has BLM received any commitment from the WyDEQ that such analyses will be performed prior to the permitting of minor sources, or that the results of such analyses would be used to limit or prevent the construction of minor as well as major sources when increments have been exceeded or would likely be exceeded. Wyoming has a regulatory provision that arguably creates authority to deny permits for minor sources if PSD increments are violated. But that authority may also be construed to issue permits for such sources without performing the analyses, or even if analyses show there will be increment violations. Absent a binding agreement with Wyoming that establishes how this authority will be applied, BLM has no basis for assuming how the authority will be applied.

In Wyoming, authority to consider visibility impacts is limited to Major stationary sources. Thus even if the WyDEQ committed in an MOA to perform increment consumption analyses and visibility impairment assessments, there is no basis for assuming that the results could be used in the permitting process to prevent a large number of minor sources from causing or contributing to visibility impairment, or that increments and visibility would be protected.

Furthermore, even if BLM could rely on WDEQ to require such comprehensive analyses of increment consumption and visibility impacts, the results would have to be available to BLM before any final action is taken on the proposal so that BLM can independently determine that its affirmative obligation under NEPA to perform the analysis has been satisfactorily performed, and

so that mitigation measures, if necessary, can be adopted as part of the ROD to fulfill BLM's affirmative obligation under FLPMA.

Therefore the parties protest BLM's failure to perform its own increment consumption and visibility analyses, and to apply the results as part of the RMP development process by including mitigation to prevent any adverse impacts.

B. EIS Does Not Recommend the Adoption of Controls Assumed for Emissions Assessment as Mitigation.

To the extent that the EIS relies on assumed emissions controls for the purpose of developing the emissions inventory, those assumptions are de facto mitigation measures that must be required in the ROD. These include, but are not limited to, control of fugitive dust on access roads, use of natural gas as a fuel for compressor stations, the assumed NOx emissions limitations of 1.0 and 1.5 gr/hp-hr for compressor engines, and the use of NSCR on diesel engines. The importance of requiring these measures as mitigation for the projects is demonstrated by the explanations regarding the range of emissions and uncertainty of state action provided in the WY EIS. For example, BLM states that NOx emissions from compressor engines in Wyoming is assumed to be 1.0 grams of NOx per horsepower/hour of operation, but that emissions could be as high as 2.0 g/hp-hr. If compressors were allowed to operate with emissions at 2.0 g/hp-hr, total emissions from all compressors in the project region would be 100% greater than the emissions assumed for the emissions analysis. This means that the contribution of compressor emissions to the violations of the NO2 increment predicted at the NCIR would be double the impacts predicted in the EIS. Thus to conclude that emissions will not be greater than the estimates developed for the EIS, the ROD must adopt mitigation requirements that ensure emissions will be controlled to the levels assumed in the analysis. To the extent BLM relies on these assumed control measures to limit emissions for the purpose of demonstrating NAAQS or increment compliance, then they must be required in the ROD so that BLM can satisfy its obligation to adopt RMPs that "provide for compliance" with applicable pollution standards.

II. Impairment of Visibility Not Prevented.

The Clean Air Act imposes on the Secretary of the Interior, as a Federal Land Manager ("FLM"), "an affirmative responsibility to protect the air quality related values (including visibility) of any such lands within a Class I area and to consider, in consultation with the Administrator, whether a proposed major emitting facility will have an adverse impact on such values." 42 USC §7475(d)(2)(B). The Secretary of the Interior is the FLM for nine Class I areas where emissions from industrial and energy developments are expected to cause or contribute to visibility impairment. These include Badlands WA, Wind Cave NP, Grand Teton NP, Yellowstone NP, Bridger WA, Washakie WA, Fitzpatrick WA, Absaroka WA, and Theodore Roosevelt NP.

The Secretary's affirmative responsibility to protect visibility in these Class I areas is not limited by the Act to major stationary sources. Indeed, EPA's PSD rule requires the FLM to "consider, in consultation with the Administrator, whether a proposed source or modification would have an adverse impact on such values." 40 CFR §51.166(p)(2). Under the PSD rule, "Stationary source means any building, structure, facility, or installation which emits or may emit any air pollutant

subject to regulation under the Act." *Id.*, §51.166(b)(5). This obligation is therefore not limited to "major stationary sources."

A. EIS Fails to Implement FLAG Guidelines.

Acting through the NPS, the Department has cooperated with other FLMs in the development of visibility review procedures and criteria for assessing when visibility impairment is not acceptable. See Final FLAG Phase I Report, 66 FR (January 3, 2001). The EIS does not even mention the FLAG Report because the air quality analysis was prepared in 1999. Therefore the Technical report provides no analysis regarding how the acceptability criteria will be applied by the Secretary to the evidence of visibility impairment provided in the AQ assessment. Even more troubling is the lack of any discussion of the mitigation measures that could be applied through the RMP to protect visibility in Class I areas.

