

APPENDIX B

SCOPING LETTERS

APPENDIX B SCOPING LETTERS

Table B-1 includes an alphabetical directory of commentors by last name. An identification number was assigned to your comment letter and is stamped on the letter. An identification number was assigned to each comment letter and is located in the upper left corner. Comments received after the close of the scoping period (November 26, 2003) are included in Appendix C.

Table B-1. Alphabetical Directory

Commentor Last Name	Commentor First Name	Agency/Organization Name	Comment Letter Date	Comment Letter Number
		W&M Thoman Ranches, LLC	11/26/2003	KSL-0029
Arthur	Gregg	Wyoming Game and Fish Department	8/25/2003	KSL-0009
Bennion	Samuel & Patricia		11/18/2003	KSL-0018 KSL-0042
Bettas	Nick & DJ	Pittsburg & Midway Mine	11/24/2003	KSL-0033
Boomgaarden	Lynne	Wyoming State Lands and Investments	8/25/2003	KSL-0008
Bown	Edward		11/24/2003	KSL-0021 KSL-0054
Britton	Scott	General Chemical Company	11/24/2003	KSL-0046
Burkhardt	Wayne	Ranges West	11/25/2003	KSL-0048 KSL-0049
Clayson	Tom	Anadarko Petroleum Corporation	8/11/2003	KSL-0005
Corra	John	Wyoming Department of Environmental Quality	8/20/2003	KSL-0007
Dorsey	Lloyd	Greater Yellowstone Coalition	11/25/2003	KSL-0034
Etchepare	John	Wyoming Department of Agriculture	8/29/2003	KSL-0013
Fischer	William		11/25/2003	KSL-0030
Fruechte	Mark		11/25/2003	KSL-0036
Greene	Robert	Citizen & Kemmerer City Council	11/22/2003	KSL-0035
Hoffman	Kelly		11/21/2003	KSL-0044
Howell	Liz	Wyoming Wilderness Association	11/6/2003	KSL-0015
Huber	Dave		8/15/2002	KSL-0017
Jensen	Paula & Michael	Southern Wyoming Dirt Riders	11/18/2003	KSL-0027

Commentor Last Name	Commentor First Name	Agency/Organization Name	Comment Letter Date	Comment Letter Number
Kohout	Michael		11/26/2003	KSL-0038
Kominsky	Dan		11/25/2003	KSL-0026
Krall	Matthew		11/26/2003	KSL-0031
Krall	Phillip		11/26/2003	KSL-0037
Kratz	Todd	Chevron U.S.A. Inc.	11/24/2003	KSL-0024
Lance	Ryan	Wyoming Planning Coordinator's Office	9/2/2003	KSL-0011
Larson	Arnold		11/24/2003	KSL-0023
Lindley	Laura	Bjork, Lindley, Danielson, & Baker, P.C.	6/8/2003	KSL-0001 KSL-0053
Linton	Fred & Fern		11/23/2003	KSL-0022
Maxon	Nate		11/24/2003	KSL-0047
Molvar	Erik	Biodiversity Conservation Alliance	8/8/2003	KSL-0012
Niemerski	Matthew	Defenders of Wildlife	8/15/2003	KSL-0006
Pence	Mike	City of Kemmerer	11/26/2003	KSL-0025
Potter	Darla	Wyoming Department of Environmental Quality	7/29/2003	KSL-0003
Raap	Kim	Wyoming Department of State Parks & Cultural Resources	7/29/2003	KSL-0002
Rex	Charles	Rees Land & Livestock Company	11/25/2003	KSL-0054
Smith	Michael	National Trust for Historic Preservation	8/26/2003	KSL-0010
Taliaferro	Bill	Green River LST Company	11/21/2003	KSL-0045
Telford	Laurel		11/21/2003	KSL-0014
Thoman	Mary	Sweetwater County Conservation District	11/26/2003	KSL-0028
Tratnik	Norris & Rosalie		11/24/2003	KSL-0016
Weston	Burdette	Rich Soil Conservation District	11/18/2003	KSL-0020
Weston	Simeon	K-Ron Ranch, LLC	11/24/2003	KSL-0054
Weston	Burdette	JW Ranching Company	11/24/2003	KSL-0054
Weston	Simeon	Diamond-W Ranch Co. Inc.	11/24/2003	KSL-0054
Wolf	Judy	Wyoming Department of State Parks and Cultural Resources	8/3/2003	KSL-0004

BJORK, LINDLEY, DANIELSON & LITTLE, P.C.

ATTORNEYS AT LAW

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[†]Also admitted in Louisiana

June 18, 2003

Bureau of Land Management
Kemmerer Field Office
312 Highway 189 North
Kemmerer, WY 83101

Re: *Kemmerer RMP*

Ladies and Gentlemen:

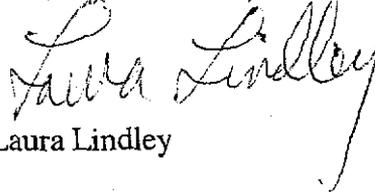
This letter is written in response to the Notice of Intent published in the Federal Register on June 16, 2003 inviting public comments on the issues and planning criteria to be addressed in the Kemmerer RMP which you are undertaking to prepare.

I believe it is critical that the Resource Management Plan make lands within the Field Office available for oil and gas leasing to the maximum extent possible. In addition, that leasing should be accomplished subject only to reasonable stipulations and every effort should be made to limit the application of stipulations which would prohibit or greatly limit opportunities for development of oil and gas from the public lands in the resource area.

Please place my name on the mailing list to receive a copy of the Draft Environmental Impact Statement and RMP. Thank you for your consideration of these comments.

Very truly yours,

BJORK, LINDLEY, DANIELSON & LITTLE, P.C.


Laura Lindley

LL:hkf

2003 JUN 18 09 58 AM
BUREAU OF LAND MANAGEMENT
DENVER, COLORADO

WYOMING

DEPARTMENT OF STATE PARKS & CULTURAL RESOURCES
DIVISION OF STATE PARKS & HISTORIC SITES

at Green
Division Director
State Parks & Historic Sites
301 Central
Warren Building 4th Floor
Cheyenne, WY 82002

(307) 777-6323
AX (307) 777-6005

RECEIVED
BLM KEMMERER F.O.
2003 SEP -5 AM 8:17

July 29, 2003

State Planning Coordinator's Office
Herschler Building, 1E
122 West 25th Street
Cheyenne, WY 82002-0001

Re: Kemmerer Resource Management Plan, OFLP#: 2003-081

Dear Sir or Madam:

One of the key topics listed as a major issue that will be addressed in the Kemmerer Resource Management Plan revision is that of recreation, more specifically Off-Highway Vehicle (OHV) recreation (aka Off-Road Vehicle (ORV) recreation). The Wyoming State Trails Program would like to see more of an emphasis placed on establishing a current inventory of roads and trails that currently reflects the opportunities for ORV recreation in Wyoming. BLM-administered roads and trails that are to be enrolled in the Wyoming ORV Program will need to be clearly identified to ensure that appropriate maintenance and construction can be properly funded and administered. As this type of recreational activity becomes increasingly popular, this inventory will be necessary to facilitate the partnership between the BLM and the State Trails Program and to provide the highest quality experience for Wyoming ORV users. This inventory will also foster the development of a proper enforcement program to ensure that the use is occurring only in designated areas that are assigned by your agency.

The Wyoming State Trails Program is requesting that the planning process addresses these issues. We would like you to provide us with information regarding any mitigation measures that the BLM intends to take to ensure that recreational trail users in will continue to be provided a positive visitation experience. We request that these comments not be ignored. Please keep us informed of any future developments and procedures pertaining to this project.

Thank you for considering our comments.

Sincerely,



Kim Raap
Manager
Wyoming State Trails Program

Dave Freudenthal, *Governor*



Phil Noble, *Director*



The State
of Wyoming

Department of Environmental Quality

Freudenthal, Governor

Herschler Building • 122 West 25th Street • Cheyenne, Wyoming 82002

MIN/OUTREACH	ABANDONED MINES	AIR QUALITY	INDUSTRIAL SITING	LAND QUALITY	SOLID & HAZ. WASTE	WATER QUALITY
(307) 777-7758 FAX 777-3610	(307) 777-6145 FAX 777-6462	(307) 777-7391 FAX 777-5616	(307) 777-7368 FAX 777-6937	(307) 777-7756 FAX 777-5864	(307) 777-7752 FAX 777-5973	(307) 777-7781 FAX 777-5973

July 29, 2003

Through: WY State Planning Coordinator's Office

Mr. Tom Davis
Kemmerer RMP Project Manager
BLM Kemmerer Field Office
312 Hwy 189 North
Kemmerer, WY 83101

RE: BLM Kemmerer Resource Management Plan Revision

RECEIVED
BLM KEMMERER F.O.
2003 SEP -5 AM 8:17

Dear Mr. Davis:

The Air Quality Division of the Wyoming Department of Environmental Quality has reviewed the July 2003 Scoping Statement. As a result of that review the Air Quality Division identified some issues and concerns that should be addressed in the review and modification of the Kemmerer RMP.

- Fire**

The Kemmerer RMP should address where and under what conditions fire should be used as a land management tool and what areas should be identified for full suppression, limited suppression, and no suppression of wildfire. In addition, the BLM should take into account smoke impacts (i.e., public health, nuisance, and visibility impacts) associated with fire, as well as the minimization of fire emissions and smoke impacts to the maximum extent feasible.
- Impacts to Class I Areas**

While the Kemmerer Resource Area does not include any Class I Areas, several Class I Areas lie downwind of the Kemmerer Resource Area. As a result, the RMP should address the air quality and visibility impacts to the Class I Areas based on the RMP alternatives.

Mr. Tom Davis
BLM Kemmerer RMP Revision
Page 2

● **Air Quality Management Objectives and Actions**

The Air Quality Division is cognizant that existing RMPs contain Air Quality Management Actions, which BLM may carry forward into the revised RMP, that imply a certain BLM authority over air quality. The primacy for air quality under the Clean Air Act has been granted to the State of Wyoming and in two appeals of the Fontenelle and Moxa Arch Records of Decision, the BLM conceded that it lacked authority over air quality. As such, the Air Quality Division is submitting the following comments so that the RMP may be revised to eliminate Air Quality Management Actions that are beyond the BLM's authority.

To ensure that the BLM does not imply a certain authority over air quality the phrase "within the scope of the Bureau's authority" should be added to the Air Quality Management Objective and/or Air Quality Management Actions as necessary. For example, Management Objective "...minimize emissions, within the scope of the Bureau's authority, that cause acid rain or degraded visibility." and Management Action "Requirements, within the Bureau's authority, would be applied..."

The authority to limit emissions and/or require emissions controls lies with the State of Wyoming. As a result, all references to "limiting emissions," "covering conveyors," etc. should be removed from Air Quality Management Actions. If the State determines that it is necessary to regulate emissions, it will do so through its State Implementation Plan (SIP) for air quality by promulgating appropriate rule. The Environmental Protection Agency has oversight responsibility during this process and will approve the State of Wyoming SIP for air quality.

Air Quality standards and guidelines are developed and established by the State of Wyoming as required by the Clean Air Act not the BLM. Therefore, any Air Quality Management Action referring to the "development" of air quality standards and guidelines should be deleted entirely from the RMP.

If you should have any questions on the above comments and concerns, please feel free to contact this office.

Sincerely,



Darla J. Potter
Visibility, Smoke Management, & EIS Coordinator
Air Quality Division

cc: Dan Olson, Administrator Air Quality Division
Cara Casten, Air Quality Engineer

2003 SEP - 5 AM 8: 17
RECEIVED
BLM KEMMERER F.O.



RECEIVED

Wyoming Department of State Parks and Cultural Resources
State Historic Preservation Office

2003 AUG -6 P 12:27

GOVERNOR'S
PLANNING OFFICE

David L. Currit, SHPO
1100 Central Avenue
Flett Building, 3rd Floor
Cheyenne, WY 82002
Phone (307) 777-7697
Fax (307) 777-6421

August 3, 2003

Lynn Simons, Director
Wyoming State Clearinghouse
Governor's Planning Office
Herschler Building, 1 East
Cheyenne, WY 82002-0600

RE: Governor's Planning Office Project ID#: 2003-081, NEPA Scoping Notice: BLM Kemmerer Resource Management Plan (RMP) Revision. Lincoln, Sweetwater, and Uinta Counties. (SHPO File # 0803RDY001)

Dear Director Simons:

We have reviewed the above Scoping Notice, as requested by your office's transmittal letter of July 11, 2003, with a comments due date of August 25, 2003. Thank you for this opportunity to comment.

Consideration and management of cultural resources for Bureau of Land Management activities and lands is substantially accomplished in accord with Sections 106 (36CFR800) and 110 of the National Historic Preservation Act, and the BLM National Cultural Programmatic Agreement as modified by the Wyoming State Protocol. These call for survey, evaluation, and protection of significant historic and archaeological properties that could potentially be affected by proposed BLM actions -- in this case, specific to the Kemmerer Revised RMP. We do have a few comments to offer at this time (see below), but we will likely provide further and more in depth comments when we receive the Draft RMP.

Specifically, we expect to see in the Kemmerer Revised RMP special attention given by the BLM to the protection -- particularly viewshed protection -- of historically significant transportation corridors (e.g., trails, roads, railroads). Generally, we expect to see an in depth overview and situational analysis of Kemmerer BLM managed cultural resources. A critical part of this analysis should be a discussion, supported by appropriate comparison charts, that indicates how well the Kemmerer BLM achieved the cultural resources program goals of the current (1986) RMP, relative to new goals (if any) that will be established by this revision, and what remains unchanged and/or unaccomplished from the 1986 RMP.

Please refer to the above SHPO project control number (0803RDY001) in future communications dealing with this action. If you have questions please do not hesitate to contact Robert York at 307-742-3054, or me at 307-777-6311.

Sincerely,

Judy K. Wolf
Review and Compliance Program Manager

507

RECEIVED
BLM KEMMERER F.O.
2003 SEP -5 AM 8:17



August 11, 2003

Bureau of Land Management
Kemmerer Field Office
312 Highway 189
Kemmerer, Wyoming 83101

BLM RECEIVED
KEMMERER F.O.
2003 AUG 14 AM 8:42

RE: Kemmerer Resource Management Plan Revision Scoping

Anadarko Petroleum Corporation (APC) appreciates the opportunity to respond to the notice to prepare an Environmental Impact Statement (EIS) for the Kemmerer Resource Management Plan (RMP). APC and its subsidiaries have considerable interests in the proposed analysis area that may be affected by the outcome of this planning effort. Following are the issues and comments that we have identified. APC respectfully requests that these issues and concerns be fully addressed in the EIS.

Lands in the Kemmerer Field Office management area are significant in their potential for development of oil and gas resources. In addition, oil and gas activities are highly important factors in local and Wyoming state economies. BLM must ensure that a thorough examination of the opportunities for future development of oil and gas occurs and that any restrictions placed on development are fully warranted.

Fluid Mineral Planning:

BLM's Supplemental Program Guidance (SPG) for Fluid Minerals (BLM Manual 1624) requires that BLM give consideration to mineral resources in the planning process. In addition, it specifies that mineral resources are on a level equal with all other resource values. Equity is as important in selecting the planning criteria as it is in the consideration of alternatives, addressing the effects in environmental consequence analyses and in determinations used to select a preferred alternative. BLM should ensure that oil and gas resources are represented on equal footing with other resources throughout the planning process.

Use of Reasonable Development Scenario (RFD) in Impact Analysis:

APC believes that BLM should consider using "net acreage of disturbance" by oil and gas operations as the most appropriate impact assessment factor in its analysis. APC believe that use of a reasonably foreseeable development (RFD) scenario with a total number of wells does not provide an accurate basis for the assessment of potential impacts. Use of net acreage disturbance does and accounts for the modern, on-the-ground realities associated with oil and gas activities.

As an example, utilization of the total anticipated number of wells, as a measurement standard does not take into consideration the reclamation of plugged and abandoned wells, which is conducted in accordance with applicable environmental regulations, returning the area to its natural state. These non-producing wells are sealed off or plugged to prevent impacts on the environment. The drill site and access route are re-contoured, reclaimed and replanted as required. BLM should take into consideration the actual surface conditions associated with development by analyzing a net effect of surface activities and then defining an acceptable range of allowable surface disturbance. In this manner, BLM would not bind itself to a projected "number of wells allowed" but rather would regulate the "net effect" on disturbance to the surface, providing incentive for environmentally sound and timely reclamation and surface management.

Furthermore, BLM should rely upon historic figures for determining average acreage disturbance per well location or mile of linear facilities.

Fluid Mineral Analysis:

The following should be examined in the planning effort:

- The following should be examined in the planning effort:
- Management options that would protect or enhance opportunities to explore for and develop oil and gas resources;
- Application of reasonable mitigation measures (least restrictive that is necessary) designed to limit or avoid demonstrated impacts to surface resources access;
- Allowance for application of new information, technology or economic conditions on lands with unknown, low and moderate oil and gas potential. Management of these lands should be in a manner that permits future exploration and production activities, should the new information, technology or economic conditions support such activities;
- Effects on opportunities to lease explore and develop oil and gas resources resulting from restrictive surface management decisions;
- Limiting imposition of stipulations to remaining effects that may be present after application of standard lease terms and conditions. For example, under the 43 CFR 3101 regulations, a two-month occupancy restriction can be imposed under standard terms and conditions of a lease to protect critical habitat. Therefore, if the typical restriction used to protect calving areas is two months, no stipulation is needed because the BLM has the authority to restrict an operator, if necessary, to protect such areas under the standard terms of the lease. A lease notice apprising the lessee that calving grounds exist on the lease should be sufficient;
- The effect of surface resource management decisions on future subsurface development opportunities and activities. Reduced access to public lands for purposes of exploring for and producing oil and gas resources should be considered a separate issue from economic impacts;
- Socio-economic benefits of oil and gas development activities indicating the cost of administering the mineral program and industry's financial contributions to Wyoming schools, local, state and federal treasuries; and
- BLM must not make assumptions that industry can directional drill in any situation. Directional drilling is most commonly used for field development and not exploration activities. Directional drilling is expensive and difficult. Consideration of directional drilling as a mitigation tool is inappropriate for planning level analyses. Informational needs such as, increased costs of drilling and production, effect of increased costs on resource recovery, technical limitations (interplay of well depth, well spacing and target zones), technical abilities (e.g. extent of lateral distances achievable), and risks (both economic and well integrity) are only available at the development proposal stage. Any discussion of directional drilling should be limited to a discussion of the assessment factors that may be used when addressing directional drilling alternatives in project level documents.

Additionally, an account of the costs that stipulations, mitigating measures and restrictive policies impose on industry projects should be included, along with the concomitant economic impact to the state of Wyoming and local governments of reduced revenues. For instance, seasonal restrictions in SW Wyoming may have already impacted the market for many of the services (dirt construction, wireline services, fracing services, etc.) that the oil and gas industry relies upon. Such an impact is likely to occur due to the narrow "window of opportunity" for drilling created by seasonal restrictions. While demand for such services could be equally spread throughout a year, widespread seasonal restrictions create an artificial increased demand during the window and a resultant increase in the price to obtain these services during that time period. Other aspects to consider could include; impacts on employment, delays in bringing production on line, and added costs for facilities.

Standards and Guidelines for Oil and Gas

Section 1502 of the Council on Environmental Quality Regulations on the National Environmental Policy Act directs that mitigation measures be identified in an EIS which may be employed to reduce or entirely avoid impacts to other resource values. While this could be construed to mean that only lease stipulations need to be identified, we believe it is necessary to discuss other types of mitigation which may be utilized at the time of oil and gas drilling, both exploration and development, such as area-wide standards and guidelines for oil and gas operations. This information is necessary because it illustrates that with appropriate mitigation, oil and gas activities are compatible with other resource uses, including those in sensitive areas.

Interim development during the planning process

According to IM-2001-191:

"When a RMP is being amended or revised, BLM will continue to process site-specific permits, sundry notices, and related authorizations on existing leases in an expeditious manner while ensuring compliance with NEPA and other laws, regulations, and policies.

"The BLM has the authority and discretion to condition its approval of proposed actions with reasonable measures (including relocation, redesign or delays in the proposed action) so as to reduce the effect of actions on other resource values and uses, consistent with the lease rights granted (see 43 CFR 3101.12). That is, BLM can use its authority and discretion to condition its approval of proposed actions to not constrain alternatives under consideration in a RMP revision or amendment consistent with the lease rights granted. Actions that may appear to reduce a lessee's right to reasonably develop a lease should be cleared through the State Director and Regional Solicitor's Office."

During ongoing efforts to amend the RMP, BLM should use its authority and discretion appropriately to avoid undue delays in permitting oil and gas activities.

Additionally, APC requests that the planning effort for the Kemmerer RMP not result in a disallowance for interim drilling in instances where the existing RFD "number of wells" would be exceeded. For example, if a proposal is submitted for 300 wells and the RMP will still allow for 150 additional wells, then the Kemmerer FO should approve 150 wells rather than denying the whole project.

Monitoring and Lease Stipulation Effectiveness and Limits on Development

The revised RMP must assure that BLM will have a program in place to monitor the effectiveness of stipulations and conditions of approval (COA). Is each stipulation or COA doing the job it was

intended to do? Do they go too far or not far enough? Have anticipated impacts occurred at the level analyzed? Since planning is so times consuming, it is extremely important for BLM to be able to determine, well in advance, if predicted impacts associated with oil and gas development are close to being met.

In a similar fashion, other resource (i.e. grazing, mining, climate, vegetation management, wildlife management, air/water quality etc.) monitoring must occur simultaneously to ensure that sufficient information is available to determine causation of impacts. BLM must be clear in the RMP of its monitoring objectives, criteria and timeframes, and BLM's responsibility for such monitoring efforts.

Additionally, BLM employs any number of parameters or limits on development to make comparison of impacts among any number of alternatives analyzed. The RMP/EIS should make it clear that these analysis parameters (i.e. well numbers, total long term acreage disturbances, etc.) are merely tools for comparison of alternatives and not strict limits on development. To be more precise, once monitoring indicates that those limits will soon be reached it is a signal to BLM that additional analysis and possible revisions to the RMP need to be considered. In any case, development will be allowed to occur during revisions.

By employing the above principles BLM can have ample opportunity to initiate new planning efforts, if needed, and determine the effectiveness of mitigation measures while ensuring long term continuance and certainty of oil and gas development in accordance with planning decisions.

Valid Existing Rights

Valid existing lease rights cannot be changed by a new plan. Voluntary compliance to the new plan may be sought from lessees if activities are initiated. Nevertheless, BLM needs to specify in the planning documents if and how valid existing lease rights could be impacted by the new leasing decisions. Specifically, potential conditions of approval for operations and other changes should be identified.

Leasing vs. Recreation Opportunities

It is important to recognize that oil and gas exploration and development activities are fully compatible with semi-primitive recreational values and opportunities. The oil and gas industry has demonstrated repeatedly its ability to operate in sensitive areas with minimum effects on other resource values.

A decision to further remove lands from the constantly diminishing multiple-use land base would have a detrimental impact on local economic opportunities and welfare. Consequently, APC would necessarily strongly object to a no-lease or no-surface occupancy stipulation decision for areas allocated to semi-primitive recreation.

Geophysical Exploration

BLM should strongly promote geophysical activities throughout the planning area. Geophysical operations are perhaps the most adaptable and environmentally friendly exploration activity. Past experience on BLM lands have proven that geophysical activities can be adapted to protect wilderness values and the most sensitive wildlife values. Seismic exploration is of great value in deciding where not to drill thereby eliminating unnecessary surface disturbances associated with drilling. There is simply no reason to disallow the benefits that can be obtained from conducting geophysical activities across the entire planning area.

Coal Bed Methane Water Disposal

BLM should ensure that all possible methods for handling coal bed methane produced water are addressed in the RMP. A toolbox of methods for dealing with produced waters should be included; such as off-channel reservoirs, closed basins, surface discharge, treatment with surface discharge and a clear recognition of the role of the Wyoming Department of Environmental Quality.

Visual Resource Management

BLM states that it is their responsibility to ensure that the scenic values of public lands are considered before allowing uses that may have negative visual impacts. While Anadarko understands BLM's responsibility for visual resource management (VRM) we are concerned that some entities are attempting to use VRM as a tool to preclude other resource development either at the planning stage or when reviewing project proposals. BLM should make it clear that visual resource management decisions are on an equal footing with other resource considerations.

Management decisions for the various Visual Resource Management inventory classification identified in the RMP must give consideration to other factors such as recreational user days, mineral development potential, management and presence of other existing resource uses. VRM is a resource allocation process that should occur in concert with and not contrary to allowances for other resource uses.

Energy Impact Analysis for All Alternatives

The National Energy Policy and Executive Order 13211 directs federal agencies to fully consider potential adverse impacts of their decisions on the President's National Energy Policy and issue a statement of adverse energy impact. In order to fully disclose the impacts of various EIS alternatives BLM should prepare a "Statement of Adverse Energy Impact" for each alternative analyzed.

Private Lands

BLM needs to ensure the rights of private land owners are adequately accounted for in the RMP/EIS. This is a significant issue that must be addressed at the planning stage. While BLM does have the mandate through NEPA to analyze for cumulative effects of proposed actions, it does not give the agency authority to manage private property. For instance, cultural and historic resources are the property of landowners. Often, projects on BLM lands are interrelated and/or interconnected with activities on private lands. This is especially true for development in checkerboard land area. BLM should not attempt to gain regulatory authority on private lands through a strained application of the NEPA process. BLM's responsibility is to analyze the potential impact of the proposed activity on private land; however, this does not mean that BLM can or should dictate what activities are conducted on private lands.

BLM must also recognize the differences between management of recognized threatened and endangered species under the Endangered Species Act (ESA) and sensitive species. APC recognizes BLM's and the FWS's authority under the ESA to require clearance surveys for federal surface and where private surface/federal minerals exist, however, that authority does not extend to sensitive species. Any discussion of potential stipulations regarding non-ESA species must recognize BLM's lack of authority to enforce the stipulations on private property. Although APC will work with landowners to ensure that its activities are conducted in an environmentally sensitive manner, should a landowner insist on allowing activity to occur that would affect habitat of non-ESA species BLM must concur. Nor does BLM have the authority to condition approval of a permit by requiring a permittee to conduct non-ESA wildlife studies/surveys on private property.

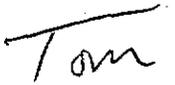
Page 6
August 11, 2003

Any requests for such surveys by the BLM must recognize that the landowner has the ultimate authority to agree or not to such surveys.

Historic Trails

The existing RMP decisions regarding protection measures for National Historic Trails should remain in effect until such time that Wyoming Historic Trail Management Plan is completed, subject to public review, and amended into the new RMP.

Sincerely,


Tom Clayson

**Defenders of Wildlife • The Wilderness Society • Wyoming Outdoor Council
Wyoming Wilderness Association • Upper Green River Valley Coalition
American Lands Alliance**

August 15, 2003

Jeffrey Rawson
Field Manager
312 Highway 189 N.
Kemmerer, WY 83101-9711

RE: Kemmerer RMP Revision

RECEIVED
BLM KEMMERER F.O.
2003 AUG 18 AM 9:29

Dear Mr. Rawson,

On behalf of the above organizations I am writing to respond to BLM's "call for coal and other resource data" by providing information and citations to materials that should be addressed in this planning process.

In this letter we first raise the issues that we believe must be considered in this document, and second list the types of information that should be considered.

We believe the following items should be addressed by the RMP Revision:

- **Consider Connected, Cumulative, and Similar Actions**

In determining the scope of the RMP EIS, BLM must consider "connected actions," "cumulative actions," and "similar actions." 40 C.F.R. § 1508.25. Connected actions are actions that are "closely related" to the RMP. Closely related actions include *any reasonably foreseeable* oil and gas development projects that would not occur "but for" authorization provided in the RMP. Examples of oil and gas development actions/projects that would not occur but for authorization in the RMP include leasing, exploration projects, and full-field development projects. Thus, the EIS should address each of these types of connected actions/projects in detail, and given the significant amount of historical data that exists for these types of actions/projects they are reasonably foreseeable and detailed consideration should be possible.

Similar actions include authorizations for oil and gas development occurring on State and private lands in or adjacent to the geographic area of the RMP, Forest Service plans and other analyses authorizing oil and gas activities on nearby lands administered by the Forest Service, and RMPs for adjacent BLM Field Offices/Districts.

- **The RMP Must Insure that the Policies and Goals Set Forth in the National Environmental Policy Act are Met**

BLM must bear in mind that the “primary purpose” of an EIS is to “insure that the policies and goals defined in [NEPA] are infused into the ongoing programs and actions of the Federal Government.”

- **Identify the Purpose and Need**

The BLM NEPA Handbook requires BLM to identify the purpose and need of the project being analyzed. BLM Handbook H-1790-1.V.B.e. While the purposes and needs for the RMP are broadly defined by the FLPMA and other law, BLM should give specific attention to the purposes and needs for oil and gas related activities that will be analyzed in the EIS.

- **Identify Future Desired Outcomes and Conditions**

BLM’s Land Use Planning Handbook requires BLM to identify desired outcomes or desired future conditions resulting from implementation of the RMP. BLM Handbook H-1601-1.II.B.1. BLM should determine what the desired outcome(s) from oil and gas leasing, exploration, and development activities are, particularly with reference to the desired outcome(s) for endangered species protection, migratory wildlife, non-migratory wildlife, prevention of habitat fragmentation, protecting the naturalness of landscapes and their aesthetic appeal, the prevention of unnecessary or undue degradation of public lands, the prevention of air and water pollution, and the protection of surface owner rights on split-estate lands. Mechanisms for resolving conflicts between the desired outcomes for oil and gas development relative to other resources should be identified in the EIS and adopted in the RMP. The requirement for BLM to prevent unnecessary or undue degradation of the public lands should be paramount in such balancing.

- **The RMP EIS Must Set Forth a Reasonable Range of Alternatives**

The range of alternatives is “the heart of the environmental impact statement.” 40 C.F.R. § 1502.14. Accordingly, the NEPA requires that BLM, in the instant EIS:

- (1) present the impacts of the proposal and alternatives in comparative form, in order to sharply define the issues and provide a clear basis for choice among the options by the decision-maker and the public;
- (2) rigorously explore and objectively evaluate *all reasonable alternatives*;
- (3) devote substantial treatment to each alternative;
- (4) include reasonable alternatives not within the jurisdiction of the lead agency; and

- (5) include *appropriate mitigation measures* not already included in the proposed action or alternatives.

40 C.F.R. §§ 1502.14; 1502.14(a), (b), (c) and (f) (emphasis added).

This binding (“shall”) authority makes it imperative that BLM include, and thoroughly analyze, a *conservation alternative*, including the provisions set forth in these comments, in the RMP EIS. The underlying principles of the alternative are reasonable and contain appropriate mitigation measures. Therefore, BLM *must* devote substantial treatment to and a rigorous analysis of the alternative that seeks to conserve Wyoming’s great heritage.

- **Gather Necessary Information and Disclose Where Information is Lacking**

It is rarely possible for the BLM (or any other Federal agency) to obtain perfect amounts of information. BLM must not allow this fact to stymie environmentally informed decision-making by BLM. CEQ regulations essentially establish a presumption in favor of obtaining information that is essential to reasoned decision-making. *See* 40 C.F.R. § 1502.22. *See also* BLM Handbook H-1790-1.III.A.2.d.

- **Interim Actions**

The National Environmental Policy (NEPA) limits the actions an agency may take during the NEPA process. Specifically, NEPA requires that,

Until an agency issues a record of decision . . . no action concerning the proposal shall be taken which would: (1) Have an adverse environmental impact; or (2) limit the choice of reasonable alternatives. 40 C.F.R. § 1506.1(a)(1)-(2).

This prohibition strictly applies when the interim project will prejudice the ultimate decision of the program. 40 C.F.R. § 1506.1(c)(3). Interim action prejudices the ultimate decision on the program when it tends to determine subsequent development or limit alternatives. 40 C.F.R. § 1506.1(c)(3).

- **Require Ongoing and Consistent Monitoring**

Monitoring of RMP implementation and the impacts resulting from plan implementation are crucial. A number of legal requirements apply to plan monitoring, and they should be carefully adhered to. *See, e.g.*, 43 C.F.R. §§ 1610.4-9, 1610.5-3; BLM Handbook H-1601-1.IV-VII. Likewise, the RMP should make provision for the effective enforcement of its provisions. It is worth noting that the standards and requirements developed in an RMP are mandatory and must be implemented, and not just when site-specific projects are pursued. *See Southern Utah Wilderness Alliance v. Norton*, 301 F.3d 1217 (10th Cir. 2002).

In view of these provisions the RMP EIS must include precise plans to monitor resources for the life of this RMP as well as plans to ensure that the monitoring is completed in a timely and thorough fashion.

- **Include a Wide-array of mitigation measures**

Mitigation of impacts to fish and wildlife resources is assuming ever-increasing importance in project planning, especially as the rate of potentially damaging development across our public lands increases. In view of this increasing importance, and combined with NEPA's mandate to include *appropriate mitigation measures*, discussion of mitigation must have a *prominent place* and must be a *major part* of the RMP EIS assessment process. 40 C.F.R. §§ 1502.14(f); 1501.16(h); 1505.2(c); and 1505.3.¹ Specifically, the CEQ regulations interpreting NEPA require that the EIS identify the "means to mitigate adverse environmental impacts," 40 C.F.R. § 1502.16(h), and "include appropriate mitigation measures already included in the proposed action or alternatives." 40 C.F.R. § 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 C.F.R. § 1508.20.

- **Insure Adherence with International Principles and Law and Utilize Current Ecological Data**

NEPA requires BLM to make a number of considerations that we specifically urge BLM not to overlook. NEPA requires the BLM to "recognize the worldwide and long-range character of environmental problems and thus support international efforts to prevent declines in the world environment," to "insure that presently unquantified environmental amenities and values" are given consideration," and "initiate and utilize ecological information in the planning and development of resource-oriented projects." 42 U.S.C. § 4332, 40 C.F.R. § 1507.2. *See also* BLM Handbook H-1790-1.V. B.2.a.(3).

Thus, in revising this RMP, BLM should consider, analyze, and wherever appropriate facilitate, international efforts to prevent environmental decline. These include a number of international agreements and treaties for resource protection, such as United Nations biosphere reserves, migratory bird treaties, the Convention on International Trade in Endangered Species, and international efforts related to biological diversity preservation, among others.

- **In Managing the Public Land the BLM Shall Take Any Action Necessary to Prevent the Unnecessary or Undue Degradation of the Lands As Required by FLPMA**

¹ In the regard we would like to note that the BLM must consider mitigation opportunities *throughout* the RMP EIS, not just in the oil and gas section of the analysis.

This provision from the FLPMA is a mandatory requirement applicable to all resource uses and decisions affecting BLM lands. 43 U.S.C. § 1732(b). Consequently, it must serve as the bedrock for all analyses in the EIS, and activities undertaken pursuant to the RMP. It is crucial to recognize that unnecessary *or* undue degradation must be prevented; the RMP must provide that *both* prongs of this standard are met. Clearly, the BLM bears a heavy responsibility before it can authorize activities that may degrade the public lands.

We urge BLM not to define “unnecessary or undue degradation” by default, in a negative fashion. In the context of oil and gas development, we specifically recommend that BLM reject the position that because regulations provide that an oil and gas lease conveys the right to “use so much of the leased lands as is necessary to explore for, drill for . . . and dispose of all of the leased resource . . .” essentially anything an oil and gas lessee proposes to do to develop a lease is “necessary” or “due” and therefore any resulting degradation of the public lands is not “unnecessary” or “undue.” See 43 C.F.R. § 3101.1-2 (but also providing for substantial retained discretion in BLM to regulate oil and gas development despite issuance of the lease). Instead, we urge BLM to require, in a direct and positive fashion, that oil and gas development not cause unnecessary or undue degradation, and to ensure that this is the case. The confusing, circuitous approach of defining unnecessary or undue degradation by default leads, for example, to an improper failure to require directional and horizontal drilling technologies, which may not be a *lessee’s* first choice, but which will still allow development of a leasehold but with far less degradation of the public lands, which is what *BLM* must concern itself with. Given the direct, unambiguous command from Congress to do whatever is necessary to prevent unnecessary *or* undue degradation, the RMP should define, and prevent, unnecessary *or* undue degradation in an equally direct, positive fashion.

- **The Requirement To Manage For Multiple Use And Sustained Yield Has Substantive Components That Must Be Adhered To**

Under FLPMA, land use plans for public lands are to “use and observe” multiple use and sustained yield principles, give priority to designation and protection of areas of critical environmental concern, and provide for compliance with pollution control laws, among other things. 43 U.S.C. § 1712(c). See also 43 U.S.C. § 1711(a); BLM Handbook H-1601-1. Likewise, specific management actions must be done pursuant to multiple use and sustained yield principles. 43 U.S.C. § 1732(a). These requirements must be borne in mind as the RMP is developed.

The definition of multiple use in FLPMA is long, but key provisions include the following: (1) Public lands and their resource values must be managed so that they “best meet the present and future needs of the American people;” (2) It is appropriate that some land be used “for less than all of the resources;” and (3) There must be harmonious and coordinated resource management that is done “without permanent impairment of the productivity of the land and the quality of the environment with consideration being given to the relative values of the resources and not necessarily to

the combination of uses that will give the greatest economic return or *greatest unit output.*" 43 U.S.C. § 1702(c). Sustained yield as defined in FLPMA can be achieved either by "high-level annual" or "regular periodic" output of resources, so long as this is accomplished in a way that can be maintained in perpetuity and is consistent with the definition of multiple use. 43 U.S.C. §1702(h). These definitions give substance to the requirement that land use plans and resulting management actions are to use and observe multiple use and sustained yield principles.

Furthermore, since sustained yield can be achieved by providing for regular periodic outputs of renewable resources, we ask that BLM consider this measure of sustained yield rather than just high-level annual measures. Occasional (periodic) outputs of some resources may be a far more sustainable means to manage for multiple use in perpetuity than to attempt to produce the resource annually, especially at a "high-level." For example, drought could well make livestock grazing ill-advised and unsustainable in some years if other resource values such as wildlife are to be protected and maintained.

- **THE BLM MUST "BEST" MEET THE PRESENT AND FUTURE NEEDS OF THE PUBLIC**

The purpose of this planning process must be to produce a plan that "best" meets the present and future needs of the American people. The RMP cannot adequately meet these needs, or generally meet these needs, or largely meet these needs, it must "best" meet them. FLPMA explicitly requires that what is "best" must be viewed from the perspective of the present and the future and all alternatives, including the proposed action, must be designed to satisfy this requirement. What is best now may not meet future needs, and since future needs may be unknown in some respects, the only way to "best" insure that future needs are met is to develop and select alternatives that have a large built in margin of safety. To achieve a large built in margin of safety the plan should emphasize resource and ecosystem protection, which will best ensure that future options are retained. Furthermore, what is "best" must be determined with reference to the needs of the American people as a whole, not a small subset of the American people.

FLPMA explicitly provides that the alternative plans that are developed need not accommodate all resource uses on all lands. This provision has special significance relative to oil and gas leasing, exploration, and development because too often essentially all lands are made available by BLM for oil and gas extraction. Therefore, we request that the alternatives developed for consideration in the EIS include a wide range of options relative to allocating lands in this area to oil and gas extraction activities. Moreover, FLPMA provides that areas where *less than all resource uses* are allowed should be "large enough to provide sufficient latitude for periodic adjustments" to accommodate changing circumstances. 43 U.S.C. §1702(c).

- **CONSIDER THE RELATIVE VALUE OF RESOURCES**

It is also important to emphasize that under FLPMA the alternatives that are developed must consider the *relative* value of the resources involved. By this legally required measure, rare, unique, and sensitive native species have a relative value far in excess of more common or easily replaced public land resources, or resources that can be provided from other lands. The same is true of many other resources, such as cultural and wilderness resources. Accordingly, the alternative plans that are developed, and particularly the preferred alternative, must give special emphasis to protecting and providing for relatively rare resources.

- **Protect the Quality of Scientific, Scenic, Historical, Ecological, Environmental, Air and Atmospheric, and Water Resource, as Well as Archeological Values**

In addition to the requirement to manage for multiple use and sustained yield, Congress declared a policy in FLPMA that public lands are to be “managed in a manner that *will* protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values” as well as to “preserve and protect certain public lands in their natural condition” and provide “food and habitat for fish and wildlife.” 43 U.S.C. §1701(a)(8) (emphasis added). Consequently, Congress has made clear that strong environmental protection must be provided through the planning process for these public assets. The EIS should reflect this Congressional guidance in all alternatives that are developed and considered, especially in the plan that is finally selected.

- **Ensure Compliance With The Clean Water Act**
 - A. **Comply with Both the Spirit and Letter of the State Water Quality Standards**

The Clean Water Act (CWA) establishes many requirements that BLM must adhere to in the RMP. It is imperative that BLM insure that waters on its lands comply with State water quality standards. It is critical to recognize that State water quality standards “serve the purposes” of the CWA, which, among other things, is to “restore and maintain the chemical, physical, and biological integrity of the Nation’s waters” 33 U.S.C. §§ 1313(c)(2)(A), §1251(a). That is, a purpose of water quality standards is to protect aquatic *ecosystems*, and BLM must ensure this comprehensive objective is met by ensuring water quality standards are complied with. Water quality standards are typically composed of numeric standards, narrative standards, designated uses, and an anti-degradation policy. All too often, however, only numeric standards are viewed as “water quality standards.” That narrow view is incorrect. The Supreme Court held in *PUD No. 1 of Jefferson County v. Washington Dep’t of Ecology*, 511 U.S. 700 (1994), that *all* components of water quality standards are enforceable limits. Consequently, the RMP must ensure all components of State water quality standards are met, not just numeric standards.

B. Ensure Compliance with the State's Anti-degradation Policy and Protect Outstanding National Resource Waters

The State's anti-degradation policy is also a critical component of water quality standards. See 40 C.F.R. § 131.12 and applicable State regulations. Of particular significance are Outstanding National Resource waters, where water quality must be maintained and protected. 40 C.F.R. § 131.12(a)(3). Outstanding National Resource waters are waters that "constitute an outstanding National resource, *such as* waters of National and State parks and wildlife refuges *and* waters of exceptional recreational or ecological significance . . ." *Id.* (emphasis added). While States designate Outstanding National Resource waters, the Clean Water Action Plan makes it appropriate for BLM to identify waters that should be fully protected by this designation during its planning process, and to make recommendations to the State and EPA accordingly.

C. Adopt Provisions to Reduce the Number of Impaired Waters

In addition to the anti-degradation policy's protections for waters that *are* meeting water quality standards, where State water quality standards *have not* been achieved despite implementation of point source pollution controls, section 303(d) of the CWA requires a State to develop a list of those still-impaired waters, with a priority ranking, and to set total maximum daily loads (TMDLs) of pollutants for the stream "at a level necessary to implement the applicable water quality standards . . ." 33 U.S.C. §1313(d)(1)(C). Consequently, to the extent waters within the BLM's jurisdiction have been identified as water quality impaired segments, or contribute stream flow to such segments, the RMP should include affirmative steps toward reducing that impaired status, regardless of whether the State has made a specific allocation of pollutant load to BLM lands at the time the RMP is prepared. If any specific load allocation has been made by the State for activities on BLM lands, BLM should obviously ensure that these are complied with.

D. Ensure Full Compliance with Sections 401 and 404

The RMP should ensure full compliance with sections 401 and 404 of the CWA. Section 401 requires State certification of compliance with State water quality standards prior to authorization of certain actions on BLM lands. 33 U.S.C. § 1341. The RMP should fully implement this requirement. Section 404 requires permits before discharges of dredged or fill material can be made into navigable waters, and BLM, through the RMP, should assist the EPA and Army Corps of Engineers with implementation and enforcement of this requirement, which, of course, is a powerful means for the protection of wetlands. See 33 U.S.C. § 1344.

E. Implement the Clean Water Action Plan

An important step toward complying with the CWA can be made by ensuring the RMP adheres to and incorporates elements of the Clean Water Action Plan. The Clean Water Action Plan makes many provisions, but several are particularly relevant to public lands management. The Clean Water Action Plan requires “managing natural resources on a watershed basis”

<http://www.cleanwater.gov/action/c2b.html>. Federal agencies must adopt a policy that “will ensure a watershed approach to federal land and resource management that emphasizes assessing the function and condition of watersheds, incorporating watershed goals in planning, enhancing pollution prevention, monitoring and restoring watersheds, recognizing waters of exceptional value, and expanding collaboration with other agencies, states, tribes, and communities.” *Id.* The BLM is specifically required to provide for “enhanced watershed restoration efforts, including the integration of watershed restoration as a key part of land management planning and program strategies,” among many other requirements. *Id.* The BLM “will increase maintenance of roads and trails and aggressively relocate problem roads and trails to better locations. Where unneeded roads pose threats to water quality they will be obliterated and the land restored.” *Id.* Implicit in this requirement is a prohibition on creating, or permitting, additional roads that could become problem roads, especially where there is no realistic basis given budget and personnel constraints to believe they can be adequately maintained. This requirement, of course, has special relevance relative to oil and gas extraction activities, which are typically characterized by a profusion of roads. Relative to riparian areas, the Clean Water Action Plan requires that BLM “will enhance the quality of streams and riparian zones and accelerate restoration.” *Id.*

E. Implement the Riparian-Wetland Initiative

Similarly, the RMP should make provision for implementing BLM’s Riparian-Wetland Initiative, and seek to implement the specific objectives established in that initiative, particularly the objective of restoring 75% of riparian areas to “proper functioning condition.” The importance of implementing the Clean Water Action Plan and the Riparian-Wetland Initiative will be addressed further, below, in the section on riparian area management.

• **Ensure Compliance With The Clean Air Act**

A. Ensure Compliance with Local, State and Regional Air Quality Standards

The RMP must manage actions on public lands to meet the air quality standards prescribed by Federal, State, and local laws. Meeting the requirements of applicable State implementation plans and ambient air quality standards is a must, and air quality in non-attainment areas must be improved. Protecting air quality should be a priority – not just an afterthought that is done if convenient or “feasible.” The FLPMA requires BLM to consider the relative value of the various resources, and indeed clean air is quickly becoming (along with

undeveloped landscapes) a most valued, yet dwindling resource. Therefore, BLM should take a proactive approach to managing air quality by, among other things: gathering baseline air quality data; setting aggressive standards; requiring any actions on public lands to meet those standards (i.e. no flaring, no two-stroke engine use on public lands, etc); analyzing the cumulative impact of any proposed action with other past, present, and reasonably foreseeable actions; establishing an effective monitoring program; and halting any actions that contribute to air pollution if such monitoring reveals that standards have been exceeded.

B. Address Regional Haze and Viewshed Issues

The EIS should address the issue of regional haze and the destruction of viewsheds caused by haze. Much of the air pollution causing this haze can be attributed to coal-fired power plants and a general increase in the burning of fossil fuels within and beyond the RMP region. Accelerated oil, gas, and coalbed methane development on Federal, State and private lands is another contributor. Part and parcel of reducing regional haze are the requirements in the Clean Air Act for the prevention of significant deterioration of air quality and protection of air quality in various airshed categories, particularly in Class I airsheds applicable to National Parks and wilderness areas. The EIS should address how prevention of significant deterioration requirements can be met, and the RMP should require steps to ensure they are met.

C. Address the Impacts of Oil and Gas Activities on Air Quality

Oil and gas development activities directly contribute to air pollution in several ways, and all should be addressed in the RMP EIS. Oil and gas development activities produce large surface disturbances (pads and roads) and increase vehicle traffic, which contributes to particulate pollution. Oil and gas development activities also contribute to NO_x, SO₂, and volatile organic compound (VOCs) pollution, through activities like flaring, drilling, processing plants, and wellhead compressors and compressor stations, to name a few. The Environmental Protection Agency (EPA) has prepared a report on the oil and gas extraction industry.² Data in the report show the oil and gas extraction industry ranks as follows in terms of creating air pollutants among the 29 industrial sectors EPA had data for in 1997:

<u>Pollutant</u>	<u>Ranking (out of 29)</u>
CO	9 th
NO ₂	3 rd
PM ₁₀	14 th
Particulates	22 nd

² *Profile of the Oil and Gas Extraction Industry*, EPA Office of Compliance, Sector Notebook Project, October 2000.

SO₂
VOC2nd
5th

These data emphasize the importance of regulating air pollution from oil and gas development activities in the RMP area.

As indicated, air pollution problems, perhaps more than any other environmental problem, are not subject to human-created, artificial boundaries. Consequently, the EIS must consider air pollution problems existing in the RMP area (whatever their source) at appropriately broad scales.

- **Ensure Compliance with the Endangered Species Act**

- A. Threatened and Endangered Species**

Several relevant provisions of the ESA that must be considered and complied with in the RMP EIS. Of course, the Section 7 “duty to ensure” listed species are not jeopardized, the duty to ensure critical habitat is not destroyed or adversely modified, and the duty to proactively seek to conserve listed species, apply to all management actions. These requirements can be furthered if the RMP: (1) adopts strong provisions for the protection and conservation of listed species, and (2) adopts measurable objectives for upward population trends for all listed species present or likely to be present in the RMP area. For example, the RMP should comply with and seek to implement any recovery plans and/or biological opinions applicable to listed species in the planning area.

Additionally, there are two other areas of crucial importance relative to the Section 7 “duty to ensure” that BLM must abide by to protect threatened or endangered species. First is the need to engage in careful biological assessments (BA) or other ESA-related analyses to determine if listed species in the RMP area are likely to be adversely affected by the RMP, or by actions carried out under the RMP. It is critical that only credible and reputable scientists conduct BAs and other ESA-related analyses, and BLM must ensure that this is the case by establishing criteria for the quality of BAs and other ESA-related analyses—whether prepared by/for BLM or by/for an applicant—in the RMP. BLM should monitor and enforce these requirements. This is consistent with the requirement to use the best available science established by the ESA. *See, also*, BLM Manual MS-1601-1 at Appendix G pages 5,13-16; BLM Manual MS-6840.2.E.2-5.

Additionally, BLM sometimes has totally merged BAs with accompanying EISs, making ESA compliance totally indistinguishable from NEPA compliance. In our view this is inappropriate because the substantive requirements of the ESA (imposing mandatory duty to conserve listed species) cannot be met by totally merging them with the procedural requirements of NEPA (requiring analysis and disclosure of environmental impacts). The RMP should prohibit this approach and certainly it should not be utilized in the RMP EIS itself.

Second is the need to engage in consultation with the Fish and Wildlife Service and/or the National Marine Fisheries Service (collectively, "the Services") relative to any listed species that occur in RMP area that may be adversely affected by the RMP or by actions authorized by the RMP or contemplated in the RMP. We believe that consultation regarding the RMP is required and should be initiated or reinitiated relative to all listed, proposed, and petitioned species and their critical habitat in the RMP area so as to ensure that the activities authorized or contemplated in the RMP do not jeopardize listed species or result in the destruction or adverse modification of critical habitat. Consultation should be completed and any biological opinion(s) issued by the Services adopted by BLM and made a binding part of the RMP (and activities occurring under it) prior to approval of the RMP. The RMP should establish criteria to ensure that the regulatory requirements for reinitiating consultation are complied with at the earliest possible time so as to ensure species are not jeopardized. See 50 C.F.R. § 402.16 (establishing reinitiation criteria). Moreover, the prohibition on foreclosing reasonable and prudent alternatives, as provided for in section 7(d) of the ESA, must be enforced by the RMP. These recommendations are consistent with BLM's Land Use Planning Handbook and its Special Status Species Manual. See BLM Handbook H-1601-1 at Appendix C Page 5-7; *Id.* at Appendix G; BLM Manual MS-6840.2.E.

In the context of oil and gas leasing, "incremental step" consultation is of particular concern, and the EIS must address this issue. See 50 C.F.R. § 402.14(k); Endangered Species Consultation Handbook at 5-7.³ In our view, the decision in *Conner v. Burford*, 848 F.2d 1441 (9th Cir. 1988) should control all consultation in the context of oil and gas development. We recognize without approving, however, that BLM will likely reject this proposition outside of the Ninth Circuit. Nevertheless, we ask that BLM consider the *rationale* (if not the *holding*) expressed in *Conner* so that listed species receive the maximum amount of protection possible. To that end, BLM must assist the Fish and Wildlife Service in conducting the most fully informed consultation possible, including assisting it to develop "views on the entire action." See 50 C.F.R. § 402.14(k). BLM must fulfill its "continuing obligation to obtain sufficient *data* upon which to base the final biological opinion on the entire action." *Id.* (emphasis added). BLM must assist the Fish and Wildlife Service in developing a fully informed understanding of the effects of the *entire* action, even if incremental step consultation is used. *Id.* The RMP should confirm and reinforce these duties and requirements. Section 7(a) (1) of the ESA requires this.

BLM's planning handbook requires that a result of consultation/conferencing and the planning process itself must be the establishment of "conservation elements" that are presented in the RMP. See BLM Handbook H-1601-1 at Appendix G page 5. It is imperative that these elements take account of all critical life stages (e.g., juveniles vs. adults) and ecological needs (e.g., breeding, feeding, shelter

³ U.S. Fish and Wildlife Service, March 1998.

and cover) for all proposed and listed species, including ensuring protection of important habitat for these species.

B. ESA Candidate and BLM Sensitive Species

BLM must ensure full compliance with BLM Manual MS-6840.06.E (Special Status Species Management). BLM Manual MS-6840.06.E requires that “protection provided by the policy for candidate species shall be used as the minimum level of protection for BLM sensitive species”—that is:

Consistent with existing laws, the BLM shall implement management plans that conserve candidate species and their habitats and shall ensure that actions authorized, funded, or carried out by the BLM do not contribute to the need for the species to become listed.

BLM Manual MS-6840.06.C & .06.E. See BLM Manual MS-6840.06.C (1&3) (discussing BLM’s responsibility to confer with U.S. Fish & Wildlife Service regarding individual species’ needs). BLM Manual MS-6840.06.C.2 imposes a series of additional substantive obligations on the BLM regarding candidate [and therefore sensitive] species management:

2. For candidate species [and sensitive species] where lands administered by the BLM or BLM authorized actions have a significant effect on their status, [the BLM shall] manage the habitat to conserve the species by:
 - a. Ensuring candidate [and BLM sensitive species] are appropriately considered in land use plans (BLM 1610 Planning Manual and Handbook, Appendix C).
 - b. Developing, cooperating with, and implementing range-wide or site-specific management plans, conservation strategies and assessments for candidate [and sensitive] species that include specific habitat and population management objectives designed for conservation, as well as management strategies necessary to meet those objectives.
 - c. Ensuring that BLM activities affecting the habitat of candidate [and sensitive] species are carried out in a manner that is consistent with the objectives for managing those species.
 - d. Monitoring populations and habitats of candidate [and sensitive] species to determine whether management objectives are being met.

Additionally, BLM must ensure compliance with BLM Manual MS-6840.22. Provisions here require BLM to take a broad and proactive approach to special status species management, and in the context of planning require that, "Land use plans shall be sufficiently detailed to identify and resolve significant land use conflicts with special status species without deferring conflict resolution to implementation-level planning."

- **Oil and Gas Overview: Taking A Balanced Approach to Oil and Gas Leasing, Exploration, and Development**

Our groups have an ongoing interest in the management of the public lands and resources in the Upper Green River Valley. As you know, we are especially concerned about the impacts that oil and gas exploration, leasing, and development have on air quality, water quality, and world-class wildlife resource in the Upper Green. Our deep concern over the natural resources in the Upper Green River Valley has been triggered by the major natural gas boom that is occurring today across the majority of the Valley with new wells going in as fast as the BLM can grant approval and industry can secure the drill rigs. This headlong rush to explore the Upper Green River Valley is currently occurring without a careful, comprehensive analysis of the impacts of the oil and gas development and in excess of the reasonable foreseeable development scenario set forth in the outdated RMP. No one knows at what point the region's wildlife populations will be threatened or when airborne pollution from the Valley's booming oil and gas development will significantly degrade the air and water quality of the nearby wilderness areas, or the Green River and its tributaries. With industry having secured approval to drill thousands of new wells in the Valley and new lease rights being sold on a regular basis, the Valley could end up being reduced to a single, dominant use – oil and gas production. In essence, 1.2 million acres of the public lands that link the Greater Yellowstone Ecosystem together could be converted to a single, continuous, industrial sacrifice zone. In light of this push to get the gas out, the following comments will first address our primary concerns related to oil and gas exploration, leasing, and development (including coalbed methane development) and then discuss other resource issues.

As stated above, we understand that there will be energy development in the Upper Green River Valley. But, for public health, environmental, and economic reasons, decision makers *must* consider – and avoid – the significant impacts of large-scale energy development on the Valley's other world-class natural values and local communities. Such impacts include but are not limited to fragmentation of wildlife habitat, marring of scenic vistas, degradation of air quality, alteration of vegetation cover, pollution and draining of water resources, and adverse impacts to surrounding communities and owners of split-estate lands. To address such issues, throughout the revised RMP the BLM must consider – and include – provisions to ensure that the highly profitable oil and gas industry will be held accountable for the full liability of conducting its business in the Upper Green River Valley.

As a preliminary matter, we would like to highlight that oil and gas leasing, exploration, and development cannot occur without BLM first: (1) conducting an in depth analysis of cumulative impacts of the development; (2) fully disclosing these impacts to the public; and (3) avoiding – or fully mitigating - these impacts to protect

other resources in the Valley. This will ensure that the BLM maintains the proper balance to protect those sensitive and irreplaceable parts of the ecosystem in a manner that sustains a normal equilibrium of resource values to the greatest degree possible. Additionally, we would like to clarify that the concerns expressed in this section with regard to oil and gas leasing, exploration, and development also generally apply to other leasable minerals, including but not limited to coalbed methane, tar sands, oil shales, phosphate, and gilsonite. The EIS should make similar analyses relative to these minerals. Additionally, many of the recommendations in this section are in conformance with the report "Land Use Planning and Oil and Gas Leasing on Onshore Federal Lands."⁴ We request that BLM consider and respond to this report as it develops the RMP. In addition we ask that BLM consider the following:

- **Place a Moratorium on Leasing During the RMP Revision Process**
- **Withdraw Environmentally Sensitive Areas from Oil and Gas Leasing**
- **Place Non-Surface Occupancy Stipulations on All Future Leases Issued**
- **Disclose Why Lease Rights have Not Expired**
- **Prohibit Leasing When the RFD has been exceeded**
- **Guide and Regulate the Configuration of Timing of Lease Offerings**
- **MONITOR AND ENFORCE LEASE ACREAGE LIMITS**

- **Exploration**

Oil and gas operators complete seismic exploration projects to acquire and evaluate subsurface geological data to facilitate for further development of oil and gas reserves. In light of this primary objective, seismic activities are inherently part of a larger action and depend on future development for their justification. In short, industry would not pay seismic companies millions of dollars to complete seismic work if they did not anticipate following through with diligent efforts to get the gas out of the ground.

With this end goal in mind, while evaluating seismic activities in the RMP revision process the BLM must consider all past, ongoing, and reasonably foreseeable similar, connected, and cumulative actions in this portion of its environmental analysis. 40 C.F.R. §§ 1508.25(a)(2)-(3) and 1508.25(c)(3). This includes, but is not limited to, oil and gas lease sales, additional seismic projects, and past, proposed, ongoing, and foreseeable future development.

In addition the RMP should:

⁴ National Academy of Sciences, 1989

- 1) Require that the BLM to thoroughly examine the impacts set forth in, *Guidance on Adequately Evaluating the Impacts of Site Specific Seismic Exploration Projects*, before approving any further seismic activities in the Upper Green River Valley;
- 2) Prohibit seismic exploration activities in areas closed to oil and gas development;
- 3) Prohibit seismic exploration activities in crucial and sensitive wildlife habitat;
- 4) Continue to seasonally restrict seismic activities during times when such activity would adversely impact wildlife;
- 5) Require operators to provide an *adequate* bond before beginning seismic projects;
- 6) Adopt stringent reclamation standards and only release bonds when these standards have been met.

- **DEVELOPMENT**

- A. Allow for Public Participation in the Development of Oil and Gas Resources**

Currently the BLM provides the public with notice of all gas field development projects. Our groups greatly appreciate the notice and opportunity to participate. However, our groups have asked, and been denied, the opportunity to receive notice of individual ADPs. The RMP should address this issue and provide that all those who request mailed notice receive such notice.

- B. Include Provisions to Notify the Public of Immediate Threats Including Methane Migration**

The RMP should include a provision requiring that if there is an immediate threat to public health, safety, or welfare or the environment, BLM will notify the operator(s) and immediately order that all wells causing these problems be shut-in pending further investigation. This provision will apply to all aspects of oil and gas extraction, including methane migration. As BLM knows, methane migration to the surface through unintended avenues can pose serious risks to human health and safety (in addition to harming soils and burrowing animals). Additionally, the RMP EIS should provide that all reports of methane migration to any residence, building or near human activity will result in the automatic shutting in of all CBM wells within a 3 mile radius. Based upon a thorough investigation, if the threat cannot be remedied by mitigation, the BLM should require that all offending well(s) be plugged, reclaimed and monitored. If mitigation can remedy the threat, the BLM should require that the shut-in order remain in effect until mitigation and monitoring measures are adopted and implemented, after full notice and hearing.

- B. Adopt a Reasonably Foreseeable Development Scenario that Balances Development with the Protection of Other Valuable Natural Resources**

The BLM must adopt a Reasonably Foreseeable Development (RFD) scenario that balances energy development with the protection of other valuable natural resources. If the BLM fails to do so, the Valley could be turned into a single continuous gas field in violation of FLPMA's multiple-use mandate and a number of other federal environmental laws.

To adequately address this issue the RMP EIS must first set forth the following to the public:

- 1) Which lands have been leased, the stipulations that attach to these leases, and when the leases will expire;
- 2) Which leased lands lay within project area boundaries and how much acreage this consumes;
- 3) The number of wells that have been approved and the number of wells that have been drilled throughout the Resource Area;
- 4) The amount of surface disturbance in the Valley to date and the amount predicted based on project approvals;
- 5) Reclamation efforts throughout the Kemmerer RA, including details regarding the total acres disturbed since the last RMP, the acreage successfully reclaimed, the definition of "successful reclamation", and the acres where reclamation was attempted but failed;
- 6) Predictions regarding the length of time the BLM expects that the current oil and gas projects will be operating.

In addition, because much of southwest Wyoming is being developed by the oil and gas industry, and pursuant to NEPA's requirement to disclose cumulative impacts, in developing an appropriate RFD scenario the BLM must consider actions being implemented outside the Kemmerer Resource Area boundaries.

Considering this impacts analysis, the BLM must develop a range of RFD scenarios that address both the acreage allowed to be developed and the number of wells to be drilled within this acreage. The public must understand the amount of acreage slated for development because of the impacts to open space and wildlife. The public must understand the number of wells the BLM seeks to permit because of the impacts to air and water quality for the surrounding communities, downstream users, and citizens from across the country that visit the Greater Yellowstone Ecosystem.

Any RFD Scenario development must also be based on baseline data and ongoing monitoring. Accordingly, in this section of the RMP EIS the BLM must set forth the following:

- 1) Baseline air and water quality data;
- 2) Baseline data on wildlife including, but not limited to, the pronghorn antelope, mule deer, elk, moose, bighorn sheep, sage grouse, mountain plover, prairie

dogs, black-footed ferrets, the array of raptors, and all species listed on the BLM's sensitive species list that are present within the Kemmerer Resource Area;

- 3) Data from past, current, and ongoing monitoring of air and water quality;
- 4) Data from past, current and ongoing wildlife studies including, but not limited to, studies with respect to pronghorn antelope, mule deer, elk, moose, bighorn sheep, sage grouse, mountain plover, prairie dogs, black-footed ferrets, the array of raptors, and all species listed on the BLM's sensitive species list that are present within the Kemmerer RA;
- 5) Baseline data and data from past, current, and ongoing studies examining road densities and surface disturbance in the Resource Area;
- 6) Socio-economic studies examining issues such as the impacts of an energy boom on community resources, wildlife, etc.;
- 7) Any other applicable studies that examine or information related to the impacts of oil and gas development on other natural resource values.

- **Base Any Assumptions Regarding Development on Information Gained During Ground-truthing Activities and on Analysis of Satellite Imagery**

BLM has completed a number of environmental analyses of oil and gas projects. Each of these analyses utilizes *assumptions* with respect to the amount of surface disturbance that such projects cause. Now that the projects have been implemented, and in some cases completed, the BLM must revisit its assumptions and evaluate whether the assumptions regarding surface disturbance from well-pad construction, road-building, pipeline infrastructure, construction of compressor stations, etcetera are correct. This analysis must be completed for each oil and gas project within the Resource and should also consider projects on adjacent lands. A table with accompanying text would best convey this information to the public.

- **Require Phased Development**

Consistent with BLM's duty to control the timing, duration and siting of operations, in addition to its duty to manage for multiple use, prevent unnecessary or undue degradation and discretion to impose reasonable mitigation measures⁵, development in the Upper Green River Valley must occur in orderly stages. Overall, the BLM must ensure that it while developing oil and gas resource it prevents the unnecessary and undue degradation of the lands⁶ and avoids of impacts of oil and gas development where technologically feasible, and especially in cases where avoiding impacts is practical

- **Bonding**

⁵ 43 U.S.C. §§ 1732(a)-(b); 43 C.F.R. §§ 3101.1-2; 3164.3; 3162.1; and 3162.5-1.

⁶ 43 U.S.C. § 1732(b).

Sufficient bonds must be provided to BLM as part of a complete APD. Presently, these bond amounts are set at: \$10,000.00 per lease (all wells developed under one lease); \$25,000.00 blanket bond for all wells in a state; and \$150,000.00 blanket bond for all wells in the country. 43 C.F.R. §§ 3104.2; 3104.3. These bond amounts apply to *all* federal oil and gas development, regardless of surface ownership (*private or federal*). In the case of Stock Raising Homestead Act split-estate lands, an additional bond amount of \$1,000.00 must be posted, in the event a surface use agreement is not reached with the private surface owner. 43 C.F.R. § 3814.1(c).

BLM recognizes that all bonding amounts (both private and public surface) are *dramatically low* in contrast to costs of full reclamation. Recent Wyoming examples illustrate this point: operators posting \$25,000.00 statewide bonds have left clean-up costs, for *one well*, of \$37,000.00. In addition, BLM recognizes that it has approximately 90 orphan wells nationwide, with expected liability to the taxpayer at \$1.7 million, yielding an average cost of reclamation (and just plugging and abandoning), *per well*, of approximately \$19,000.00. BLM acknowledges that full reclamation of some orphaned natural oil and gas wells can cost up to \$75,000.00. Accordingly, BLM recognizes that bonding amounts are far too low for federal oil and gas activities.

To bring some balance to this situation, BLM should adopt a change in its bonding policy and discretionary functions under the Mineral Leasing Act in this RMP EIS. The applicable regulation provides that:

The authorized officer may require an increase in the amount of any bond whenever it is determined that the operator poses a risk due to factors, including, but not limited to . . . [when] the total cost of plugging existing wells and reclaiming lands exceeds the present bond amount based on the estimates determined by the authorized officer. 43 C.F.R. § 3104.5(b).

Given the above discussion of *actual* reclamation costs, BLM's policy should reflect a presumption that the current bonding amounts are far too low.

- **Reclamation**

Closely related to the issue of bonding is reclamation. Reclamation of both federal surfaces and private surfaces associated with split-estate lands means returning the land and surface resources back to the time of pre-surface disturbance activities. The RMP should require the each APD fully describe and detail the reclamation efforts that will be required by each operator. In this regard, the following non-exhaustive list serves as an example of what should be included in an APD but the BLM should also follow Chapter 6 of the Onshore Oil and Gas Operations Gold Book with respect

to all reclamation and abandonment requirements.⁷ In addition, all posted bonds must, at a minimum, be sufficient under current market prices, to ensure the full reclamation.

- **Protect Surface Owner Rights**

BLM recognizes the numerous issues and conflicts that arise from split-estate lands – generally, where the federal government owns (and subsequently leases) the mineral estate under land that is privately owned, usually by ranchers and farmers whose families patented this land several generations ago. While the split-estate issue in the Kemmerer Resource Area is smaller than that in some BLM Resource areas in Wyoming, this is still an issue a major concern because private landowners who live on “split estates” are often severely affected by BLM’s oil and gas leasing decisions.

In the past, The BLM has often ignored or given little attention to the legitimate concerns of surface owners and their communities. This revision process provides the BLM with an opportunity to remedy this situation and adopt means by which to minimize conflicts between surface owners and companies developing subsurface minerals by proactively seeking and addressing their concerns.

Reinforcing the immediate need to protect surface-owner, on April 3, 2003, the BLM issued a press release and an Instruction Memorandum (IM) vowing to protect surface-owner rights on split estate lands.⁸ The IM clarifies policy, procedures and conditions for approving oil and gas operation on split estate lands. In short, the order requires that the lessee or its operator enter into good-faith negotiations with the private surface owner to reach an agreement to compensate for any loss of crops or any damages to tangible improvement. If those good-faith negotiations do not produce an agreement with the surface owner, the BLM will require an adequate bond from the lessee or its operator in an amount sufficient to indemnify the surface owner against the reasonable and foreseeable damages for loss of crops and tangible improvements caused by the proposed operations.⁹ This IM is a very important step in protection surface owner rights and the protections expressly given in this memorandum must be expressly incorporated into the RMP EIS. However, our groups feel the BLM must do more to protect surface owner rights. The below comments provide a starting point from which to begin.

- **Withdraw Private Surface Lands from Leasing**

⁷ *BLM: Surface Operating Standards for Oil and Gas Exploration and Development* (3rd Edition – Gold Book, Chapter 6.

⁸ *Instruction Memorandum No. 2003-131 to All Field Offices from BLM Director* (Apr. 3, 2003) and accompanying press release

⁹ In addition to compensation for damage to permanent improvements and crops, BLM shall ensure bond posted is adequate to compensate surface owner for “any damage that may be caused to the value of the land for grazing.” 43 C.F.R. § 3814.1(b).

In addition to the provisions authorizing the BLM to withdraw oil and gas resources from leasing discussed in above, the BLM has general withdrawal authority pursuant to 43 U.S.C. § 1714.

- **Adopt Land Owner Protection Provisions**

If the BLM fails to withdraw private surface lands from oil and gas leasing, the RMP should include a discussion of and adopt landowner protections provisions that condition development to protect private surface owners who could be adversely affected by oil and gas development.

- **Ensure Landowner Participation in Oil and Gas Leasing, Exploration, and Development Decisions**

As discussed above, pursuant to our federal environmental law the public has the right to participation at all stages of oil and gas leasing, exploration, and development. This is of particular import in the case of split-estates and has been a problem in the past.

- **Adopt the Land Owner Protection Provision in SMCRA**

While developing the *draft* RMP EIS, the BLM should review and make full use of the provisions in the Surface Mining Control and Reclamation Act, 30 U.S.C. §§ 1221 to 1230a, that apply to protect surface owners with federal minerals estates underneath their land.

- **Inspection and Enforcement**

BLM recognizes that the many duties and requirements of federal and state laws are meaningless unless two things occur: inspection followed up by enforcement. The RMP should thus set forth strict inspection and enforcement guidelines inspecting the well sites quarterly, with at least one unannounced visit annually. All inspection findings will be kept in writing and made available to the public. In addition, BLM will back up its inspection findings with strict enforcement, including lease cancellation pursuant to 43 C.F.R. § 3163.1(a)(5) and all civil and criminal penalties in 43 C.F.R. Subpart 3163.

- **Address the Granting of Exemptions and Exceptions**

The RMP EIS must address the issue of granting exemptions and exceptions to both lease stipulations *and* other protective measures at the APD stage. At a minimum, the RMP must identify which stipulations cannot be relaxed and the specific conditions that must be met before a request to exempt or relax any of the others will be granted.

- **Sundry Notices**

BLM employs Sundry Notices pursuant to 43 C.F.R. § 3162.3-2(a) (authorizing use of Form 3160-5, the Sundry Notice). In our experience, Sundry Notices are used for a wide array of activities, and not necessarily just for "further well operations", as required by the regulations. The RMP should define precisely when the use of Sundry Notices is appropriate, and in our view they are inappropriate for anything other than the enumerated activities mentioned at 43 C.F.R. § 3162.3-2(a). Additionally, the RMP should define when NEPA compliance is required and what opportunities exist for public involvement relative to Sundry Notices.

- **Toxic and Hazardous Wastes and Chemicals; Storm-water Runoff**

The use of hydraulic fracturing and the impacts of drilling fluids (muds) and chemicals must be considered in the EIS. Hydraulic fracturing and drilling fluids contain a wide array of chemicals, many of which are clearly toxic or hazardous. The appropriateness of using these chemicals must be addressed in the EIS, and in particular the EIS and the final RMP should ensure compliance with the Clean Water Act, Safe Drinking Water Act, Toxic Substances Control Act, Resource Conservation and Recovery Act, and the Comprehensive Environmental Response Compensation Liability Act (CERCLA—the Superfund) relative to the use of these and other toxic and hazardous substances.

- **Rights-of Way**

Rights-of-way are often part-and-parcel of energy development projects, as well as many other activities. All provisions in the Mineral Leasing Act and FLPMA must be adhered to relative to rights-of-way to help ensure environmental protection.

- **Address the Socio-Economics of Oil and Gas Development**

In addition to the socio-economic analysis discussed in relation to the principles of phased development above, consideration of oil and gas development potential in the RMP area must address potential oil and gas reserves/resources from the standpoint of economically recoverable resources and not just technically recoverable resources.

- **Issues Specific to Coalbed Methane Development**

Currently, only a handful of coalbed methane (CBM) wells have been drilled in the Kemmerer Resource Area. However, given industry estimates of CBM reserves in the Upper Green, the success of the test wells and the scoping notice sent out just two days prior to the beginning of the RMP scoping process, this is slated to change. In view of this upcoming change, the RMP must, in great detail, address CBM issues and impacts and adopt specific provisions to avoid – or fully mitigate – such impacts on other valuable natural resources. Such analysis is required by both MEPA and FLPMA as well as recent IBLA decisions that expressly recognize the unique impacts of CBM development.

- **Air Quality: Protection Wyoming Clean Air and Clear Vistas**

In view of the potential oil and gas boom in the Upper Green River Valley, the RMP EIS must contain a comprehensive analysis of the impact oil and gas exploration and development will have on Wyoming's clean air, clear vistas, and community health.

- **The BLM Must Conduct a Complete Increment Consumption Analysis**
- **NEPA and FLPMA Require Consideration 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 C.F.R. § 1502.16(h), and "include appropriate mitigation measures already included in the proposed action or alternatives." 40 C.F.R. 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 C.F.R. §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."

- **BLM May Not Rely on State Permitting Process to Fulfill Obligations Under FLPMA and NEPA**

At the onset of this process our groups would like to make it clear that the BLM may not rely on the State's permitting process. In short, it may not be substituted for the affirmative duty imposed on BLM to "provide for compliance" with NAAQS and the 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 RMP EIS 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.

- **Impairment of Visibility Must be 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 U.S.C. § 7475(d)(2)(B). The Secretary's

affirmative responsibility applies not only to the review of permits for major stationary sources, but 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 U.S.C. § 1701(a)(8). Because this RMP and subsequent projects in the Kemmerer Resource Area will *directly* impact Class I areas our groups would like to emphasize that the Secretary's affirmative responsibility to protect visibility in these Class I areas.

- **The RMP EIS Must Provide Provisions to Implement the 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 RMP EIS Must Identify and Mitigate Acid Rain Impacts**

The RMP EIS must identify potentially adverse impacts on water chemistry in highly sensitive high altitude lakes. The EIS should then consider and include mitigation measures that will prevent NAAQS and increment violations, and ensure no degradation of visibility on the least impaired days, is assessed to determine if they will prevent the adverse impacts on lake chemistry. If not, then additional mitigation options should be identified to determine the extent of mitigation needed to prevent adverse impacts on the quality of these lakes.

- **The RMP EIS Must Identify and Mitigate Impacts on Public Health from Fine Particle Exposures**

The emissions sources from oil and gas projects are and 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 EIS must 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 RMP EIS must identify any current or potential large increases in exposure to fine particles (FP) from background concentrations of 19 to 42 µg/m³.

- **Greater Yellowstone Wildlife**

As has been touched upon over and over again in our comments, the Upper Green River Valley supports a world-class wildlife resource. From the pronghorn who hold

the record for the longest migration in the Lower 48 states to the world renowned fisheries of the Upper Green, this area must be protected to ensure the long-term viability of healthy, abundant, and free-ranging wildlife species.

When considering impacts to wildlife, BLM must do more than consider just the area actually impacted by a given activity. The effects of oil and gas development, for example, are far broader and more pervasive than just the public land acreage converted to bare dirt for roads and oil pads. In this regard, the report "Fragmenting Our Lands, The Ecological Footprint From Oil And Gas Development" should be considered.¹⁰ BLM must ensure its analyses of impacts to wildlife consider indirect, connected, related, long-term, and cumulative impacts in as quantitative, and scientifically supported, a manner as possible. BLM must also ensure that it fully complies with BLM Manual MS-6840 (Special Status Species Management).

- **Ensuring Wildlife Diversity – General Considerations**

BLM has a duty to protect the diversity of all native wildlife on public lands by providing for ecosystem-based management. FLPMA requires public land management to protect ecological and other values, and also requires that they be managed for multiple use and sustained yield. 43 U.S.C. §§ 1701(a)(7)-(8). NEPA requires BLM to fulfill its trustee obligation for future generations, assure productive surroundings, avoid environmental degradation, preserve important natural aspects of our national heritage, and enhance the quality of renewable resources. 42 U.S.C. §§ 4331(b)(1)-(6). The CWA established the objective of restoring and maintaining the chemical, physical, and biological integrity of the Nation's waters, which of course includes the RMP area. 33 U.S.C. § 1251. The ESA establishes the purpose of conserving the *ecosystems* upon which threatened and endangered species depend on. 16 U.S.C. § 1531(b). BLM's livestock grazing standards and guidelines establish standards of ecological health applicable not only to livestock grazing, but to resource management generally. See 43 C.F.R. subpt. 4180. The Clean Water Action Plan establishes the need to manage public lands on a watershed—that is, ecosystem—basis. Read together, these and other legal standards establish that BLM must ensure the *ecosystems* it manages are fully protected so as to enhance biological diversity.

- **Require "No Net Loss" of Big Game Transitional and Winter Ranges**

Yellowstone's big game rely on relatively distinct summer, transitional, and winter ranges during their annual migratory cycle. While summer ranges appear relatively secure because of their size and land status, the transition and winter ranges of both the mule deer and pronghorn antelope are threatened by energy development and subdivision expansion.¹¹ To avoid and minimize the adverse impacts of development the EIS should contain a provision requiring that there be no net loss of big game transitional and winter

¹⁰ In this regard we ask BLM to consider the report *Fragmenting Our Public Lands, The Ecological Footprint From Oil And Gas Development*, courtesy of The Wilderness Society (C. Weller et al., authors)(Sep. 2002)

¹¹ *North American Study* at 1.

ranges throughout the Kemmerer Resource Area. This mitigation requirement would be fully consistent with WGFD's no net loss policy.¹² The WGFD adopted this policy because it recognizes that one of Wyoming's most unique and valued resources is its abundant, free-ranging wildlife and that without habitat protection the populations of these important species would be limited. A requirement of "no net loss" of winter and transitional ranges is vital as the Upper Green River Valley is the largest publicly-owned expanse of wildlife winter range in the Greater Yellowstone Ecosystem. One potential method for ensuring no net loss would be to require off-site mitigation. The RMP EIS must therefore fully explore this possibility.

- **Study and Disclose the Increase in Poaching Stemming from and Increase in Population due to the Oil and Gas Boom**

As human populations expand, conflicts with wildlife are inevitable. This is illustrated in a study completed by Joel Berger and Dennis Drake entitled, *Effects of Agricultural, Industrial, and Recreational Expansion on Frequency of Wildlife Law Violations in the Central Rocky Mountains, USA*.¹³ The RMP must discuss the impacts of population growth that accompanies oil and gas development on the wildlife species on the Upper Green River Valley. This discussion should include an analysis of potential increases in wildlife law violations, the actual impact these violations have on animal population sizes, opportunities for education-oriented conservation measures, and opportunities to mitigate the impacts of increased populations on wildlife species.

- **Recovering the White-tailed Prairie Dog and its Habitat Needs**

- While white-tailed prairie dogs can still be found throughout the sage-steppe country of Wyoming, Utah, Colorado, and Montana, the occupied acreage has declined by at least 92% from historical estimates.¹⁴ These declines have been disastrous for many of the species that rely on white-tailed prairie dogs, including the black-footed ferret, mountain plover, burrowing owl, and ferruginous hawk. If extinction of these once widespread and abundant species is to be avoided, and if the white-tailed prairie dog ecosystem is to be recovered, the BLM must actively work toward prairie dog conservation and recovery.

¹² *Mitigation Policy*, Wyoming Game and Fish Commission at 6 (Apr. 28, 1998)(Attached as Exhibit CC).

¹³ *Effects of Agricultural, Industrial, and Recreational Expansion on Frequency of Wildlife Law Violations in the Central Rocky Mountains, USA*, J. Berger and D. Drake, *Conservation Biology*, Vol. 1, No. 3 (Sep. 1988).

¹⁴ *Petition for a rule to list the white-tailed prairie dog (Sciuridae: Cynomys leurus) as Threatened or Endangered under the Endangered Species Act, 16 U.S.C. § 1531 et seq. (1973 as amended) and for the designation of Critical Habitat*, Center for Native Ecosystems, Biodiversity Conservation Alliance, Southern Utah Wilderness Alliance, American Lands Alliance, Forest Guardians, Terry Tempest Williams, Ecology Center, and Sinapu (Jul. 11, 2002).

- **Protecting the Imperiled Sage Grouse**

Sage Grouse Throughout the West, in Wyoming, and in the Upper Green River Valley

Once common throughout much of western North America and known as the "icon of the sagebrush steppe," populations of this sensitive species have plummeted across most of its range. It is estimated that in just the last fifty years, there has been a 50% decrease in total area occupied by sage grouse and up to an 80% decrease in total numbers in some areas. Sage grouse are now extinct in at least four states and one Canadian province where populations once existed. Six petitions recently have been filed to list all remaining populations under the federal Endangered Species Act.

Wyoming, however, still has one of the strongest sage grouse populations in the world and will have a key role in deciding the fate of this magnificent species. In nearby states habitat loss and fragmentation has largely isolated populations, resulting in significant decreases in sage grouse numbers and local extinctions. Wyoming still has a mostly connected distribution, but if habitat fragmentation continues, the State's presently linked sage grouse population will begin to unravel. Maintaining large, unbroken expanses of effective sage grouse habitat throughout Wyoming thus should be a top priority in this RMP EIS.

- **THE PYGMY RABBIT – A NEW CANDIDATE FOR LISTING UNDER THE ESA**

As discussed above, the BLM must comply with the Endangered Species Act (ESA). This includes following the provisions for all listed and candidate species. Just days before scoping comments were due, The Committee for the High Desert, American Lands Alliance, Biodiversity Conservation Alliance, the Center for Native Ecosystems, and the Oregon Natural Deserts Association, filed a petition to list the Pygmy rabbit under the ESA. Once, biologists considered Wyoming to be on the periphery of its range, but due to drastic declines outside of Wyoming, the Wyoming occupied habitat is now crucially important and threatened by the oil and gas boom in the Kemmerer Resource Area. While most of our groups have yet to receive and review a copy of the petition given its very recent submission, here we would simple like to draw the BLM attention to the petition, remind the BLM of its responsibility under the ESA, and ask that the BLM incorporate the appropriate protection measures into the RMP EIS to protect this species and its habitat.

- **Raptors**

Raptors often receive protective stipulations and other protective measures, particularly in the context of oil and gas development activities. The EIS should examine existing stipulations and protections to determine their effectiveness and to determine whether they should be modified so as to protect these magnificent birds. Too often raptor stipulations only apply to occupied nests. Again, however, this is an inappropriately restricted approach from a biological and ecological perspective. The EIS should examine whether habitat that could potentially be occupied by raptors,

such as previously utilized nests, should receive protection so as to ensure the continued viability of raptors in the RMP area. It should consider all biological needs of raptors and develop suitable protections for all significant life-stages of the various raptors, all of which should be included in the RMP. Additionally, the EIS should address compliance with the Bald Eagle Protection Act and Migratory Bird Treaty Act and the RMP should specify the means by which BLM will ensure compliance with these laws as well as pursue (or facilitate) enforcement of them.