The Secretary's affirmative responsibility to protect visibility in Class I areas is not limited to the review of permits for major stationary sources, nor is it limited to Class I areas where the Secretary is the "federal land manager." The Secretary's responsibility also applies to the development of RMPs under FLPMA. Under FLPMA, public lands are to be managed to "protect the quality of ...ecological, environmental, air and atmospheric, water resource and archeological values; [and] that where appropriate, will preserve and protect certain public lands in their natural condition." 43 USC §1701(a)(8).

The National Park Organic Act charges the Secretary with the duty to protect national park lands in their natural condition. Such lands that are also Class I under the Clean Air Act are subject to statutory directives that express the clear intent of Congress that these lands be included within the lands that the Secretary has an affirmative responsibility to protect. When the Secretary, acting through the BLM, is also developing RMPs for other federal public lands where the activities being authorized are shown to interfere with the express policies enacted to protect parks, wilderness and monuments, then the Secretary must exercise her planning authority under FLPMA to ensure that the air and atmospheric resources (including visibility) in Class I areas is protected.

The Technical Report establishes that detectable visibility impairment will occur on at least 9 days, and as many as 15 days when the emissions from the Project and post-1995 sources are analyzed. The Report documents that two major variables are the amount of other sources included in the analysis, and the stringency of NOx emissions limits on compressors. The Report, however, fails to account for the impacts resulting from emissions analyzed in the PRB EIS, or the emissions from pre-1995 sources. Therefore it seriously underestimates the net impact on visibility in the Class I areas.

The TSD for the PRB EIS, Appendix E, provides ample information showing that if the preferred alternatives for the WY and MT projects are approved, Alternatives I and E, massive degradation of visibility will occur in areas likely to be affected by emissions from the Green River Basin, including Yellowstone NP and Grand Teton NP. Impacts from PRB emissions at these Class I areas will be well above the one deciview change in visibility that is considered the threshold for detection by the general public. Yet despite this evidence of extensive deterioration in visibility from PRB emissions, the EIS is completely silent regarding the cumulative impacts from PRB and

GRB emissions, or how the Secretary will carry out her affirmative responsibility to protect visibility in these areas.

BLM attempts to minimize these impacts by focusing exclusively on the "direct project impacts" on visibility, rather than the cumulative contribution of project emissions when added to total emissions from all sources in the region. But the Clean Air Act requires protection of visibility in Class I areas from deterioration caused by increased pollution, which is not determined by the emissions from one source, or from one set of sources, but by all sources adding emissions since the national visibility goal was enacted in 1977. It is visibility impairment caused by these cumulative impacts that must be addressed and prevented.

The parties protest the failure of the JMH SDEIS to perform a cumulative impact analysis that includes emissions from all post-1977 sources, including recently approved development in the PRB, and the failure to identify the mitigation measures that can achieve the level of protection for visibility described in the FLAG guidelines.

B. EIS Fails to Implement EPA's "No Degradation" Policy Under the Clean Air Act.

In addition to the affirmative responsibility to "protect" visibility in Class I areas under her charge as an FLM, the Secretary acting through BLM under FLPMA also has a responsibility to ensure the national visibility goal established by the Clean Air Act is implemented in all Class I areas likely to be impacted by emissions from developments authorized by RMPs.

The CAA "declares as a national goal the prevention of any future, and the remedying of any existing, impairment of visibility in mandatory class I Federal areas which impairment results from manmade air pollution." 42 USC §7491(a)(1). EPA has promulgated rules to implement this national goal. 40 CFR Part 51, subpart P. These regulations include requirements defining reasonable progress toward the national goal. "The reasonable progress goals must provide for an improvement in visibility for the most impaired days over the period of the implementation plan and ensure no degradation in visibility for the least impaired days over the same period." 40 CFR §51.308(d)(1). This rule has been affirmed by the D.C. Circuit Court of Appeals in response to an attack by industry arguing that EPA is not authorized by the Act to establish a "no degradation" standard. American Corn Growers v. EPA, 291 F.3d 1, 10 (D.C. Cir 2002) ("Petitioners' claim that the agency is without authority to mandate attainment of the national goal is therefore meritless.")

This standard for reasonable progress has not been addressed in the EIS, but should have been. At a minimum, the AQ Technical Report should identify the visibility for the least impaired days in each of the Class I areas where significant impacts are predicted, and the extent to which the additional emissions from the projects combined with other regional emissions increases would cause degradation on those days.

The results of that analysis should then be considered for the purpose of identifying the kinds of mitigation measures necessary to achieve the no degradation standard. This should also be addressed in a supplement to the current SDEIS before any final action to amend the RMP or adopt final mitigation measures as part of the ROD.

The parties protest the completion of any final action on the RMPs and ROD until these supplements are prepared, submitted to the public for review, and used to identify and adopt sufficient mitigation measures to achieve the no degradation standard for reasonable progress toward the national visibility goal.