- **Additional Species**

A number of other species in the Upper Green River Valley live in the Upper Green River Valley including but not limited to black-footed ferrets (a species protected under the ESA), burrowing owls, mountain plover (a candidate species under the ESA) etc. The RMP must provide a list of species in the Resource Area, must disclose monitoring, population, and habitat data in regard to each species and must adopt mitigation measures to protect each of these species from any development approved by this RMP.

- **Designation Of Areas Of Critical Environmental Concern Must Be Given Priority**

Areas of Critical Environmental Concern (ACECs) are defined in FLPMA. Just as the definitions of multiple use and sustained yield give substance to FLPMA's requirements for management to be based on multiple use and sustained yield, the definition of ACEC gives substance to the requirement that priority be given to designation and protection of ACECs. ACECs are defined as areas "where special management attention is required . . . to protect and prevent irreparable damage" to important resources, including fish and wildlife resources, ecological features, and historical, paleontological and archeological resources. 43 U.S.C. §1702(a). Candidate ACECs must have relevance and importance. 43 C.F.R. § 1610.7-2(a). Since Congress required that designation and protection of ACECs be given priority in land use planning, it is critical that all alternatives developed in the EIS do so. 43 U.S.C. § 1712(c)(3).

- **Wilderness, Wilderness Study Areas, and the National Landscape Conservation System**

Pursuant to the provisions at 43 U.S.C. § 1782(c), 43 C.F.R. Part 6300, as well as the Wilderness Act itself, the RMP EIS must address the protection of existing wilderness study areas (WSA's) and any designated wildernesses in the RMP area. The RMP should establish standards to ensure that the wilderness qualities of existing wildernesses and WSA's are not impaired or degraded. For example, we believe oil and gas development activities in WSAs should be prohibited or regulated to the full extent permitted by law. Exploration leaves long-term marks on the landscape, which should be avoided to the extent possible. Oil and gas drilling activities also impair and degrade wilderness qualities and should be prohibited except under no surface

occupancy stipulations. Ensuring non-impairment is a non-discretionary duty that BLM must meet. *Southern Utah Wilderness Alliance v. Norton*, 301 F.3d 1217 (10th Cir. 2002).

- **Cultural and Paleontological Resources**

Most if not all historical, archeological, and paleontological resources (hereinafter, “cultural resources”) are strictly non-renewable: once marred or destroyed, they are forever lost to future generations. Such fragility demands utmost care and humility from BLM managers and planners. The RMP should reflect—and require—this conservative approach to managing these priceless and irreplaceable resources.

BLM’s multiple-use mandate requires land managers to consider the value of cultural resources in their decision-making process. Unfortunately, these resources are frequently given short shrift in this calculus. Their value is not easily measured, and as a result they are sacrificed in pursuit of more obviously economically profitable resources. The RMP should ensure this problem is avoided.

- **Fire And Fire Policy**

The RMP EIS should address issues related to fires and fire policy. The RMP should:

- 1) Establish an ecologically based fire *restoration* program so that fire can play its natural, and necessary, role in the RMP area.
- 2) Prohibit any mechanical treatments (e.g., thinning) of vegetation in wilderness areas or wilderness study areas.
- 3) Prohibit road building as a means to accomplish any vegetation treatments in furtherance of the fire policy. If “non-permanent” roads are allowed, there should be stringent assurance they will in fact be temporary.
- 4) Be consistent with the Western Governors Association’s 10-year Comprehensive Wildfire Strategy prepared in 2001.
- 5) Provide that funds for fire management should be used, in accordance with our recommendations on invasive and exotic species, to eradicate flammable invasive species such as cheatgrass. They should also be used to restore native species less likely to create fire problems, and for restoring seed banks of native species.
- 6) Provide that riparian areas should be restored so that they can serve as natural firebreaks.
- 7) Provide that fire suppression efforts and related vegetation management efforts (like thinning) are focused on the “wildland urban interface.” Remote areas where fire causes few if any problems and may in fact be an important component of ecological health should not be subject to mechanical vegetation management activities pursued to accomplish fire policy.

Any attempts in the RMP to “cut red tape”, “improve the regulatory process”, or prevent “needless delays”, as called for in the Healthy Forests Initiative, must

nevertheless fully comply with all applicable law, and in particular must not limit the ability of concerned citizens to participate in decisions related to fire management and policy. Rhetoric should not be the basis for fire policy and management. For example, if the BLM proposes to base fire suppression and/or related vegetation management activities or policies on purported delays due to administrative challenges or lawsuits, it should provide credible data from the RMP area in the EIS to support such a claim.

Additionally, the EIS should address underlying assumptions or conditions that influence fire policy in a thorough and scientifically credible manner. The full costs and benefits of fire suppression and related vegetation management activities should be illuminated, particularly relative to other means of reducing fire hazards, such as allowing natural fires to burn or "prescribed" burning. Land exchanges and other similar methods for preventing encroachment of housing developments among otherwise remote BLM lands should be addressed. The relative importance of past fire suppression policy and drought in creating "unnatural" fuel accumulations and creating hazardous fire conditions should be thoroughly addressed and analyzed. Whether fuel accumulations are in fact "unnatural" should be fully explored.

- **LIVESTOCK GRAZING: IMPLEMENT PLAN TO PROTECT AND RESTORE RANGELAND HEALTH**

Livestock grazing can have profound impacts on wildlife and the public lands. See 43 U.S.C. §§ 1901(a)(1) (determining that "vast segments" of the public rangelands are in unsatisfactory condition), 1751(b)(1) (finding that much federal rangeland "is deteriorating in quality"). Recognizing this, BLM adopted standards and guidelines for grazing administration in 1995 that are designed to restore and protect range health and degraded range conditions. See 43 C.F.R. Subpt. 4180. The RMP should provide a clear and binding schedule for ensuring that the three steps the grazing rules establish for determining if grazing needs to be modified are accomplished in a timely manner. The three steps are: assess rangeland health, determine if grazing is a significant factor causing unhealthy rangelands, take appropriate actions to eliminate or modify grazing by the start of the next grazing season. Furthermore, for allotments that have already been assessed, provision should be made in the RMP for future assessments and determinations—the standards and guidelines are intended to be an ongoing, prominent factor in grazing management, and the Fundamentals of Rangeland Health are standing national requirements. It is also worth noting that pursuant to the Public Rangelands Improvement Act (PRIA), "the goal" of rangeland management "shall be to improve the range condition of the public rangelands" 43 U.S.C. § 1903(b) (emphasis added).

- **Ensure Monitoring to Assess Whether Standards and Guidelines For Range Health are Being Met**
- **Complete a Site-Specific Impacts Analysis, Determine Suitability, and Balance Resource Use**

- **INSURE LIVESTOCK GRAZING DOES NOT ADVERSELY IMPACT FRAGILE RESOURCES SUCH AS RIPARIAN AREAS**
- **WITH RESPECT TO GRAZING INSURE ADHERENCE TO THE CLEAN WATER AND SAFE DRINKING WATER ACT**
- **ANALYZE THE IMPACTS OF LIVESTOCK ON ARCHEOLOGICAL, CULTURAL, AND HISTORIC RESOURCES**
- **ANALYZE THE ECONOMIC IMPACTS OF LIVESTOCK GRAZING**

- **Off-Road Vehicles and RS 2477**

Travel and dispersed recreation management are critical issues facing public lands managers, today and in the future. Given the recent increase in the popularity of recreation, the technological advances in mechanized and motorized "toys," and the high growth rates in the number of visitors to public lands, it is critical that the RMP EIS address these issues. If not fully addressed by the RMP, this will simple result in increased expectations of use by recreationalists, more illegal routes, further degradation of resources, and more dissatisfied users. Accordingly, our groups urge the BLM planning staff to fully evaluate and take a proactive approach to managing recreation and associated travel.

- **Defer Any R.S 2477 Claims**

Claims pursuant to R.S. 2477 can be a sever threat to public land resources. The RMP should deter determining the validity of R.S. 2477 right-of-way claims until there is a generally applicable unambiguous legal requirement for the BLM to do so. In addition , R.S. 2477 claims should not be processed until the Department of Interior can clarify the relationship of the recent "Disclaimer of Interest Rule" to R.S. 2477 claims.

At this time, authority to determine the validity of these claims is limited to quiet title actions. If a determination of the validity of an R.S. 2477 right-of-way is made, BLM should adopt the standards set forth in *Southern Utah Wilderness Alliance v. BLM*, 147 F.Supp.2d 1130(D. Utah 2001). That is, valid claims must show evidence of intentional physical construction, of a publicly used highway with some clear destination, on public lands that had not otherwise been reserved for public purposes. *Id.* Any determination of the validity of an R.S. 2477 claim should be an open process with full opportunities for public involvement and comment.

- **Noxious Weeds**

According to BLM Instruction Memorandum, all NEPA documents *must* include an analysis of the potential for weed spread and establishment as an environmental consequence of proposed actions. Measures and stipulations to minimize or avoid the

spread of weed[s] *must* be provided.” (BLM I-M 99-178 at 2-3 (1999) (emphasis added)). Moreover, Executive Order 13112, “Invasive Species,” (Feb. 3, 1999) directs all federal agencies to: identify actions that may promulgate invasive species; prevent their introduction; monitor invasive populations accurately and reliably; and, not authorize any action that it believes will cause or promote the introduction of invasive species. Accordingly, the revised RMP must include this discussion as it relates to all resource management activities. This is of particular importance when evaluating the level at which oil and gas exploration and development will be allowed in the Valley.

- **Noise**

The RMP EIS must address issues related to noise, and its impact on the remoteness and quietness that so many seek on the public lands. We particularly ask that the EIS address, and the RMP provide requirements to minimize, the noise created by oil and gas development activities, especially the noise problems from compressors and compressor stations. Noise occurring due to oil and gas exploration and well drilling should also be minimized. ORV noise should also be addressed.

- **Toxic Substances**

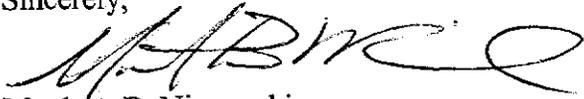
The RMP should adopt an overarching prohibition on the use of insecticides, herbicides, fungicides, rodenticides, and other similar substances. Use of such substances should then only be allowed if in conformity with a site-specific written plan and fully evaluated prior to use in a NEPA document. The site-specific plan shall be subject to public review, comment, and landowner notification and approval. It must describe the type and quantity of material to be used, the pest to be controlled, the method of application, the location of the application and storage/disposal of containers, and other information, and will only be allowed as consistent with state and federal law.

- **Recreation Management**

The recreation resource on public lands is becoming increasingly valuable: more people want to recreate on a finite amount of public land. Recreationists desire solitude, clean air, clean water, vast undeveloped landscapes, and a place to witness healthy natural systems thriving with native plants and wildlife. The RMP should accommodate those desires.

Thank you for your time and consideration. We look forward to the initiation of the Scoping Period.

Sincerely,



Matthew B. Niemerski
Public Lands Associate
Defenders of Wildlife
1130 17th Street NW
Washington, D.C. 20036

Peter Aegnst
Regional Associate
The Wilderness Society
Bozeman, Montana

Dan Heilig
Executive Director
Wyoming Outdoor Council
Lander, Wyoming

Linda Baker
Outreach Coordinator
Upper Green River Coalition
Pinedale, Wyoming

Liz Howell
Director
Wyoming Wilderness Association
Sheridan, Wyoming

Mark Salvo
Grasslands and Deserts Advocate
American Lands Alliance
Portland, Oregon



The State
of Wyoming



Department of Environmental Quality

e Freudenthal, Governor

Herschler Building • 122 West 25th Street • Cheyenne, Wyoming 82002

IN/OUTREACH (307)777-7758 X 777-3610	ABANDONED MINES (307)777-6145 FAX 777-6462	AIR QUALITY (307)777-7391 FAX 777-5616	INDUSTRIAL SITING (307)777-7369 FAX 777-6937	LAND QUALITY (307)777-7756 FAX 777-5864	SOLID & HAZ. WASTE (307)777-7752 FAX 777-5973	WATER QUALITY (307)777-7757 FAX 777-5864
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August 20, 2003

Tom Davis, RMP Project Manager
BLM Kemmerer Field Office
312 Hwy 189 North
Kemmerer, WY 83101

RE: Response to the Scoping Statement for the Kemmerer Resource Management Plan

Dear Mr. Davis:

These comments regarding the proposed Kemmerer Resource Management Plan (RMP) in Lincoln, Uinta, and Sweetwater Counties are specific to this agency's statutory mission within State government which is protection of public health and the environment. In that regard, these comments are meant to, in association with all other agency comments, assist in defining the Official State Position.

Thank you for the opportunity to comment on the proposed Kemmerer RMP.

The Department of Environmental Quality (DEQ) would like to provide the Bureau of Land Management (BLM) with any information concerning water quality that may aid in the RMP development process. The discharge and handling of produced water from the oil and gas industry is a specific concern of the Department. This concern is based on the large potential for oil and gas development in the area. The DEQ and its staff would like to assist the BLM in assessing water resource concerns and developing mitigative measures as needed.

We appreciate the opportunity to comment on this process and look forward to working with you in the future. If you have any questions, please feel free to contact Jeremy Lyon at 307-777-7588.

Sincerely,

John V. Corra
Director
Department of Environmental Quality

JC/JML/bb/3-0908.ltr
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These comments are reflective of a specific agency mission only. These comments defer to and are subordinate to the Official State Position.

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BLM KEMMERER F.O.
2003 SEP - 5 AM 8:17

Office of State Lands and Investments

Funding Wyoming Public Education

RECEIVED

122 West 25th Street
Cheyenne, WY 82002
Phone: (307) 777-7331
Fax: (307) 777-5400
sifmail@state.wy.us



Dave Freudenthal
Governor
2003 AUG 25 AM 9:55
Lynne Boomgaarden
Director
PLANNING OFFICE

August 25, 2003

Ms. Lynn Simons, State Planning Coordinator
State Planning Coordinator's Office
Herschler Building, 1East
122 West 25th Street
Cheyenne, Wyoming 82002

Re: **SPC Project Number 2003-081**
Kemmerer Resource Management Plan
Notice of Intent

2003 SEP - 5 AM 8:17
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BLM KEMMERER F.O.

Dear Ms. Simons:

The staff of the Office of State Lands and Investments has reviewed the captioned Notice of Intent and offers the following comments relative to the proposed action insofar as it pertains to the mission of this office.

A paramount concern of this office is the likelihood that, due to the mosaic land ownership patterns, federal prescriptions imposed by the Bureau of Land Management upon a collective area of federal lands will impede our ability to develop the State's subsurface. From a trust perspective, the cumulative affect of overlapping federal land use prescriptions and restrictions within areas controlled by plans for dominant federal lands make it very hard, if not impossible, to responsibly manage the State's surface and sub-surface resources to optimize the return to the Trust's beneficiaries as prescribed by state law. Therefore, we would ask that the Bureau of Land Management be sensitive to maintaining access to State trust lands isolated by lands under the BLM's jurisdiction and encourage a balanced approach to the use of the area's resources with minimal regulation when appropriate.

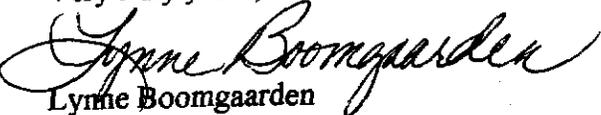
Unfortunately, our office does not possess coal resource, fire/fuels or forestry data that we could contribute to this effort at this time. However, if you would like, we would be happy to provide our land status coverage insofar as it relates to the mineral estate, surface estate or both,

Ms. Lynn Simons, State Planning Coordinator
State Planning Coordinator's Office
August 25, 2003
Page 2

owned and administered by the State of Wyoming for the benefit of the common school and other beneficiaries.

We appreciate this opportunity to comment. If we may be of further assistance, please do not hesitate to contact this office.

Very truly yours,


Lynne Boomgaarden
Director

sc

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BLH KEMMERER F.O.
2003 SEP -5 AM 8:17

GAME AND FISH DEPARTMENT

RECEIVED

Dave Frederick, Governor



Brent Manning, Director

"Conserving Wildlife - Serving People"

2003 AUG 27 P 2:37

August 25, 2003

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BLM KEMMERER

WER 201.01
Bureau of Land Management
Kemmerer Field Office
Notice of Intent
Kemmerer Resource Management Plan
Revision
PROJECT ID# 2003-081
Lincoln, Sweetwater and Uinta Counties

Wyoming State Clearinghouse
State Planning Coordinator's Office
Herschler Building, 1 East
122 W. 25th Street
Cheyenne, WY 82002-0600

Dear Ms. Simons:

The staff of the Wyoming Game and Fish Department has reviewed the Notice of Intent regarding the Kemmerer Resource Management Plan (RMP) Revision. Our terrestrial wildlife input has been inadvertently delayed and will be provided as soon as possible. We offer the following aquatic comments.

AQUATIC ISSUES

Native Game Species – Mountain whitefish, Bonneville cutthroat trout, and Colorado River cutthroat trout are the game fish species endemic to the Green River and Bear River drainages. The current distribution of both cutthroat trout subspecies within their respective drainages is reduced from historic levels. Reasons for this decline include the introduction of non-native trout and habitat alterations due to land management activities. The land management activities that may be resulting in a negative impact to cutthroat trout populations include livestock grazing, road construction, timber harvest, oil and gas development, and irrigation operations. These issues should be addressed in the revised RMP.

The Department has categorized the Colorado River and Bonneville cutthroat trout as Status 2 species. Status 2 species are physically isolated and/or exist at extremely low density throughout their range, and habitat conditions appear to be stable. The Colorado cutthroat trout was petitioned for listing under the U.S. Endangered Species Act in December 1999. The U.S. Fish and Wildlife Service will begin to address the petition by October 2003.

Management actions by western states, and coordination of future actions through multi-state management plans authored by affected states have been factors in maintenance of Bonneville cutthroat trout and the decision that listing this subspecies is not warranted. The RMP should address measures to maintain and expand current populations of Bonneville cutthroat trout.

An Interagency Colorado River cutthroat trout management plan was established in 1987. The BLM, U.S. Forest Service, and WGFD signed this plan. The primary goal is to have a healthy, self-sustainable cutthroat trout population within a portion of its historic range. The plan also details the factors impacting the Colorado River cutthroat trout population. However, efforts to increase populations and habitat, or at least, decrease the risk of extinction, have been hindered by land management practices that continue to degrade the aquatic habitat. WGFD has been addressing the non-native trout issues and needs the support of the RMP to improve habitat conditions within the historic range of the Colorado River cutthroat trout.

The Conservation Agreement and Strategy for Colorado River cutthroat trout in States of Colorado, Utah, and Wyoming, 2001 was signed by federal and state agencies, including the BLM. This agreement was developed with federal land management agencies to ensure implementation of specific conservation measures. The Agreement states four goals, and we are listing the last three as they pertain to this scoping statement: 1) to maintain areas which support abundant Colorado River cutthroat trout and manage other areas to increase abundance, 2) to maintain the genetic diversity of the species, and 3) to increase the distribution of Colorado River cutthroat trout where ecologically, sociologically, and economically feasible. This agreement should be discussed and included in the RMP Revision.

Native Nongame Fish Species – Several native nongame fish species of concern are found in waters within Bureau of Land Management lands and are listed in the following table:

Native nongame fish species of concern located within the Kemmerer RMP area.

Native Fish Species	
Green River Drainage	
Bluehead Sucker	<i>Catostomus discobolus</i>
Flannelmouth Sucker	<i>Catostomus latipinnis</i>
Mottled Sculpin	<i>Cottus bairdi</i>
Mountain Sucker	<i>Catostomus platyrhynchus</i>
Roundtail Chub	<i>Gila robusta</i>
Speckled Dace	<i>Rhinichthys osculus</i>
Bear River Drainage	
Bluehead Sucker	<i>Catostomus discobolus</i>
Leatherside chub	<i>Gila copei</i>
Utah Chub	<i>Gila atraria</i>

Utah Sucker	<i>Catostomus ardens</i>
Redside shiner	<i>Richardsonius balteatus</i>
Speckled Dace	<i>Rhinichthys osculus</i>
Mottled Sculpin	<i>Cottus bairdi</i>

The Department has categorized the flannelmouth sucker, roundtail chub, and bluehead sucker as Status 1 species. Native Species Status 1 (NSS) refers to species physically isolated and/or existing at extremely low densities throughout their range, and habitat conditions are declining or vulnerable. A draft Conservation and Management Plan for Three Fish Species in Arizona, Colorado, Nevada, New Mexico, Utah, and Wyoming addresses needs for roundtail chub, bluehead sucker, and flannelmouth sucker. This plan identifies the goals, objectives and strategies for these species. The RMP should refer to this document in all applicable sections. The WGFD Administrative Report titled *Management consideration for native nongame fishes of Wyoming - native nongame fishes conservation assessment, February 2003* provides information on the threats to native fish, habitat issues, nonnative introduction, disease, hybridization, and predation. This document also provides recommendations and discussions on actions that may prevent the further decline of these species. This document should be reviewed and referenced within the RMP.

Nonnative and Native Game Fish – The BLM should also address concerns to protect the sport fisheries available to anglers. The economic benefits from fish and wildlife should be included within this RMP.

Sport Fish	
Colorado River Cutthroat Trout	<i>Oncorhynchus clarki pleuriticus</i>
Bonneville Cutthroat Trout	<i>Oncorhynchus clarki utah</i>
Rainbow Trout	<i>Oncorhynchus mykiss</i>
Brown Trout	<i>Salmo trutta</i>
Brook Trout	<i>Salvelinus fontinalis</i>
Mountain Whitefish	<i>Prosopium williamsoni</i>
Snake River Cutthroat Trout	<i>Oncorhynchus clarki spp</i>

Native Amphibian Species – Habitat requirements necessary to protect the status of all native amphibians should be addressed within this document.

Amphibians	
Tiger Salamander	<i>Ambystoma tigrinum</i>
Boreal Toad	<i>Bufo boreas boreas</i>
Northern Leopard Frog	<i>Rana pipiens</i>
Great Basin Spadefoot	<i>Scaphiopus intermontanus</i>
Boreal Chorus Frog	<i>Pseudacris triseriata maculata</i>

Aquatic Nuisance Species – The revised RMP should address all aquatic nuisance species and methods to prevent the spread of New Zealand mud snail, Asiatic clam, zebra mussel, and *M. cerebralis*.

Plans and Reports that are applicable:

Conservation Agreement and Strategy for Colorado River cutthroat trout in the States of Colorado, Utah and Wyoming.

Conservation and Management Plan for Three Fish Species – Roundtail chub, Bluehead sucker, Flannelmouth sucker

Management Consideration for native nongame fishes of Wyoming – Native nongame fishes conservation assessment, Feb 2003. Wyoming Game and Fish Department Administrative Report.

Additional Issues and concerns

Impacts of the recent and continued drought on aquatic habitat. Together with other long-term effects (e.g., fire suppression, livestock grazing, oil and gas development, etc.) on aquatic habitat, we recommend the RMP Revision evaluate planning contingencies to react to continued drought and other cumulative effects.

Coal Bed Methane and oil/gas development. There is significant potential for increased coal bed methane and oil/gas development. The RMP should address the foreseeable level of development and the probable impacts on fisheries and aquatic habitats. This should include habitat fragmentation, associated roadway impacts (such as erosion resulting in sedimentation to both ephemeral and perennial waterways) and other cumulative impacts associated with mineral, oil or gas extraction. The RMP should also address mitigation approaches to minimize these impacts.

Economics. The contribution of fishing and hunting, and estimates of the value of nonconsumptive wildlife uses, to the local and state economy, should be included. This will help guide discussions on both wildlife and other economic management directions in the RMP.

Realty actions. Access to public lands is an issue, and management is easier if public lands are blocked up. The RMP should include and promote actions such as conservation easements and land exchanges to accomplish those purposes. Additionally, the RMP should consider access for anglers and hunters in realty actions.

Transportation Plan. The effect of roads on aquatic resources is a concern. Road management should be addressed in the RMP, particularly in reference to identifying best management practices that reduce erosion and surface runoff resulting from road construction. Thereby,

reducing the contribution of sediments and contaminants to both ephemeral and perennial waterways.

Cumulative impacts. With increasing intensity of land uses (energy development, recreation, etc.) the need for a comprehensive cumulative impact analysis is essential. This should be done at appropriate local and regional scales to be most meaningful.

Riparian-area management. Management of riparian areas in this arid climate will always be an issue. The RMP should especially address Proper Functioning Condition (PFC). The RMP should explore the possibility of setting riparian objectives and desired future condition beyond what is currently presented in PFC evaluations.

Trapping and transplanting. The ability to move animals into or out of specific areas for the purposes of managing or re-establishing fish and wildlife populations should be addressed in the RMP.

Road Management. The RMP should address the issue of roads in the floodplain. Where streams must be crossed, best management practices should be employed to maintain stream equilibrium upstream and downstream of a crossing.

Summary of Aquatic-related Items or Issues Recommended for Inclusion in the BLM Kemmerer Resource Management Plan

- Aquatic and Wildlife Strategic Habitat Plans with Regional Priorities
- ACEC Designations
- Basin Management Plans
- Conservation Agreement and Management for Roundtail chub, Bluehead suckers, Flannelmouth suckers
- Conservation Agreement and Strategy for Colorado River cutthroat trout in the States of Colorado, Utah and Wyoming
- Management Consideration for native nongame fishes of Wyoming – Native nongame fishes conservation assessment, Feb 2003. Wyoming Game and Fish Department Administrative Report.
- Realty Actions
- Access
- Fish and Wildlife Objectives/Habitat Needs
- Water Quality
- Aquatic Nuisance Species
- Travel Management
- Sensitive Species (NSS)
- Vegetation Management and Ecological Processes (include weed management)
- Cumulative Effects
- Riparian Potential (PFC)
- Trapping and Transplanting

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BLM KEMMERER F.O.

Grazing Standards and Guidelines
Fencing Standards and Guidelines
Timber Management
Maximum road densities within gas fields
Drilling multiple wells from the same pad

Sincerely,



GREGG ARTHUR
DEPUTY DIRECTOR

GA:TC:as

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BLM KEMMERER F.O.
2003 SEP -5 AM 8:18

LAW DEPARTMENT



NATIONAL TRUST
for HISTORIC PRESERVATION

1785 MASSACHUSETTS AVENUE, N.W.
WASHINGTON, D.C. 20036
TEL. 202/588-6035 FAX. 202/588-6038

FACSIMILE COVER SHEET

TO: Jeffrey Rawson, BLM (307) 828-4539

Richard Currit, WY-SHPO
(307) 777-3543

Tim Nowack, BLM
(307) 775-6129

Carol Legard, ACHP
(303) 969-5115

Barbara Pahl, NTHP
(303) 623-1508

Darrin Old Coyote, Crow Nation
(406) 638-3880

Jimmy St. Goddard, Blackfeet Nation
(406) 338-7530

Jimmy Arterberry, Comanche Tribe
(580) 492-3733

Carlton Underwood, N. Arapahoe BC
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Floyd Wopsock, Northern Uta Tribe
(435) 722-2374

Blaine Edmo, Shoshone-Bannock Tribe
(208) 237-0797

John Washakie, Eastern Shoshone Tribe
(307) 332-3532

Gilbert Brady, Northern Cheyenne CB
(406) 477-6210

FROM: Michael Smith
Public Lands Counsel
Tel: 202/588-6031
Fax: 202/588-6038

DATE: August 27, 2003

PAGES: Cover plus 7

RE: Scoping Comments for the Revision of the Kemmerer Resource Management Plan

PLEASE DELIVER THIS FAX IMMEDIATELY – THANK YOU!

CONFIDENTIALITY NOTICE: The contents of this facsimile transmission contain confidential information belonging to the sender which is legally privileged. The information is intended only for the use of the individual or entity named above. If you are not the intended recipient, you are hereby notified that any disclosure, copying, distribution or the taking of any action in reliance on the contents of this information is strictly prohibited. If you have received this transmission in error, please immediately notify us by telephone to arrange for return of the original documents to us.



August 26, 2003

VIA FAX (307) 828-4539 AND MAIL

Mr. Jeffrey Rawson
 Field Manager, Kemmerer Field Office
 Bureau of Land Management
 312 Highway 189 North
 Kemmerer, Wyoming 83101

RECEIVED
 BLM KEMMERER F.O.
 2003 SEP -2 AM 10:03

Re: Scoping Comments for the Revision of the Kemmerer Resource Management Plan

Dear Mr. Rawson:

On behalf of the National Trust for Historic Preservation (National Trust), we appreciate the opportunity to submit these scoping comments regarding Bureau of Land Management's notice of intent to revise the Kemmerer Field Office's Resource Management Plan (RMP). These scoping comments are intended to outline cultural and historic issues which BLM needs to address in the revised RMP.

Interests of the National Trust. The National Trust has a strong interest in the preservation of our nation's historic resources. Congress chartered the National Trust in 1949 as a private charitable, educational, and nonprofit organization to facilitate public participation in the preservation of our nation's heritage and culture, and to further the purposes of federal historic preservation laws. 16 U.S.C. §§ 461, 468. In addition to our headquarters in Washington, D.C., the National Trust operates seven regional and field offices throughout the country, including our Mountains-Plains Office in Denver, as well as 23 historic sites open to the public. With the strong support of our 200,000 members around the country, including 260 members in Wyoming, the National Trust works to protect significant historic places and to advocate historic preservation as a fundamental value in programs and policies at all levels of government.

General Concerns

The National Trust believes that BLM should be taking substantially greater responsibility for evaluating and protecting cultural and historic resources. BLM manages the largest and most diverse inventory of cultural resources of any federal agency. The Kemmerer field area has a number of highly significant cultural, historical, and archeological resources, including the Oregon, Mormon-California, and Lander National Historic Trails, and the Pony Express Route. In addition, the Kemmerer area contains many historic resources that have not yet been identified, and whose potential significance and eligibility for the National Register

Protecting the Irreplaceable



Mr. Jeffrey Rawson
Bureau of Land Management
August 26, 2003
Page 2

have not yet been evaluated. Because they are unidentified or unevaluated, these resources are likely to be the most vulnerable to unintended adverse impacts unless they are fully considered in the planning process. The RMP revision provides an excellent opportunity for BLM to proactively survey, evaluate, and protect these invaluable and irreplaceable cultural and historic resources.

Management decisions in the planning process should consider the broader implications of designated uses. We believe the RMP should outline proactive measures to protect cultural and historic resources from mineral development, and should examine how BLM can fulfill its stewardship responsibilities and incorporate specific management plans into each of the alternatives depending on the designated activities. Given this, we believe that outlining the issues and potential areas of interest at the outset of the resource management planning process will enhance BLM's ability to develop an effective RMP.

The following comments outline our concerns and provide specific recommendations for developing an appropriate RMP:

1. **BLM Should Engage in Consultation with Indian Tribes Early in the Planning Process.**

BLM should engage in consultation with Indian tribes early in the RMP process as required by the National Historic Preservation Act (NHPA), the Federal Land Policy and Management Act (FLPMA), and other statutes, policies and procedures. FLPMA requires Federal agencies to "coordinate the land use inventory, planning, and management activities of or for such lands with the land use planning and management programs of . . . Indian tribes by, among other things, considering the policies of approved State and tribal land resource management programs." 43 U.S.C. § 1712(c)(9). Under the NHPA, tribal consultation is necessary to identify "traditional cultural properties" and other religious and cultural values within a land management area during the planning process. See 16 U.S.C. § 470a(d)(6)(B); see also National Register Bulletin No. 38.

BLM's handbook on tribal consultation best describes why early consultation is necessary – "to assure that tribal governments, Native American communities, and individuals whose interests might be affected have a sufficient opportunity for productive participation in BLM planning and resource management decision making." BLM, H-8160-1 – General Procedural Guidance for Native American Consultation, I.A. (released 11/03/94) [hereinafter Native American Handbook]. The handbook also recognizes that conventional NEPA and NHPA analyses "generally do not appropriately address the consequences felt by Native American practitioners." Id. at II.D.

As the Native American Handbook further points out, consultation requirements include a "good faith effort to elicit specific kinds of information." BLM cannot assume that a failure to respond to an inquiry letter indicates that the tribe is not concerned. Native American Handbook

Mr. Jeffrey Rawson
Bureau of Land Management
August 26, 2003
Page 3

at III.A; see also Pueblo of Sandia v. United States, 50 F.3d 856 (10th Cir. 1995). Effective consultation is important because Native American interests can only be dealt with through the consultation process. The handbook states that consultation is necessary because:

Native American issues and concerns, although associated with BLM lands and resources, are based on intangible values. Intangible values are not amenable to 'mitigation' in the same way that a mitigation strategy can be used to address damage to, or loss of, physical resources.

Native American Handbook at II.

Actual mitigation of adverse impacts on cultural and historic resources might be effective at the time of planning specific projects to satisfy Section 106 of the NHPA. However, the BLM recognizes that

[s]trategies to reduce proposed Federal actions' impacts, or proposed undertakings' effects, generally follow models related to [NEPA], the [NHPA], and their implementing regulations (40 CFR Parts 1500-1508 and 36 CFR Part 800). Where Native American cultural and religious concerns are involved, however, conventional methods of mitigation generally do not appropriately address the consequences felt by Native American practitioners.

Native American Handbook at II.D (emphasis added). Therefore, it is critical that BLM adequately solicit information from potentially affected Native American tribes, and more importantly, provide them with sufficient information about the project, to identify areas of traditional cultural and religious significance. Failure to provide Native American tribes with an adequate opportunity to raise their legitimate concerns would mean that the RMP process is deficient.

Recommendations:

- ◆ Make a "reasonable and good faith effort" to consult with Native American tribes located in and around southwestern Wyoming, as well as tribes known to have a historical connection to the area;
- ◆ Adhere to federal laws and agency policies regarding consultation with tribes;
- ◆ Request information about areas with potential religious or cultural significance to Indian tribes;
- ◆ Allow Indian tribes who are interested in the RMP process an adequate opportunity to engage in consultation and provide information; and
- ◆ Ensure that areas identified as having religious or cultural significance to Indian tribes are carefully considered in the RMP process, and that adequate protection for these resources is integrated into the RMP.

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Page 4

2. **BLM Should Integrate Compliance with Section 110 of the NHPA, and President Bush's "Preserve America" Executive Order, into the RMP Process.**

Federal legislation and executive orders emphasize the importance of cultural and historic preservation as a national policy. For example, the National Historic Preservation Act affirms that "the historical and cultural foundations of the Nation should be preserved as a living part of our community life and development in order to give a sense of orientation to the American people," and that "the preservation of this irreplaceable heritage is in the public interest so that its vital legacy of cultural, educational, esthetic, inspirational, economic, and energy benefits will be maintained and enriched for future generations of Americans." 16 U.S.C. § 470(b)(2), (4).

BLM's stewardship responsibilities for historic properties are defined in Section 110 of the NHPA. Among other things, Section 110 requires BLM to locate, inventory, and nominate properties to the National Register, as well as to assume responsibility for preserving historic properties under its ownership or control. *Id.* § 470h-2(a).

BLM should take proactive steps to comply with the mandates of Section 110 of the NHPA, identifying within the RMP how BLM intends to satisfy its stewardship responsibilities, especially when considering the impacts that other potential uses within the area may have on historic and cultural resources.

More recently, President Bush has strengthened the stewardship responsibilities of federal agencies. On March 3, 2003, he signed Executive Order 13287, entitled "Preserve America," which requires each federal agency to "prepare an assessment of the current status of its inventory of historic properties," expanding on the requirement found in section 110(a)(2) of the NHPA. Exec. Order 13287, § 3; *see* 16 U.S.C. § 470(h)-2(a)(2). Additionally, the President has required each agency to "ensure that the management of historic properties in its ownership is conducted in a manner that promotes the long-term preservation and use of those properties." *Exec. Order 13287* § 4. Accordingly, the RMP should take stronger steps to ensure that all designated uses comply not only with the NHPA, but also with the mandates of President Bush's proactive stewardship agenda.

Recommendations:

BLM should:

- ◆ Integrate President Bush's "Preserve America" stewardship mandates into the RMP;
- ◆ Integrate Section 110 of the NHPA into the RMP process by identifying, evaluating, and nominating properties to the National Register;
- ◆ Adopt specific measures to protect cultural resources from artifact collectors, looters, and vandals;

Mr. Jeffrey Rawson
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August 26, 2003
Page 5

- ◆ Ensure that allowed uses within the area will not diminish BLM's ability to identify and protect historic properties in the future; and
- ◆ Adopt "No Surface Occupancy" restrictions and additional necessary stipulations for leases, including closing sensitive areas to leasing altogether, in order to avoid and minimize potential adverse effects on cultural and historic properties.

3. **Adequately Integrate FLPMA's Multiple-Use Mandates Into the RMP Process.**

FLPMA requires BLM to establish land use plans that consider a combination of "multiple uses." 43 U.S.C. § 1701 et seq. However, BLM must manage the "public lands in a manner that will protect the quality of historical and archaeological values." *Id.* § 1701(a)(8). A determination of designated uses is not based on "the greatest economic return or the greatest unit output." *Id.* § 1702(c). Instead, FLPMA requires a "systematic interdisciplinary approach" as a method for achieving a combination of multiple uses. *Id.* § 1712(c)(1). Thus, BLM should consider all resources, including the preservation of cultural and historic properties, when determining use distribution within a given plan.

One of FLPMA's fundamental policies is that "the public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values; [and], where appropriate, will preserve and protect certain public lands in their natural condition . . ." *Id.* § 1701(a)(8). In order to ensure that this policy is carried out, the RMP needs to address potential threats to these values from a variety of uses, including but not limited to oil and gas development. For example, the RMP should also address the potential impacts of recreational uses such as "Off-Road Vehicles" (ORV) and other recreational activities. Taking into account impacts from only one use would fail to meet both the spirit and letter of FLPMA's multiple-use mandate.

In general, the RMP must comport with the multiple use mandates set out in FLPMA and further defined in BLM's Cultural Resource Management Program (Manual 8100) [the "CRMP Manual"]. BLM should follow the five objectives for identifying, planning, and managing cultural resources described in the CRMP Manual -

- (1) Respond to statutory authorities concerning historic preservation and cultural resource protection, and utilize the principles of multiple use;
- (2) Recognize the value of cultural resources, and manage in a way that does not diminish these uses and values;
- (3) "Contribute to land use planning and the multiple use management of the public lands in ways that make optimum use of the thousands of years of land use history inherent in cultural resource information, and that safeguard opportunities for attaining appropriate uses of cultural resources;"
- (4) Protect and preserve representative examples of cultural resources; and
- (5) "Ensure that proposed land uses, initiated or authorized by BLM, avoid inadvertent damage to federal and non-federal cultural resources."

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Bureau of Land Management
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Page 6

BLM, CRMP Manual.

Recommendations:

BLM should:

- ◆ Establish as a goal the protection, conservation and, where appropriate, restoration, of archeological and historic sites and landscapes in the Kemmerer field area;
- ◆ Determine the sites or areas that are most vulnerable to current and future adverse impacts, and adopt management actions necessary to protect, conserve, and restore cultural resources; and
- ◆ Outline specific management actions, such as stabilization, fencing, signage, closures, or interpretative development, to protect, conserve and, where appropriate, restore cultural resources.

4. BLM Should Comply with Section 106 of the NHPA Prior to Designating Areas for Off-Road Vehicle Use.

In the National Trust's view, designating certain areas for Off-Road Vehicle (ORV) use in the RMP requires prior compliance with Section 106 of the NHPA. Accordingly, BLM should conduct a Section 106 review of areas designated for ORV use, before approving the RMP. Section 106 review is triggered when a federal agency approves an undertaking. *Id.* . BLM's regulations state that the RMP "is not a final implementation decision on actions which require further specific plans, process steps, or decisions under specific provisions of law and regulations." 43 C.F.R. § 1601.0-5(k). However, designating an area in the RMP as open for ORV use is a final implementation decision, because it does not require further specific plans or approvals from BLM. ORV use has the serious potential to harm identified and unidentified cultural and historic resources. Therefore, we believe that designating an area in the RMP for ORV use is a site-specific activity that requires Section 106 review prior to approval of the RMP.

Recommendation:

- ◆ BLM should not approve ORV designations in the RMP, either "open" or "limited," until it has completed a Section 106 review.

5. Ensure Adequate Viewshed Protection for the Oregon/Mormon National Historic Trail within the RMP Area

In designating specific areas as open for activities, e.g. oil and gas development, BLM must ensure that such activities will not adversely impact the historic landscape, or viewshed, of the Oregon/Mormon National Historic Trail. Historic landscapes are a large part of what makes National Historic Trails so significant. If resource use designation in the RMP will potentially

Mr. Jeffrey Rawson
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August 26, 2003
Page 7

allow for surface occupancy, or other surface activities that may obstruct the viewshed of any historic trail, BLM should comply with the mandates of Section 106 of the NHPA prior to approving the RMP.

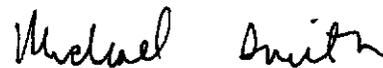
Recommendations:

BLM should:

- ◆ Conduct a Section 106 review before designating any areas in and around National Historic Trails as open for activities that may allow surface occupancy;
- ◆ Provide adequate buffer zones to ensure that surface activities will not adversely impact the viewshed for National Historic Trail;
- ◆ Attach adequate restrictions and stipulations for areas open for oil and gas development outside of the buffer zones; and
- ◆ In the alternative, restrict activities by applying NSO restrictions or other enforceable stipulations adequate to prevent all impacts to the historic viewsheds of National Historic Trail.

The National Trust appreciates the opportunity to provide these scoping comments for the Kemmerer Field Area RMP. We believe that the resource management planning process is a critical step in the stewardship and protection of cultural and historic resources. If we can provide you with additional information or otherwise be of assistance, we will be happy to do so.

Respectfully submitted,



Michael Smith
Public Lands Counsel

cc: Richard Curritt, Wyoming SHPO, Cheyenne
Tim Nowack, BLM, Cheyenne
Carol Legard, ACHP, Denver
Barbara Pahl, NTHP, Denver
Darrin Old Coyote, Crow Nation
Jimmy St. Goddard, Blackfeet Nation
Jimmy Arterberry, Comanche Tribe
Carlton Underwood, Northern Arapahoe Business Council
Floyd Wopsock, Northern Ute Tribe
Blaine Edmo, Shoshone-Bannock Tribe
John Washakie, Eastern Shoshone Tribe
Gilbert Brady, Northern Cheyenne Cultural Board

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DAVE FREUDENTHAL
GOVERNOR



STATE CAPITOL
CHEYENNE, WY 82002

Office of the Governor

September 2, 2003

Kemmerer Resource Management Plan
Bureau of Land Management
Tom Davis, RMP Project Manager
312 Hwy 189 North
Kemmerer, WY 83101

2003 SEP - 5 AM 09 17
RECEIVED
BLM KEMMERER F.O.

Re: Kemmerer Resource Management Plan Revision

State Identifier Number: 2003-081

Dear Mr. Davis:

The State Planning Coordinator's Office has reviewed the Federal Register Notice of Intent and the current Kemmerer Resource Management Plan. This Office also distributed the Notice of Intent to all affected state agencies for their review, in accordance with State Clearinghouse procedures. Attached are comments from the Wyoming Department of Environmental Quality, the Wyoming Game and Fish Department, the Department of State Parks and Cultural Resources, the Office of State Lands and Investments and the Department of Agriculture

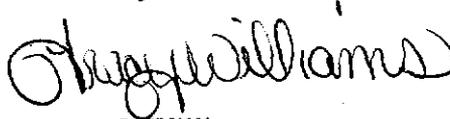
The agencies have provided information for BLM's use or identified concerns or issues which should be addressed throughout the RMP revision process. In addition to these comments, we ask that BLM be sensitive to maintaining access to State trust lands isolated by lands under BLM's jurisdiction, address the economic values of the mineral estate potential for the area, only revise those parts of the existing RMP which are "not working," and maximize a balanced approach to the use of the area's resources, minimizing regulation as much as possible. Continuous monitoring of impacts and mitigation effectiveness, and flexibility to manage adaptively, will be key issues.

The State is looking forward to working closely with the BLM team as a cooperating agency partner throughout this process, and to providing more detailed information as appropriate and requested.

Page Two

Please continue to provide this office with either (7) seven hard copies or electronic copy (submit to SPC@state.wy.us) of continued information for review and distribution to interested agencies. Thank you for the opportunity to comment.

Sincerely,



Tracy J. Williams
Policy Analyst

TJW

Enclosures: (6)

Wyoming Game and Fish Department
Department of Environmental Quality
State Historic Preservation Office
Department of Parks and Cultural Resources
Department of Agriculture
Office of State Lands and Investments

RECEIVED
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State of Wyoming
Office of the Governor
Planning Coordinator's Office

DATE: September 2, 2003

TO: Mr. Tom Davis
Kemmerer RMP Project Lead

FAX NUMBER: 307-828-4539

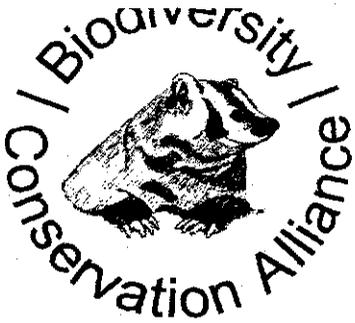
PHONE NUMBER:

FROM: Tracy J. Williams, Policy Analyst

Transmitting (17) Pages Plus the Cover Page

Kemmerer Resource Management Plan NOI Comments
State Identifier Number: 2003=-081
Original letter mailed this date via U.S. Postal Service

122 West 25th Street -- Herschler Bldg., 1 East -- Cheyenne, WY 82002-0600
307.777.6924 -- 307.777.8586 fax



Working to Protect Native Species and Their Habitats

P.O. Box 1512, Laramie, WY 82070 (307) 742-7978 fax: 742-7989

August 8, 2003

Kemmerer Field Office, BLM
312 Hwy. 189 North
Kemmerer, WY 83101

Re: Scoping Comments on the Kemmerer Resource Management Plan Revision

Dear Planning Team:

The following are the comments of Biodiversity Conservation Alliance (BCA) on the proposed revision of the Kemmerer RMP. Please address the issues raised in these comments in the forthcoming DEIS for the plan revision.

1. The new Kemmerer RMP should require adequate protection for sage grouse.

Current BLM protections and mitigations for sage grouse are woefully inadequate. Currently, the Wyoming BLM typically requires NSO stipulations for the first $\frac{1}{4}$ mile radius of a sage grouse lek, and mere timing limitations from $\frac{1}{4}$ mile to two miles of the lek. Most sage grouse typically nest within 2 miles of a lek site, and scientists agree that the area within two miles of the lek site should be given full protection from disturbances. This includes road-building, oil and gas drilling, and *vegetation manipulation projects such as sagebrush clearing and burning*. If disturbance-related activities are allowed to occur at all within the two-mile radius of a lek site, the grouse will return the following spring to a lek site with heavily impacted nesting habitat, and likely human activity on roads and well sites well within the 2-mile radius. This will cause decreased reproduction and possibly lek abandonment. Given that the sage grouse has been petitioned for listing under the Endangered Species Act, and this listing will now become even likelier due to the impacts of West Nile Virus on sage grouse populations westwide, the absolute minimum measure that should be emplaced is a NSO (and no vegetation treatments) within 2 miles of a sage grouse lek.

2. The new Kemmerer RMP should require adequate protection for prairie dogs.

Current BLM protective measures for prairie dogs seem essentially nonexistent. The white-tailed prairie dog has been petitioned for listing under the Endangered Species Act, and also is a keystone species that is vital to the viability of other rare and declining species

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such as ferruginous hawk, swift fox, black-footed ferret, mountain plover, and burrowing owl. The new RMP should require NSO stipulations for all prairie dog colonies with a ½ mile buffer to prevent increased raptor predation that results from the construction of roosting structures such as condensate tanks. Prairie dog colonies should also be avoidance areas for power line rights-of-way. In addition, the BLM should make a current survey of prairie dog colonies throughout the Field Office, and prairie dog complexes larger than 3,000 acres should be designated as Areas of Critical Environmental Concern, with additional protections such as a moratorium on recreational shooting.

3. The Kemmerer RMP should adequately protect big game crucial ranges.

The BLM has heretofore been woefully remiss in protection big game crucial winter, crucial winter yearlong, severe winter relief, and calving ranges. Seasonal stipulations have failed miserably to provide protection, as they have allowed roads and well sites to be built inside crucial winter ranges, and these seasonal stipulations are waived at the operator's convenience, nullifying the nominal protection that is afforded in the first place. The result is that roads and well sites are built inside big game crucial ranges, with the result that vehicular traffic and increased human activity occur inside these sensitive habitats during the crucial season. This is an unacceptable state of affairs. Instead, the new RMP should require NSO stipulations to be placed on all big game crucial ranges, with no opportunity for waiver.

4. The Kemmerer RMP should adequately protect raptor nesting habitat.

Current BLM mitigation measures and protective stipulations regarding raptor nest sites are inadequate. These measures typically require No Surface Occupancy only within a few hundred feet of a raptor nest. The best available science suggests that 1/4-mile buffers are the minimum protection that can be afforded to prevent nest abandonment, and larger, 1-mile buffers are needed to account for particularly sensitive species like ferruginous hawks and for drought years and other periods of prey scarcity, when raptors range more widely and are more susceptible to disturbance. It is important to note that a disturbance that causes nesting raptors to abandon the nest for as little as 10 or 20 minutes can lead to the fatal cooling or overheating of eggs or the fatal dehydration or exposure of chicks, leading to the failure of that year's reproductive effort and consequently impacting the local raptor population. Bald eagle winter roost sites must also be identified and granted similar protections.

5. The Kemmerer RMP should identify and protect big game migration corridors.

The Wyoming Game and Fish Department has identified migration routes for several big game species. These migration corridors should be protected from industrialization, lest habitat fragmentation or increased levels of human disturbance lead to interruption of annual migration patterns or even extirpation of migratory populations. An important lesson

from the Red Desert's Steamboat Mountain elk herd is that once a migratory population is lost, natural migration patterns are not reestablished by the reintroduction of that same species to the vacated area. In the case of the Steamboat Mountain herd, the native herd migrated between summer ranges in the Wind River Range and winter habitats in the Red Desert; following extirpation in the 1930s, the reintroduced population failed to take up the original migratory patterns of the native herd.

6. The Kemmerer RMP should identify and protect mountain plover nesting habitat.

Mountain plovers are about to be listed as Threatened under the ESA. The Kemmerer RMP should include a comprehensive survey of the field office for mountain plover, conducted during the short window in late spring when the birds are visible and according to scientifically accepted protocols. Nesting areas that are identified should be protected with No Surface Occupancy stipulations, with a minimum ½ mile NSO buffer.

7. The Kemmerer RMP should identify and protect pygmy rabbit habitats.

The pygmy rabbit has been petitioned for listing under the ESA. The Kemmerer RMP should include a comprehensive survey of the Field Office for pygmy rabbits, and identified habitats should be protected by NSO stipulations and a moratorium on sagebrush eradication or reduction programs. Pygmy rabbits are dependent on stands of large, dense sagebrush that are typically found in draw bottoms. These animals do not disperse very far, and are vulnerable to the habitat fragmentation effects of road-building and oil and gas development.

8. The Kemmerer RMP should protect populations of Bonneville and Colorado River cutthroat trout.

The new RMP should provide measures that protect the habitat of indigenous populations of Bonneville and Colorado River cutthroat trout. Protective measures should ensure that sediment loading does not occur in streams inhabited by these two subspecies, that surface-disturbing activities do not take place on floodplains, that riparian vegetation achieves Properly Functioning Condition and is not overgrazed, and that toxic CBM wastewater and other pollutants are not discharged into waterways containing these populations.

9. The Kemmerer RMP should protect populations of rare native warmwater fishes.

We are concerned about the potential impacts of water withdrawals (both from oil and gas projects and livestock operations), dams and diversions (small and large), coalbed methane wastewater discharge, and siltation from road and wellpad construction on BLM Sensitive

fished such as roundtail and leatherside chub and bluehead sucker as well as downstream Endangered fishes such as the Colorado pikeminnow, humpback chub, razorback sucker, an bonytail. Actions that interrupt the flow regime, temperature regime, chemical signature, or migration routes for these fishes must be prohibited through the new RMP.

10. The Kemmerer RMP should minimize fences on public lands, remove unpermitted fences, and bring all fences into compliance with WGFD standards.

Fences emplaced to control livestock movements also interfere with the migrations and dispersal of wildlife, particularly pronghorns. WGFD require that all fences should have a bottom strand at least 16" above the ground and of smooth wire. Wire mesh fences of the type formerly used to control sheep should be eliminated. Experience with winter die-offs in the Evanston area in the early 1970s demonstrates that fences can be a barrier to pronghorns and result in major losses.

11. The Kemmerer RMP should institute a natural fire policy in place of controlled burns.

Precious little is known about the frequency and severity of natural wildfires in the sagebrush steppes of southwestern Wyoming. As a result, the BLM as a land manager is in a poor position to know how to manage a large-scale program of sagebrush manipulation and controlled burning. Thus, the appropriate approach is to let natural wildfires burn in order to reestablish the natural mosaic of sagebrush stands. This should be codified as a requirement in the new RMP.

12. The Kemmerer RMP should mandate directional drilling to reduce habitat impacts.

Directional drilling, using clustering of wells on a few sites and drilling outward, should be required for all full-field oil, gas, and CBM development projects under the new RMP. Doing so fulfills the operators' desire to extract resources while maintaining other multiple uses of the land to the greatest extent possible under full-field development, and also prevents undue degradation of lands and resources that occurs through the unnecessarily heavy impacts of vertical drilling programs. Please see the attached report, which details the feasibility of directional drilling both from an economic and technical standpoint; we incorporate this report into our comments by reference. Significantly, local experience also supports directional drilling:

"There is, however, a benefit from pad drilling, and that is that the wellheads are all concentrated in a small area. That, as we mentioned in our comments, is very positive for the environment. It significantly reduces our footprint. But it also consolidates the wells so we can use centralized facilities, which will

lower capital costs. And we think we'll gain back some of the slippage in cost for directional drilling by having consolidated service facilities. In fact, we're going to look at centralizing facilities to minimize the visual impact as well as the operating impact of having well-by-well production facilities out there. That should further reduce our operating cost. And we believe that, overall, we should see net savings from pad drilling by the time we implement fully directional drilling plus the consolidation of service facilities."

-Chuck Stanley, Questar, regarding directional drilling experience in the Jonah Field. Questar First-Quarter 2003 Teleconference Question and Answer Session, www.questar.com/news/teleconference/teleQA503.htm. Emphasis added.

Thus, there is no excuse for BLM to fail to mandate this lower-impact technology for drilling in the Kemmerer RMP.

13. The Kemmerer RMP should prohibit surface disposal of CBM wastewater.

Coalbed methane wastewater is typified by high salinity and sodicity, as well as high concentrations of toxic heavy metals. This alone should be sufficient to preclude its surface disposal, which allows the wastewater to move into near-surface aquifers and surface streams and wetlands, where it could outright poison aquatic life and/or alter with the chemical signature of the waterway and thus impair the migrations of fishes such as bluehead suckers and Colorado pikeminnows. But furthermore, even if the wastewater were to be purified, the massive influx of water, potential changes in temperature gradients, and changes to natural flow patterns would have substantial and lasting impacts on fish populations by altering the cues for migration and spawning to the point that reproduction could be jeopardized. For these reasons, coalbed methane wastewater should either be reinjected into the ground in manner that allows for future retrieval, or treated and shunted into municipal water systems for domestic use. These measures should be required in the new RMP.

14. The Kemmerer RMP should mandate the use of pitless drilling technology.

Pitless drilling entails the recycling and ultimate reinjection of drilling fluids through a closed-loop system, preventing the need for reserve pits filled with toxic compound, a possible deathtrap for livestock and wildlife. Its use also reduces the size needed for the drilling pad, thus reducing the wellpad footprint. This technology actually costs less to implement than the cost of digging, lining, and disposing of a reserve pit, and thus there is no reason not to mandate pitless drilling technology for all oil and gas projects. The new RMP should require the use of this technology unless its environmental impacts in a specific case are greater than those of a reserve pit. See attached report for details.

15. The new RMP should consider the forthcoming Heart of the West Wildland Network Design and be compatible with its recommendations.

The Wildlands Project is in the final stages of developing the Heart of the West Wildlands Network Design, a core-corridor model for maintaining wildlife habitat and important linkages for the entire Wyoming Basins Ecoregion. We incorporate the final document into these comments by reference; it is slated for release this fall. The BLM should carefully consider this plan, and implement its zoning recommendations to achieve an ecologically sound land management strategy on a regional scale.

16. The BLM should consult with the tribes indigenous to the Kemmerer Field Office.

The BLM should consult with, and engage as cooperating agencies, the Native American tribes indigenous to the area, including but not limited to the Shshone, Bannock, and Ute peoples. Special protection should be granted to Native American Respected Places and Sacred Sites. It is important to note that merely notifying the tribes does not satisfy the BLM's legal requirements; the tribes must be actively engaged to achieve a meaningful dialogue.

17. The new RMP should forbid industrial development on floodplains.

Pursuant to Executive Orders currently in force, the new RMP must preclude construction activities on 25-year and 100-year floodplains, both for permanent streams and intermittent draws.

18. The new RMP should survey for, identify, and protect lands of wilderness quality.

The BLM should survey the Kemmerer Field Office for lands that meet wilderness criteria, including but not limited to lands identified by citizen inventory adjacent to the Lake Mountain WSA in the 1992 report, *Wilderness at Risk*. These lands should be withdrawn from mineral leasing and other surface-disturbing activities through the new RMP.

Conclusion

We urge the BLM to draft a new RMP that maintains the wide-open spaces, visual resources, and wildlife habitats managed by the Kemmerer Field Office. On lands where oil and gas development is appropriate, these development activities should be done right, with only secondary regard to the timeliness and profitability of doing so. All activities permitted under the new RMP should be approached within the context of maintaining or improving wildlife, water quality, recreation opportunities, visual resources, and wilderness qualities, in order to fulfill BLM's multiple-use mandate. We urge the agency to strike a balance between

competing uses, rather than elevating oil and gas development to a preeminent status and ignoring other resources that are valuable to the public over the long term.

Thanks you for considering these comments, and please keep us informed of any future documentation relating to this RMP revision.

Sincerely yours,

A handwritten signature in black ink, appearing to read 'Erik Molvar', with a long horizontal flourish extending to the right.

Erik Molvar

Attachment: *Drilling Smarter* report



Drilling Smarter:

Using Directional Drilling
to Reduce Oil and Gas Impacts in the Intermountain West

By Erik M. Molvar

Reviewed by

Dr. Pat Rickey

Senior Research Associate, Exxon Production Research Company, 1967-1996

Walter K. Merschat

*Exploration Geologist, Unocal, 1969-76; Geoscientist, Gulf Research, 1976-84;
Consultant, Scientific Geochemical Services, 1985-present*

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Additional copies of this report are available online at:

www.voiceforthewild.org

Acknowledgments

Persons who contributed materials, information, or edits to this report include Gwen Lachelt of the Oil and Gas Accountability Project, Mark Pearson, Tom Darin, Michele Barlow, The U.S. Department of Energy, Phillips Petroleum, Pacific Environment, Pete Morton, and many others.

FOREWORD

This study was compiled by researching technical and trade publications produced by the oil and gas industry. Conclusions and recommendations of this report rely heavily on the findings and conclusions of the industry experts who authored these studies. We recognize that success stories are more likely to be published than failures, and as a result great pains have been taken to present both the positive aspects and drawbacks of directional drilling, and to present data that reflects industry-wide averages (incorporating both successful and failed projects) wherever these data were available. As a result, a higher proportion of studies outlining the negative aspects of directional drilling are presented here than are found in the petroleum engineering literature, which almost universally provides glowing endorsements of the technical capabilities and economic feasibility of directional drilling. We chose this conservative approach in order to avoid overstating the capabilities of these technologies.

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Drilling Smarter: Using Directional Drilling to Reduce Oil and Gas Impacts in the Intermountain West

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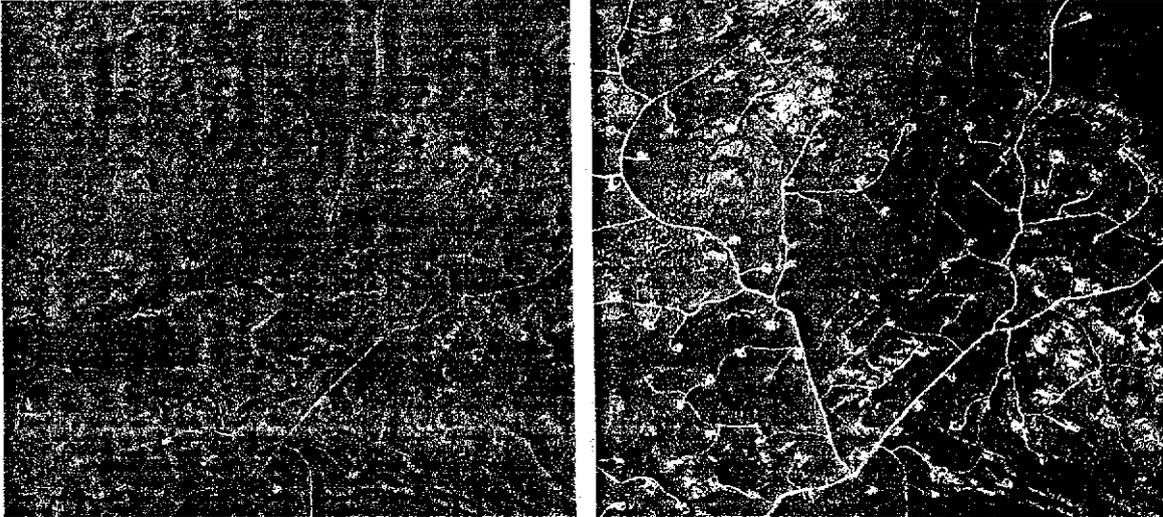
EXECUTIVE SUMMARY

Current practices in oil and gas exploration and development have produced massive environmental impacts across broad stretches of the Intermountain West. However, over the past several decades, the oil and gas industry has developed innovative technologies that can extract energy resources from the ground while reducing the impacts of that drilling on the natural environment. In particular, directional drilling technology has the potential to offer a less damaging alternative to conventional drilling methods in the Rocky Mountain West. Using directional drilling, energy firms can tap deposits of oil and gas at almost any depth from drilling sites up to 6½ miles away from the deposit.

Directional drilling has proven technically and economically feasible in a broad range of geologic settings, including tight gas, heavy oil, and coalbed methane. This method is proven to substantially increase producible reserves of oil and gas. Because the increased productivity of directional drilling compensates for additional costs, directional drilling is often more profitable than vertical drilling.

The Bush Administration's National Energy Policy calls for the use of directional drilling technology to reduce the environmental impacts of oil and gas exploration and development. However, federal agencies rarely even consider directional drilling as an alternative for oil and gas projects involving federal lands and minerals in the Intermountain West, and the oil and gas industry frequently balks when asked to use these technologies. On lands where oil and gas development is deemed appropriate and compatible with other uses in the Rocky Mountain West, federal agencies should consider whether they can reduce the damages from drilling activities through the implementation of directional drilling technologies, and if so, require their use.

Directional drilling does not prevent all environmental impacts of oil and gas exploration and development, and clustering operations lead to an intensification of impacts in the drilling area even while reducing the overall surface area across which those impacts occur. In addition, use of directional drilling technology does not address the numerous other impacts associated with oil and gas development and production, such as chemical spills and air pollution. As a result, some lands — including national wildlife refuges, parks, wilderness areas and monuments; roadless and wilderness-quality lands; and other sensitive lands — contain resources incompatible with oil and gas development and should remain withdrawn from all types of drilling. And appropriate buffers must be established to protect these lands from impacts in adjacent areas. Additionally, other lands such as important wildlife habitat, scenic landscapes, wetlands and other sensitive lands must be protected from the surface impacts of energy development.



Images provided by SkyTruth and the Upper Green River Valley Coalition

Recent full-field development in western Wyoming's Jonah Field as shown by aerial images. The photograph at left shows the landscape in 1994, before full-field development. By 1999 (at right), the landscape had become fragmented by roads and well pads.

AN ENVIRONMENTAL IMPERATIVE

A century of oil and gas development has left a heavy mark on many of our nation's public and private lands, particularly in the West. Oil and gas fields have become a vast spiderweb of pipelines and access roads, pockmarked with well pads, which fragment the landscape. Compressors, trucks, and pumpjacks generate noise, pollutants, and dust. Water and mud "produced" during the course of oil and gas development threatens local surface- and ground-water supplies used for residential and agricultural needs. Indeed, full-field development for oil and gas has often converted pristine wildlands and pastoral rural areas into industrial landscapes. In its conventional form, oil and gas production destroys the wild character of primitive areas, severely diminishes the recreational value of the landscape, creates long-term scarring across scenic viewsheds, and degrades or destroys habitat for native wildlife and fishes. As such, conventional oil and gas development is fundamentally incompatible with most other land uses, both public and private, particularly where dense well spacing is allowed.

The drilling activities associated with oil and gas production are just some of the sources of environmental damage associated with the production of oil and gas. While all of the potential impacts from oil and gas exploration, development and transportation must be considered before this activity is approved on federal lands,

it is particularly important to consider alternatives to traditional drilling. The following sections describe a few examples of the impacts of drilling.

Oil and Gas Development Fragments Habitat

The sprawl of oil and gas fields can cause severe habitat fragmentation through the proliferation of roads, pipelines, and well pads across the landscape. The effects of forest fragmentation on bird densities are well-documented (e.g., Hansen and Rotella 2000). But fragmentation also impacts sagebrush bird species (Knick and Rotenberry 1995). In sagebrush habitats, major songbird declines have been found in areas with heavy oil and gas development (Inglefinger 2001). Lyon (2000) found that the construction of roads and wells within 2 miles of sage grouse strutting grounds had negative impacts on nesting. On a population scale, drilling has severe short-term impacts on sage grouse, while associated roads, pumping stations, and associated facilities have permanent negative impacts (Braun 1998, Braun et al. in press). Thus, oil and gas drilling can have serious effects even on relatively small, mobile wildlife.

Wells and Roads Displace Wildlife

Oil and gas development can also have a major impact on big game animals. Powell and Lindsey (2001) found that elk avoid lands within 1.5 kilometers of oilfield roads and well sites in

the sagebrush steppes of Wyoming. In mountainous habitats, the construction of a small number of oil or gas wells has caused elk to abandon substantial portions of their traditional winter range (Johnson and Wollrab 1987, Van Dyke and Klein 1996). Drilling in the mountains of western Wyoming displaced elk from their traditional calving range (Johnson and Lockman 1979, Johnson and Wollrab 1987). Migration corridors may in some cases be equally important to large mammals and are susceptible to impacts from oil and gas development (Sawyer et al., in press). A study by Nelleman and Cameron (1998) demonstrated that even where directional drilling is widespread, oil and gas development of the Kuparuk Field of Alaska's North Slope caused caribou of the Central Arctic Herd to abandon their traditional calving grounds and displaced concentrations of calving animals to areas with poorer habitat quality. Because winter ranges and calving areas are crucial to the survival of big game herds, these studies demonstrated the need to completely protect these sensitive habitats from surface development by the oil and gas industry.

A POLICY IMPERATIVE

President George W. Bush made the implementation of lower-impact directional drilling technologies the cornerstone of his energy policy. The President's National Energy Policy contains a section titled, "21st Century Technology: The Key to Environmental Protection and New Energy Production," which states:

Producing oil and gas from geologically challenging areas while protecting the environment is important to Americans and to the future of our nation's energy security. New technology and management techniques will allow for sophisticated energy production as well as enhanced environmental protection... Smaller, lighter drilling rigs coupled with advances in directional and extended-reach drilling significantly increase protection of the environment... Modular drilling rigs, 'slimhole' drilling, directional drilling, and other advances enable: [...]

- production of oil and gas with increased protection to wetlands and other sensitive environments;

Other examples of advanced technology include: [...]

- highly sophisticated directional drilling that enables wells to be drilled long horizontal distances from the drilling site[.]

National Energy Policy, May 2001, "Reliable, Affordable, and Environmentally Sound Energy for America's Future: Report of the National Energy Policy Development Group," p. 5.5.

Likewise, the Secretary of the Interior, who is responsible for implementing much of the National Energy Policy, has emphasized the need to begin utilizing directional drilling technology:

We must also harness 21st Century technology to help our environment. Where we once needed scores of wells to tap underground reserves, today in some areas we can use one hole on the surface to drill for oil in a circle extending seven miles. We can use the resources below ground while we preserve the landscape and habitat above.

Presentation of Gale Norton, Secretary of Interior, to the National Newspaper Association (Washington, DC, March 23, 2001). These policy statements represent an unequivocal commitment on the part of the administration to implement less environmentally damaging directional drilling technologies.

A POLICY FAILURE BY THE BUSH ADMINISTRATION

But despite these commitments, the Bush Administration has failed to live up to its promises to implement technologies to reduce the impacts of oil and gas exploration and drilling on the environment. In fact, rather than pushing for more directional drilling, under the Bush Administration, the Interior Department's Bureau of Land Management (BLM) has actively avoided any effort to consider directional drilling as an alternative when energy production is being considered on public lands in the Intermountain West (see Table 3).

For example, federal agencies under the Bush Administration failed to even consider directional drilling as an alternative for at least six western projects where the public specifically demanded the use of these techniques. The environmental consequences from ignoring the opportunity to reduce damages to these surface lands from drilling are staggering.

In western Wyoming's Vermillion Basin, the BLM refused to analyze a directional alternative to protect roadless lands even after a court order

Table 1. Approval documents for oil and gas developments that have been issued since George W. Bush became President in 2001.

Project	State	Document	Date(s)	Directional Requested?	Directional Analyzed?	Notes
Porcupine Tuit	WY	EA	8/02	Yes	No	Thunder Basin N.G. coalbed methane
Atlantic Rim (3 Pods)	WY	DRs	12/01-8/02	Yes	No	winter range, grouse leks coalbed methane
Hanna Draw	WY	DR	6/02	Yes	No	coalbed methane
Vermillion Basin	WY	DR	8/02	Yes	No ¹	in proposed wilderness
WY Powder River Basin	WY	EIS	1/02	Yes	No	coalbed methane 50,000 wells
Southern Ute	CO	EIS	8/02	Yes	No	700 coalbed methane wells
Raton Basin	CO/NM	EA	9/01	No	No	206 wells
Macum/Klabzuba	MT	EA	5/02	No	No	inside Missouri Breaks NM
Huber Six Well	CO	DR	4/02	No	No	6 wells
Pinon Mesa	NM	DR	4/02	No	No	high-profile recreation area
MT Powder River Basin	MT	EIS	2/02	Yes	Yes ²	coalbed methane 30,000 wells
Otero Mesa	NM	EIS	10/00	Yes	Yes ³	includes sensitive wildlife habitats
Farrington	NM	EIS	6/02	No	Yes ⁴	10,000 wells

EA=Environmental Assessment (analyzing alternatives); EIS = Environmental Impact Statement (analyzing alternatives); DR = Decision Record (final decision).

1. Despite court ruling requiring the agency to take a harder look at directional drilling.
2. Not selected as the Proposed Action.
3. Proposed alternative under the Clinton administration, but withdrawn from proposed alternative status by the Bush administration.
4. Only 70 of 10,000 wells to be clustered on single well pads.

compelled them to undertake a detailed analysis of directional drilling. Big game habitat, declining sage grouse and prairie dog populations, and important recreational lands are all at risk.

In northern Wyoming's Powder River Basin, the Administration proposed to approve 50,000 new coalbed methane wells, without considering directional drilling as a means to reduce their massive impacts on ranchers and rural landowners who own property above the energy resource. This scale of development, without considering alternatives that could reduce the damage from drilling, could jeopardize the future of 16 species of plants and wildlife, according to the BLM's own report (BLM 2002a).

On New Mexico's Otero Mesa, directional drilling was the preferred method for producing energy after an analysis was completed under the Clinton Administration. However, the current the Bush Interior Department reversed course and changed the proposed action to conventional vertical drilling. A largely intact roadless area supporting a suite of rare wildlife and plant species is now at risk.

There is a stark contrast between what the Bush Administration has promised the public and the drilling policy it has been implementing throughout the Rocky Mountain West. If the Bush administration truly supports a responsible energy policy that reduces the environmental damage from oil and gas development, it will stop paying lip service to directional drilling while continuing to conduct business as usual.

WHAT IS DIRECTIONAL DRILLING?

Directional drilling is an advanced technology that allows oil and gas resources to be tapped a long horizontal distance away from the well site. For the purposes of this report, "directional drilling" will encompass all forms of drilling where the endpoint of the well is distant from the drill site, rather than directly beneath it. Under this definition, slant-hole wells, S-turn wells, and horizontal wells are all considered forms of directional drilling. The term "directional drilling" can also be used to describe drilling to lay subsurface pipelines beneath rivers and other sensitive areas; this application of

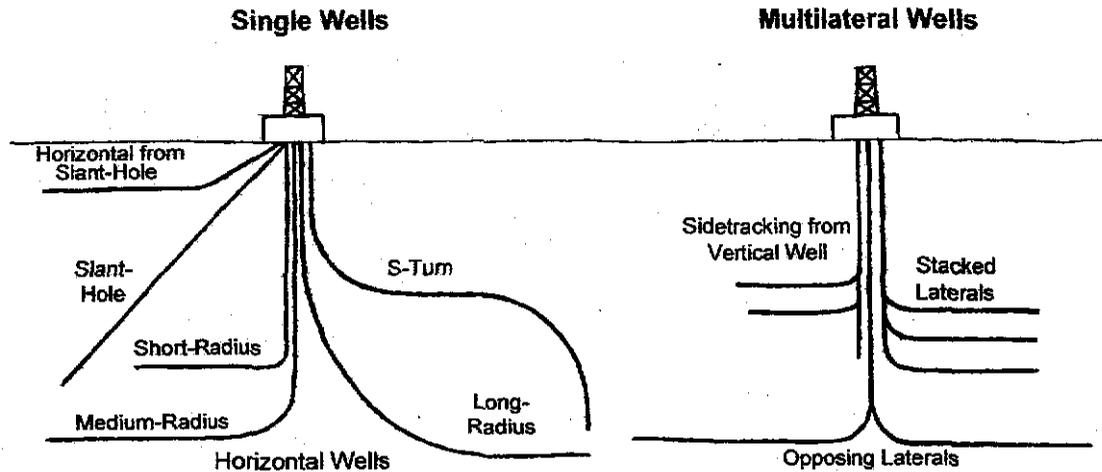


Figure 1. Different types of directional wells.

directional drilling is beyond the scope of this report. A brief synopsis of directional well types follows, and Figure 1 presents a schematic illustration of the various directional well types.

Slant-Hole Wells

Slant-hole wells are drilled at an angle from the vertical, using a tilting drilling rig. Slant-hole wells can be completed without making any bends at all, resulting in the equivalent of a conventional vertical well that is tilted on its axis. Alternately, slant-hole wells can be combined with a horizontal bend that is drilled in much the same way as traditional horizontal wells (see Figure 1), a configuration that is most commonly used for shallow target zones (Smith and Edwards 1992). Slant-holes can also be re-drilled at a later date to add a horizontal section (e.g., Myal and Frohne 1992).

S-Turn Wells

Sometimes known as "deviated wells," S-turn wells start out in a near-vertical orientation, have a long near-horizontal or diagonal section, and finish by approaching the vertical once again. This well type has been used in extended-reach applications. For example, the Sacate Sa-1, an offshore California well, achieved a horizontal distance of over 3½ miles from the well site using this drilling technique (Elks and Masonheimer 2002).

Horizontal Wells

Horizontal wells are defined as wells deviated more than 75 degrees from vertical (Lacy et al. 1992); they often depart from the horizontal in order to track the dip of the target

formation. These wells have a characteristic "J" shape, with the horizontal section following the oil- or gas-bearing rock to maximize production.

Short-Radius

Short-radius wells feature a sharp, abrupt turn from the vertical to the horizontal plane. A comprehensive review of short-radius horizontal drilling found that "[r]eservoir management applications, water and gas coning, injection wells, irregular formations and coal degasification [coalbed methane production] are becoming more economically feasible" (Leazer and Marquez 1995). This study found that short radius horizontal wells make it easier to avoid problem formations above the pay zone. And with short-radius wells, submersible pumps can be placed deeper in the wellbore, improving pumping efficiency and extending pump life. The study concluded that "[s]hort radius technology has evolved to the point where it is a common occurrence to drill a 45-ft radius curve into a 10-ft target and achieve displacements in excess of 1,000 ft." These wells are not typically used to drill long horizontal distances from the well site.

Medium Radius

Medium-radius wells make their turn from the vertical to the horizontal at an intermediate rate, and the horizontal length is often longer. By the early 1990s in the United States, medium-radius wells were the most widely used and productive of horizontal wells (USDOE 1993). In 1990, the longest horizontal displacement for a medium-radius horizontal well reached 4,164 feet (Moritis 1990). This drilling style figures

prominently in the horizontal successes of the Austin chalk (Sheikholeslami et al. 1991), and also has been used for very shallow applications in coalbed methane drilling (USDOE 1993).

Long Radius

In a long-radius well, the wellbore shifts from the vertical to the horizontal very gradually, with only slight changes in the degree of slope over the course of the bend. Extended-reach, long-radius horizontal wells were being successfully drilled from platforms off the coast of California as early as 1989 (Moritis 1990). Because this type of drilling requires a long transition between vertical and horizontal, it is best suited to deep wells and/or extended-reach drilling that accesses reservoirs far away from the drill site.

Multilateral

Multilateral wells entail drilling two or more horizontal legs from a single vertical well in order to maximize exposure to the oil- or gas-bearing strata. Opposing laterals are most advantageous for deep wells or cases where drilling costs are high, because information gained in drilling the first lateral can be incorporated into the drilling of the second (Meehan 1995). Stacked laterals have been used for steam injection wells in Canadian heavy oil reservoirs (Sarma and Ono 1995), and to access multiple pay zones (Rixse and Johnson 2002). More complex "fishbone" configurations have been drilled in Venezuela's Orinoco Basin, in which even the laterals have laterals (Moritis 2000).

Chambers (2000) concluded that multilateral drilling was practical for all geologic situations: "There is no depth or specific reservoir type to which multi-lateral use is limited. Multi-laterals are being used for shallow reservoirs (800' TVD [True Vertical Depth]) to deep (15,000' TVD) formations, for completions in heavy oil, light oil, and gas." Meehan (1995) reported that by 1995, multilateral drilling had become "routine" at Union Pacific Resources. Meehan (1995) stated, "State of the art drilling includes as many as four, 4,000+ ft horizontal laterals, horizontal wells at TVDs [True Vertical Depths] greater than 16,000 ft."

Multilateral drilling has now become an established practice within the oil and gas industry. Chambers (1998) summarized this growing role: "The implementation of multiple lateral wellbores, or multiple horizontal wells exiting a single wellbore, has gained wider

acceptance in the oil industry, particularly from a reservoir management point of view. The deeper the junction, the more attractive multilaterals become. The more wells drilled, the cheaper the technology, the more laterals drilled from a well, the less the incremental cost for additional laterals. Open hole branches are very easy to create and fast to implement."

HISTORY OF DIRECTIONAL DRILLING

Directional drilling is not a new technology. In fact, all types of directional drilling have been around for years, but it is only in the last several decades that these techniques have gained broad acceptance and widespread application. The first horizontal well was drilled near Texon, Texas in 1929 (USDOE 1993). Chambers (1998) noted early horizontal activity dating from 1939. In the early 1940s, horizontal wells were drilled with horizontal distances of 100 to 500 feet (Anon. 1999). China attempted its first horizontal well in 1957 (USDOE 1993). The first coiled-tube and slimhole drilling was also done during this period (USDOE 1999a). The first multilateral well was drilled in the Soviet Union in 1953 (Chambers 1998), and between 1953 and 1980, the Soviet Union drilled 111 multi-branch horizontal wells including exploration wells, production wells, and injector wells (Maurer 1995). Nonetheless, during these early years, directional drilling was comparatively costly and failed to achieve broad acceptance within the industry.

Slant-hole drilling was the first directional technique to achieve widespread use. Between 1982 and 1992, over 1,000 slant or angle wells were drilled, primarily in Canada, Venezuela, and China (Smith and Edwards 1992).

But the big boom came with the widespread use of horizontal drilling. European offshore successes with directional drilling in the North Sea (e.g., Andersen et al. 1988, Jacobsen and Rushworth 1993) led to increasing application of directional technologies to land-based drilling. Horizontal drilling soon took off in North Dakota's Williston Basin, and as of 1990, some 70 horizontal wells were producing about 7% of North Dakota's oil from the Bakken Shale formation (Petzet 1990). For northern Alaska's Prudhoe Bay field, Standing (2000) noted, "Horizontal drilling started experimentally in 1986, and in the 1990s became routine for lengthening wellbores and avoiding gas-oil or water-oil contacts." Perhaps the largest application of horizontal drilling came in the Austin Chalk deposits in Texas, a formation

where production from vertical drilling had been declining. Union Pacific Resources drilled more than 1,100 new horizontal wells and 1,250 horizontal laterals from existing wells in the Austin Chalk between 1987 and 1995 (Meehan 1995). With success in the Texas Austin Chalk, 134 horizontal wells were soon drilled or permitted in the same formation in Louisiana (Maloy 1997). The first directional well in Wyoming was completed in 1987, and as of 1994, 80 producing wells were completed out of 117 attempts (Stewart 1995).

Directional drilling has caught on not only in North America but all around the world. Between 1990 and 1998, Petroleum Development Oman drilled 350 horizontal wells in 33 different Middle Eastern oil and gas fields (Ishak et al 1998). Horizontal wells have been drilled on every continent except Antarctica. Today, horizontal drilling technology is so efficient at extracting oil and gas that it has become the benchmark for the industry: Miller and Steiger (1999) boasted that their array of vertical and directional wells had production that equaled high benchmark projections from horizontal drilling. In the words of Pinney and Rodrigues (1999), "Over the past 20 years, horizontal drilling has progressed from an exotic technology to a standard industry tool."

DIRECTIONAL CAPABILITIES

Directional drilling in general, and horizontal drilling in particular, are extremely versatile and offer capabilities that make these technologies superior to vertical drilling for the recovery of oil and gas. Deskins et al. (1995) stated that horizontal wells can improve production and increase reserves through (1) intersecting natural fractures that can't be accessed with vertical wells; (2) delaying the onset of water or gas coning so that more oil is produced; (3) improving production from thin or tight reservoirs; and (4) improving waterflood sweep efficiency (for reservoirs injected with fluids to increase oil or gas production). Zammerilli (1989) compared the effectiveness of three drilling methods for the Devonian Shale of West Virginia and found that "new-lease horizontal drilling is the optimal method [for maximizing production] in West Virginia, and high-angle drilling results in a slight improvement over vertical drilling." An article in *Journal of Petroleum Technology* summarized the current role of horizontal drilling: "Most experts agree that horizontal wells have become a preferred

method of recovering oil and gas from reservoirs in which these fluids occupy strata that are horizontal, or nearly so, because they offer greater contact area with the productive layer than vertical wells. While the cost factor may be as much as two or three times that of a vertical well, the production factor can be enhanced as much as 15 or 20 times, making it very attractive to producers" (Anon. 1999).

Each of the qualities of directional drilling that make it a viable alternative to vertical drilling in the Intermountain West have been thoroughly documented in the published literature, and are discussed in more detail below.

Directional Drilling Increases Production

Directional wells, and horizontal wells in particular, offer substantial increases in production over vertical wells, chiefly because in the words of Hall (1998), "[h]orizontal drilling exposes magnitudes more of the pay zone to the wellbore. Hutzler (2000) summarized the basis for this phenomenon as follows: "Drilling a horizontal, as opposed to a conventional vertical well, enables more of the reservoir to be exposed to the wellbore since most reservoirs are wider than they are deep." Table 2 displays the results of a number of studies worldwide that directly compared the productivity of horizontal wells with their vertical counterparts.