III. Impacts on Public Health from Fine Particle Exposures Not Identified.

The emissions sources included in the proposed projects will be a major source of NO_x emissions which are transformed in the atmosphere to form fine particle nitrates. Given the potentially severe adverse health effects associated with fine particle exposures, the parties protest the failure of the EIS to fully assess the potential adverse public health effects associated with cumulative emissions of fine particles and fine particle precursors from the current and proposed sources of fine particles. In addition, the EISs identify large increases in exposure to fine particles ("FP") from background concentrations of 20 to 66 µg/m³ (more than the current NAAQS) in MT, and from 19 to 42 µg/m³ in areas of Wyoming.

The recent evidence of the effects of FP exposures at these expected future concentrations demonstrates that increased premature mortality, hospitalizations, asthma and other respiratory disease episodes, increased medication and health care costs, increased loss of work days and lost wages as well as lost school days for children are expected at these levels of exposure. The EIS fails to address this new evidence, and fails to inform the public of these adverse health impacts.

A. Endangerment to Public Health from Exposure to Fine Particles.

The adverse health effects of fine particles (i.e., particles < 2.5 µm in diameter) ("FP") must be evaluated in the EIS to determine acceptable levels of exposure to avoid endangering public health, and then to assess the impact emissions from the proposed projects will have on current background concentrations of PM_{2.5}. If emissions from the proposed projects will cause or contribute to the exposure of residents above levels associated with adverse health effects, then the EIS must identify mitigation measures sufficient to prevent those effects.

This analysis of FP health effects in the NEPA context is made necessary by EPA's guidance to air quality permitting agencies that they are not required to apply NSR review requirements to FP sources until after an area has been designated for the PM 2.5 NAAQS. Such designations are not expected until 2004 or later. In addition, EPA has failed to promulgate PSD increments for PM_{2.5} as required by §166 of the CAA. The parties believe that such a waiver of permit procedures is not authorized by the Act and implementing regulations, but as long as EPA exempts major FP sources from permit review and from increments and increment review, the potential adverse health effects associated with exposures to FPs must be addressed under NEPA.

This analysis is also made necessary because the FP NAAQS promulgated by EPA in 1997 does not prevent adverse health effects demonstrated by the health effects research published since 1996 when EPA closed the last version of the PM Criteria Document relied upon to set the 1997 NAAQS for PM_{2.5} to protect public health pursuant to §109(b) of the CAA. Therefore, since the 1997 NAAQS appears no longer to be adequate to protect against adverse health effects, the residual adverse effects allowed by the NAAQS must also be considered under NEPA. In the event

it is determined that the proposed projects will contribute to adverse health effects among the residents of Wyoming, mitigation measures must also be considered under NEPA to prevent those effects.

1. Health Effects Caused by Exposure to Fine Particles.

The US EPA found it necessary to adopt a revised National Ambient Air Quality Standard ("NAAQS") to protect against the adverse health effects caused by exposure to fine particles ("FP") less than 2.5µm in size because the standard for PM-10 was not adequate to protect public health. 62 Fed. Reg. 38651 (July 18, 1997). EPA based its determination primarily on evidence obtained from epidemiology studies that evaluated the relationship between various health outcomes experienced by residents in communities where FP were measured and changes in FP concentrations in those communities. Some 80 of those studies were "short-term" studies which compared health outcomes such as premature mortality, increased hospital admissions, and the increased incidence of pulmonary and cardiovascular disease symptoms with short-term increases in PM over periods ranging from less than 24 hours to a few days.

Considered as a cumulative body of evidence, EPA found the studies demonstrated that for each 24-hour period, various health outcomes such as premature death or increased hospital admissions could be expected to increase in response to increased exposure to both PM-10 and PM2.5. For mortality, the increase ranged from a low of approximately 3% above baseline mortality rates to a high of 9%, depending on the study population and location. EPA Criteria Document, Table 13-3, p. 13-37 to 38.3 For the same magnitude increase in 24-hour PM10 concentrations, hospital admissions increased from a low of 6% to a high of 23% above background for patients reporting "respiratory disease", or from 10% to 25% above background for patients with chronic obstructive pulmonary disease. CD, 13-46. Other diseases with statistically significant increases in incidence reported among patients requiring hospitalization during high pollution episodes include pneumonia and ischemic heart disease. Id.

After reviewing the various potential sources of uncertainty in the risk ratios reported by these studies, the CD concluded that "as a group, especially within one study type (i.e., acute mortality), PM studies present a relatively consistent picture." Id., 12-363. For the elderly, EPA's CD found "considerable agreement among different studies that the elderly are particularly susceptible to effects from short-term and long-term exposures to PM, especially if they have underlying respiratory or cardiac disease. These effects include increases in mortality and increases in hospital admissions." CD, 13-92.