In one Utah project, for example, 143 laterals were drilled and completed as re-entries from 43 vertical wells. For those 43 wells, 180,000 feet of wellbore penetrated the pay zone, compared with only 26,000 feet for all 379 of the previous vertical wells in the field (Hall 1998). Iverson et al. (1995) found that even without hydraulic fracturing, a horizontal well in Wyoming produced as much gas as a comparable conventional well that used hydraulic fracturing (see Appendix for an explanation of hydraulic fracturing). In Texas, Sheikholeslami et al. (1991) found a linear increase in production with longer horizontal sections: "This relationship and the low cost of drilling incremental medium-radius horizontal lengths show the economic benefit of drilling the longest possible horizontal length."

But there are limits to the increases that horizontal wells can achieve over conventional vertical wells. Cho and Shah (2002) found that beyond 3,000 feet horizontal distance, wellbore friction and turbulence may reduce gains achieved through a longer exposure to the pay zone, to the point that a maximum output is achieved. These researchers pointed out that

Table 2. Horizontal/directional well production expressed as a percentage of vertical wells from the same field.

<u>Location</u>	<u>Production Increase</u>	<u>Notes</u>	<u>Source</u>
Alaska	200-300%	Prudhoe Bay	Broman and Schmor 1992
California	300%	Elk Hills	Gangle et al. 1991
California	700%	Elk Hills	Gangle and Ezekwe 1995
California	350-900%	Elk Hills	Anon. 1996
Colorado	500-1000%	Piceance Basin	Myal and Frohne 1992
Canada	250-800%	underbalanced, heavy oil	Teichrob 1994
Colombia	400-600%	offshore	Huang et al. 1996
Germany	200-300%	deep gas	Graute et al. 1994
Germany	500%	deep, sour gas	Schuler 1992
North Dakota	200-500%	Bakken shale	Lacy et al. 1992
North Sea	600%	offshore	Reynolds and Seymour 1991
Texas	250-700%	Austin chalk	Sheikholeslami et al. 1991, Lacy 1992
Venezuela	1300%	Orinoco heavy oil	Lacy 1992
West Virginia	700%	hydraulic fractured	Yost and Overbey 1989
West Virginia	400-2500%	Devonian shale	Lacy 1992

friction may be less important if the wellbore is subjected to low pressures. Thus, there may be an upper limit to production increases over vertical wells that can be realized by drilling with horizontal technologies. But in no case does wellbore friction reduce productivity of a horizontal well below that of a vertical well.

Because one might expect directional drilling attempts that produce successfully to be publicized more often than failures, it is useful to examine the overall technical success rate of horizontal wells over a broad area. Deskins et al. (1995) took a comprehensive survey of horizontal wells in North America, and found that horizontal wells enjoyed technical success in 95% of U.S. reservoirs where they were employed, compared to a success rate over 90% for Canadian horizontal wells. These figures were calculated by reservoir rather than by individual well, and the technical success figures are likely to underestimate the true success rate because reservoirs with a handful of failures were given the same weight as reservoirs with thousands of successful wells (Deskins, pers. comm.). Unfortunately, technical success rates for vertical wells were not presented for the sake of comparison.

Directional drilling has been shown to maximize oil and gas production in virtually any oil and gas recovery situation. As early as 1990, Stagg and Reilly proclaimed that "Industry is no longer constrained by the mechanical aspects of horizontal well completions. Equipment and techniques are available, or soon will be

available, to meet all completion needs." These methods are feasible for both exploration and full-field development (French Oil and Gas Industry Association 1990). The effectiveness of horizontal drilling as an exploration tool was noted by Hawkings et al. (1990), who reported that a horizontal well was able to locate high permeability sands where conventional wells had failed. Aguilera et al. (1991) lauded the potential of horizontal drilling in infill situations. According to Thakur (1999), "As a general rule, readers are encouraged to consider horizontal wells as the primary option for a field." These studies and technical reports by the oil and gas industry illustrate that directional drilling is a versatile and viable alternative and should be considered where oil and gas is proposed for development because of its ability to meet or exceed the production ability of vertical wells.

Directional Drilling Can Tap Distant Resources

Directional drilling can now tap pockets of oil and gas that are miles away from the drilling site. Horizontal drilling can reach subsurface reservoirs up to 29,000 feet away from the drilling site in horizontal distance (Al-Blehed et al. 2000) and, in some cases, even farther. The Exxon-Mobil Sacate Sa-2 well is believed to hold the current North American record for horizontal displacement, reaching a final distance of 21,277 feet (just over 4 miles) from the drilling site; this feat was achieved offshore in over 650 feet of water (Elks and Masonheimer 2002). Elks and Masonheimer went on to state,

"Horizontal deviations [for wells in this project] could ultimately exceed 35,000 feet," a distance of over 6½ miles.

In 1997, China's Xijiang 24-3-A14 well achieved a horizontal displacement of 26,452 feet, or over 5 miles (Jiang and Nian 1998). Vighetto et al. (1999) reported on the successful drilling of extended-reach horizontal wells with horizontal displacements of up to 34,728 feet. This example shows the oil and gas industry's current ability to use horizontal drilling to produce from reservoirs more than 6½ miles away from the drilling rig. And according to industry, even greater gains in distance capabilities are likely in the offing. Ron Aufflick of K and M Technologies even goes so far as to claim in the press that extended reach drilling rigs will be able to drill nearly 20 miles from the drilling site within the next 10 years (in Schneider 2001).

These industry reports demonstrate the viability of extended-reach drilling technologies to tap oil and gas reserves across great distances. Such long-reach technologies provide the technical capability to extract oil and gas from lands where surface damage from conventional drilling is barred in order to protect the important surface values of sensitive landscapes.

New Steering Technologies Allow for Greater Drilling Accuracy

Advances in modern technology now allow operators to steer the drill bit through the Earth with pinpoint accuracy, unlocking the resources from distant pools of oil and gas. This "geosteering" is aided by three-dimensional computer programs that allow modeling and visualization of the drill path through the Earth, enabling the operator to guide the drill bit in real-time; this technology has been tested and proven accurate in the Gulf of Mexico, North Sea, and onshore Latin American locations (Sanstrom and Longorio 2002).

The technology that allows this real-time steering of the drill bit is alternately known as "Measurement While Drilling" (MWD) or "Logging While Drilling" (LWD). These technologies gather information at the well bit and instantaneously send it back to the drill engineer, who controls the bit. Corrections can be made immediately if the drill bit strays from the target zone, or to avoid obstacles (Maurer 1995). Barry et al. (1998) reported a case history where Logging-While-Drilling techniques were used to geosteer horizontal wells in real-time along a 40-foot column of oil trapped between an

aquifer and a gas cap. The authors of this study noted, "Excellent well performance supports the general validity of the geosteering approach and a static pressure survey in one of the wells verifies the steering accuracy." Geosteering has become so precise that a multilateral well off the coast of Nigeria was successfully completed within a target window of only +/- 2 feet (Aloko et al. 1998).

DIRECTIONAL DRILLING IS EFFECTIVE IN MANY GEOLOGIC SETTINGS

Directional drilling, in its several forms, has proven to be remarkably versatile as an alternative to conventional vertical drilling in recovery of all types of petroleum resources. In the United States, directional drilling has met with economic success in most of the major oil- and gas-bearing rock formations (see Table 3, following page). Aguilera et al. (1991) stated, "Theoretically, all reservoirs can benefit from horizontal wells." Al-Blehed et al. (2000) asserted that horizontal drilling is superior to vertical drilling for a variety of conditions including naturally fractured reservoirs, thin reservoirs, heterogeneous reservoirs, vertical permeability homogeneous reservoirs, reefs or isolated sand bodies, and faulted reservoirs. Joshi (1991) asserted that for natural gas production, horizontal wells improve drainage area per well for low-permeability geologic formations and reduced near-wellbore turbulence and increase delivery efficiency for high-permeability formations. Robertson et al. (1992) concluded, "Horizontal wells appear to improve the chances of attaining commercial gas production rates from heterogeneous formations."

Directional drilling offers superior production even when applied to most geologically difficult circumstances. In Germany, an 11,200-foot-deep sour gas well achieved a fivefold production increase over nearby vertical wells. Of this well, Schuler (1992) noted, "The drilling was in a geologically difficult environment with tight target tolerances." In Argentina, horizontal drilling was used to successfully explore a deep, fractured gas reservoir involving hanging wall anticline traps (Blangy 2002). In China's Shixi Field, 5 horizontal wells were drilled into deep volcanic formations with multiple fracture systems and high pore pressure. Of these wells, Xinzhong et al. (1998) observed, "It is very difficult to drill the horizontal well due to the specialty and complexity of its geological configuration, hole construction, and operational requirement. Now 5 horizontal wells with 5000m

Table 3. U. S. geologic formations where directional projects have successfully produced oil and gas.

<u>Location</u>	<u>Formation</u>	<u>Source</u>
Alabama	Pottsville coal	Swindell 1996
Alaska	Tarn formation	Phillips Petroleum 2002
	West Sak formation	Phillips Petroleum 2002
	Alpine formation	Phillips Petroleum 2002
California	Stevens sand	Gangle and Ezekwe 1995, Anon. 1996
	Veder sand	Chenot et al. 2002
	Monterey chert	Elks and Masonheimer 2002
Colorado	Niobrara sandstone	Petzet 1990, Stright and Robertson 1993
	Codell formation	Swindell 1996
	Mesa Verde sandstone	Myal and Frohne 1992
	Cameo coals	USDOE 1993
Kentucky	Devonian Shale	Bellinger 1991
Louisiana	Austin Chalk	Swindell 1996, Maloy 1997
	Miocene	Swindell 1996
	Cotton Valley	Swindell 1996
	Wilcox sandstone	Lacy et al. 1992
Michigan	Antrim	Swindell 1996
	Dundee limestone	Wood 1997
Montana	Red River	Swindell 1996
	Mission Canyon	Swindell 1996
New Mexico	Fruitland coal	USDOE 1993, Swindell 1996
	Mancos shale	Swindell 1996
North Dakota	Bakken shale	Swindell 1996
	Madison limestone	Swindell 1996
Ohio	Clinton sandstone	McCormac 1996
	Rose Run sandstone	McCormac 1996
Oklahoma	Bartlesville	Swindell 1996
	Mississippi	Swindell 1996
	Viola	Swindell 1996
	Hunton	Swindell 1996
South Dakota	Red River	Swindell 1996
Texas	San Andres dolomite	Leazer and Marquez 1995
	Montoya limestone	Fletcher 2002
	Devonian fm.	Fletcher 2002
	Austin Chalk	Swindell 1996
	Buda	Swindell 1996
	Georgetown	Swindell 1996
	Ellenburger	Swindell 1996
Wilcox fm.	Doughtie 1994	
Utah	Desert Creek dolomite	Leazer and Marquez 1995, Swindell 1996, Chidsey et al. 2002
	Twin Creek	Swindell 1996
	Paradox shale	Morgan 1996
	Ismay limestone	Chidsey et al. 2002
West Virginia	Devonian Shale	Zammerilli 1989, Salamy et al. 1991
Wyoming	Nugget sandstone	Weatherl 1998
	Almond formation	Iverson et al. 1995
	Niobrara sandstone	Swindell 1996
	Minnelusa	Swindell 1996
	Frontier sandstone Hanna coals	Swindell 1996 Logan 1988

MD [Measured Depth, the overall length of the wellbore] have been drilled successfully." On Alaska's North Slope, the Schrader Bluff Pilot Project involved two stacked horizontal wells drilled into heavily faulted sandstone formations with target zones only 25 feet and 28 feet thick, respectively. Using geosteering technology, the paired wells successfully followed the narrow pay formation as it rose and dipped across numerous faults; both wells achieved economic success (Rixse and Johnson 2002).

Horizontal drilling has proven successful in a variety of geological settings, as discussed in numerous industry and government reports summarized on Table 3.

Shallow Reservoirs

Directional drilling has been employed to successfully access shallow reservoirs in a number of cases. Slant-hole drilling can be paired with horizontal techniques for shallow reservoirs; a well was drilled using this technique near the town of Brooks in southern Alberta, reaching a depth of 1,886 feet and a horizontal displacement of 4,200 feet (Smith and Edwards 1992). In the Black Warrior Basin, Mississippi Valley Gas Company successfully drilled a well 1,805 feet in depth with a horizontal leg of 1,650 feet. The well produced gas from a storage field at 6 times the rate of neighboring vertical wells (Butler and Skeen 1996). Multiple horizontal laterals have been drilled for formations as shallow as 800 feet (Chambers 2000). In Wyoming's Hanna Basin, three medium-radius horizontal wells successfully accessed coalbed methane at a depth of only 363 feet (Logan 1988). Thus, there appears to be no reservoir too shallow for horizontal drilling.

Deep Reservoirs

Directionally drilling has accessed some of the world's deepest oil and gas deposits. As of 1995, the Navasota #1 well was the deepest horizontal well in the Austin Chalk, at 14,172 feet (Pearce et al. 1995). In the Goodwyn gas/conglomerate field in Australia, the GWA-13 well was drilled to 24,620 feet total depth with a horizontal displacement of 9,400 feet (Dolan et al. 1998). Horizontal wells in the Permian Basin of west Texas now exceed depths of 14,000 feet (Fletcher 2002). Schuler and Santos (1996) reported success with hydraulic fracturing on what was then the world's deepest horizontal well (15,687 feet deep). In Alaska's Cook Inlet, the Forest Oil Redoubt #4 well was drilled

deeper than 18,872 feet from an offshore rig (Anon. 2002b).

Horizontal and directional technology has proven itself in ultra-deep settings where temperatures and pressures can be intense. In the Middle East, a short-radius sour gas well was successfully drilled to a depth of 14,115 feet in the deep, hot Thamama limestone from an offshore drilling rig (Simpson et al. 1993). Based on drilling deep horizontal wells in Germany, Graute et al. (1994) concluded, "Results of both wells proved that horizontal drilling into these deep reservoirs is technically feasible and economically attractive."

Deep horizontal wells have achieved substantial production successes. A well drilled into the ultra-tight, high pressure, high temperature Roeliegendes sandstone in Germany produced at a rate 3.5-9 times greater than hydraulically fractured vertical wells (Schuler and Santos 1996). According to Krystinik (2001), a horizontal well drilled in Wyoming's Green River Basin reached a depth greater than 15,000 feet in tight-gas sandstone, was drilled at a cost that was reduced to 50% of the industry average, and achieved economic production of greater than 14 million cubic feet of gas per day.

These reports illustrate that use of directional drilling in deep reservoirs is effective and productive. Reaching depths of over 15,000 feet in Wyoming and elsewhere in the world, this technology clearly is versatile enough to be considered in all reservoirs.

Tight Reservoirs

Tight reservoirs are formations of very low permeability, which impedes the flow of oil and gas to the well. Nonetheless, directional wells have proven both feasible and profitable in these geologically challenging settings. Mostafa (1993) reported that horizontal drilling in tight carbonate reservoirs improved production and reduced oil and water coning. Horizontal drilling has proven profitable in the tight chalk reservoirs of the Danish North Sea (Andersen et al. 1988). In the Permian Basin of west Texas, EOG Resources reported successful completions in 14 of 15 horizontal wells of the tight Devonian formation (Fletcher 2002). Directional drilling has been shown to increase rate of gas production and overall recoverable quantity for tight gas sands (e.g., Cassetta 1998).

Kabir et al. (1997) linked horizontal drilling effectiveness in tight carbonate reservoirs with ability to intercept fractures. Because fractures tend to be oriented vertically, wellbores traveling

horizontally through a formation have a far greater capability to successfully intercept fractures than vertical wells, which have a rather short passage through the target formation. For tight gas reservoirs that are naturally fractured, horizontal drilling compares favorably with massive hydraulic fracturing and is a sound alternative (van Kruysdijk and Niko 1988). For northwestern Colorado fractured sandstones, Stright and Robertson (1993) stated, "The advantage of a horizontal well over a vertical Niobrara well is higher probability of encountering well-developed fractures, a common problem with vertical Niobrara wells." Hydraulic fracturing can be used in conjunction with horizontal drilling to enhance the productivity of tight reservoirs lacking in natural fractures (Soliman et al. 1996).

Based on these studies, it appears that directional drilling may have a distinct advantage over conventional vertical drilling in tight formations, particularly where fractures are intercepted to release the gas resource.

Heavy Oil

Directional drilling has proven effective in tapping heavy oil deposits in tar sands. Luhowy (1993) reported that "Horizontal wells proved economical for developing, under primary recovery, viscous heavy oil from the unconsolidated McLaren sand channels in Saskatchewan." On Alaska's North Slope, the West Sak heavy oil reservoir is being developed using multilateral horizontal technology (Phillips Petroleum 2002). For heavy oil recovery, Shirif (2000) noted that, "For a given pattern, there is a horizontal well configuration that maximizes the total production rate."

Coalbed Methane

Although vertical drilling currently dominates coalbed methane fields, directional drilling is increasingly being applied to the production of this unconventional resource. According to Moore and Moore (1999), directional drilling is applicable to coalbed methane production, but drilling rig placement may be constrained by rock jointing and fracture patterns. Horizontal wells have been drilled for coalbed methane in Colorado's Piceance Basin using short radius technique, and in Wyoming's Hanna Basin using medium-radius technique (Logan 1988). According to the West Virginia Geological and Economic Survey's coalbed methane database, CDX Gas drilled 13 horizontal wells in West Virginia's Welch Field, which produced 1.5

trillion cubic feet of coalbed methane between 1999 and 2000.

Furthermore, horizontal drilling for coalbed methane appears to be an effective method to increase production. In discussing Penn Virginia Corporation's coalbed methane program, company president A. James Dearlove has stated, "By using horizontal drilling on our coalbed methane and Devonian shale acreage, we expect to significantly accelerate gas production, which should increase the present value of our properties" (quoted in Anon. 2002a). One horizontal well drilled in New Mexico's San Juan Basin produced almost seven times the coalbed methane as the average vertical well in the area (USDOE 1993).

Horizontal methods can also yield substantial increases in coalbed methane producible reserves. In Colorado's San Juan Basin, multilateral drilling by CDX gas is expected to recover 50-75% of available coalbed methane reserves, compared to 10% for conventional methods (McWilliams 2002). According to Wayne Kelley, president of Texas-based Omega Oil Company, multilateral technology using coiled-tube drilling in coalbed methane fields "would replace 220 well pads on the surface with a single well pad" (as quoted in Bleizeffer 2002).

With the dramatic expansion of coalbed methane contemplated for the Intermountain West, directional drilling appears to be a viable alternative to the conventional wells that currently dominate the production of this resource. Conventional methods of coalbed methane production typically entail a high density of roads, well pads, pipelines and transmission lines that can be reduced to some extent by clustered directional drilling. But coalbed methane development also creates the additional problem of disposal of millions of gallons of wastewater, which must be removed from the coal seam before the gas can be extracted. This water is often highly saline or alkaline (e.g., Hulin 2001), and the dumping of such toxic wastewater into streams and groundwater can have disastrous ecological effects. Dumping coalbed methane wastewater onto the surface has unacceptable ecological, economic, and social impacts that are beyond the scope of this report but that should be addressed before this resource is developed.

Thin Reservoirs

Horizontal wells can travel along the pay zone of thin reservoirs for long distances, dramatically improving production over vertical

wells that have only a short trip through the pay zone. In Trinidad's *Immortelle Field*, six "highly successful" horizontal wells were drilled to tap a 48-foot thick oil play (Thakur et al. 1996). In a remote area of Sumatra, a horizontal well was successfully drilled into a 33-foot-deep oil column (Curnutt et al. 1993). Horizontal drilling has been used to produce gas from a pay zone only 10 feet thick in Pleistocene sands in the Gulf of Mexico (Gidman et al. 1995). A dual-lateral horizontal well off the coast of Nigeria was successfully drilled along an 11-foot oil column trapped between a gas cap and an aquifer.

Horizontal drilling yields superior production for thin reservoirs. Production from horizontal drilling into a 130-foot thick oil rim off the coast of East Malaysia has yielded two to eight times the production of vertical wells in the area (van der Harst 1991). In its Pelican Lake project, CS Resources used horizontal wells to target pay zone that was a mere 13-20 feet thick. These horizontal wells achieved productivities that were five to thirty times greater than neighboring vertical wells, with longer horizontals yielding the higher productivities (Sarma and Ono 1995).

Depleted Reservoirs

Due to its higher efficiency in recovering oil and gas, horizontal drilling has proven to be an excellent method to revitalize depleted reservoirs. In Oklahoma's Caddo County, a well with a 4,000-foot horizontal displacement was drilled into a depleted sandstone reservoir, achieving a production of 1,800 barrels of oil per day with very little gas coning—the mixture of gas and oil that reduces production efficiency (Beardmore et al. 1994). In Michigan, horizontal laterals from old wellbores yielded more than a threefold increase in oil production over vertical wells, effectively revitalizing the depleted Niagaran fields (Lanier 1996). A more complete accounting of successes in depleted reservoirs is presented in the section of this report titled "Increasing Producibile Reserves."

ECONOMIC ADVANTAGES OF DIRECTIONAL DRILLING

The oil and gas business has always been inherently risky, and profitability is based in large part on market prices of oil and gas products. No drilling method, whether vertical or directional, can insulate a drilling company from the possibility of individual economic failures. Nonetheless, the overwhelming majority of published studies on the subject demonstrate that

directional drilling is not only economically feasible but is in fact substantially more profitable than conventional, vertical drilling due to its superior cost-benefit ratio, even though the costs to drill a directional well may be higher in some cases.

Costs of Individual Wells

In 1991, Fritz et al. noted, "If the cost of drilling a horizontal well was equal to that of drilling a vertical well, most reservoirs would be candidates for horizontal drilling." These costs are in fact equalizing. Aalund and Rappold (1993) found that the cost of drilling two horizontal wells in Egypt was 1.4 times the cost of drilling conventional wells, and made the following prediction: "As horizontal drilling becomes more common, the cost of horizontal wells will decrease to near that of vertical wells in the Middle East." Under Elf Aquitaine's drilling program, horizontal well costs averaged 1.5 times the cost of vertical wells (Thakur 1999). On the basis of cost per foot of drilled wellbore, directional drilling is only slightly more expensive than vertical drilling. According to Sarma and Ono (1995), "The 1993 Joint Association Survey of drilling costs on 845 horizontal wells indicated that at \$80.76/ft, a horizontal well was only 8% more expensive to drill per foot than a vertical well." Hawkins et al. (1990) reported that a horizontal gas well in the Roetliengendes Field in Germany cost roughly the same to complete as a fracture-stimulated conventional well. Thus, compared to vertical wells, the costs for drilling a directional well can be higher than, or sometimes equal to, costs for drilling a vertical well. But horizontal wells often yield much higher oil and gas production than vertical well, offsetting cost increases (see following section).

For each new formation, there is a learning curve that progressively drives down the cost of horizontal drilling as more wells are completed. Lacy et al. (1992) summarized this effect as follows: "As drilling experience is gained in a certain area, horizontal well costs decrease. The first well usually costs two or three times more than a vertical well. The second well usually costs much less than the first one. After drilling a few wells, the horizontal/vertical well cost ratio is about 1.5. Therefore, a multi-horizontal well program has a better chance for economic success."

Technological advances are bringing down the cost of horizontal drilling. Slant-hole and coiled-tube drilling can be used to bring down

the costs of horizontal drilling. According to Smith and Edwards (1992), "Slant hole drilling technology can result in considerable savings over conventionally drilled deviated holes because mud motors and deviation control with measurement while drilling tools are usually unnecessary." Slimhole and coiled-tube drilling offers further economic advantages in drilling horizontal laterals from existing boreholes. McCarty et al. (2002) reported that for 64 sidetracks drilled in 2002 on the North Slope with coiled-tube methods, costs averaged less than one-half that of conventional rotary sidetracks. This study concluded that "CTD [coiled-tube drilling] has matured into a highly efficient and economical means of sidetracking wells on the North Slope." According to the U.S. Department of Energy, "a typical 10,000-foot well drilled in southwest Wyoming costs about \$700,000, but with coiled tubing and slimhole, the same well would cost \$200,000 less" (USDOE 1999a).

Multilateral horizontal wells take the economic savings to an even higher level. According to Maurer (1995), "Multibranch horizontal wells can reduce horizontal drilling costs by 20 to 30% and the size and number of offshore platforms by 50%." In the same study, Maurer noted that "Unocal stated that its B-34 trilateral well [in the Dos Quadras offshore field] cost \$2 million compared to \$3 million for three conventional horizontal wells (\$1 million each)." Just as with single horizontal wells, there is a learning curve associated with multilateral wells (Chambers 1998). Moritis (2000) found that for multilateral wells in Venezuela, the cost of drilling a single lateral leg decreased from \$1 million to \$700,000 during the course of the project, while the cost of drilling complex "fishbone" configurations decreased from \$1.7 million per well to \$1.2 million. For drilling horizontal laterals from existing wellbores, Lanier (1996) reported that costs decreased from \$600,000 to \$350,000 per well during the course of the 20-well program.

Higher Cost-Benefit Ratio of Directional Wells

It is important to recognize that well cost alone provides a poor comparison between conventional and horizontal technologies; it tells only half the story. For a true economic comparison, the difference in cost must be measured against difference in productivity. For the Seidenburg Z-17 well, a deep well in a German sour gas field, drilling and production costs were 1.2 times greater for a horizontal well, but production exceeded that of vertical wells by

a factor of 4.5 (Niggeman and Ehlers 1991). In a continent-wide survey of horizontal wells in 1995, Deskins et al. found that while U.S. horizontal wells were twice as expensive on average than vertical wells, their output of oil or gas averaged 3.2 times as much as vertical wells. With over three times the product for only twice the cost, it is easy to see that horizontal wells were in fact more economical on average than vertical wells. In the same study, Canadian horizontal wells produced 4.1 times as much product on average as vertical wells with only 2.2 times the investment, an even higher economic advantage for horizontal wells than in the U.S. For the Devonian shales of the Appalachian Basin, Salamy et al. (1991) stated, "Recent drilling and completion operations have demonstrated the technical and economic successes of horizontal wells over vertical wells." Thus, while costs are slightly higher to drill directional wells, the higher costs of individual wells are more than offset by dramatically increased production.

Economic Success of Individual Wells

As is the case with vertical wells, there are no guarantees that individual directional wells will turn a profit. For 20 horizontal wells in Colombia, Saavedra and Joshi (2002) reported that costs were 1.5-2.5 times the cost of comparable vertical wells. Of these wells, two of the four completed in carbonate formations became economic successes, while 88% of the horizontal wells drilled in sandstone achieved economic success. In a survey of horizontal drilling in U.S. fields (Deskins et al. 1995), economic success rates averaged 54% (59% for clastics, 45% for carbonates). Canadian economic success rates were 59% for light-oil clastics, 79% for carbonates, and 92% for heavy oil reservoirs. Once again, this survey likely underestimated economic success rates for individual wells by calculating economic success by reservoir rather than by individual well: Reservoirs with initial horizontal failures do not inspire repeat attempts, and this survey gave reservoirs with a few failed wells the same weighting as reservoirs with thousands of successful wells (Deskins, pers. comm.). No economic success data were provided for vertical wells over the same period for comparison purposes, and it is unknown how the market prices of the day may have influenced the profitability ratings of wells in this study.

It is useful to consider the factors behind the minority of horizontal wells that do not prove

profitable. For Canadian horizontal wells that failed to achieve economic success, Sarma and Ono (1995) summarized the primary factors: (1) The wellbore missed the target zone or improperly placed within target zone; (2) Vertical permeability was low. Deviated wells with multiple laterals were found to be favorable for this situation; (3) In a fractured reservoir, the well failed to intersect fractures as anticipated; (4) Formation damage or excessive well undulation made cleaning difficult; (5) The well traversed unexpected variations in rock formations, leading to water coning; (6) The presence of flow barriers such as shale streaks inhibited production (but flow barriers can also augment production by inhibiting coning); (7) Feasibility studies were poor (e.g., based solely on simulations). Some of these problems can be overcome through improved planning and performance, while others are inherent and would likely affect vertical wells in much the same way.

Profitability for Large-Scale Projects

To evaluate a fundamental shift from vertical drilling to directional drilling, it is best to evaluate the economic advantages of implementing directional drilling on a large scale. Because each directional well drains a greater reservoir volume than a corresponding vertical well, fewer wells are required to drain a reservoir, reducing up-front project costs (Fritz et al. 1991). The technology continues to improve and efficiencies in using this technology will also likely increase. Al-Blehed et al. (2000) stated that their use of horizontal wells reduced drilling, flowline, and facilities costs by 20-25% over vertical drilling. Turaiki and Raza (1998) reviewed the track record of horizontal drilling in Saudi Arabia. They reached the conclusion that "Implementation of [3-D seismic, horizontal drilling, and multi-lateral drilling] has had a pronounced effect on reducing capital and operating costs. Development planning has become more cost-effective, oil production rate declines are being arrested, plateau oil rates are being sustained over longer duration, and oil recoveries are being improved."

These improved efficiencies in oil and gas recovery have translated into real economic successes when directional drilling technologies are applied on a large scale. Meehan (1995) evaluated Union Pacific Resources' horizontal drilling program in the Austin Chalk: "UPRC's first 1,000 horizontal wells have been an economic success," he reported, returning 19%

over their expenses. As of 1993, horizontal drilling was reducing total drilling, flowline, and facilities costs in the Middle East by 20-25% while improving well capacity by 150-400% (Aalund and Rappold 1993). Fritz et al. (1991) compared the costs of older-technology directional drilling with vertical drilling and found that oil production costs per barrel were lower for directional drilling in the Austin Chalk, but higher in the Williston Basin of North Dakota. According to Maloy (1992), "Horizontal drilling in Giddings field Austin Chalk has significantly improved well recoveries and more than offset drilling costs."

According to Harrison et al. (1994), techniques to control production unique to horizontal drilling make production from certain types of sandstone reservoirs profitable, which would be unprofitable with vertical drilling. Baker et al. (1984) performed an economic analysis on coalbed methane recovery via directional drilling and found it to be economically feasible. Based on BP's horizontal drilling experiences in the Gulf of Mexico, Badgett et al. (1994) stated that "[t]he wells have provided access to reserves isolated by depositional features within the reservoir at a cost equal to or less than that of conventional drilling." According to Sarma and Ono (1995), "Most IOR [improved oil recovery] with horizontal wells has been successful, both in terms of oil productivity and economics. In most cases, project cost has been realized within months of production."

When horizontal drilling is applied broadly, the increases in oil and gas production more than compensate for higher costs per well. According to studies, directional drilling appears to yield economic advantages on a large scale. Even in individual cases where directional costs are higher, the overall cost-benefit of directional drilling appears to favor this technology over conventional vertical drilling.

INCREASING PRODUCIBLE RESERVES

Numerous reports have also found that directional drilling is also more effective at removing oil and gas from geologic formations than conventional vertical wells. Thakur (1999) reported that because horizontal drilling is a more efficient extraction method, it increases the recoverable reserves for a given reservoir.

There are numerous cases where horizontal or other directional drilling has rejuvenated oil and gas reservoirs that previously were dormant. The Anglia gas field of the western North Sea was unproductive with vertical drilling, even

with well stimulation and fracturing technologies. But "at a small cost premium, the [horizontal drilling] method enabled a marginal field to be developed successfully" (Guyatt and Allen 1996). The Tyra Field of the Danish North Sea, which originally produced only gas, became a productive oil field due entirely to the success of horizontal drilling (Nykjaer 1994). In northern Alberta, horizontal wells are being used to tap "attic oil" missed by previously existing vertical wells (Morrissey 1996). In Canada, declining or shut-in fields such as the South Bodo, Edam West Sparky, Midale Bed Unit 5, Weyburn, and Cummings-Dina pools returned to strong production through horizontal drilling (Sarma and Ono 1995). In south Texas, the Pearsall Field had been abandoned as uneconomic until it was rejuvenated through horizontal drilling (Lichtenburger 1990). Based on initial successes, horizontal drilling is expected to yield an additional 80 million barrels of oil from the moribund Crystal Field in Michigan (Wood 1997).

Directional drilling can profitably tap new fields that are unprofitable to develop with conventional vertical methods. Jacobsen and Rushworth (1993) evaluated horizontal drilling in the Troll field of the Norwegian North Sea. They summarized their findings as follows: "Under the large gas accumulation of the Troll field lies a significant quantity of oil. However, this oil is contained in thin layers distributed over a wide area and therefore cannot be developed using conventional wells. In 1988 Norsk Hydro re-evaluated possible development schemes for the oil resource, and concluded that the application of horizontal well technology could provide an economically viable means of developing the resource." Following successful test wells, full-scale development followed. A five trillion cubic foot sweet gas play in northeastern British Columbia was rendered feasible by horizontal drilling; *Oil and Gas Journal* reported that "En Cana said Greater Sierra would be uneconomic without two technologies: horizontal drilling and underbalanced circulation" (Anon. 2002c).

Finally, horizontal drilling maximizes the amount of oil in place that can be extracted from underground reservoirs. Hawkings et al. (1990) reported that horizontal drilling would double the producible reserves from the Rotliegendes Field in Germany. According to Maloy (1992), horizontal drilling in the Austin Chalk "has conceivably increased recoverable reserves by 400 million BOE [barrels of oil equivalent, a measure

allowing comparison of gas and oil production].” In the Elk Hills field in California, Gangle and Ezekwe (1995) concluded, “The horizontal wells produce at higher rates, lower drawdowns, and lower gas-oil ratio which will extend the life of the project and result in higher recovery.” Horizontal drilling has increased the recovery potential for this tilted reservoir to over 70% of the oil in place, an increase of 10 million barrels of producible oil per horizontal well (Gangle et al. 1991). For the Paradox formation of Utah, Arizona, and Colorado, Chidsey et al. (2002) reported, “Proper geological evaluation of the reservoirs may increase production by 20 to 50% by the application of horizontal, possibly multilateral drilling projects.” Deskins et al. (1995) predicted that horizontal drilling would increase U.S. producible reserves by 38%.

Directional Drilling Exploratory Wells

Based on industry reports, directional drilling is feasible for both exploration and full field development (French Oil and Gas Industry Association 1990). The effectiveness of horizontal drilling in particular as an exploration tool was noted by Hawkins et al (1990) who reported that a horizontal well was able to locate high permeability sands where conventional wells had failed.

THE POTENTIAL TO REDUCE IMPACTS THROUGH DIRECTIONAL DRILLING

Directional drilling, coupled with new well spacing patterns, can reform the way that the oil and gas industry does business. This is particularly important on public lands and on private lands overlaying federal minerals in the Rocky Mountain West, which must be managed for multiple uses. These tools have great potential to reduce damages from exploration wells, infill projects, and new full-field development. As a result, directional drilling technology should be considered in all pending and future oil and gas projects, and if found to be more environmentally beneficial, it should be implemented.

However, directional drilling is by no means an environmental panacea. When properly employed, these techniques can reduce the quantity of roads, well pads, pipelines, and overall surface impacts, and also concentrate human activity and vehicle traffic in a smaller area. But directional techniques do not eliminate these impacts, nor do they necessarily reduce other environmental impacts such as noise, some types of air pollution, chemical spills, and in the

case of coalbed methane, toxic wastewater. In order to truly minimize the environmental impacts when producing oil or gas, additional measures beyond the scope of this report will be required. In addition, directional drilling does not eliminate all impacts of oil and gas development, and in some cases merely shifts the impacts to other lands.

Consequently, directional drilling is not suitable for use in all instances. There are a number of sensitive lands and habitats that are fundamentally incompatible with industrial use, where oil and gas development of any kind is inappropriate. These lands include national wildlife refuges, parks, monuments, and wilderness areas; roadless and wilderness-quality lands; and other sensitive areas; as well as appropriate buffers around these lands.

Other sensitive lands, such as important wildlife habitat, areas of high archaeological and cultural interest, floodplains, and lands of critical importance to endangered and threatened species and other rare plants and wildlife, should be withdrawn from all surface developments to protect these sensitive lands from the surface impacts associated with energy development. Directional drilling has potential as a tool to access subsurface energy resources while protecting important surface values that would be damaged through conventional vertical drilling operations. It is directional drilling that allows for oil and gas to be extracted from federal lands with a “no surface occupancy” lease requirement.

However, environmental benefits can only be maximized if all surface activities, including exploration, are eliminated. The following paragraphs outline some of the potential environmental damage-reduction benefits of this technology.

Directional Drilling Requires Fewer Wells in Existing Fields

Because each horizontal well drains a much larger area than a vertical well does, fewer horizontal wells (and their associated roads, wellpads, pipelines, and in some cases, powerlines) are needed to drain a given oil or gas field. Maurer (1995) reported that Petro-Hunt used a single multibranch horizontal well to drain an entire lease; this dual wellbore produced at a rate that was 1.5 times greater than single-bore horizontal wells. For offshore drilling, Huang et al. (1996) reported, “In this application, the horizontal well can replace at least four vertical wells.” According to Al-Blehed et al.

(2000), horizontal drilling has decreased the number of wells required to drain Middle Eastern reservoirs by 30%.

Because fewer directional wells are required to drain a subsurface reservoir, well spacing is greater for directional wells (Fritz et al. 1991). Joshi (1991) stated that "to achieve larger producible reserves, horizontal wells will have to be drilled with a larger well spacing than vertical wells." In one full-field horizontal drilling scenario, Stright and Robertson (1993) noted "It is also concluded that horizontal well spacing in the fractured Niobrara should be greater than 640 acres." Indeed, horizontal wells that are spaced close together compete to draw the same oil or gas, reducing production efficiencies. In the Austin Chalk, Meehan (1995) found that "[i]nterference between [horizontal] wells more than 8,000 feet apart was not uncommon." Thus, it would be foolish from a technical perspective to implement a directional drilling program with an ultra-dense (20- to 80-acre) well spacing pattern.

In existing oil and gas fields, horizontal and multilateral drilling allows additional production to occur without an increase in well density, by drilling from existing wells or well pads. The U.S. Department of Energy agrees, stating that "new techniques for sidetrack drilling (drilling a lateral extending from an existing wellbore) and deeper drilling from existing wells can allow some of these resources to be developed without drilling new wells or disturbing previously undisturbed areas" (USDOE 1999a). Horizontal infill drilling can utilize existing wellpads to produce additional resources with few added impacts.

Directional Drilling Extends the Reach of Drilling Operations

Extended-reach drilling is both practical and economical. Based on experience in offshore California fields, Elks and Masonheimer (2002) concluded that "[a]lmost any rig can drill ERD [extended-reach drilling] wells, when the wells are designed and engineered within the rig's limitations." In 1994, emerging technological advances allowed extended-reach wells in Australia's Bass Strait field to be drilled "more economically and consistently" (Santostefano and Krepp 1994). The literature abounds with examples of technically and economically feasible "extended reach," or long-distance directional drilling, in a variety of settings, as summarized in this report. Such extended-reach drilling provides the possibility for extracting

energy resources from under sensitive lands needing protection from surface disturbances. However, to date there are only a few examples where this has taken place. According to Deskins (1995), only 7% of the horizontal wells in a nationwide survey were drilled to avoid surface restrictions above the target formation. In Brazil, Petrobras has employed horizontal drilling in the Amazon to reduce the need to clear rainforest (Knott 1994). In this case, equipment was brought in by barge, and crews were helicoptered in, eliminating the construction of access roads to the wellpad. Slimhole drilling was used to access natural gas beneath the city of Howell, Michigan (Gredell and Benson 1995). In Texas, horizontal drilling was employed to access a large gas deposit beneath Falcon Reservoir, which was protected from surface drilling for ecological reasons (Doughtie 1994). These cases show that where surface resources require protection through lease stipulations or other measures, companies with a vested interest in a specific area may still be able to access the resource through directional drilling although this will displace impacts to other areas.

Cluster Drilling Reduces Surface Damage

Extended-reach drilling can be paired with cluster development to reduce the surface footprint associated with oil and gas drilling operations. Slant and conventional directional drilling was used to drill 23 shallow wells (ranging from 1,716 feet to 1,860 feet deep) from a single pad near Wolf Lake in northeastern Alberta (Smith and Edwards 1992). In Venezuela's Orinoco Basin, Petrozuata has drilled up to 12 wells from a single pad (Moritis 2000). The Tabasco satellite field in the North Slope's Kuparuk area has been produced entirely from 9 wells drilled from a single pad (Phillips Petroleum 2002). Foregoing sentence reinstated. Elsewhere on Alaska's North Slope, a 25,000-acre reservoir was drained with 36 wells on two drilling pads (Redman 2002). The surface disturbance from the well pads, roads, and airstrip constructed during this project totaled 97 acres, compared to a total of 128 vertical well pads and 1,925 acres of surface disturbance for a comparable 25,000-acre part of Wyoming's Moxa Arch field (data from BLM 1995). But it is important to note that such cluster drilling has been shown to cause caribou to abandon the critically important calving grounds (Nelleman and Cameron 1998).

Cluster drilling from a single well pad not only reduces the overall footprint of oil and gas

development on the landscape by concentrating the activity and impacts of many wells at a few widely dispersed sites but also minimizes the capital investments of drilling companies (French Oil and Gas Industry Association 1990), and reduces costs for an expensive and ecologically damaging network of improved roadways. "By minimizing the number of production wells and usage of cluster locations," noted Graute et al. (1994), "a reduction of field investment and operating costs should be attained...." British Petroleum (2002) also has acknowledged the economic advantages of cluster development, stating that "limiting the size and number of new facilities also allows petroleum operations to be conducted more efficiently." Hub and cluster development is currently being used to develop the Tchibouela-Est field in Congo; this full-field production method is expected to improve production at reduced capital outlays (Energy Information Administration 2002).

By implementing cluster development in conjunction with directional drilling technology, there is the potential to simultaneously reduce environmental damages associated with full-field development using traditional vertical wells, as well as reduce industry costs. This provides an additional incentive for considering directional drilling, coupled with cluster development, when developing mineral resources in the Intermountain West.