All but one of the studies that showed increased acute mortality during short-term (i.e., one to two day) high pollution episodes were performed in areas like the Tempe portion of Maricopa County where PM 10 concentrations likely meet EPA's 1987 annual NAAQS for PM.4 Most studies were

³ EPA explains the values reported as "RR" in the table are the "risk ratios from the various short-term mortality studies" which reflect the "% increase in risk of death over background risk..." CD, 13-87.

⁴ Reported PM mean levels were below the annual NAAQS of 50 µg/m³ in all mortality study locations except Los Angeles. CD, Table 13-3, p. 13-37.

performed in areas where 24-hour concentrations also met the 1987 24-hour NAAQS.⁵ Most important, adverse health outcomes were observed when PM₁₀ exposures exceeded 24-hour average concentrations as low as 30 µg/m³, well below the 1987 NAAQS of 150 µg/m³. These adverse health effects were also observed below the background levels assumed by Salt River Project ("SRP") in the air quality modeling analyses of plant emissions that they have provided to the City and other interested parties. Studies showing increased incidence of adverse health outcomes other than mortality also showed these effects at concentrations substantially below the levels allowed by the 1987 NAAQS. Based on this evidence, the Administrator's CD concluded:

The evidence for PM-related effects from epidemiologic [sic] studies is fairly strong, with most studies showing increases in mortality, hospital admissions, respiratory symptoms, and pulmonary function decrements associated with several PM indices. *** While the results of the epidemiology studies should be interpreted cautiously, they nonetheless provide ample reason to be concerned that there are detectable human health effects attributable to PM at levels below the current NAAQS.

CD, 13-92.

EPA's CD identified exposure to short-term high pollution episodes (24 to 48 hours) as making a significant contribution to the overall mortality and morbidity attributed to PM. "Epidemiological findings suggest that short-term ambient PM exposure can trigger terminal events." *Id.*, 13-44. "[M]ost available epidemiologic evidence suggests that increased mortality results from both short-term and long-term ambient PM exposure." *Id.*, 13-45. Morbidity studies reviewed in the CD showed increased incidence of hospital admissions for elderly people and children during 24-hour periods with higher concentrations of both PM₁₀ and PM 2.5. Tables 13-3 and 13-4, CD, 13-37 to 13-39.

EPA concluded the PM_{2.5} evidence shows "serious health effects (e.g., mortality, exacerbation of chronic disease, increased hospital admissions) in sensitive populations (e.g., the elderly, individuals with cardiopulmonary disease), as well as significant adverse health effects (e.g., increased respiratory symptoms, school absences, and lung function decrements) in children." 62 Fed. Reg. 38,657; CD 13-82 to 13-94.

EPA also noted that the evidence of the increased incidence or relative risk of mortality effects, for example, increases "3 to 6 percent ... per 25µg/m³ increase in PM concentration," 61 Fed. Reg. 65,649, and that the relative risk of experiencing other adverse effects increases by 1.5 (50%) to 5 (500%) with exposure to higher concentrations "below to somewhat above the 1987 NAAQS...." 62 Fed. Reg. 38,659. Since the effects observed in the short-term studies correlate with 24-hour exposures, the higher the daily exposure, the greater the risk for exposed populations. EPA staff found that the best estimate of the relative risk for increased mortality is 1.5% increase in daily mortality per 10 µg/m³ increase in 24-hour PM 2.5.

The cities where EPA found this relationship between increased daily exposure and increased incidence of premature mortality most convincing were the cities where the confidence interval for

⁵ Most study areas reported maximum concentrations below the 24-hour NAAQS of 150 µg/m³. *Id.* Those with a maximum value above the NAAQS might not violate the NAAQS which required a second value above 150 µg/m³ to violate the standard.

the effect was greater than 95%. Most of the evidence of mortality and morbidity associated with FP exposures, as well as the most compelling evidence, is associated with "short-term", i.e., one- to two-day, exposures. Here, EPA found statistically significant evidence that daily exposures to FP concentrations well below 65 $\mu\text{g}/\text{m}^3$ are clearly harmful, but failed to set NAAQS adequate to prevent the harm.

EPA's decision was based on more than 60 "community epidemiological studies that evaluated associations between short-term concentrations of various PM indicators and mortality and morbidity endpoints" and "reported positive, statistically significant endpoints." 61 Fed. Reg. 65,646/1. More than 20 of these studies reported "statistically significant positive associations between fine particle concentrations and mortality and morbidity endpoints." *Id.*, 65,649/1.