CONCLUSIONS

This report demonstrates that directional drilling is a proven, feasible method to extract oil and gas resources in a variety of geologic settings throughout the Intermountain West and elsewhere across the globe. It is frequently economically superior to vertical drilling when the cost of drilling and the benefit from increased production associated with directional wells is taken into account.

Where directional drilling is undertaken in a localized area by clustering wells, the surface disturbance associated with the drilling activity can be reduced, compared to vertical drilling. Directional wells generally need wider spacing

within an area as well, which spreads out the amount of surface disturbance and may reduce the damage to any particular area. Thus, in a full-field development scenario, cluster drilling incurs a much more compact impact on the landscape when compared to the sprawl of roads, pipelines, and wellsites inherent to conventional vertical drilling. Directional drilling also enables oil and gas to be extracted from beneath lands where "No Surface Occupancy" restrictions have been placed to protect sensitive resources valued by the public.

Directional drilling will not prevent all environmental impacts of oil and gas exploration and development. While clustering operations reduce the overall amount of land disturbance, they do intensify impacts in localized drilling areas. Directional drilling technologies also will not address other impacts associated with oil and gas development, such as air pollution and chemical spills. As a result, lands that contain resources incompatible with oil and gas development should remain withdrawn from all types of drilling, with buffers established to protect these lands. Still other sensitive lands must be protected from the surface impacts of energy development.

Given the availability and utility of this technology, it should be considered as an alternative wherever the federal government is examining oil and gas development of publicly owned minerals in the Intermountain West. When found to be the more environmentally protective alternative, this technology should be required in the development of federal mineral resources.

Although the Bush Administration has lauded directional drilling for its potential to reduce environmental impacts, so far it has failed to implement or even study the widespread use of directional drilling technology. Directional drilling should be factored into every decision about oil and gas activity affecting the minerals owned and managed by the federal government in the West. It could be a replacement for vertical drilling in a variety of circumstances, from exploration wells to infill projects to full-scale development of new fields.

APPENDIX A

*Other Means to Reduce Surface Impacts**Pitless Drilling*

One method that is universally applicable to reduce drilling impacts is "pitless drilling," entailing closed-loop systems that recycle drilling mud rather than dumping it into open pits. In addition to the elimination of toxic waste pits on the surface, this method reduces wellfield truck traffic by up to 75%, reduces water consumption by 80%, and is actually 8% less costly than constructing and maintaining a reserve pit (Longwell and Hertzler 1997). This method has proven successful in Alaska (Phillips Petroleum 2002) and Colorado (Longwell and Hertzler 1997), and is planned for the Sakhalin I project in Russia (Sumrow 2002). Due to its environmental advantage, pitless drilling should be mandated as a standard requirement for drilling operations.

The Need to Reduce the Impact of Seismic Exploration

Seismic oil and gas exploration can also have serious environmental impacts. There are two main methods: vibroseis, which relies on heavy equipment to send vibrations through the Earth, and shot-hole method, which required setting off underground explosive charges. The resulting shock waves are recorded by geophones to produce an underground map of oil and gas deposits. Desert soils, particularly those with biological soil crusts, are acutely susceptible to compaction and destruction when subjected to off-road vehicle driving of the type that accompanies heavy-impact types of seismic exploration; these soils and crusts can take 50-200 years to recover (Belnap 1995). Menkens and Anderson (1985) reported that prairie dog colonies subjected to vibroseis-method explor-



Photos by Scott Groene, Greater Yellowstone Coalition

Top: 26-ton vibroseis trucks used for heavy-impact seismic exploration.

Bottom: The aftermath of vibroseis truck use.

ation showed population declines while neighboring colonies experienced population increases. Seismic exploration projects can also have impacts on big game, particularly in sensitive habitats. Both shot-hole and vibroseis methods have been shown to disturb and displace elk on winter ranges (Ward 1986). Seismic exploration can also cause elk to abandon preferred calving habitats (Gillin 1989). Shot-hole seismic projects, while less damaging to the land, may also have negative impacts on wildlife. Explosions from shot-hole seismic testing may injure or kill fish when the shots are placed too close to aquatic habitats (Yukon Fish and Wildlife Management Board 2002). When performed in the winter, seismic shots can disturb and cause stress to hibernating bears (Reynolds et al. 1983). For these reasons, seismic exploration projects also deserve special planning to minimize their impacts on lands and wildlife.

The most prevalent method, 3-D seismic exploration, can be accomplished through two distinct techniques. In both types of seismic work, strings of receivers called "geophones" are strung out along set patterns across the landscape to pick up vibration signals from artificial sources. "Vibroseis" techniques employ 56,000-pound trucks that lower a 6,000-pound vibrating pad to create the vibration. "Shot-hole" methods employ drilling shallow holes and setting off explosive charges to set up the vibration signals.

When properly conducted, this method can be a lower-impact alternative to vibroseis.

The vibroseis truck method is very heavy handed, requiring extensive off-road driving by massive machinery, which crushes vegetation and destroys fragile soils. According to the U.S. Bureau of Land Management, "Thumper trucks are obsolete technology that generate a greater shock wave through the ground and have the potential for greater impact to undiscovered cultural sites (due to the fact that they operated by dropping a 6,000 pound weight)" (BLM 2002b). Nonetheless, vibroseis trucks continue to be widely used throughout the American West.

The shot-hole method is much lighter on the land, particularly if it is performed without off-road vehicle travel. For environmentally sensitive areas, geophone cables can be laid by hand, and heliportable drills can be airlifted in to shot-hole sites (BLM 2001). This eliminates the need for damaging off-road truck and buggy traffic. Advances in shot-hole technology now allow 3-D seismic exploration to be conducted even in cities (Hansen 1993). Hansen later pointed out that exploration companies have a high degree of flexibility in locating shot points, increasing their ability to reduce impacts with this method (Hansen 1996). As in the case of drilling, some lands are so sensitive to disturbance that they are inappropriate for any type of seismic exploration.

APPENDIX B

Emerging Technologies Compatible with Directional Drilling

Virtually every technological advance developed for vertical drilling has also been successfully applied to directional drilling. For directional wells, these technological advances further improve the technical capabilities, increase oil and gas recovery, and lower drilling and production costs. As more advances are made in drilling technology, these methods will be able to access oil and gas from deeper reservoirs, farther from the drilling pad, and at lower costs per barrel produced than ever before.

Hydraulic Fracturing

Hydraulic fracturing has been successfully implemented with horizontal wells on any number of occasions (Yost and Overbey 1989, Salmay et al. 1991, Iverson et al. 1995, Soliman et al. 1996). Multiple hydraulic fractures have been successfully employed with very deep horizontal wells (Schuler and Santos 1996). Guo and Evans (1993) developed algorithms to predict production for horizontal wells with any combination of fracturing and oil or gas viscosity. Thus, for low-permeability (tight) reservoirs, the option of hydraulic fracturing is

available to companies employing directional drilling technologies.

It is important to note that hydraulic fracturing is a controversial technique for gas extraction. Fracturing can have dramatic impacts on water supplies and nearby dwellings. These impacts, while outside the scope of this report, must be carefully considered before undertaking this approach.

Steam Injection

Steam injection can be used to improve heavy oil recovery from unconsolidated sand formations. Horizontal wells have been effectively employed in conjunction with steam injection from vertical wells (Chenot et al. 2002) and with paired horizontal injector wells (Sarma and Ono 1995). O'Rourke et al. (1997) found horizontal drilling of paired wells to be effective in gas production using steam injection techniques.

Underbalanced Drilling

In underbalanced drilling, drilling mud is infused with gas to make it lower-pressure than the producing formation. This prevents the drilling mud from being forced out from the wellbore into the reservoir formation, impairing the flow of gas into the wellbore (Teichrob 1994, Pinney and Rodrigues 1999). Brookey (1998) recently developed new drilling fluids using long-lasting "micro-bubbles," enabling balanced and underbalanced drilling fluids to be created at a fraction of the cost of injecting air or gas into drilling mud. Underbalanced drilling is particularly effective in producing oil and gas from low-pressure formations using horizontal drilling.

Well Casings

Originally, most horizontal wells were drilled as "open hole" completions, with no liner or casing of any type. Later, a number of different well casing types were developed for use with directional wells. Gomez et al. (2002) provide a useful synopsis of horizontal well casing types. According to this study, horizontal wellbores are most commonly completed in "open hole" fashion, or with slotted liners in unstable formations where wellbore collapse is a potential problem. Slotted-liner completions can be gravel packed to reduce sand production, which lowers efficiency. Gels can be used to isolate problem zones, even with slotted liners (Gomez et al. 2002). At the beginning of the 1990s, cased

horizontal wells in Alaska were being completed with either cemented or slotted liners (Stagg and Reilly 1990). These researchers noted that cement casings were being used to isolate problematic rock formations outside the pay zone. Thus, many different well casing options are available to drillers of horizontal wells.

Coiled Tube and Slimhole Drilling

Coiled-tube drilling replaces the segmented drill pipe of conventional drilling with flexible tubing. The coiled tubing is run under compression in order to maintain the necessary pressure on the drill bit (Faure et al. 1994a). According to Faure et al. (1994b), coiled tubing allows re-drilling old wells and performing horizontal re-entries, even in offshore situations where there is no derrick in place. Graham et al. (1999) extolled the advantages of coiled-tube drilling for drilling horizontal lateral sections from existing vertical wellbores: "Due to economic, environmental, and surface logistics concerns, re-entry drilling from existing wellbores is often an extremely viable solution to horizontal development in existing reservoirs. By utilizing an existing wellbore, many of the costs can be avoided and often troublesome formations are already secured behind casing."

Coiled-tube methods have been paired with underbalanced drilling to achieve significant production improvements over vertical wells in a deep chalk reservoir in the Gorm Field of the Danish North Sea (Wodka et al. 1995) and also in the deep Elkton formation (McGregor et al. 1997). In addition, coiled-tube methods require a smaller wellpad and produce less toxic waste (Faure et al. 1994a) and are quieter than conventional drilling (USDOE 1999a).

Slimhole drilling, often accomplished through coiled-tube technology, entails the drilling of smaller-diameter wellbores, often from an existing vertical well. The new generation of smaller-diameter drilling bits developed for slimhole drilling are more durable, have increased penetration rates, and develop more power (McDonald et al. 1996). Slimhole drilling can also reduce wellpad footprint. According to the U.S. Department of Energy, "Operational footprints are also reduced, since equipment for slimhole drilling is smaller than that used in conventional operations. The area cleared for drilling locations and site access can be as little as 9,000 square feet with mud holding pits, as much as 75 percent less than that required for conventional drilling operations" (USDOE 1999a). Like coiled-tube drilling, slimhole

drilling is quieter than conventional methods, reducing disturbance to local people or wildlife (USDOE 1999a).

A technique known as "microdrilling" is currently under development with the U.S. Department of Energy. This technique uses coiled-tube drilling from a trailer that can be pulled by a pickup truck, and can drill new wells up to 500 feet deep with no site preparation. According to the U.S. Department of Energy (1999b), "When developed for deep drilling, the technology will replace traditional methods that use massive amounts of equipment, material, and manpower, all of which are extremely expensive." This technique may allow drilling to occur without additional well pad construction.

Waterfloods and Miscible Floods

Oil and gas producers may use waterfloods and miscible floods to increase reservoir production; these methods entail the injection of water or solvent to raise reservoir pressure and force oil or gas out through producing wells. These methods are typically employed in a coordinated fashion over entire reservoirs to maximize the production of oil or gas. Horizontal wells enhance the effectiveness of waterfloods through maximizing the "sweep efficiency," or ability to force more oil out of the reservoir (Aalund and Rappold 1993, Deskins et al. 1995).

Cases abound regarding the successful pairing of horizontal drilling with waterfloods and miscible flood. The combination of waterfloods and horizontal drilling has achieved success in Utah (Hall 1998). With miscible floods, horizontal wells in Canada's Rainbow Keg River G Pool achieved 3.5 times the hydrocarbon production of the best vertical well in the pool (Sarma and Ono 1995). In addition, the drilling of horizontal wells actually improved the productivity of offset vertical wells for miscible floods in the Rainbow Keg River E Pool (Fong et al. 1996). The cost of these horizontal wells in this pool as well as similar miscible flood horizontal projects in the Brazeau River field were recovered within the first year of production (Sarma and Ono 1995). Miscible floods have also been effectively employed in conjunction with cluster drilling on Alaska's North Slope (Redman 2002).

Rotary Steerable Drill Bits

Rotary steerable drill bits can change direction on a dime and offer faster drilling through the rock than older directional systems. In the Norwegian North Sea, a rotary steerable system drilled through 8,586 feet of horizontal reservoir section in only 8.9 days, saving the rig operator \$1 million in rig time (Gaddy 1999). Similarly, rotary drilling systems saved 100 days of rig time (and the associated costs) in Norway's North Sea Jotun Field (Grini et al. 2002). Grini et al. noted that "Rotary-steerable systems provided greater directional-steering accuracy and drilling efficiency in extended-reach drilling applications." Most importantly, rotary steerable technology holds the promise of increasing extended reach distances by 25% over current achievements (Sumrow 2002).

But there are limitations to rotary-steerable technology. Chenot et al. (2002) reported that unconsolidated sands were poor candidates for rotary steerable drilling after a well failed in this formation where a conventional horizontal well was successful. Rotary-steerable systems remain an expensive option at the current time. Sumrow (2002) noted, "Anecdotally, only about 15% of the rigs in the North Sea can afford to run rotary steerable systems, limiting rotary steerable technology to only the more expensive wells." But if rotary-steerable technologies follow the trends of other advances in petroleum engineering, costs may soon decrease to the point where this technology is economically feasible for a broad range of applications.

Other Emerging Technologies

A host of other technologies have arisen to increase the productivity or economic efficiency of directional drilling. Ali et al. (1996) developed an acid foam treatment to repair "skin damage" problems for open-hole wells in unconsolidated sands. Miller and Geehan (1998) also found that acid stimulation improved production in under-producing horizontal wells in carbonate formations. A plunger lift has been developed specifically for use in removing liquids from horizontal wellbores (Pullin and Porter 2001). Mathematical algorithms to predict bit walk in diagonal, directional, and horizontal wells have been developed to achieve even greater accuracy in drilling (Liu and Zaihong 2002). All of these technologies improve the performance of directional wells and increase their cost effectiveness.

LITERATURE CITED

- Aalund, L., and K. Rappold. 1993. Horizontal drilling taps more oil in the Middle East. *Oil and Gas J.* 91(25):47-51.
- Aguilera, R, J.S. Artindale, G.M. Cordell, M.C. Ng, G.W. Nicholl, and G.A. Runions. 1991. *Horizontal wells*. Houston, TX: Gulf Publishing, 401 pp.
- Al-Blehed, M.S., G.M. Hamada, M.N.J. Al-Awad, and M.A. Al-Saddique. 2000. Horizontal wells find varied applications in Saudi fields. *Oil and Gas J.* 98.19:47-52.
- Ali, S.A., H.N. Bui, and M.B. Edwards. 1996. Acid diversion is critical in horizontal gas well treatments. *Petr. Engr. Intl.* 69(4):32-34.
- Aloko, J.A.A., S.P. Fischer, J. Osselbum, and D. Lee. 1998. Africa's first dual horizontal/dual completion multilateral well. Pp. 151-163 in *Proc. 1998 6th Intl. Oil & Gas Conf. and Exh., Part 1, Nov. 2-6 1998, Beijing, China*. Richardson, TX: SPE.
- Andersen, S.A., S.A. Hansen, and K. Fjeldgaard. 1988. Horizontal drilling and completion: Denmark. Pp. 155-165 in *Proc. Euro. Petrol. Conf., Oct 17-19, London*. Richardson, TX: SPE.
- Anonymous. 1996. Horizontal well taps Elk Hills shallow zone. *Oil and Gas J.* 94(4):59.
- Anonymous. 1999. Horizontal and multilateral wells: Increasing production and reducing overall drilling and completion costs. *J. Petrol. Tech.* 51(7):20-24.
- Anonymous. 2002a. Penn Virginia announces Appalachian coalbed methane drilling venture with CDX Gas, L.L.C. and revises third quarter 2002 exploration expense guidance. *PR Newswire Philadelphia*, August 2, 2002.
- Anonymous. 2002c. EnCana pursues Northeast BC Devonian reef margin play. *Oil and Gas J.* 100(25):39-40.
- Badgett, K.L., P.L. Mills, S.P. Mitchell, G.S. Vinsort, and K.L. Wilkins. 1994. Team combines technologies to target horizontal wells in Gulf of Mexico oil field. *Oil and Gas J.* 92(11):44-49.
- Baker, E.C., D.C. Oyler, J.H. Perry, and G.L. Finfinger. 1984. Economic evaluation of directional drilling for methane drainage from coalbeds. U.S. Bureau of Mines Report of Investigations RI-8842, 11 pp.
- Barry, A., P. Burnett, and C. Meakin. 1998. Geosteering horizontal wells in a thin oil column. *Proc. 1998 Asia Pacific Oil & Gas Conf., Oct. 12-14, 1998, Perth, Aust.* pp.221-233. Richardson, TX: SPE.
- Beardmore, D.H., J.L. Gent, and R.A. Esbaugh. 1994. Drilling a blind-entry 4,000-ft. horizontal well in a depleted sandstone reservoir. Pp. 311-322 in *Proc. Drilling Conf., Feb. 15-18 1994, Dallas, TX*. Richardson, TX: SPE.
- Bellinger, C.E. 1991. Horizontal well in the Devonian Shale, Martin County, Kentucky. Pp. 315-322 in *Proceedings, SPE Eastern Regional Conference and Exhibition, Oct. 23-25, Lexington, KY*. Richardson, TX: Society of Petroleum Engineers.
- Belnap, J. 1995. Surface disturbances: Their role in accelerating desertification. *Environmental Monitoring and Assessment* 37:39-57.

- Blangy, J.-P. 2002. Target-oriented, wide-patch, 3-D seismic yields trap definition and exploration success in the sub-Andean thrust belt Devonian gas play, Tarija Basin, Argentina. *Leading Edge* 21(2):142-151.
- Bleizeffer, D. 2002. Omega takes a bottom-up approach. *Casper Star-Tribune*, May 6, 2002.
- BLM. 2001. Haystacks 3-D Geophysical Exploration Project, Environmental Assessment. EA #WY-040-01-108. Rock Springs, WY: Bureau of Land Management, July 26, 2001, 21 pp.
- BLM. 2002a. Draft Environmental Impact Statement and Draft Planning Amendment for the Powder River Basin Oil and Gas Project. Buffalo, WY: Bureau of Land Management, January 2002, 860 pp.
- BLM. 2002b. Finding of No Significant Impact and Decision Record for North Mail Trail 3D Seismic Survey, Canyons of the Ancients National Monument, EA# CO-SJFO-01-081EA. U.S. Bureau of Land Management, 12 pp.
- Braun, C.E. 1998. Current issues in sage grouse management. *Proc. West. Assoc. Fish and Wildl. Agencies* 67:134-144.
- Braun, C.E., O.O. Oedekoven, and C.L. Aldridge. In press. Oil and gas development in western North America: Effects on sagebrush steppe avifauna with particular emphasis on sage-grouse. *Trans. N. Am. Wildl. Nat. Res. Conf.*, Dallas TX, 2002.
- British Petroleum. 2002. Technical brief: Alaska's North Slope oilfields. Anchorage, AK: British Petroleum, 4 pp.
- Broman, W.H., and D.R. Schmor. 1992. Horizontal well operations at Prudhoe Bay. Pp. 541-545 in *Proc. SPE Intl. Mtg. Petrol. Eng.*, Mar 24-27, Beijing, China. SPE Paper No. 22383. Richardson, TX: SPE.
- Brookey, T. 1998. 'Micro-bubbles': New aphron drill-in fluid technique reduces formation damage in horizontal wells. Pp. 645-656 in *Proc. 1998 Intl. Symp. on Formation Damage Control*, Feb 18-19, Lafayette, LA. Richardson, TX: SPE.
- Butler, J.R., and B. Skeen. 1996. Horizontal well successfully drilled in Black Warrior basin. *Oil and Gas J.* 94(30):33-36.
- Cassetta, D. 1998. The 3D seismic rejuvenation of Roleta Field, Zapata County, TX. *AAPG Bull.* 82(9):1778.
- Chambers, M.R. 1998. Multilateral technology gains broader acceptance. *Oil and Gas J.* 96(47):47-52.
- Chambers, M.R. 2000. Making multi-lateral wells cost effective. *SPE Reprint Series*, no. 53, pp.44-56. Richardson, TX: SPE.
- Chenot, D., J. Ford, and M. Pearse. 2002. Reservoir simulation/horizontal drilling, Round Mountain Unit thermal development project. U.S. Dept. of Energy Office of Fossil Energy Fact Sheet, Contract No. DE-FG26-00BC15258.
- Chidsey, T.C. Jr., G.D. Walker, and F.J. Garrett. 2002. Heterogeneous shallow-shelf carbonate buildups in the Blanding sub-basin of the Paradox Basin, Utah and Colorado: Targets for increased oil production and reserves using horizontal drilling. U.S. Dept. of Energy Office of Fossil Energy Fact Sheet, Contract No. DE-FC26-00BC15128.
- Cho, H., and S.N. Shah. 2002. Optimization of well length for horizontal drilling. *J. Can. Petrol. Tech.* 41(5):54-62.

Curnutt, R.C., J.M. Benesch, K.M. Prikel, D. Indrarto, and F.G.H. Sumblang. 1993. Reservoir engineering aspects of horizontal drilling in an 'ultra-thin' oil column: A case study. Pp. 147-157 in Proc. Asia Pacific Oil and Gas Conf., Feb. 8-10, Singapore. Richardson, TX: SPE.

Deskins, W.G., W.J. McDonald, and T.B. Reid. 1995. Survey shows successes, failures of horizontal wells. Oil and Gas J. 93(25):39-45.

Deskins, G., Maurer Technology, telephone interview of August 9, 2002.

Dolan, S.P., R.C. Crabtree, R.F. Drury, R. Gogan, G. Hattersley, D. Hindle, B. Neufeld, and R. Scaife. 1998. Planning, execution, and lessons learned from the GWA 13 extended reach drilling well - Goodwyn gas/conglomerate field, NSW, Australia. Pp. 271-279 in Proc. 1998 Asia Pacific Oil & Gas Conf., Oct. 12-14, Perth, Aust. Richardson, TX: SPE.

Doughtie, D. 1994. South Texas yields huge gas discovery. World Oil 215(8):87-91.

Elks, William C., Jr, and R.A. Masonheimer. 2002. Extended-reach drilling develops Sacate field, offshore California. Oil and Gas J. 100(10):45-55.

Energy Information Administration. 2002. Congo-Brazzaville Country Analysis Brief. Washington: USDOE, March 2002.

Faure, A.M., J.R. Simmons, J. Miller, and I.A. Davidson. 1994a. Coiled tubing drilling: A means to minimize environmental impact. Pp. 513-523 in Proc. 2nd Intl. Conf. on Health, Safety, and the Environment in Oil and Gas Exploration and Production, Jakarta, Indonesia, January 25-27 1994. SPE Paper No. 27156.

Faure, A., B.V. Herman, H. Van Elst, P.M. Burge, R. Jurgens, and B. Hughes. 1994b. Slim-hole and coiled-tubing window cutting systems. Pp. 373-380 in Proc. Permian Basin Oil & Gas Recovery Conf., Mar. 16-18 1994, Midland TX. Richardson, TX: SPE.

Fletcher, S. 2002. Horizontal drilling taps tight gas plays in Permian basin. Oil and Gas J. 100(6):40-42.

French Oil and Gas Industry Association. 1990. Directional drilling and deviation control technology. Houston, TX: Gulf Publishing Co., 142 pp.

Fritz, R.D., M.K. Horn, and S.D. Joshi. 1991. Geological aspects of horizontal drilling. Tulsa, OK: AAPG, 563 pp.

Fong, D.K., F.Y. Fong, and F.J. McIntyre. 1996. Unexpected benefit of horizontal wells on offset vertical well productivity in vertical miscible floods. Can. J. Petrol. Tech. 35(9):70-79.

Gaddy, D.E. 1999. Rotary-steerable system drills 300,000 ft. of hole. Oil and Gas J. 97(20):57.

Gangle, F.J., K.L. Schultz, and G.S. McJannet. 1991. Horizontal wells in a thick steeply dipping reservoir at NPR-1, Elk Hills, Kern County, California. Pp. 389-393 in Proc. SPE Western Regional Mtg., Mar 20-22 1991, Long Beach CA. SPE Paper No. 21792. Richardson, TX: SPE.

Gangle, F.J., and J.N. Ezekwe. 1995. Improved oil recovery using horizontal wells at Elk Hills, California. Pp. 363-367 in Proc. SPE Western Regional Mtg., Mar 23-25 1995, Long Beach CA. SPE Paper No. 27884. Richardson, TX: SPE.

Gidman, B., L.R.B. Hammons, and M.D. Paulk. 1995. Horizontal wells enhance development of thin offshore gas reservoirs. Petrol. Engr. Int'l 67(3).

Gillin, C. 1989. Response of elk to seismograph exploration in the Wyoming Range. M.S. Thesis, Univ. of Wyoming, 110 pp.

Graham, R.A., R.J. Cox, J.A. Stadlweser, and R. Stinn. 1999. Horizontal re-entry drilling with coiled tubing: A viable technology. *J. Can. Pet. Tech.* 38(10):28-36.

Graute, J., E. Eide, and G. Wenninger. 1994. Record horizontal wells for deep gas reservoir improve productivity and recovery. Pp. 419-431 in *Proc. Euro. Petrol. Conf.* Richardson, TX: Society of Petroleum Engineers.

Gredell, M.E., and M.A. Benson. 1995. Slimhole horizontal well application in a gas storage reservoir: A case study. *Proc. 1995 Operating Section*, May 7-10, Las Vegas, NV, pp 732-742.

Grini, M., W.V. Rice, and S. Stromberg. 2002. Rotary-steerable technology lowers drilling time, well costs. *Oil and Gas J.* 100(20):39-43.

Gomez, J.A., D.D. Mamora, and L.O. Lilledal. 2002. Full-scale well-model tests of a new chemical plug system for zone isolation in horizontal wells. *SPE Drilling & Completion* 17(2):82-86.

Guo, G., and R.D. Evans. 1993. Inflow performance and production forecasting of horizontal wells with multiple hydraulic fractures in low-permeability gas reservoirs. Pp. 307-317 in *Proc. Gas Tech. Symp.*, June 28-30 1993, Calgary, Alta. Richardson, TX: SPE.

Guyatt, R.C.P., and J.P. Allen. 1996. Application of horizontal wells to a tight-gas sandstone reservoir: A Case history. *SPE Reservoir Engineering* 11(3):203-209.

Hall, S.D. 1998. Multilaterals convert 5 spot to line drive waterflood in SE Utah. Pp.383-386 in *Proc. 1998 6th Intl. Oil and Gas Conf Exhib.*, Nov. 2-6 1998, Beijing, China. Richardson, TX: SPE.

Hansen, W. 1993. Environmentally compatible seismic prospecting is feasible. *Erdoel Erdgas Kohle* 109(6):254-258.

Hansen, W. 1996. Reducing the environmental impact of 3D seismic. Pp. 425-432 in *Proc. 1996 Intl. Conf on Health, Safety, and the Environment in Oil and Gas Exploration and Production, Part 1 (of 2)*, Jun 9-12 1996, New Orleans LA. SPE Paper No. 35812.

Hansen, A.J., and J.J. Rotella. 2000. Bird responses to forest fragmentation. In: *Forest fragmentation in the southern Rocky Mountains*, R.L. Knight, F.W. Smith, S.W. Buskirk, W.H. Romme, and W.L. Baker, eds. Pp. 201-219. Boulder: University Press of Colorado.

Harrison, R.D. Jr., H. Restarick, and T.F. Grigsby. 1994. Case histories: New horizontal completion designs facilitate development and increase production capabilities in sandstone reservoirs. Pp. 431-439 in *Proc. 64th Ann SPE Western Regional Mtg.*, Mar 23-25, Long Beach, CA. Richardson, TX: SPE.

Hawkings, N., C. Ramsey, J. Rapach, and M. Kristof. 1990. Results from a horizontal well in a Roetligendes gas field. Pp. 441-451 in *Proc. Euro. Petrol. Conf.*, Oct. 21-24 1990, The Hague, Neth. London: European Offshore Petroleum Conference.

Howell, E.C., and E.C. Stacey. 1994. 3D seismic and horizontal drilling - A case history, Bodo, Alberta. Pp. 1299-1313 in *Proc. Latin Am./Caribbean Petrol. Eng. Conf*, Apr 27-29, Buenos Aires, Argentina. SPE Paper No. 27065.

Huang, W.S., M.R. French, and B.N. Markitell. 1996. Design and performance of Chuchupa 16 - First horizontal gas well, offshore Colombia. Pp. 11-20 in *Proc. - SPE Int'l Conf. on Horiz. Well Tech.*, Nov. 18-20, Calgary, Alta. Richardson, TX: SPE.

- Hulin, B.K. 2001. Water quality of Wyoming stream channel sediments and coalbed methane product water. M.S. Thesis, Univ. of Wyoming, 63 pp.
- Hutzler, M.J. 2000. Statement of Mary J. Hutzler, Director, Office of Integrated Analysis and Forecasting, Energy Information Administration, before the Committee on Energy and Natural Resources, US Senate, July 26, 2000.
- Ingelfinger, F.M. 2001. The effects of natural gas development on sagebrush steppe passerines in Sublette County, Wyoming. M.S. Thesis, Univ. of Wyoming, 110 pp.
- Ishak, I.B., R.P. Steele, R.C. Macaulay, P.M. Stephenson, and S.M. Al Mantheri. 1998. Review of horizontal drilling. SPE Reprint Series no. 47, 1998, pp. 190-203.
- Iverson, W.P., T.L. Dunn, and R.C. Surdam. 1995. Improvements to formation evaluation, Almond Formation, Green River Basin, Wyoming. Wyo. Geol. Assoc. Guidebook 46:271-280.
- Jacobsen, R.I., and P. Rushworth. 1993. Application of horizontal wells to the Troll oil development: An operational overview. Pp. 117-128 in Construction & Installation/Field Drilling and Development Systems, Proc. 25th Ann. Offshore Tech. Conf., Part 3 (of 4), May 3-6 1993, Houston TX.
- Jiang, Z.M., and Z.W. Nian. 1998. Critical aspects experienced in drilling a world record extended reach well in South China Sea. Pp. 35-43 in Proc. 1998 6th Intl. Oil and Gas Conf. Exh., Nov 2-6 1998, Beijing, China. Richardson, TX: SPE.
- Johnson, B.K., and D. Lockman. 1979. Response of elk during calving to oil/gas drilling activity in Snider Basin, Wyoming. WDGf report, 14 pp.
- Johnson, B., and L. Wolrab. 1987. Response of elk to development of a natural gas field in western Wyoming 1979-1987. WDGf Report, 28 pp.
- Joshi, S.D. 1991. Horizontal well technology. Tulsa, OK: PennWell Books, 535 pp.
- Kabir, C.S., A.G. Del Signore, and A.A. Al-Fares. 1997. Performance evaluation of horizontal wells in a tight carbonate reservoir. Pp. 643-654 in Proc. 1997 SPE Ann. Tech. Conf. and Exh. Part Sigma, Oct 5-8, San Antonio, TX. Richardson, TX: SPE.
- Knick, S.T., and J.T. Rotenberry. 1995. Landscape characteristics of fragmented shrubsteppe habitats and breeding passerine birds. *Conserv. Biol.* 9:1059-1071.
- Knott, T. 1994. Jungle juice - tapping the Amazon's petroleum reserves. *Petroleum Review* 48:554-556.
- Krystinik, L.F. 2001. Big bucks or money disposal project?...New perspectives on basin-centered gas from horizontal drilling, deep Frontier fm., Green River Basin, SW Wyoming. AAPG Bull. 85(13) supplement.
- Lacy, S., W. Ding, and S.D. Joshi. 1992. Horizontal well applications and parameters for economic success. Pp. 257-265 in Proc. 2nd Ann. Latin Am. Petrol. Eng. Conf., Mar.8-11 1991, Caracas Venezuela. SPE Paper No. 23676. Richardson, TX: SPE.
- Lanier, G.H. 1996. Low-cost short-radius re-entry horizontal drilling program revitalizes aging northern Michigan Niagaran oil fields. Pp. 681-694 in Drilling and Completion, Proc. 1996 Ann. Tech. Conf. Exh., Part Delta, Oct. 6-9 1996, Denver CO.
- Leazer, C., and M.R. Marquez. 1995. Short-radius drilling expands horizontal well applications. *Petrol. Engr. Intl.* 67(4): 21-26.

- Lichtenburger, G.J. 1990. Pressure buildup test results from horizontal wells in the Pearsall Field of the Austin Chalk. Pp.835-850 in Proc. 65th Ann. SPE Tech. Conf. Exhib., Sept 23-25 1990, New Orleans LA. SPE Paper No. 20609. Richardson, TX: SPE.
- Liu, X., and S. Zaihong. 2002. Technique yields exact solution for planning bit-walk paths. *Oil and Gas J.* 100(5):45-50.
- Logan, T.L. 1988. Horizontal drainhole drilling techniques used in Rocky Mountain coal seams. Proc. Rocky Mtn. Assoc. Geol. Conf., Coalbed Methane, San Juan Basin.
- Longwell, J., and G. Hertzler. 1997. Closed-loop system as a cost effective alternative to reserve pits. Pp. 186-196 in *Advances in drilling technologies for the North American Rockies: Proc. Consortium for Emerging Gas Resources in the Greater Green River Basin, Apr 28 1997, Denver CO.*
- Luhowy, Victor M. 1993. Horizontal wells prove effective in Canadian heavy-oil field. *Oil and Gas J.* 91(26): 47-50.
- Lyon, A.G. 2000. The potential effects of natural gas development on sage grouse (*Centrocercus urophasianus*) near Pinedale, Wyoming. M.S. Thesis, Univ. of Wyoming, 121 pp.
- Maloy, W.T. 1992. Horizontal wells up odds for profit in Giddings Austin Chalk. *Oil and Gas J.* 90(7):67-74.
- Maloy, W.T. 1997. A geological assessment: What's ahead for Louisiana Austin chalk. *Oil and Gas J.* 95(22):149-153.
- Maurer, W.C. 1995. Recent advances in horizontal drilling. *Can. J. Pet. Tech.* 34(9):25-33.
- McCarty, T.M., M.J. Stanley, and L.L. Gantt. 2002. Coiled-tube drilling: Continued performance improvement in Alaska. *SPE Drilling & Completion* 17(1):45-49.
- McCormac, M.P. 1996. Ohio 1995 oil and gas activity and exploration highlights. *Oil and Gas J.* 94(16):77-80.
- McDonald, S., F. Felderhoff, and K. Fisher. 1996. New bits, motors improve economics of slimhole horizontal wells. *Oil and Gas J.* 94(11):66-70.
- McGregor, B., R. Cox, and J. Best. 1997. Application of coiled-tubing-drilling technology on a deep underpressured gas reservoir. *J. Petrol. Tech.* 49(6):606-608.
- McWilliams, C. 2002. The hope: Fewer wells, more gas. *Pine River (Colorado) Times*, June 6, 2002.
- Meehan, D.N. 1995. Technology vital for horizontal well success. *Oil and Gas J.* 93(50):39-46.
- Menkens, G.E., and S.H. Anderson. 1985. The effects of vibroseis on white-tailed prairie dog populations on the Laramie Plains of Wyoming. Report to the U.S. Bureau of Land Management, Interagency Agreement #WY910-IA2-1187, 15 pp.
- Miller, M.J., and T. Geehan. 1998. Stimulation optimization for horizontal wells in carbonate formations. Pp. 329-333 in *Proc. Rocky Mtn. Regional/Low Permeability Reservoirs Symp. and Exh., Apr. 5-8 1998, Denver, CO. Richardson, TX: SPE.*
- Miller, K.A., and R.A. Steiger. 1999. Pikes Peak Project; successful without horizontal wells. *J. Can. Pet. Tech.* 38(4):21-26.

- Moore, B.R., and P.R. Moore. 1999. Low altitude airborne multispectral microfracture analysis in the control of oil and gas production, coalbed methane and site location of directional drilling. AAPG Bull. 83(8):1371.
- Morgan, C.D. 1996. Horizontal drilling potential of the Cane Creek Shale, Paradox Formation, Utah. SPE Reprint Series No. 45, pp. 30-38.
- Moritis, G. 1990. Horizontal drilling scores more successes. Oil and Gas J. 88(9):53-64.
- Moritis, G. 2000. Complex well geometries boost Orinoco heavy oil producing rates. Oil and Gas J. 98(9):42-46.
- Morrissey, F. 1996. Horizontal well strategy taps attic oil. Oil and Gas J. 94(3):38-42.
- Mostafa, I. 1993. Evaluation of water and gas pattern flooding using horizontal wells in tight carbonate reservoirs. Pp. 29-42 in Proc. 8th Middle East Oil Show and Conf., Apr. 3-6 1993, Manama, Bahrain. Richardson, TX: SPE.
- Myal, F.R., and F.-K. Frohne. 1992. Drilling and early testing of a sidetrack to the slant-hole completion test well: A case study of gas recovery research in Colorado's Piceance Basin. Pp. 631-639 in Proc. SPE Rocky Mtn. Regional Mtg. Exhib., May 18-21, Casper, WY. SPE Paper No. 24382. Richardson, TX: SPE.
- Nelleman, C., and R.D. Cameron. 1998. Cumulative impacts of an evolving oil-field complex on the distribution of calving caribou. Can. J. Zool. 76:1425-1430.
- Niggeman, L., and R. Ehlers. 1991. Horizontal drilling in a depleted sour gas reservoir: A new application. Pp. 749-757 in Proc. 1991 SPE/IADC Drilling Conf., Mar 11-14, Amsterdam, Neth. SPE Paper No. 21987. Richardson, TX: SPE.
- Nykjaer, O. 1994. Development of a thin oil rim with horizontal wells in a low relief chalk gas field, Tyra Field, Danish North Sea. Euro. Petrol. Conf. - Proc. pp299-305. Richardson, TX: SPE.
- O'Rourke, J.C., A.G. Begley, H.A. Boyle, C.T. Yee, J.I. Chambers, and R.W. Lunning. 1999. UTF Project status update, May 1997. J. Can. Pet. Tech. 38(9):44-53.
- Pearce, D., M. Johnson, and B. Godfrey. 1995. Horizontal well drilled into deep, hot Austin Chalk. Oil and Gas J. 93(14):59-61.
- Petzet, G.A. 1990. Development eclipsing exploration onshore. Oil and Gas J. 88(23):58-62.
- Phillips Petroleum. 2002. Phillips Petroleum Company Worldwide...North America...Alaska. www.phillips66.com/locations/alaska.html.
- Pinney, M., and S. Rodrigues. 1999. Drilling technology increasing Western Canada gas supply. Oil and Gas J. 97(24):106-108.
- Powell, J.H., and F.G. Lindzey. 2001. 2000 progress report: Habitat use patterns and the effects of human disturbance on the Steamboat elk herd. Unpublished report, Wyoming Cooperative Fish and Wildlife Research Unit, 21 pp.
- Pullin, R., and P. Porter. 2001. Plunger lift for horizontal wells. Pp. 102-103 in Proc. 48th Ann. Southw. Petrol. Short Course, Apr. 25-26, Lubbock, TX.
- Redman, R.S. 2002. Horizontal miscible water alternating gas development of the Alpine Field, Alaska. In Proc. SPE Western Regional/AAPG Pacific Section Joint Meeting, May 20-22, Anchorage AK. SPE Paper No. 76819, 8 pp.

Reynolds, P.E., H.V. Reynolds III, and E.H. Follman. 1983. Responses of grizzly bears to seismic surveys in northern Alaska. *Proc. Int. Conf. Bear Res. And Manage.* 6:169-175.

Reynolds, D.A., and K.P. Seymour. 1991. Horizontal well replaces hydraulic fracturing in North Sea gas well. *Oil and Gas J.* 89(47):71-74.

Rixse, M., and M.O. Johnson. 2002. High-performance coil-tubing drilling develops shallow North Slope heavy oil. *Oil and Gas J.* 100(27):58-63.

Robertson, C.J., J.M. Rapach, N.T. Grant, and M.H. Smith. 1992. History of horizontal wells in the V Fields. Pp. 291-302 in *Proc. Euro. Petrol. Conf.*, Nov 16-18 1992, Cannes, FR. Richardson, TX: SPE.

Saavedra, N.F., and S.D. Joshi. 2002. Application of horizontal well technology in Colombia. *J. Can. Petrol. Tech.* 41(3):33-39.

Salamy, S.P., K. Aminian, G.J. Koperna, and C.D. Locke. 1991. Pre- and post-stimulation well test data analysis from horizontal wells in the Devonian shale. Pp. 337-352 in *Proc. SPE Eastern Regional Conf. Exhib.*, Oct 23-25 1991, Lexington KY. SPE Paper No. 23449. Richardson, TX: SPE.

Sanstrom, B., and P. Longorio. 2002. Innovative 3D visualization tool promotes development-drilling efficiency. *Oil and Gas J.* 100(8):79-84.

Santostefano, V., and A.N. Krepp. 1994. Extended reach drilling advancements dramatically improve performance on Bass Strait wells. Pp. 349-359 in *Proc. Asia Pacific oil & Gas Conf.*, Nov 7-10 1994, Melbourne, Aust. SPE Paper No. 28777. Richardson, TX: SPE.

Sarma, H.K., and K. Ono. 1995. Horizontal wells prove versatile for improved oil recovery. *Oil and Gas J.* 93(50):47-56.

Sawyer, H. H., F.W. Lindzey, D. McWhirter, and K. Andrews. In press. Potential effects of oil and gas development on mule deer and pronghorn populations in Wyoming. *Proc. N. Am. Wildl. Nat. Res. Conf.*, Dallas TX, 2002.

Schneider, Z. 2001. Drilling technique could boost output. *Casper (Wyoming) Star-Tribune*, October 20, 2001.

Schuler, S.K. 1992. Horizontal well improves recovery in deep sour gas field. *Oil and Gas J.* 90(12):93-97.

Schuler, S., and R. Santos 1996. Fraced horizontal well shows potential of deep tight gas. *Oil and Gas J.* 94(2).