EPA determined that these studies described a dose-response relationship between increased daily concentrations of PM_{2.5} and increased incidence of mortality and morbidity among populations exposed to the higher pollution levels. Referred to as the "relative risk," this correlation was derived from the so-called "core" studies that EPA relied upon to determine that health effects were occurring at levels allowed by the 1987 NAAQS. In one of these studies, the 1996 critical re-analysis of the Six Cities data, "Is Daily Mortality Associated Specifically with Fine Particles?", Dr. Schwartz notes "that the **day** is the unit of observation in this study." and "[r]elative risks have been expressed as the percent increase in **daily mortality** ... associated with each specified increment in particulate air pollution exposure." [emphasis added]. Key findings (reported in Table 7) are that **daily FP increases** of only 10 $\mu\text{g}/\text{m}^3$ are associated with a 1.5% increase in daily mortality from all causes and a 4% increase in deaths from pneumonia. All results were reported at the 95% confidence interval. EPA's Staff Paper, at V-63 to V-64, concluded "[t]he estimated increase in daily mortality associated with PM_{2.5} was consistently positive in all 6 cities (0.8 to 2.2% for a 10 $\mu\text{g}/\text{m}^3$ PM_{2.5} increase) and statistically significant in 3 cities."

EPA found the evidence of acute health effects associated with short-term exposures to PM_{2.5} to require a NAAQS for PM_{2.5} to ensure the adequate protection of public health. EPA's proposed rule noted that both premature mortality and increased hospital admissions followed "same day, previous day, or longer lagged single-day concentrations" which supported EPA's conclusion that it must "protect against episodes lasting several days. . . , while also protecting sensitive individuals who may experience effects after even a single day of exposure." 61 Fed. Reg. 65,655.

EPA emphasized the importance of these individual 24-hour exposures by concluding that adverse health effects

including premature mortality and increased hospital admissions, have generally been reported with same-day, previous day, or longer lagged single-day concentrations, although some studies have reported stronger associations with multiple-day average concentrations.

62 Fed. Reg. 38,668. This finding that the adverse health effects attributable to PM_{2.5} occur after single-day as well as several-day exposures makes clear that daily exposures in the range described by the health effects studies contribute to the adverse health effects of PM_{2.5}.

2. Recent Studies Provide More Compelling Evidence of Harm From Daily Exposures in the Range Above 25 $\mu\text{g}/\text{m}^3$.

Since 1996, the body of evidence demonstrating a correlation between premature mortality, increased morbidity and exposure to fine particles has become much more compelling. The conclusion that the current level of the 24-hour PM_{2.5} standard fails to protect public health with a margin of safety is supported by analysis of a number of the studies reported by EPA in the current draft of the revised Criteria Document for PM. Important among these is the Six Cities data reported by Schwartz, Dockery and Neas (JAWA, 1996). Those data demonstrate that the association between daily FP concentrations $\leq 25 \mu\text{g}/\text{m}^3$ and increased mortality remains as strong as the association between increased mortality and all days in the data set. Their analysis strongly suggests that no margin of safety is provided unless exposures to 24-hour FP concentrations are kept below $25 \mu\text{g}/\text{m}^3$.

This conclusion is also supported by comparing the effects associated with 24-hour concentrations of PM₁₀. Samet et al. (2000a) report a significant positive correlation between daily increases of $10 \mu\text{g}/\text{m}^3$ and hospitalizations for cardiovascular effects when only days $\leq 50 \mu\text{g}/\text{m}^3$ are analyzed. Assuming a 2:1 PM₁₀/PM_{2.5} ratio which is observed in many areas, this result also suggests that 24-hour fine particle concentrations above $25 \mu\text{g}/\text{m}^3$ are associated with adverse health effects.

One possible objection to concluding that adverse health effects are associated with 24-hour exposures at $25 \mu\text{g}/\text{m}^3$ is the argument that daily concentrations of $34 \mu\text{g}/\text{m}^3$ were found not to be associated with a statistically significant increase in daily mortality in two of the Six cities where the annual means were close to $12 \mu\text{g}/\text{m}^3$. In both Portage and Topeka, where the correlation between acute effects and daily increases in FP concentrations is not demonstrated at the 95% confidence interval, the 98th percentile level is $34 \mu\text{g}/\text{m}^3$. But daily concentrations at these levels appear to be associated with adverse effects when all the days $\leq 25 \mu\text{g}/\text{m}^3$ in the full Six Cities data set are analyzed. Schwartz, Dockery and Neas (JAWA, 1996). This analysis strongly suggests that adverse health effects are associated with the high days $\geq 25 \mu\text{g}/\text{m}^3$ even in Portage and Topeka, but that the effect of these days is not shown to be statistically significant when the days for each of those two cities are analyzed separately because there are so few days in each of those two cities in the $25 - 34 \mu\text{g}/\text{m}^3$ range.

The likelihood that the days above $25 \mu\text{g}/\text{m}^3$ are associated with adverse acute effects even in cities where the number of such days is small, and the annual means are therefore low, is also supported by the NMMAPS analysis. A "Review of the California Ambient Air Quality Standards for Particulate Matter and Sulfates" prepared by the staffs of the Air Resources Board and the Office of Environmental Health and Hazard Assessment (November 30, 2001) concluded, at p. 121, that "the magnitude of the estimated [daily] mortality effect ... was independent of the mean PM₁₀ in any given city. Thus, cities with higher average concentrations of PM₁₀ tended to have the same general effect per microgram of PM₁₀ as cities with lower averages." These data strongly support the inference that the effects of daily concentrations are not linked to annual means, and not dependent on the number of high daily concentrations in an area.