Sheikholeslami, B.A., B.W. Schlottman, F.A. Seidel, and D.M. Button. 1991. Drilling and production aspects of horizontal wells in the Austin Chalk. *J. Petrol. Tech.* 43(7):773-779.

Shirif, E. 2000. How new horizontal wells affect the performance of existing vertical wells. *AAPG Bull.* 84(6):894.

Simpson, W.A.F, P. Spilsbury, E. Teleco, and C. Hargreaves. 1993. Applying short-radius horizontal drilling to a deep, hot reservoir in the Mubarek field. Pp. 669-678 in *Proc. 1993 SPE/IADC Drilling Conf.*, Feb 23-25 1993, Amsterdam, Neth. Richardson, TX: SPE.

Smith, J., and B. Edwards. 1992. Slant rigs offer big payoffs in shallow drilling. *Oil and Gas J.* 90(13):64-66.

- Soliman, M.Y., J.L. Hunt, and M. Azari. 1996. Fracturing horizontal wells in gas reservoirs. Pp. 27-40 in Proc. 1996 SPE Eastern Regional Conf., Oct 23-25, Columbus, OH. Richardson, TX: SPE.
- Stagg, T.O., and R.H. Reilly. 1990. Horizontal well completions in Alaska. *World Oil* 210(3):37-44.
- Standing, T.H. 2000. Data shows steep Prudhoe Bay production decline. *Oil and Gas J.* 98(40):86-96.
- Stewart, W.W. 1995. Horizontal wells in Wyoming through 1994. *Wyo. Geol. Assoc. Guidebook* 46:283-295.
- Stright, D.H. Jr., and R.D. Robertson. 1993. Integrated approach to evaluation of horizontal well prospects in the Niobrara shale. Pp. 755-766 in Proc. Rocky Mtn. Mtg./Low Permeability Reservoirs Symp. Exh., Apr 26-28 1993, Denver CO. Richardson, TX: SPE.
- Sunrow, M. 2002. Extreme conditions, extended-reach wells govern land-rig design for Sakhalin. *Oil and Gas J.* 100(24):41-51.
- Swindell, G.S. 1996. U.S. horizontal wells show varied production performance. *Oil and Gas J.* 94(13):66-69.
- Teichrob, R.R. 1994. Low-pressure reservoir drilled with air/N₂ in a closed system. *Oil and Gas J.* 92(12):80-90.
- Thakur, S.C., K. Bally, D. Therry, and L. Simon. 1996. Performance of horizontal wells in a thin oil zone between a gas cap and an aquifer, Immortelle Field, Trinidad. Pp. 715-726 in Proc. SPE Ann. Tech. Conf. Exh., Oct. 6-9 1996, Denver, CO.
- Thakur, G.C. 1999. Horizontal well technology--A key to improving reserves. *J. Can. Pet. Tech.* 38(10):55-60.
- Turaiki, S.A., and S.H. Raza. 1998. Successful applications of the latest technology for improved oil recovery in Saudi Arabia. Proc. 1998 11th Symp. on Improved Oil Recovery, Part 1, Apr. 19-22 1998, Tulsa, OK, pp. 415-422. Richardson, TX: SPE.
- USDOE. 1993. Drilling sideways - A review of horizontal well technology and its domestic application. Washington, DC: Energy Information Administration, Office of Oil and Gas, U.S. Department of Energy, Report No. DOE/EIA-TR-0565, 23 pp.
- USDOE. 1999a. Environmental benefits of advanced oil and gas exploration and production technology. Publication of the U.S. Department of Energy, Office of Fossil Energy, 163 pp.
- USDOE. 1999b. Microdrilling technology advances in Los Alamos field test. U.S. Dept. of Energy Fossil Energy Techline, October 20, 1999.
- van der Harst, A.C. 1991. Erb West: An oil rim development with horizontal wells. Pp. 447-458 in Proc. SPE Asia Pacific Conf., Nov 4-7 1991, Perth, Aust. Richardson, TX: SPE.
- Van Dyke, F., and W.C. Klein, 1996. Response of elk to installation of oil wells. *J. Mamm.* 77(4):1028-1041.
- van Kraysdijk, C.P.J.W., and H. Niko. 1988. Alternatives for draining tight naturally fractured gas reservoirs: Horizontal hole drilling vs. massive hydraulic fracturing. Pp. 47-57 in Proc. Euro. Petrol. Conf., Oct 17-19, London. Richardson, TX: SPE.
- Vighetto, R., M. Naegel, and E. Pradie. 1999. Teamwork, downhole technology expedites Tierra del Fuego operations. *Oil and Gas J.* 97(23):60-65.

Ward, L.A. 1986. Displacement of elk related to seismograph activity in south-central Wyoming. Pp. 246-254 in *Issues and technology in the management of impacted western wildlife: Proceedings of a national symposium*, Glenwood Springs, CO. Boulder, CO: Thorne Ecol. Inst.

Weatherl, M.H. 1998. Horizontal drilling success in the East Painter Field of southwest Wyoming. Pp. 349-361 in *Proc. 1998 Rocky Mtn. Regional/Low Permeability Reservoirs Symp. and Exh.*, Apr. 5-8 1998, Denver CO. Richardson, TX: SPE.

Wodka, P., H. Tirsgaard, C.J. Adamsen, and A.P. Damgaard. 1995. Underbalanced coiled tubing drilled horizontal well in the North Sea. Pp. 271-280 in *Proc. SPE/LADC Drilling Conf.*, Feb. 28-Mar. 2 1995, Amsterdam, Neth. Richardson, TX: SPE.

Wood, J.R. 1997. Recovery of bypassed oil in the Dundee formation using horizontal drills. *Annual Report to U.S. Department of Energy, Contract DE-FC22-94BC14983*, 10 pp.

Xinzhong, L., Z. Ziren, and C. Ping. 1998. Drilling and completion of the deep horizontal well in Shixi oilfield. Pp. 223-232 in *Proc. 1998 6th Intl. Oil & Gas Conf. Exh.*, Nov 2-6, Beijing China. Richardson, TX: SPE.

Yost, A.B., and W.K. Overbey, Jr. 1989. Production and stimulation analysis of multiple hydraulic fracturing of a 2,000-ft horizontal well. Pp. 321-334 in *Proc. SPE Gas Tech. Symp.*, June 7-9 1989, Dallas TX. SPE Paper No. 19090. Richardson, TX: SPE.

Yukon Fish and Wildlife Management Board. 2002. *The effects of oil and gas activity on fish and wildlife: A review of selected literature*. Whitehorse, Yukon Territory, 87 pp.

Zammerilli, A.M. 1989. Simulation study of horizontal, high-angle, and vertical wells in Eastern Devonian Shale. Pp. 641-650 in *Proc. SPE Joint Rocky Mtn. Reg./Low Permeability Reservoirs Symp. and Exhibition*, Mar. 6-8 1989, Denver, CO. Richardson, TX: SPE.



Wyoming Department of Agriculture

2219 Carey Ave., Cheyenne, WY 82002 ■ Phone: 307-777-7321 ■ Fax: 307-777-6598
E-mail: wda@state.wy.us ■ Website: wyagric.state.wy.us

Dave Freudenthal, Governor

John Etchepare, Director

RECEIVED

August 29, 2003

2003 AUG 29 P 12:55

Board Members

- District 1
Lee Ott
- District 2
Kate Moor
- District 3
Reed Gardner
- District 4
Helen Jones
- District 5
Spencer Ellis
- District 6
Alan Todd
- District 7
Arlene Brown

State Planning Coordinator's Office
122 West 25th Street
Herschler Building, 1E
Cheyenne, Wyoming 82002-0001

Dear Lynn Simons:

Following are our scoping comments for the Revised Kemmerer Resource Management Plan for the Bureau of Land Management.

Our comments are specific to WDA's mission within state government which is to assist the citizens of Wyoming to live safe and healthy lives, promote and preserve our agricultural community, be responsible stewards of our natural resources, and achieve integrity in the market place. As this proposed project affects the welfare of our citizens, our agriculture industry, and our natural resources, we believe it's important that we be kept informed of proposed actions and decisions and that we continue to be provided the opportunity to express pertinent issues and concerns.

This project will affect grazing permittees, agriculture producers, landowners, and other citizens, as well as our natural resources over a large area of our state. Officials need to consider these effects, both direct, indirect, economic, and environmental. Moreover, decisions that affect grazing or other uses in the study area will have significant compounding impacts and rippling repercussions on private, state, and other federal lands, and upon agriculture producers and communities adjacent to the study area. These impacts and repercussions need to be evaluated. The cumulative adverse impacts upon ranchers specifically should be included.

We encourage BLM officials to continue to work with all grazing permittees and agriculture producers affected by this project to learn of their concerns and recommendations about the proposed policies and actions regarding this project. These folks are intimately familiar with the area under study and possess irreplaceable long-term, on-the-ground knowledge. They understand that it is in their best interests to continue to serve as stewards of the rangelands in this area. They are particularly aware of the impacts upon the wildlife and livestock habitat and the rangeland health of the proposed project. Their many years of daily on-the-ground wisdom often lead to recommendations that can help identify reasonable and successful management strategies that are both environmentally and economically sound. Thus, we strongly recommend BLM officials aggressively address the concerns and recommendations of these stewards during the planning process.

It is imperative that BLM officials ensure that all livestock grazing permittees who are directly affected by this proposal receive all notices about this revision.

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BLM KEMMERER
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Our mission is to assist the citizens of Wyoming to:
live safe and healthy ■ promote and preserve our agricultural community ■ be responsible
of our natural resources ■ achieve integrity in the market place

Grazing on public lands represents a vital economic value to agriculture producers and to local communities. Impacts on this economic activity, specifically within the affected area and also in adjoining areas, need to be included in the study.

Grazing also represents irreplaceable environmental and social values, contributing valuable wildlife habitat, open spaces, ranchland buffers between federal lands and developments, scenic vistas and visual beauty of the area, and the traditional image of the historic rural landscapes of Wyoming and the West. Any loss of these essential environmental, historic, and social values of livestock grazing to users and visitors of the area and residents of impacted communities should be included in the scope of the study.

Environmental studies often spotlight the costs of livestock grazing or of other commodity uses while failing to include the values of these uses. Perhaps worse, the studies fail to include the costs of desired goals, such as recreation, habitat improvement, naturalness, etc., while spotlighting their values. To be fair, the American public and the citizens of Wyoming deserve to know all costs and values of each use. In that regard, the specific costs of enforcement of each alternative should also be identified.

Previous proposed revisions have often unfairly singled out the impacts of livestock grazing regarding impacts on resources. These biases were compounded by the failure to mention other users which created identical or similar impacts on these resources. Although the impacts of wildlife and wild horses were often omitted in these areas, all uses which affect the resource under study should be included.

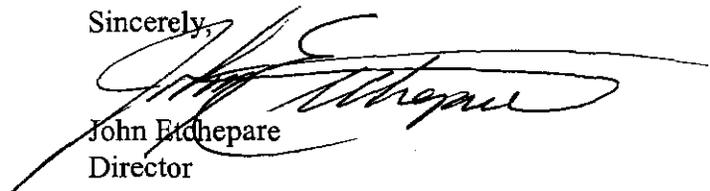
Congressional mandates, federal statutes, and implementing regulations call for multiple use, and these mandates, statutes, and regulations should be an integral part of the plans for the assessments.

Peer-reviewed science should underlie decisions and that science should be identified in the decisions and discussions regarding this planned assessment.

Decisions in the proposed plan should allow BLM officials, grazing permittees, and company officials the opportunity to work cooperatively and the flexibility to make the best site-specific, case-by-case decisions that are in the best interests of the affected resources and citizens.

In conclusion, we appreciate the opportunity to comment on the scope of the proposed actions, we encourage continued attention to our concerns, and we look forward to hearing about proposed actions and decisions.

Sincerely,


John Edtheper
Director

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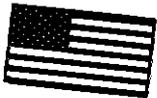
Stumpf, Christa V.

From: Henke, Robert J.
Sent: Sunday, November 23, 2003 6:57 AM
To: 'Bill_Daniels@blm.gov'; Don_Ogaard@blm.gov; Arlan_Hiner@blm.gov;
 ROBERT.J.HENKE@saic.com
Cc: Ziemke, Laura L.; Stumpf, Christa V.
Subject: RE: RMP

Bill,
 Receipt acknowledged.
 Regards,
 Robert

-----Original Message-----

From: Bill_Daniels@blm.gov [mailto:Bill_Daniels@blm.gov]
Sent: Friday, November 21, 2003 3:23 PM
To: Don_Ogaard@blm.gov; Arlan_Hiner@blm.gov; ROBERT.J.HENKE@saic.com
Subject: RMP



For the record, here is a scoping comment. We will not respond to it from here, because it is a scoping comment. I will acknowledge its receipt and thank him, and tell him I am passing it along to you. Thanks, Bill
 ----- Forwarded by Bill Daniels/WYSO/WY/BLM/DOI on 11/21/2003 03:18 PM

Bill Kathy Mastin 11/21/2003 02:03 PM	To: Joe Patti/WYSO/WY/BLM/DOI@BLM, Daniels/WYSO/WY/BLM/DOI@BLM, Walt George/WYSO/WY/BLM/DOI@BLM, Don Simpson/WYSO/WY/BLM/DOI@BLM cc: Subject: RMP
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Would one of you please respond to this for me?

Thank you for your help.

Kathy

----- Forwarded by Kath *enter this name* /WYSO/WY/BLM/DOI on 11/21/2003 02:00 PM

"Leland Telford" <pillow@allwest.net> on 11/21/2003 12:13:26 PM

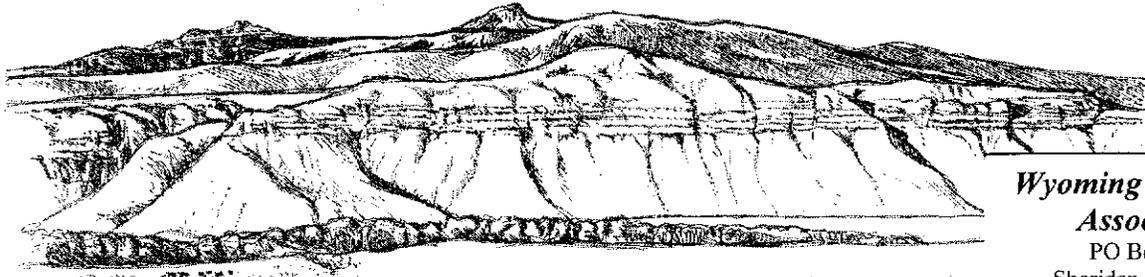
To: <state_office_wymail@blm.gov>
cc: <pillowgrande@yahoo.com>

Subject: RMP

Looking over the objectives of the RMP it is obvious there are many facets to consider. It is also understandable why "the plan" should be reviewed after a certain number of years. It seems to me that things have been going

along quite well. As the RMP is being reviewed please keep in mind the old adage, " If it ain't broke don't try to fix it. Thanks for the ear. Laurel Telford Randolph, Utah

KSL-0014



 Wind River near Dubois

**Wyoming Wilderness
Association**

PO Box 6588
Sheridan, WY 82801
307 672-2751 office
307 672-2752 fax
wild@wavecom.net
www.wildwyo.org

November 6, 2003

BLM Kemmerer Office
Attn: Don Ogaard, RMP Project Manager
312 Highway 189 North
Kemmerer, WY 83101
krmp_wymail@blm.gov

RE: KEMMERER RMP AND EIS SCOPING COMMENTS

Dear Mr. Ogaard;

The Wyoming Wilderness Association newly reformed in 2003 is very interested in being involved in the Kemmerer Resource Management Plan Revision process. Please make sure the WWA is on your mailing list and will receive all updates and NEPA information.

Our interest mainly is concerned with wilderness and roadless area management, but any management activity that is directed from the Kemmerer office can severely impact the values for wilderness and roadless areas. WWA notes that Raymond Mountain Wilderness Study Area (WSA) is the premiere WSA in western Wyoming.

The Citizens Proposal for Wyoming BLM lands has inventoried and found 52,769 acres of Raymond Mountain wilderness. The BLM should consider wilderness management for all these available and capable lands. A map and description has been enclosed with our comments and should be included in the comment record as comments directed to the RMP revision process.

Its location is pivotal in maintaining excellent wildlife habitat and wildlife corridors for linkage to other populations. Wilderness is the highest form of protection for this area and will provide protection for the critical winter habitat for elk, moose and deer. Wilderness will provide better water quality protection since Raymond Mountain contains an important population of Bonneville cutthroat trout in the Sublette Range.

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2003 NOV 10 AM 10:44

The WWA recommends that the RMP establish goals and objectives that consider wilderness protection equally with all other multiple uses for resource management; identify lands that are capable and available for wilderness and/or non-motorized recreation opportunities, and prohibit any uses that would diminish the remaining wilderness/roadless areas

Raymond Mountain WSA has been overgrazed in the past decades. Fencing, water developments and motorized use are discouraging the wilderness qualities of the area, thus, higher and better protections for the integrity of wilderness should be part of the RMP process. Although the Wilderness Act allows for grazing in wilderness, it only does so if the grazing does not harm the ecosystem. Grazing problems need to be addressed in the RMP.

The RMP revision should also address swapping of the state inholdings within the Raymond Mountain WSA. The State of Wyoming has not shown any ability to manage their inholdings as Wilderness Study Areas. In fact, in the Fortification Creek WSA in the Powder River Basin has a state inholding where the State leased the land for CBM development ignoring the wilderness management of the WSA. Land swaps need to occur in a long range planning document like the RMP and should not be done as an emergency.

Please keep us on your mailing list for further NEPA actions. Thank you.

Sincerely,



Liz Howell, Director

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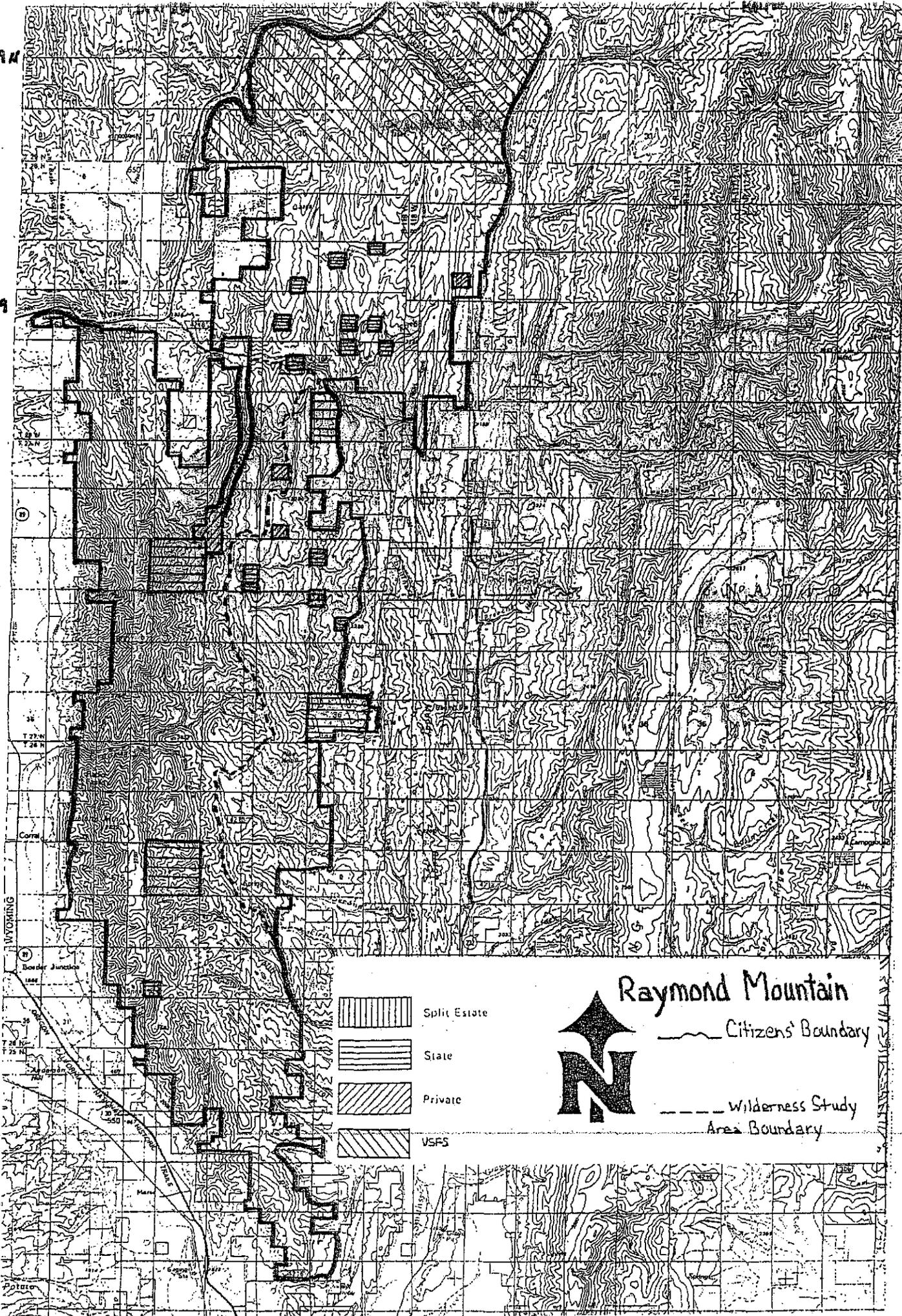
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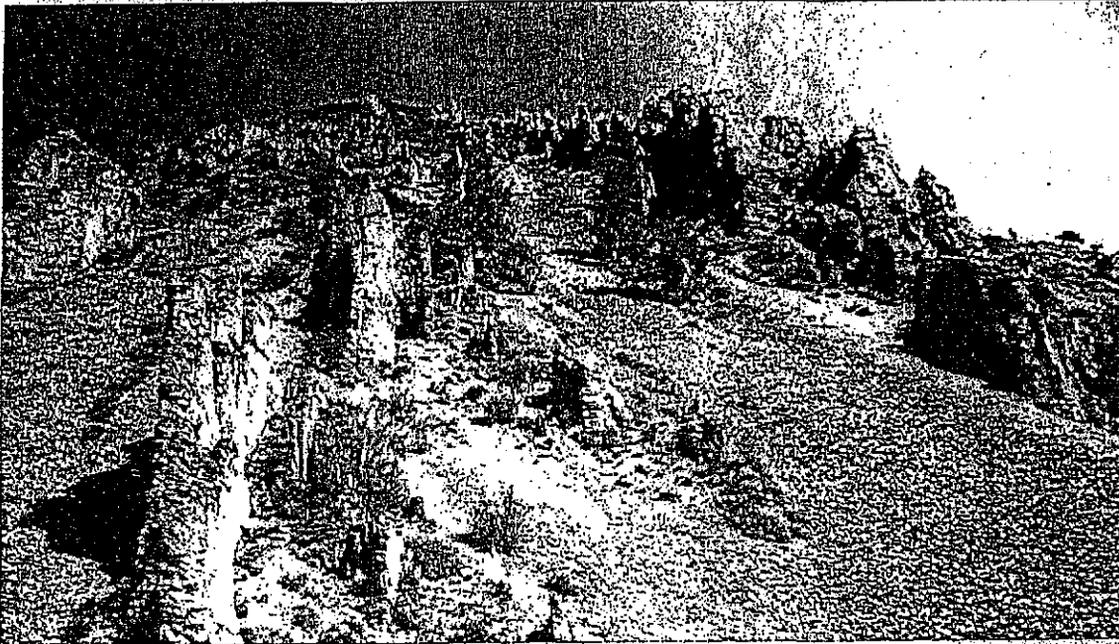


Raymond Mountain

N Citizens' Boundary

Wilderness Study Area Boundary

Bridger Country Areas



Raymond Mountain

Bob Kinter

1. Raymond Mountain, (with Little Muddy Creek and Coal Creek; 040-221, 222, & 223)

Written in collaboration with Anne and Bob Kinter and Steve Jones.

Summary

Citizens' Proposal:	52,769 acres includes 10,880 NF
Intensive Inventory:	53,056 acres
Wilderness Study Area:	32,936 acres

2003 MAY 10 AM 10:45
BUREAU OF LAND MANAGEMENT
R. J. PETERSON

BLM Recommendation: 32,936 acres

Highlights

Raymond Mountain, the Little Muddy Creek and Coal Creek areas are included within the Sublette Range, named for famed explorer Bill Sublette, rising east of the Bear River. The Sublette Range is like an island mountain range comprised of steep rocky canyons, forests of subalpine and Douglas fir, open parks, surrounded by a sea of big sagebrush. Many streams, including Raymond, Little Muddy, Coal, and Huff Creeks originate in the area and provide wetlands habitat for many of the animals in the area. Panoramic views from Sublette Mountain and other peaks feature the Salt River Range, the Tunn Range, and the Bear River Valley.

Location and Access

The Raymond Mountain Citizens' Proposal area is located in Lincoln County near Wyoming's western border, about 60 miles south of Grand Teton National Park. Legal access is from the north on State Highway 89 in Salt Canyon, or from the south near Quealy Reservoir or from the northern region of Coal Creek off of State Highway 89. Other accesses require crossing private land which to date has not been a problem. The access utilized most by the locals is from State Highway 89 to Raymond Creek Canyon at the central western area.

Wilderness Qualities

The Raymond Mountain WSA encompasses the 13,530-acre Raymond Mountain Area of Critical Environmental Concern, which was designated to protect special wildlife values, including streams which contain a genetically pure strain of Bonneville cutthroat trout. This rare and sensitive species is a candidate for threatened and endangered status and is found in at least three of the tributaries originating from the Sublette Range. Other fish species found in the creeks, especially from the Coal Creek, Salt Creek, Raymond Creek, and Little Muddy Creek tributaries are the Leatherside chub (a candidate for federal listing), and the Bluehead sucker, a unique species recognized by the Nature Conservancy as rare in the State (WNDD, 1993).

Most of Raymond Mountain WSA is crucial winter range for moose, elk, and mule deer, while the northeastern half of Coal Creek is an elk calving ground. Adjacent to the Little Muddy Creek Citizens addition area in the Bridger Teton National Forest, there were seven sightings of the North American Lynx, a candidate for federal listing for endangered/threatened species (WNDD, 1993).

Many birds, including ruff and blue grouse, sandhill cranes, goshawks, Cooper's hawks, and ferruginous hawks - another Endangered/threatened candidate species - nest in the study area. Huff Lake and numerous beaver ponds support nesting pintail ducks, gadwall, widgeon, teal, and other waterfowl. Just south of the Raymond Mountain WSA is the National Bear River Wetlands Wildlife Refuge where habitat is provided for many critical bird species such as: the long-billed curlew, snowy egret, black-crowned night-heron, white-faced ibis, Forster's tern, and the federally listed Endangered whooping crane (WNDD, 1993).

Bald eagles (listed endangered/threatened) forage and use for area for winter habitat (WNDD, 1993), and peregrine falcon have potential nesting sites on the cliffs. Rock walls and grottoes within the area may provide habitat for five Priority Species: Townsend's big-eared bat, Yuma myotis, California myotis, Keen's myotis, and fringed myotis (Luce 1991).

77-0015 01 APR 1997
 DIVISION OF WILDERNESS
 RESTORED TO WILDERNESS
 01 APR 1997

In addition to excellent wildlife viewing, visitors here find great botanical diversity. Unique or rare plant species found in the area and the Citizens' additions include: the small-flower fiddleneck, Wasatch biscuitroot, Payson's milk-vetch, and Williams conimitella (WNDD, 1993). Magnificent scenery, and unusual geologic formations such as rock spines and towers add delight to the hiker.

Resource Analysis

Most timber in the area is not harvestable due to extremely steep slopes and poor access (Storbo et. al. 1991). About 50 acres could be harvested for sawtimber, and 50 acres for firewood.

Small coal reserves may be present in the study area, but development potential is low and there are much more extensive and accessible deposits elsewhere in Wyoming.

189 acres of a Phosphate lease (Tenneco) lie on the western edge of the unit [have checked this, and should we redraw or boundary to exclude, if necessary. BLM Minerals person (Kemmerer RA) said Tenneco is looking to get out of the lease quickly and doesn't think that any development has been done in the area. Should they withdraw from the lease it probably would not be reissued due to WSA (G. McMillan, BLM, 6-22-93). No activity has occurred on the lease since 19__, and the likelihood of development is low.

Recoverable reserves of natural gas are estimated to total 81 BCF, which is less than 0.6 percent of reserves in the Thrust Belt (Storbo et. al. 1991).

Seven outfitters use the Sublette Range areas for big game hunting, and sheep and cattle graze the area from May through October. The Kemmerer district manager Darrell Short said that the Raymond Mountain area is overgrazed (BLM, Kemmerer 6-22-93).

Gas-related activity and snowmobile use would disturb wildlife on critical winter range, and displace animals to adjacent agricultural lands, resulting in damage to private stockyards and haystacks, should the area not be designated as wilderness (BLM 1990b). Big game numbers in Raymond Canyon WSA would be reduced by 10 to 20 percent, and reduced by a lesser percentage in the other two areas. Hunter use would be reduced by 25 percent over the next ten years, and the quality of fishing experiences would be decreased. Livestock and ORV use in streambeds would continue to degrade habitat of the Bonneville cutthroat trout, and construction associated with gas development would increase sediment loading into trout streams.

Wilderness values would be lost, primarily outside of the Raymond Mountain ACEC plan area, due to gas exploration and development, timbering, and ORV use. Naturalness and solitude within the ACEC would also be impacted by timbering on 50 acres and by 10 gas wells.

Boundary Rationale and Management Recommendations

BLM management decisions: the BLM recommended all of the Raymond Mountain WSA (32,936 acres) as wilderness but the Citizens' additions of I-GO Speedway and Coal Creek were not considered.

The peripheral bounds of the Sublette Range study area are set by private and state land ownership patterns, except on the northern portion of USFS land where Highway 89 and geographic features set the boundary. This area is divided into three study units by vehicle ways. The I-GO Speedway road had deteriorated into a 4wd track and could be further rehabed to

become trail access to add Little Muddy Creek to Raymond Canyon (Storbo, Short, 1993). Although BLM recommends only the largest of the three units--Raymond Mountain--for Wilderness, the other two units are equally wild. By adding the Little Muddy Creek and the Coal Creek area, this wilderness proposal area would include high National Forest lands down to bottom lands. The additions would provide a natural compliment to Raymond Mountain by encompassing a complete geographic and ecological area.

Regardless of designation recommended, livestock pressure on habitat for Bonneville cutthroat trout should be decreased (BLM, 1991). No fencing should be allowed to manage for grazing but reduction of grazing is recommended (Storbo, 1993). The BLM is presently pursuing a land exchange with the State for the two-160 parcels and the 40 acre parcel in the Raymond Mountain WSA (R. Short, BLM, 1993). The BLM plans to pursue the acquisition of the private land in the future which would enhance manageability of the area. The cherry-stem road was the result of an verbal agreement between the Wyoming Game and Fish and the BLM to do fisheries enhancement in 1983 and has not been used for this purpose since then. The road should be closed and rehabilitated to become a trail to Huff Lake (Storbo, 1993). In particular, acquisition of the 160-acre private tract on Huff Creek would, also, allow closure of the way which runs beside and across the stream, resulting in improved water quality and habitat for the Bonneville cutthroat trout.

[ask WGFD if we need to cherrystem to Huff Lake past the private land--BLM says its for fisheries improvement projects by agreement with them, and for access to state land, but the road is highly rutted and must be bad for water quality] BLM doesn't know how these owners access their land]

November 20, 2003

P.O. Box 165
Kemmerer
Wyoming
83101

Attention Don Ogaard, RMP Project Manager:

This letter includes my comments about the Kemmerer RMP revision. You have my permission for this letter to be available for public review at the BLM Kemmerer Field Office.

My three main concerns are: (a) winter range for sage grouse (b) water development (c) livestock grazing

WINTER RANGE FOR SAGE GROUSE

Sage grouse use primarily sagebrush during the winter months. Any proposed type of conversion which includes winter-use areas must be carefully considered.

An on-the-ground survey of sage grouse winter distribution during peak snow conditions should be done before approval is given for conversion. All known sage grouse wintering areas should receive priority attention concerning the control of wildfires and prescribed burns.

WATER DEVELOPMENT

More water sources need to be made available for sage grouse and wildlife. All livestock water troughs should have installed bird ramps. A tank-overflow system which provides water at ground level is most

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BLM KEMMERER F.O.
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beneficial to sage grouse and other birds. All water systems used by livestock should be left on - not emptied - when livestock have been moved. Some spring drinking water sources in meadow vegetation should be fenced, and water should be piped to an outside stock watering trough. This is most important for sage grouse brood-rearing areas. It is also desirable to have vegetation cover in areas where sage grouse come to water; these areas may include up to five acres that need to be fenced. The areas around most livestock water sources are void of vegetation, trampled by livestock. Guzzlers should be installed in sage grouse summer range where water is a limiting factor. An open trough guzzler at ground level is best, and it should be fenced to keep livestock out of the guzzler area.

GRAZING

Livestock should not be turned out until the second week in June. The forced movement or drives of cattle and sheep in the spring is reason for concern. Even a slight disturbance will cause hen sage grouse to abandon their nests while laying in mid-April through middle-May. Yearling hens are prone to nest-abandonment when disturbed during incubation. Yearling hens comprise at least 35% of the reproductive segment. Known nesting areas of sage grouse should be undisturbed from mid-April through mid-June.

The BLM, along with the Wyoming Game and Fish Department, should have information for the Kemmerer Resource Area regarding the following:

BLM
KEMMERER R.A.
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- (1) Occupied sage grouse range
- (2) Leks and nesting areas
- (3) Brood-rearing areas
- (4) winter-use areas
- (5) Habitat modifications
 - (a) Sagebrush control
 - (b) Controlled burns
 - (c) Energy development and reclamation
- (6) Continual efforts to locate new leks

OVERGRAZING ON THE CUMBERLAND ALLOTMENT

I do not understand why the BLM has allowed such extensive overgrazing on this allotment during the past three years. Cattle and sheep have nearly obliterated the grass, leaving many areas bare. The BLM has regulations for livestock-grazing. Why does the BLM allow this overgrazing? I am starting to believe that livestock grazing of public lands is the single most destructive use of our public lands. Is the BLM biased toward the livestock industry? Does the BLM bow under political pressure? I think the Kemmerer Resource Area has failed to address problems with livestock grazing on public lands.

Sincerely,

Norris Tratnik

Norris Tratnik

2003 NOV 25 PM 12:28
RECEIVED
BLM KEMMERER R.O.

Dave Huber
420 Wilkes Drive #9
Green River, WY 82935
[Click here and type return address]

August 15, 2002

ATTN: Jeff Rawson

There is a large tract of BLM land behind the southern end of the Commissary Ranch Association that used to be a very beautiful and pristine area that harbored many animals including two resident elk herds.

Years ago, people started making their own road through there. In the early 1980's, the BLM office out of Kemerrer, Wyoming had a local construction firm plow the road on side hill to prevent motorized traffic from going through there.

Recently, more people have been buying property in the area and have been driving large trucks and 4-wheelers through there again, causing soil erosion, cutting down trees, making their own "new" trails with 4-wheelers, and harassing the animals that are left in there.

We would appreciate your aid and input into preventing any more damage by this inconsiderate few.

We feel it would be in the general public's interest to close the present "access trail" to motorized traffic to prevent further damage to the area.

The local BLM office in Kemerrer is aware of the situation, but needs some direction from your office.

Sincerely,

Dave Huber

Dave Huber
[Click here and type job title]

420 Wilkes Dr. #9
Green River, WY 82935
(307) 875-1907

[Click here and type slogan]

Rock Springs



Written Comment Form
Kemmerer Field Office Planning Area
Resource Management Plan (RMP) Revision Process

Location: KemmererDate: 11/18/03

Thank you for your input.

PLEASE PRINT LEGIBLY.

BLM manages Private AUMs they should
 have plan to compensate for private AUMs that they do not
 allow private people to use. (common use AUMs)

BLM Manages the Grass or forrage with Livestock numbers
 never changing the Wildlife numbers

BLM has got to Manage Wildlife numbers to responsibly
 manage the Range production

deer & Elk & Antelope # are always increasing BLM
 has to manage that

I want to see more burns in areas

*** CONTINUE ON BACK FOR MORE SPACE ***

Public comments submitted for this planning effort, including names and street addresses of respondents, will be available for public review in their entirety after the comment period closes at the Kemmerer Field Office during regular business hours (7:45 a.m. to 4:30 p.m.), Monday through Friday, except federal holidays. Individual respondents may request confidentiality. If you wish to withhold your name or address from public review or from disclosure under the Freedom of Information Act (FOIA), you must state this prominently at the beginning of your comments. Such requests will be honored to the extent allowed by law. All submissions from organizations or businesses, and from individuals or officials representing organizations or businesses, will be made available for public inspection in their entirety.

NAME: Sam BennionORGANIZATION: Private land ownerADDRESS: P.O. Box 55CITY/STATE/ZIP: Cokville WY 83114
 Yes, include my name and address on the mailing list so I can receive information on the Kemmerer Planning Area RMP Revision.

 No, do not include my name and address on the mailing list.

Please hand this form in or MAIL (post-marked by November 26, 2003) to:

BLM Kemmerer Field Office
 312 Highway 189 North
 Kemmerer, Wyoming 83101
 Attn: RMP Revision



Written Comment Form
Kemmerer Field Office Planning Area
Resource Management Plan (RMP) Revision Process

Location: EvanstonDate: 11/18/03

Thank you for your input.

PLEASE PRINT LEGIBLY.

- 1) Special management areas should be kept as small as possible.
- 2) Unless very special circumstances exist, broad multiple use of the land should be allowed. The plan should start with this broad multiple use concept, then restrict it only where specific justification exists.
- 3) The University of Wyoming should be consulted immediately for input on the economic analysis. No input into economic models should be made without review by the University. The model being used should be reviewed by the University to determine if it is appropriate to apply to southwest Wyoming.
- 4) Economic impact for all alternatives should be analyzed for individual counties.

*** CONTINUE ON BACK FOR MORE SPACE ***

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NAME: Ken Klinker
ORGANIZATION: Uinta County
ADDRESS: 225 9th St
CITY/STATE/ZIP: Evanston, WY 82930

- Yes, include my name and address on the mailing list so I can receive information on the Kemmerer Planning Area RMP Revision.
- No, do not include my name and address on the mailing list.

Please hand this form in or MAIL (post-marked by November 26, 2003) to:

BLM Kemmerer Field Office
 312 Highway 189 North
 Kemmerer, Wyoming 83101
 Attn: RMP Revision



Written Comment Form
Kemmerer Field Office Planning Area
Resource Management Plan (RMP) Revision Process

Location: EvansstonDate: 11/18/03

Thank you for your input.

PLEASE PRINT LEGIBLY.

MAPS ON FRONT DISPLAYS don't show the private lands. It is miss leading to the General Public to come into a public forum and believe the Area under the RMP is all Federal. These comments and understanding would be better served having all the facts in front of them. Not just on a map at the back of the room to make up ~~the~~ for the error at the front.

*** CONTINUE ON BACK FOR MORE SPACE ***

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NAME:	<u>Burdette W. Worton</u>
ORGANIZATION:	<u>J.W. Ranching Co., Inc., Permittee</u>
ADDRESS:	<u>51 W. 300 So</u>
CITY/STATE/ZIP:	<u>Laketown, Wt. 84038</u>

- Yes, include my name and address on the mailing list so I can receive information on the Kemmerer Planning Area RMP Revision.
- No, do not include my name and address on the mailing list.

Please hand this form in or MAIL (post-marked by November 26, 2003) to:

BLM Kemmerer Field Office
 312 Highway 189 North
 Kemmerer, Wyoming 83101
 Attn: RMP Revision



Written Comment Form
Kemmerer Field Office Planning Area
Resource Management Plan (RMP) Revision Process



Date: November 24, 2003

Location: _____

Thank you for your input.

PLEASE PRINT LEGIBLY.

(See Exhibit "A" annexed hereto and by this reference specifically made a part hereof. (2 pages))

Lined area for writing comments.

**** CONTINUE ON BACK FOR MORE SPACE ****

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NAME: Edward M. Bown - Attorney at Law
ORGANIZATION: Attorney for our group of cattle permittees in the Cumberland-Uinta
ADDRESS: 1015 East 3900 South Grazing Allotment; Rock House Grazing
CITY/STATE/ZIP: Salt Lake City, Utah 84124-1110 Allotment; and Cumberland Flats Grazing Allotment.

- X Yes, include my name and address on the mailing list so I can receive information on the Kemmerer Planning Area RMP Revision.
No, do not include my name and address on the mailing list.

Please hand this form in or MAIL (post-marked by November 26, 2003) to:

BLM Kemmerer Field Office
312 Highway 189 North
Kemmerer, Wyoming 83101
Attn: RMP Revision

Exhibit "A"

TO: Bureau of Land Management
FROM: EDWARD M. BOWN, ATTORNEY FOR CATTLE PERMITTEES
SUBJECT: RMP scoping comments

The following represent our comments to BLM on the RMP scoping.

Vegetation:

The RMP should recognize the need to maintain the ecological role of fire in promoting stand renewal in the sagebrush steppe and aspen/mountain brush vegetation types. Prescribed fire and other vegetation treatments should be available to assure that the natural plant succession processes are maintained to provide biological diversity and productivity on range landscapes.

The RMP should recognize the need to maintain an aggressive control and prevention program against noxious and invasive plants.

Minerals:

The RMP should provide mineral production on public land while assuring appropriate rehabilitation/re-vegetation on all disturbed sites (wells, access roads, pipelines). It should also address prevention and treatment of noxious and invasive weeds on all disturbed sites as well.

Lands and Realty:

The RMP should provide for an accelerated land exchange program in the areas of checkerboard ownership or other small tract in-holdings. Land exchanges would be greatly beneficial to the agency, private landowners, the public and simplify the use of such lands.

The RMP should identify the need for road and trail maintenance. This is a public safety, soil erosion and public access issue.

Livestock grazing:

The RMP should encourage the development of coordinated and cooperatively developed grazing management plans.

The RMP should provide for the construction and maintenance of management facilities necessary for the proper management of livestock grazing (pasture fences, water developments, vegetative treatments, etc.).

The RMP should recognize livestock grazing as having economic significance and other benefits to local communities.