Accordingly, the parties believe that credible scientific evidence from a number of sources demonstrate that human populations exposed to daily concentrations at $25 \mu\text{g}/\text{m}^3$ will experience adverse health effects. Therefore this evidence should be reviewed as part of the environmental review for the proposed projects, and mitigation adequate to protect public health must provide

protection against levels of daily concentrations that are harmful to health, but not prevented by EPA's 1997 standard. We believe the health effects associated with short-term concentrations of fine particles are significant. For the reasons set out above, we believe that the evidence demonstrates that adverse health effects are associated with daily concentrations of 25 $\mu\text{g}/\text{m}^3$ and above. Mitigation must ensure that concentrations at this level are not allowed.

B. EIS Must Determine Frequency Of Daily Exposures Above 25 $\mu\text{g}/\text{m}^3$ And Effects Of Project Emissions On Those Exposures.

The EIS identifies the maximum expected increases in daily exposure to FP, but does not report the distribution of days $\leq 25 \mu\text{g}/\text{m}^3$, and the increased frequency of exposure to these harmful levels of FP. The EIS should include a risk assessment using the techniques applied by EPA in the development of its Risk Assessment for the 1997 FP NAAQS to estimate the increased adverse health risk to the local populations in the area of the projects.

The recent decision of the Ninth Circuit Court of Appeals requires that the research evidence of health effects associated with air pollutants from diesels be addressed under NEPA. Public Citizen v. US DOT, 316 F.3d 1002 (9th Cir. 2003). The evidence of adverse health effects associated with 24-hour exposures to FP must be included in a supplement to the EIS.



3 February 2003

Rawlins RMP/EIS
BLM, Rawlins Field Office
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To: Field Supervisor, Rawlins Field Office, Bureau of Land Management.
From: Stephen J. Dinsmore, Department of Wildlife and Fisheries, Mississippi State University, Box 9690, Mississippi State, MS 39762.
Subject: Rawlins RMP scoping comments for the Mountain Plover.

This memo provides detailed comments that I hope will aid decisions regarding Mountain Plover management in the revised Great Divide Resource Management Plan (RMP). I have studied breeding Mountain Plovers in Montana since 1991, have surveyed for Mountain Plovers across much of their present breeding range, and have published and continue to publish the results of my on-going plover research in the peer-reviewed literature.

The Mountain Plover is a local and declining bird of the western Great Plains and is currently under review for Threatened status under the U. S. Endangered Species Act (U. S. Department of the Interior 1999). It is one of the rarest North American birds with an estimated population of 8,000 to 10,000 individuals (Knopf 1996). Their conservation hinges on the protection of remaining breeding habitat, including prairie dog colonies, and through the use of proactive plover management that protects nesting sites and uses tools such as fire and rotational grazing to enhance other nesting areas.

Mountain Plovers breed primarily in Montana, Wyoming, and Colorado and sparingly in surrounding states as well as Texas and Mexico (Knopf 1996). Mountain Plovers are uncommon breeders in southern Wyoming (Dorn and Dorn 1999), although there have been no formal surveys in Wyoming to estimate spatial variation in abundance. The Great Divide Resource Area includes at least 2 well known plover breeding areas: the Laramie Plains area in Albany County and the Mexican Flats area in Carbon County. Both areas support at least moderate numbers of breeding plovers, and current research is focusing on estimating plover numbers in these and other areas of Wyoming. Relative to other breeding areas, less is known about Mountain Plovers breeding in Wyoming. Thus, the following comments are based on a review of published literature on Mountain Plovers with an emphasis on studies conducted in Wyoming.

Specific points for your consideration in the revised Great Divide RMP include:

1. Annual surveys. There is a clear need for conducting annual surveys for nesting Mountain Plovers throughout the Great Divide Resource Management Area. Surveys are needed to estimate abundance of plovers within this region, and will provide data necessary to assess future fluctuations in plover numbers. Surveys should be designed to understand distribution and abundance during the nesting and brood-rearing seasons, and could secondarily address issues such as habitat use, differences between nesting and brood-rearing habitat, and other topics of interest. Future impacts to plovers resulting from actions in the Great Divide Resource Management Area cannot be fully measured without a thorough understanding of plover distribution *and* abundance.
2. Landscape requirements for maintaining Mountain Plovers. The specific requirements for maintaining viable numbers of Mountain Plovers within the Great Divide Resource Management Area are unknown, although they include several important criteria. The Mountain Plover is a disturbed-prairie or semi-desert species (Knopf and Miller 1994) and is characterized as a breeding bird of high plains and desert tablelands (Graul 1975, Knopf 1996). They prefer disturbed habitats for nesting, including areas occupied by prairie dogs (*Cynomys* spp.; Knowles et al. 1982, Samson and Knopf 1994, Knopf 1996). Mountain

Plovers selectively nest on active prairie dog colonies, especially those of black-tailed prairie dogs (Knowles et al. 1982, Olsen-Edge and Edge 1987, Dinsmore 2001), but also occasionally those of the white-tailed prairie dog (*C. leucurus*) (Ellison-Manning and White 2001a). In many parts of Wyoming, including the Great Divide Resource Management Area, plovers nest in semi-desert habitats on high tablelands, generally in areas dominated by *Atriplex* spp. and *Artemisia* spp. (Parrish et al. 1993, Knopf 1996). All sites used by nesting plovers range-wide include short vegetation (typically <5 cm; Graul 1975, Olsen and Edge 1985, Parrish et al. 1993, Ellison-Manning and White 2001b), a bare-ground component (typically >30%; Knopf and Miller 1994), some history of disturbance (e.g., grazing or fire; Day 1994, Olsen and Edge 1985, Knopf 1996, Ellison-Manning and White 2001a), and flat or gently sloping landscapes (Graul 1975). Minimum-area requirements for plover broods have been estimated at 28 ha (Knopf and Rupert 1996), but similar requirements for adult plovers are unknown. Given this information, management for plovers within the Great Divide Resource Management Area should emphasize their preferred habitats (using the above criteria). The number of Mountain Plovers necessary to maintain a viable population within the Great Divide Resource Management Area is unknown, and it is likely that this is not even a discrete population of plovers. I recommend that these landscape-level questions (e.g., minimum viable population size) be the focus of future research.

3. Population trends. There have been no formal surveys to estimate trends in Mountain Plover numbers within the Great Divide Resource Management Area, either from Wyoming Game and Fish Department files or from the published literature. At a larger spatial scale, Breeding Bird Survey (BBS) data for all of Wyoming indicate a non-significant negative trend (-2.37, $P = 0.51$) for the period 1966 to 2000 (Sauer et al. 2001). However, BBS data are subject to many sources of bias and should be interpreted with caution (see Link and Sauer 1998). Thus, there is weak evidence for a long-term negative trend in plover numbers in Wyoming, but trends at more localized scales are unknown.

4. Habitat quality trends in the Great Divide Resource Management Area. There have been no detailed surveys of Mountain Plover habitat within this region, and specific factors that contribute to quality nesting habitat for this species are unknown (but see #2 above for general characteristics of nesting sites). I recommend you conduct a designated survey for plover nesting habitat, using the criteria listed in #2 above, to provide valuable future baseline data.
5. Relationship between habitat quality and predation. The revised Great Divide RMP should continue to emphasize providing plover nesting habitat that meets the criteria listed in #2 above. The specific relationship between habitat quality and susceptibility to predation (nests, chicks, and/or adults) is unknown for the Mountain Plover. Plovers nesting in native habitats such as prairie dog colonies in Montana experienced high nesting success for a ground-nesting bird; nesting success varied temporally within the nesting season and was negatively impacted by rain events, but neither of these relates to habitat quality (Dinsmore 2001). No other nesting studies, nor any brood or age-specific survival study, have examined the relationship between habitat and susceptibility to predation. The potential impacts of human development projects such as drill pads and additional roads on plovers are many, and could potentially alter the predator regime such that plovers are negatively impacted. Such development could enhance habitat for several potential plover predators (several birds of prey, Black-billed Magpie and other corvids, and several species of mammals), thus negatively impacting plovers. If the revised Great Divide RMP includes provisions for providing less than optimal plover nesting habitat, then managers may indirectly promote plover exposure to additional predators that favor these human-disturbed areas.
6. Existing Bureau of Land Management documents (e.g., existing Great Divide RMP and the Seminole Road Coalbed Methane EA) specifically address possible impacts and subsequent mitigation measures for Mountain Plovers. After a careful review of these documents (especially U. S. Department of Interior 2001, Appendix E), I recommend the following for consideration in the revised Great Divide RMP:

- a. Annual surveys should be conducted during the period 15 April to 15 June; the earlier start date is needed to better detect plovers before they begin nesting.
- b. Activity delay times of 37 days (active nest) and 7 days (brood) seem adequate given this species nesting cycle and the precocial nature of the chicks.
- c. Important plover nesting areas should receive full protection from development activities. I am concerned that existing documents permit plover nesting and/or brood areas to be impacted/destroyed, without a provision promoting their long-term persistence. Some quality nesting/brood-rearing sites may not be used every year, and in years when they are not used they can be legally and negatively impacted without regard to their overall importance to nesting plovers. The emphasis on plover use areas, defined on an annual basis, is simply too weak to favor the long-term persistence of plovers in this area. I recommend that you define 2 levels of plover use: 1) areas of plover concentration, which I define as sites used by plovers ≥ 3 years in a 5-year period, or sites with ≥ 5 pairs of plovers in any given year, and 2) sites that are used infrequently, which includes sites that are occupied by plovers < 3 years out of any 5-year period, and those sites with < 5 pairs in any year. The former sites should receive full protection, perhaps in the form of an Area of Critical Environmental Concern (ACEC) designation, while the latter sites could be developed, with no surface occupancy (NSO) restrictions, if absolutely necessary. I recommend a no surface occupancy buffer zone of a minimum of 0.25 miles around such sites.
- d. I strongly recommend that, whenever possible, you seek to avoid surface disturbance during mining operations. No surface occupancy drilling is an alternative to surface disturbance, and would ameliorate some of the negative effects of drilling operations on Mountain Plovers.
- e. Areas with white-tailed prairie dogs should be withdrawn from surface development and should only be developed under no surface occupancy

drilling. I recommend the same no surface occupancy buffer zone (a minimum of 0.25 miles) around these areas. Areas with prairie dogs represent a high quality habitat for nesting plovers (Olsen and Edge 1985, Dinsmore 2001) and should receive special protection. I also recommend you consider enhancing prairie dog numbers within this region, specifically to provide high quality plover nesting habitat.

- f. Future construction/site preparation should include measures to minimize or avoid building structures (fence posts, phone poles, etc.) that can serve as avian predator perches.
7. Long-term effects assessment. Predicting the possible long-term effects of Great Divide RMP management actions to Mountain Plovers poses many challenges. Any such assessment will require detailed information on annual surveys and yearly estimates of nesting and fledging success. Using these yearly estimates, long-term patterns exhibited by plovers can be formally assessed using trend analyses on, for example, the number of breeding plovers. Such analyses will only be meaningful over a "long" time period, preferably >5 years. At this time, I see no strong need for a formal meta-analysis because baseline data are simply not available for key life history components of Mountain Plovers such as brood survival and geographic variation in age-specific annual survival. I do, however, support such an analysis at present if it is used in an exploratory fashion to suggest areas where information is lacking or where future efforts should be expended. When detailed baseline information eventually becomes available, a formal meta-analysis on annual survival and/or annual reproductive success would be useful. Modeling exercises to assess the possible impacts of extreme weather events on local plover numbers are not recommended at this time because baseline data necessary for such models are not yet available.
8. Mitigation. Plover nesting areas will continue to require some protection from disturbance during the nesting season, and in no way do I endorse mineral development in plover concentration areas within the Great Divide Resource Management Area. Plovers frequently nest near areas of human disturbance, including roadways, drill pads, and other forms of human disturbance (Knopf

1996, Ellison-Manning and White 2001a), although their success in these areas relative to other native habitats has not been evaluated. In areas of plover concentration (see definition in #6c), I recommend that there be no development; these sites should be off-limits to ensure that quality nesting areas receive long-term protection. At other sites (e.g., those used infrequently by plovers; see definition in #6c), the following mitigation measures should be followed. Plover nesting areas should be protected by a 100m buffer during the nesting season (10 April to 10 July), a 0.25 mi construction buffer should be placed on all nesting sites, the 200m active nest buffer, specific restrictions on construction of possible avian predator perches, and road and driving restrictions, as outlined in the Decision of Record (U. S. Department of the Interior 2001). Mitigation should also specifically include provisions for enhancing other nesting habitats used by Mountain Plovers, including prairie dog colonies.

After reviewing all available information on Mountain Plovers that is pertinent to the Great Divide RMP, I offer the following 3 recommendations for future monitoring and information needs:

- a. Any monitoring of Mountain Plovers should be conducted using accepted survey methodology. Survey design considerations should include the random selection of areas to be surveyed, surveys that minimize roadside bias (e.g., do not conduct only road-based surveys), incorporation of distance sampling theory to estimate plover densities and trends (Buckland et al. 2001), and conducting surveys during the pre-nesting period (mid-April to mid-June) when plovers are most visible. Surveys should also stress obtaining adequate sample sizes for analyses, although the small number of plovers may limit this goal.
- b. Adaptive resource management. This strategy should be incorporated into the management of plovers in the Great Divide Resource Management Area as follows. First, reliable estimates of plover numbers in this area are needed. Second, based upon these estimates and the results of nest and brood monitoring, managers will have the flexibility to adjust their activities to meet changes in the

- status of plovers in this area. Third, managers will need to specifically monitor plover response to management activities so that management can be "adaptive".
- c. In my opinion, critical information needs include a rigorous estimate of the number of Mountain Plovers nesting in the Great Divide Resource Management Area, an understanding of how productivity varies between disturbed and undisturbed sites, and how human activities specifically impact plover nesting success and chick survival in areas of mineral development.

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