Special Designations:

The RMP should critically analyze the cumulative effect of special land designations on future management options for land uses such as grazing, mineral production and vegetation

management (prescribed burns or other cultural practices). Special land designations will definitely limit and in many cases, preclude future management options, activities and facilities that are necessary to properly manage livestock grazing (fences, water developments and vegetation treatments). When specially designated areas are located within a grazing allotment, the effects of the restrictions often extend beyond the special status boundary by impacting management options on the entire allotment. These special designations can become a de facto means of removing livestock grazing.



Written Comment Form
Kemmerer Field Office Planning Area
Resource Management Plan (RMP) Revision Process



Location: _____

Date: 11/23/03

Thank you for your input.

PLEASE PRINT LEGIBLY.

Oil & Gas Development - need a clear definition of Viewshed in regards to Historic Trail.
Historic Trails more ~~strong~~ Trail markers more analysis of elusive segments. more analysis and public information on Energy Development impact to trails.
Energy Development - wind generators. I am in favor of this renewable energy source but think BLM should address this issue with clear definitions of where these would be.
The least impact to our Natural Resources - Migration + Humans + Habitat etc
where creek wetlands must designated used life viewing areas - so that ATV and vehicles do not need to cross meadows etc to access various sites.
As a national Hawk Watch Station is a great asset to our district it should have plans for future development of Public Areas.
The road usage near trails need to be monitored to avoid habitat disturbance - ~~more~~ signs need to be placed when invasive activity occurs. Road closures may be necessary.
CONTINUE ON BACK FOR MORE SPACE

Public comments submitted for this planning effort, including names and street addresses of respondents, will be available for public review in their entirety after the comment period closes at the Kemmerer Field Office during regular business hours (7:45 a.m. to 4:30 p.m.), Monday through Friday, except federal holidays. Individual respondents may request confidentiality. If you wish to withhold your name or address from public review or from disclosure under the Freedom of Information Act (FOIA), you must state this prominently at the beginning of your comments. Such requests will be honored to the extent allowed by law. All submissions from organizations or businesses, and from individuals or officials representing organizations or businesses, will be made available for public inspection in their entirety.

NAME: Fern + Fred Linton
ORGANIZATION: OCTA - Trail Advocates - Bird Watchers
ADDRESS: 405 Wilkes Dr
CITY/STATE/ZIP: Green River WY 82935

- [X] Yes, include my name and address on the mailing list so I can receive information on the Kemmerer Planning Area RMP Revision. Please send me dated and current magazine
[] No, do not include my name and address on the mailing list.

Please hand this form in or MAIL (post-marked by November 26, 2003) to:

BLM Kemmerer Field Office
312 Highway 189 North
Kemmerer, Wyoming 83101
Attn: RMP Revision

2003 NOV 25 AM 8:31
BLM KEMMERER F.O.



Written Comment Form

Kemmerer Field Office Planning Area
Resource Management Plan (RMP) Revision Process



Location: Kemmerer

Date: Nov 24 2003

Thank you for your input.

PLEASE PRINT LEGIBLY.

I believe that weed management needs to continue
grazing should also continue
water development to better utilize existing forage
land science should be used in decisions
Predators need to be monitored and accounted for damages caused
cross fencing to better manage range

*** CONTINUE ON BACK FOR MORE SPACE ***

Public comments submitted for this planning effort, including names and street addresses of respondents, will be available for public review in their entirety after the comment period closes at the Kemmerer Field Office during regular business hours (7:45 a.m. to 4:30 p.m.), Monday through Friday, except federal holidays. Individual respondents may request confidentiality. If you wish to withhold your name or address from public review or from disclosure under the Freedom of Information Act (FOIA), you must state this prominently at the beginning of your comments. Such requests will be honored to the extent allowed by law. All submissions from organizations or businesses, and from individuals or officials representing organizations or businesses, will be made available for public inspection in their entirety.

NAME:	<u>Arnold Larson</u>
ORGANIZATION:	<u>Rancher</u>
ADDRESS:	<u>Box 68</u>
CITY/STATE/ZIP:	<u>OPAL WY 83124</u>

- Yes, include my name and address on the mailing list so I can receive information on the Kemmerer Planning Area RMP Revision.
- No, do not include my name and address on the mailing list.

Please hand this form in or MAIL (post-marked by November 26, 2003) to:

BLM Kemmerer Field Office
312 Highway 189 North
Kemmerer, Wyoming 83101
Attn: RMP Revision

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BLM KEMMERER F.O.
2003 NOV 24 PM 1:50

Todd Kratz
 Senior Landman
 Wyoming Asscets
 Tel: 281-561-3630
 Fax: 281-561-3566
 toddkratz@chevrontexaco.com

ChevronTexaco

North American Upstream
 MidContinent Business Unit
 11111 South Wilcrest
 Houston TX 77099

November 24, 2003

BLM Kemmerer Field Office
 312 Highway 189 North
 Kemmerer, WY 83101
 Attn: RMP Revisions

2003 NOV 25 PM 3:10
 BLM KEMMERER F.O.

Ladies and Gentlemen:

Pursuant to the public meeting held in Evanston, Wyoming on Tuesday, November 18, 2003, and after reviewing the "Summary of the Management Situation Analysis", Chevron U.S.A. Inc. would like to offer the following comments regarding issues that should be addressed in the revised Kemmerer Resource Management Plan.

MINERAL RESOURCES – OIL AND GAS

- Surface management programs that are selected should protect and encourage opportunities to explore for and produce oil and gas.
- In selecting surface management options, the BLM should recognize that directional drilling may not be a viable option for much of the drilling in the RMP Area, particularly the Overthrust area because of the steep angle of the various producing formations.
- Chevron would like to emphasize that the fact that industry has no current exploration interest in an area should not be considered a reason for closing an area to future exploration and production. In addition, the BLM needs to recognize that the economics for an exploration prospect can change relatively quickly as technology changes and advances, and for this reason it is almost impossible for industry to forecast the number of wells that will be drilled in the next 20 years, as set out in Section 2.8.1.2 of the SMSA.
- The BLM should analyze and discuss the socio-economic impacts that the various surface management options it is considering will have on exploration and production. The oil and gas industry has created a large number of jobs in Wyoming, and makes a substantial contribution to the economic welfare of the Federal, State and local economies through taxes and royalties.
- The BLM should consider using a system that establishes an acceptable area of surface disturbance that will be permitted for oil and gas development, rather than trying to establish a specific number of wells that will be permitted. This approach will add flexibility for both the BLM and industry and may actually increase the number of wells drilled under the RMP. It would also take into account wells that have been plugged and abandoned.
- The surface management options selected by the BLM should be the least restrictive available consistent with achieving the resource management objectives. The impact of these options should be subject to being monitored and measured to insure that they are effective. This will allow the appropriate management of other resources.

VISUAL RESOURCE MANAGEMENT

- Chevron supports the concept of Visual Resource Management, but such management must be based on reasonable mitigation measures. Chevron encourages the BLM to retain the current Controlled Surface Use Stipulation of 1/4 mile or line of sight (whichever is less) on either side of National Historic Trails. Such Stipulations should be applied only to those

trails that exist "on the ground", and not to generalized areas in which trails are thought to have been located but for which there is no evidence.

ADAPTIVE MANAGEMENT

- Chevron has historically supported and participated in various "work groups" dealing with problems affecting our operations. However, we expect the individuals who are on the work groups to have a scientific and working knowledge of the issues being addressed, as well as an understanding of the industry(s) that will be affected by the issues and decisions.
- Project proponents should be represented on the work group.
- A balanced approach to managing all of the resources being affected, as well as an open dialogue with the public, needs to be integral part of the process.

SPECIAL MANAGEMENT AREAS

AREAS OF CRITICAL ENVIRONMENTAL CONCERN

SPECIAL STATUS SPECIES

- Chevron recognizes and supports the use of these tools to preserve and protect specific areas that have unique characteristics. However, Chevron is concerned that these tools will be proposed without solid scientific basis for such proposal. The BLM should make the public aware of any other areas in which the BLM is considering using these options, and provide the scientific basis for its concerns.
- Any area in which these options are proposed should be as small as possible consistent with the resource management objectives, and the existing rights of thirds parties within each area must be protected. In addition, any surface use restrictions should be the least restrictive possible. This will allow other resources to be managed appropriately.

Chevron appreciates the opportunity to review the SMSA and participate in the scoping process for the Resource Management Plan. If you have any questions, or need additional information, please feel free to call me at the telephone number shown above. In addition, please add my name and address to the mailing list for upcoming information related to the Revised RMP.

Sincerely,
Chevron U.S.A. Inc.



Todd Kratz

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BLM KENNEDY F.O.
2003 NOV 25 PM 3:10



Written Comment Form
Kemmerer Field Office Planning Area
Resource Management Plan (RMP) Revision Process

Location: CITY OF KEMMERERDate: 11-26-03

Thank you for your input.

PLEASE PRINT LEGIBLY.

KEMMERER MAYOR JIM CARROLL AND THE KEMMERER CITY COUNCIL REQUEST THAT I SUBMIT THE FOLLOWING COMMENTS TO YOU:

- (1) THE CITY OF KEMMERER HAS A MAJOR NEED FOR GRAVEL RESOURCES. PURCHASING GRAVEL AND FILL MATERIAL FROM PRIVATE SUPPLIERS IS COST PROHIBITIVE FOR OUR CITY WITH ITS LIMITED FUNDING SOURCES. TO MAINTAIN AND IMPROVE OUR STREETS AND OTHER INFRASTRUCTURE, WE NEED TO BE ABLE TO OBTAIN MATERIALS AT A MORE REASONABLE COST.
- (2) THE CITY OF KEMMERER SUPPORTS PARTNERSHIPS WITH BLM TO PROVIDE APPROPRIATE PUBLIC ACCESS FOR RECREATIONAL USES (I.E. HIKING, BIKING, BACKWAY TRAILS).
- (3) IN REGARD TO ECONOMIC DEVELOPMENT AND JOB CREATION, THE CITY OF KEMMERER SUPPORTS INCREASED MINERAL AND GAS EXTRATION. WITH TODAYS REGULATIONS, WE CAN PROTECT THE ENVIRONMENT AND STILL CREATE JOB OPPORTUNITIES AND PROVIDE PRODUCTS NEEDED IN OUR NATION THAT WILL NOT REQUIRE US TO IMPORT THESE PRODUCTS FROM OTHER COUNTIES.
- THANK YOU FOR CONSIDERING THESE COMMENTS FROM THE CITY OF KEMMERER.

*** CONTINUE ON BACK FOR MORE SPACE ***

Public comments submitted for this planning effort, including names and street addresses of respondents, will be available for public review in their entirety after the comment period closes at the Kemmerer Field Office during regular business hours (7:45 a.m. to 4:30 p.m.), Monday through Friday, except federal holidays. Individual respondents may request confidentiality. If you wish to withhold your name or address from public review or from disclosure under the Freedom of Information Act (FOIA), you must state this prominently at the beginning of your comments. Such requests will be honored to the extent allowed by law. All submissions from organizations or businesses, and from individuals or officials representing organizations or businesses, will be made available for public inspection in their entirety.

NAME:	MIKE PENCE
ORGANIZATION:	CITY OF KEMMERER
ADDRESS:	220 WYOMING HIGHWAY 233
CITY/STATE/ZIP:	KEMMERER WY 83101

- Yes, include my name and address on the mailing list so I can receive information on the Kemmerer Planning Area RMP Revision.
- No, do not include my name and address on the mailing list.

Please hand this form in or MAIL (post-marked by November 26, 2003) to:

BLM Kemmerer Field Office
 312 Highway 189 North
 Kemmerer, Wyoming 83101
 Attn: RMP Revision

NOV 26 PM 1:01
 BLM KEMMERER F.O.



KSL-0026

Written Comment Form
Kemmerer Field Office Planning Area
Resource Management Plan (RMP) Revision Process



Location: KEMMERER

Date: 11-25-03

Thank you for your input.

PLEASE PRINT LEGIBLY:

If your Visual Resource Management efforts are going to result in what I see between Opal and Granger, WY, with who knows how many small tanks per square mile and a maze of access roads, in my opinion, those efforts will be a total failure and a contradiction to any conceivable "desired future condition of public lands" I detect a conflict between "Issues K" and "Criteria C." I've watched the wide open spaces of southwest WY disappear over the last 20 years. The area north of the Uintas and between the WYO-Salt River ranges and the Wind Rivers to the Gros Ventre has always been a magical place to me. To see the lower Ham's Fork and the Green River Basins turn into a checkerboard of tanks and roads is visually and aesthetically "criminal." To extend this scarring into the foothills and mountains is inexcusable. I'm afraid the tourists who come here to get away from it all are going to feel too

**** CONTINUE ON BACK FOR MORE SPACE ****

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NAME:	<u>Dan C Kominsky</u>
ORGANIZATION:	
ADDRESS:	<u>1305 Central Avenue</u>
CITY/STATE/ZIP:	<u>Kemmerer WY 83101</u>

- Yes, include my name and address on the mailing list so I can receive information on the Kemmerer Planning Area RMP Revision.
- No, do not include my name and address on the mailing list.

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Kemmerer, Wyoming 83101
Attn: RMP Revision

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much at home. (Maybe camp point??)

The so-called blessing of an abundance of natural resources like coal and natural gas is fast becoming a curse on the natural beauty of southwest Wyoming. We're starting to look more and more like some Texas oil millionaire's back yard.

Don C. Kominick



KSL-0027

Written Comment Form
Kemmerer Field Office Planning Area
Resource Management Plan (RMP) Revision Process



Location: ELIHAN STAIR

Date: 11/18/03

Thank you for your input.

PLEASE PRINT LEGIBLY.

- WE WOULD LIKE TO SEE THE RMP RETAIN EXISTING ROADS AND TRAILS, FOR OHV RECREATION USE.
WE WOULD ALSO LIKE TO SEE A DESIGNATED "OPEN" AREA FOR OHV USE IN THE AREA CIRCLED ON THE MAP INCLUDED WITH THIS FORM.
WE WOULD LIKE TO SEE AN ADDITIONAL OPEN AREA FOR OHV USE AT THE SITE OF THE OLD LYMAN DUMP EAST OF LYMAN, WHICH COULD BE USED FOR A MOTO-X TRACK.
WE APPLAUD THE KEMMERER FIELD OFFICE FOR RECOGNIZING THE NEED FOR INCLUDING RECREATIONAL USES IN THE MULTIPLE USE PLAN, AND FOR THE COOPERATION FROM YOUR OFFICE IN PERMITTING THE HILL CLIMB AT THE CLAY HILLS AREA.
WE NEED TO IMPROVE THE ROAD INTO THE HILL CLIMB SITE TO PREVENT THE CURRENT ROAD FROM RUTTING AND GROWING WIDER.
DESIGNATING AN OHV AREA WOULD ENABLE ACCESS TO STATE, AND FUNDS EARMARKED FOR TRAIL IMPROVEMENTS

**** CONTINUE ON BACK FOR MORE SPACE ****

Public comments submitted for this planning effort, including names and street addresses of respondents, will be available for public review in their entirety after the comment period closes at the Kemmerer Field Office during regular business hours (7:45 a.m. to 4:30 p.m.), Monday through Friday, except federal holidays.

NAME: MICHAEL R. JENSEN
ORGANIZATION: SOUTHERN WY. DIRT RIDERS ASSN.
ADDRESS: 265 REES RD.
CITY/STATE/ZIP: LYMAN, WY. 82937

- Yes, include my name and address on the mailing list so I can receive information on the Kemmerer Planning Area RMP Revision.
No, do not include my name and address on the mailing list.

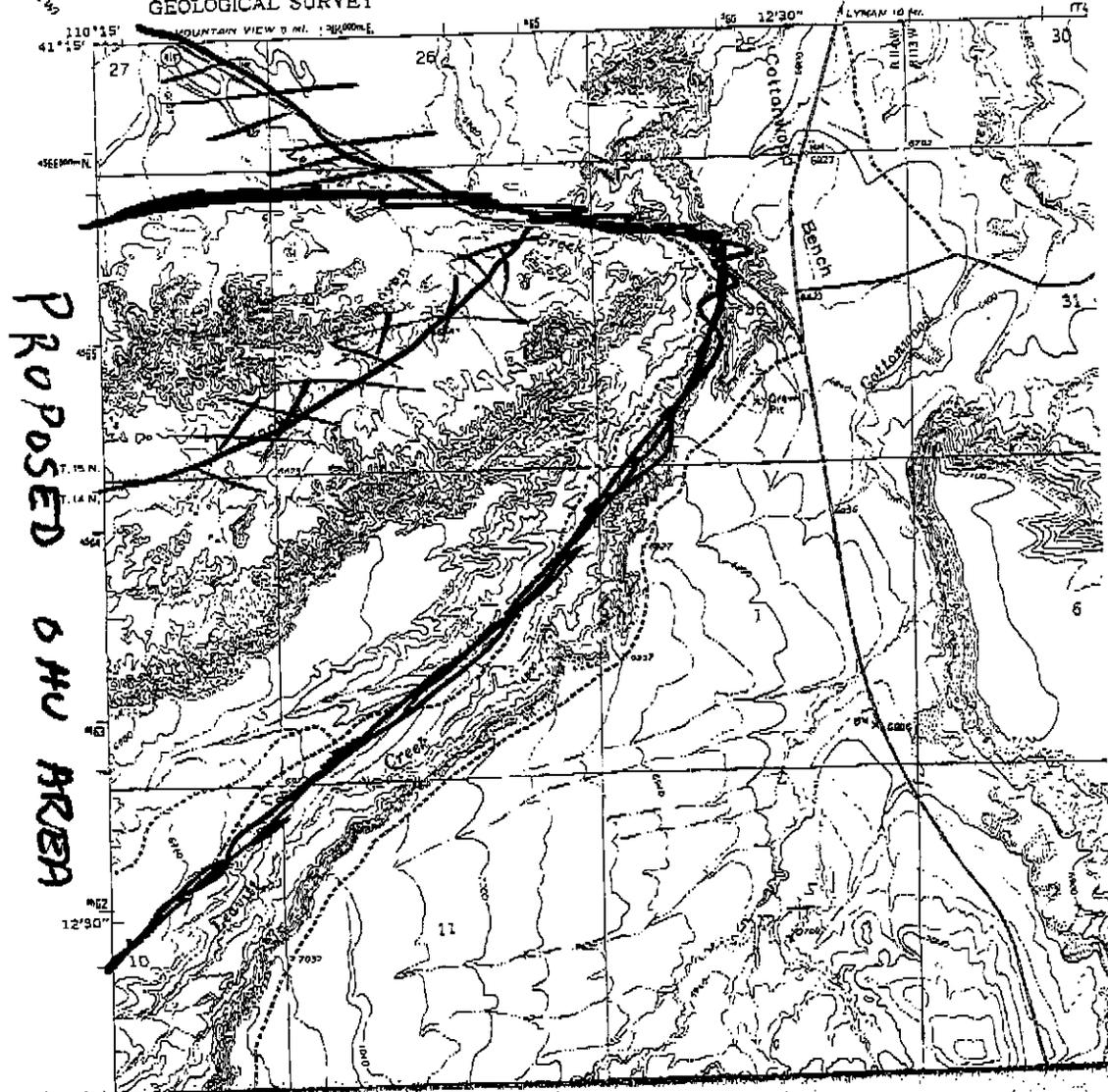
Please hand this form in or MAIL (post-marked by November 26, 2003) to:

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312 Highway 189 North
Kemmerer, Wyoming 83101
Attn: RMP Revision

2003 NOV 26 AM 8:55
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MOUNTAIN VIEW

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY



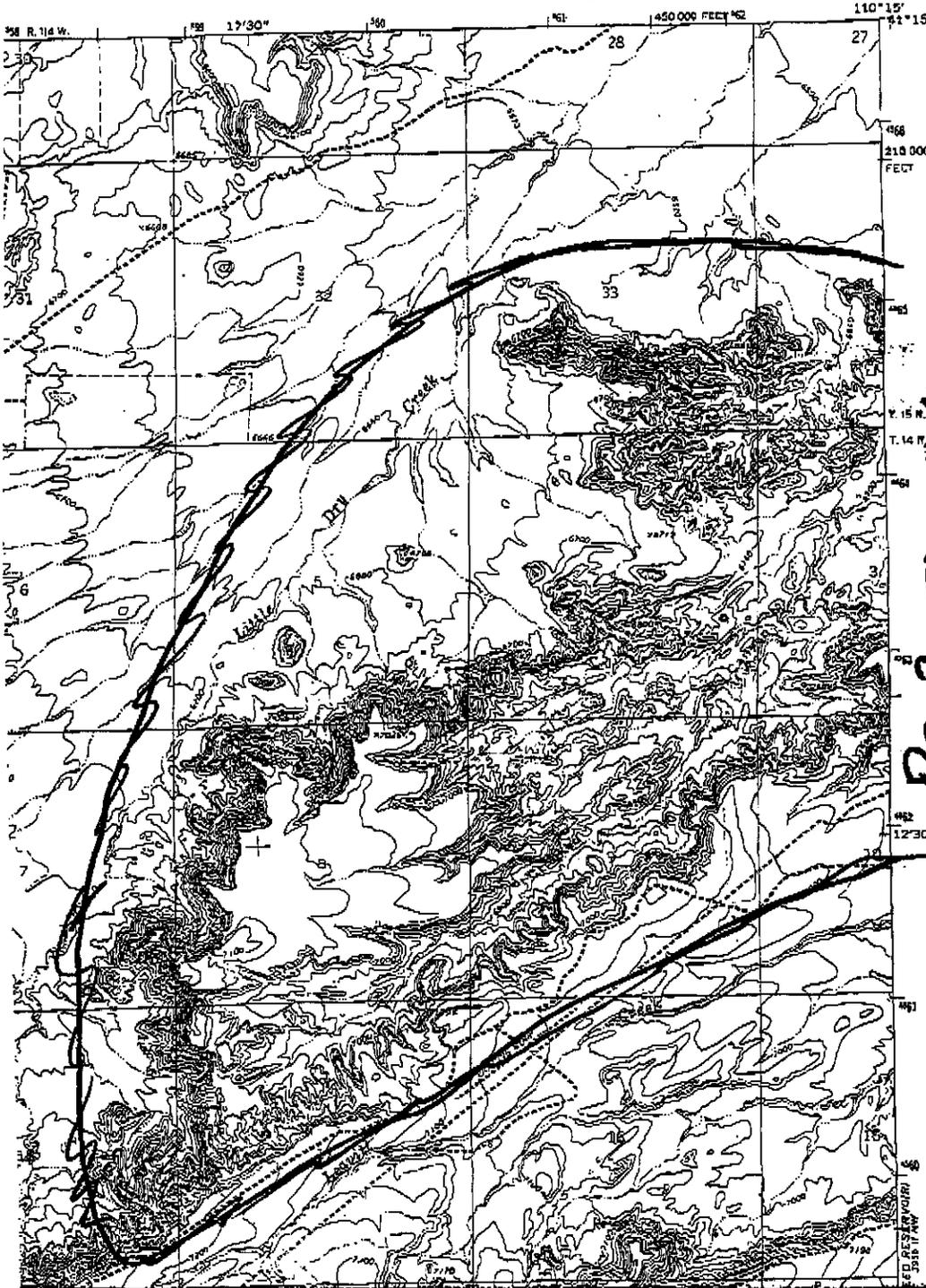
PROPOSED OHU AREA

REED RESERVOIR QUAD
WY

LEAVITT BENCH QUADRANGLE
WYOMING-UINTA CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)

388 1987
TUBBLE HILL

ED
REN P.O.
AM 8:55



PROPOSED OHV
AREA



Sweetwater county conservation district

Mary E. Thomas, Chairman - Randy Shipman, Vice Chairman - Jean Dickinson, Secretary - Tom Burris, Treasurer - George Stephen, member

3-B Faxon Station Road
P.O. Box 360 Faxon, Wyoming 82932-0360 (307) 273-5531 ext. 100

November 26, 2003

USDOI - Bureau of Land Management
Kemmerer Field Office
312 Highway 189 North
Kemmerer, WY 83101
FAX: 1-307-828-4539

RE: Scoping Comments for Kemmerer Resource Management Plan

To Whom It May Concern:

The Sweetwater County Conservation District offers the following scoping comments for the Kemmerer Resource Management Planning process:

*Special land designations should be critically analyzed for the cumulative effects on future management options for land uses (i.e. grazing, mineral production, vegetation management such as prescribed burns or other cultural practices).

*Locally lead, collaborative efforts should be encouraged for the development of grazing and/or other pertinent management plans. The integrity of existing plans should be maintained (such as the Cumberland/Uinta AMP). The lands should be managed for multiple uses.

*Vegetation issues: The ecological role of fire should be maintained to promote stand renewal in the sagebrush steppe and aspen/mountain brush vegetation types. Prescribed fire and other vegetation treatments should be available to assure that the natural plan succession processes are maintained to provide biological diversity and productivity on range landscapes.

An aggressive control and prevention program against noxious and invasive plants should be maintained.

*Forestry issues: There should be cooperation and coordination with other land management agencies, such as the USFS, regarding forestry health, forest restoration, and fires.

*Minerals: Mineral production should be provided on public land. Appropriate rehabilitation/re-vegetation on disturbed site should address prevention and treatment of noxious and invasive weeds on these sites.

November 26, 2003

***Roads and livestock driveways:** Road and trail maintenance should be considered as it is a public safety, soil erosion and public access issue. Livestock driveways are an economic necessity to the agriculture custom and culture of the area and should be maintained at least at current levels.

***Livestock Grazing:** Construction and maintenance of management facilities necessary for the proper management of livestock grazing (pasture fences, water developments, vegetative treatments, etc.) should be provided.

***Social and Economic Impacts:** The *Sonoma Institute Model* for analyzing social and economic impacts must be re-evaluated-- a more local approach to social and economic impacts must be incorporated (local school data, tax base data, etc.) as they relate to federal land planning in the Kemmerer RMP area relative to community stability.

Thank you for the opportunity to comment. Our District looks forward to being a cooperator in this land planning process. The original NOI to revise the Kemmerer RMP was published June 16, 2003, (68FR35690). We understand preliminary issues and now scoping issues are being evaluated and determined. Our hope would be that the BLM Kemmerer Field Office could begin the draft no action and alternatives table and chapter 4 cooperating agency meetings no later than February 2004. This, then would allow ample time for Cooperating Agencies to review and analyze the alternatives over the following two months, preferably after Spring 2004, and better prepare the cooperators and contractor for the development of the final drafts for no-action and alternative 2 and 3 and begin the period to draft the preferred alternative and environmental comparisons.

This letter is being sent via facsimile copy today, but shall be followed with a U.S.P.O. copy and attached appendices (regarding local social and economic information) within the next week.

Sincerely yours,



Mary E. Thoman, Chairman

W & M THOMAN RANCHES, LLC

HC65 Fontenelle Route

Kemmerer, WY 83101

1-307-877-3718

November 26, 2003

USDOI - Bureau of Land Management
Kemmerer Field Office
312 Highway 189 North
Kemmerer, WY 83101
Sent Via FAX 1-307-828-4539

RE: RMP Revision - SCOPING

Please consider our comments in the upcoming Resource Management Plan Revision.

Vegetation:

The RMP should recognize the need to maintain the ecological role of fire in promoting stand renewal in the sagebrush steppe and aspen/mountain brush vegetation types. Prescribed fire and other vegetation treatments should be available to assure that the natural plant succession processes are maintained to provide biological diversity and productivity on range landscapes. Existing structures/developments should not be compromised during this process, however. Special land designations that would limit this type of multiple use management should be avoided.

The RMP should recognize the need to maintain an aggressive control and prevention program against noxious and invasive plants.

Forest Health: There are forest health and fire issues in the Kemmerer RMP area and they should be dealt with on a proactive basis.

Wildlife should be managed for existing resources and other multiple uses. The BLM should not allow resource damage because of unrealistic wildlife populations. Conflicts with other uses should be resolved through a locally lead, collaborative management process and public education program.

Minerals:

The RMP should provide mineral production on public land while assuring appropriate rehabilitation/re-vegetation on all disturbed sites (wells, access roads, pipelines). It should address prevention and treatment of noxious and invasive weeds on these disturbed sites as well.

Roads and Livestock Driveways: The RMP should identify the need for road and trail maintenance. This is a public safety, soil erosion and public access issue. Livestock driveways are an economic necessity to the agriculture custom and culture of the area and should be maintained.

Livestock grazing:

The RMP should encourage the development of locally lead, collaborative efforts in the development of grazing management plans.

The RMP should provide for the construction and maintenance of management facilities necessary for the proper management of livestock grazing (pasture fences, water developments, vegetative treatments, etc.). There should be no changes from the existing plan that would cause undue expense or hardship to any one permittee (changing fencing standards on existing fence, for example, or removing existing water developments)

The RMP should recognize livestock grazing as having economic significance to local communities.

Special Designations:

The RMP should critically analyze the cumulative effect of special land designations on future management options for land uses such as grazing, mineral production and vegetation management (prescribed burns or other cultural practices). Special designations frequently limit or preclude future management options, activities and facilities that are necessary to properly manage livestock grazing (fences, water developments and vegetation treatments). When specially designated areas are located within a grazing allotment, the effects of the restrictions often extend beyond the special status boundary by impacting management options on the entire allotment. These special designations can become a de facto means of removing livestock grazing or preventing multiple use of the land.

Cultural/Historical:

Local custom and culture should be preserved and not used as a means to cause hardship or elimination of one multiple use. (for example, sheepherder monuments should be recognized as such and not treated as Indian artifacts when they are not).

Viewsheds and distances from established trails should not be unreasonable and cause economic hardship or hamper efforts to develop better overall management plans for the resource. The archeological clearance process should be streamlined (in terms of time and visits to the field) and all clearances for any multiple use management plans/projects should be done on a team approach basis so that all issues are addressed equally.

The resource should be managed for multiple use. One use should not be favored over another nor should one use cause the elimination or mismanagement of another over the long term.

Sincerely yours,

Mary A. Thomas, Manager

W & M THOMAN RANCHES, LLC

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2003 NOV 26 AM 8:28

William G. Fischer
381 Bramwell St
Green River, WY 82935

November 25, 2003

Kemmerer Field Office: BLM
c/o Arlan G. Hiner, Acting Field Manager
312 Highway 189 N.
Kemmerer, Wyoming 83101

Subject : Public Comment — Revised Kemmerer RMP

Your summary of the management situation in the Kemmerer RMP Area appears to include virtually all of the issues that exist there. This data was presented to the public in Rock Springs on November 19 and is, in my opinion, quite well written.

Everybody in the area, and some outside, will have their own reasons for modifying the current RMP, which is almost two decades old at this time. Putting the full gamut of everyone's pet planning needs together in one document most certainly meets all legislative requirements but it also tends to diminish the most serious issues facing the "Responsible Management" of the BLM lands in question and their valuable resources.

There was room for only a bare mention, here and there, of the most serious factor that needs to be fully developed to a new enforcement stage. This is the issue of worker safety in a serious "Multiple Mineral Development" environment involving workers in the underground trona mines, possibly those in underground coal mines, and maybe even some rig workers on the surface. Worker safety in the underground mines and their associated processing facilities is currently regulated by MSHA. Many, but not all, of the surface drilling operations are regulated by OSHA. The State Mine Inspector has some responsibility in all of the mining operations, but the Wyoming Oil and Gas Conservation Commission actually regulates the drilling and completion of Oil and Gas wells. They have understood the concerns of the miners and helped with some of the drilling and logging requirements, but they are fundamentally and foremost an agency responsible for development of the Oil and Gas Industry in Wyoming. They regulate such things as well spacing, reporting requirements, completion procedures, and reclamation. Their Charter is strictly driven by the need to satisfy the State's desire for oil and gas revenues and pipelines needed to reach major population centers. They are currently, in my opinion, not the right agency to manage the safety issues involved in this serious conflict involving underground mine workers. Let me explain a little further.

A Joint Industry Committee has been trying to identify the safety issues and also describe the potential loss of mineral reserves involved in Multiple Mineral Development within the Kemmerer RMP area and nearby public and private lands. This Committee was jointly funded by the mineral landlords and the operators involved in the production of minerals from these lands based on their respective land interest. This work has taken very close to a decade to complete and it is not over yet. Our research is virtually complete but the enforcement of meaningful performance standards designed to protect both workers and mineral reserves is at a cross-roads.

The BLM is a major player in the Kemmerer RMP area and they may or may not be able to influence performance on State and private lands, especially within the checkerboard area. Landlord agreements may be possible in the future but the safety issue is imminent today.

There have been attempts to correlate the situation here in Green River with the Permian Basin potash near Carlsbad, New Mexico. The two situations are completely different geologically in that the pressures involved at the mine level when producing oil in the Carlsbad area is simply the weight of an oil column of less than 1000 feet, compared to gas pressures commonly found when drilling into the 12,000 foot deep gas wells in the Green River Area. A minimal casing or cementing problem that might occur near the Carlsbad mines could mean disaster if it were to occur in the Green River area. Most of the recent deep wells in this area encounter 6,500 to 7,000 psi gas which, after flowing, quickly returns when shut in, even after many years of production. Therefore guidelines have been developed to minimize the possibility of a world class disaster in the Kemmerer RMP area. These guidelines, which can be developed further, are summarized as follows:

1. Casing programs above the top of the Wasatch formation; passing through the trona horizons and the underlying and overlying water/brine zones, should be designed to accept significant lateral movement especially if the lowermost trona seam occurs at less than 2000 feet of depth. This is the depth at which most everyone agrees that underground workers can economically mine trona ore in the local geological and business climate. It is obviously somewhat problematical.
2. The influence of underground mining extends laterally on the surface to approximately "one mining depth" with significant lateral displacements which influence casing program design extending to about three quarters of this distance.
3. Vertical surface displacements reach at least 40 percent of the mining height at the time of mining and at least 80 percent after twenty years. We did not study the potential impact of mining several seams which overlying each other.

4. The centralization of surface casing through the water and trona-bearing zones is very important along with the placement of cement or other fillers that may be used to minimize the potential damage caused by lateral displacements. We anticipate as much as two feet of combined lateral displacement over approximately ten prominent but thin slip zones. Multiple casing strings of progressively larger diameter above 1200 feet would be indicated in those general areas where workers are or will be present underground.
5. Pipelines on the near surface have experienced no significant damage in areas where vertical displacements have exceeded 6.5 to 8.0 feet. This is partly due to the rather low lateral strains when mining at depths of 1500 feet or more. Another factor influencing pipelines would be the manner in which they are bedded within the trench. The proximity of near surface natural slip-planes caused by shale/sandstone/limestone interfaces can also become an important factor. This was clearly demonstrated when the access road to General Chemical had to be replaced due to lateral cracks caused by four-inch vertical displacements where caliche/shale layers occurred over underground mine workings where ten feet of trona had been removed. In many cases wrapped or double-wrapped steel pipe would be called for. Plastic pipe might be practical for potable water to industrial sights provided it is placed below the frost line.
6. The most important safety recommendation for coexistence of trona mining and oil or gas development in the Green River basin is the requirement for verification of the integrity of surface casing cement and the centralization of casings through the trona and water bearing horizons.
7. The need for monitoring of the pressure between production tubing and the surface casing exposed to the rocks surrounding the mine workings has been discussed extensively. It is my opinion that if necessary in that it serves as an early warning of problems ahead. If the annulus were simply open to the atmosphere a whistle or a flow might be detected but contaminated fluids might also be released. A properly installed pop-off valve might be tied into the production signals being transmitted to the control center. It could be set at a prescribed level such that only the off/on status would be transmitted.
8. From the standpoint of the mine operators, we recently developed isotopic methods of identifying and fingerprinting the natural gas found in the mines as being chemically different from the gas found in the deep Cretaceous formations. Samples can be periodically checked by the mine operators to verify that deep gas is not entering their more shallow mine workings. I would think that sampling would not be mandatory unless a well and the workings were within some specified distance from each other. This fingerprinting is not cheap.

9. Communication between drilling and mining parties has been virtually absent in the past. I do not mean that it has not occurred from time to time, but rather that it has often occurred as idle chatter, or possibly in different technical, political, or legal languages. Ten years of research has resulted in virtually no coming together across the abyss. This needs to be cleared up if the two industries are to come together safely. It must involve as many workers as it does managers and lawyers. I am not sure how to go about this problem from the standpoint of the Kemmerer RMP. It has been at least a half a century trying to close the "environmental/industrial misunderstanding" gap and the result has been the exporting of many jobs and problems off shore. Thirty years ago I likened this situation to one of inbreeding among the members of each group: government regulators, researchers, miners, drillers, managers, manufacturers, and bankers. They all talk to themselves, developing new vocabulary rather than clear heads and progress. Would required monthly meetings work?

As vital as it is to prevent any accidental migration of high pressure gas or over-pressured water into the mines, the gas producing industry has repeatedly requested the Wyoming Oil and Gas Conservation Commission to allow unrestricted drilling of deep wells within the Known Sodium Leasing Area (KSLA). A number of wells have been completed recently and more are pending. Without public knowledge and access to the completion mechanism, there is no way of estimating the loss of trona reserves or the threat to future miners. The ability to bypass agreed upon regulations through a simple hearing before the WOGCC should possibly be replaced with a Section 554 hearing under the Federal Administrative Procedures Act when ever the Kemmerer RMP is involved. This makes violation of rules a much more serious matter and cuts through a lot of the hearsay. (I believe that is still the current section reference.)

The Union Pacific spin-off to Rocky Mountain Energy, Rock Springs Royalty, and now Anadarko has resulted in much of the renewed pressure to abandon the need for verification of casing integrity within the KSLA. Gas prices are up and the market is growing rapidly. It has always been the policy of Rocky Mountain Energy and many others operating in this area to refuse to shut down a drill rig to properly log the upper part of any of their local gas wells. They have often claimed that rig time is so expensive that the well would be unprofitable if they were to do so. My feeling is that this is not generally true, although costs are quite high, when you consider that the Joint Industry study recommends casing integrity tests which require a fluid-filled hole and cement which has been allowed to set for several days. Wexpro suggested drilling the surface casing with a separate rig about a month ahead of the primary rig. No rig time would be lost. There is no one in this area that I know of who have plans to drill only one well and go home. A rig pulling doubles could set many surface casings and have them ready for logging before the big triples arrive. Logging per se does not require a rig on site.

Changing the subject a little: PODS ARE IN !!! What are these pods ? They are different strokes for different folks. The environmental folks are happy because they reduce the land needed for access to drilling sites. Some models using multiple off-shoots from one surface location also reduce the amount of drill cuttings that must be brought to the surface. Their design originated in the North Sea and the Gulf of Mexico and can now be found throughout the world. Some of the North Sea platforms are currently being raised 60 feet to accommodate subsidence caused by oil withdrawal. Up-front expenses are quite high but they are cost effective in many areas, especially in reduced gathering system requirements, access maintenance, and environmental costs. They also result in improved forage for domestic and wild animals and fewer visibility disturbances. Good deal eh?

From the standpoint of long-term operating costs there might be problems in the future that have not yet developed. Let's say that five off-shoots have been developed down hole and the second from the bottom has picked up a dose of corrosion or possibly been squeezed nearly in half. How long must the well remain down while the problem is fixed? Can it be fixed for a reasonable cost? Are reserves to be lost also? Maybe we can't find out what is wrong with it? This might not look like such a good deal, especially if we have six or eight of these operational or in the planning stage. From the land-based standpoint I think there are better environmental compromises.

Take, for instance, a similar group of five wells which are drilled 20 feet apart. They are all lined up in line, drilled in far away but different directions, and each is equipped with it's own down-hole and surface well head equipment. Five wells take up only eighty feet of surface distance. Well cuttings probably require a landfill but a problem with one leaves the other four in operation. If a rig were to be mounted on a large frame similar to a dragline, it could simply be walked from one well to the other. Drilling and completion costs would be good, environmental disturbance would be virtually the same, and these folks would enjoy lower down-hole maintenance costs and improved operating time. The environmental improvement on land might even exceed that of an off-shore platform at sea. I think this type of platform might work well in the Kemmerer RMP area since the fingerprint where wells pass through the shallow trona horizons is quite small. It might be possible to arrange angled wells along section lines rather than in the centers of each section, and still meet State royalty requirements.

Now that directional drilling technology is catching on in this area, I think it will be an absolute necessity to put it to use if joint development is to take place anywhere in the conflict area of the basin, and especially in the Kemmerer RMP area. Agreement on the safeguards necessary to extract the maximum of each resource will be tougher than actually drilling or mining. I would use cautious optimism.

Another issue that the revision of the Kemmerer RMP is faced with is the current status of the AML funding (Abandoned Mine Lands). It is my understanding that this funding has been struck from the current all-encompassing energy bill. If this is true, the large number of hazardous abandoned mine openings in the Kemmerer and Rock Springs areas will continue to threaten our hapless citizens in southwestern Wyoming. There are many of these openings and I am aware of some that are life threatening. The State has a large current budget surplus as a result of recent energy development and high gas prices but the chance of seeing any of it to protect it's citizens from this obvious hazard from the past is minimal. There are too many political mouths to feed. Those who develop the new RMP must put teeth in the plan to require elimination of this hazard once and for all.

I hope these comments meet your need at this early stage of the game. There is a long way to go if all of the issues are to be resolved in a safe and equitable manner.

With best wishes for a successful RMP review,



William G. Fischer
November 25, 2003

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KSL-0031

Written Comment Form
Kemmerer Field Office Planning Area
Resource Management Plan (RMP) Revision Process



Location: Kemmerer

Date: 11/26/03

Thank you for your input.

PLEASE PRINT LEGIBLY.

The following comments were developed in relation to concerns of the quantified impact of long term mineral leasing in the resource management area and its negative effects on other resource management issues.

After reading your MSA summary it was noted that the greater part of the RMP area is leased for oil, gas, and coalbed methane excluding private and other land holdings; in fact almost 100% of the area seems to be open for this activity. Sacrificing the resource area to this prioritized condition would exclude the importance of other management issues and the effective management of their values. The long term impact of mineral leasing at the magnitude planned could only have a negative effect on a multitude of recreational opportunities, air and water quality, tourism, visual resource management issues, big game and habitat management, and socio-economic values.

As a suggestion for future revisions to the RMP I would strongly recommend that all of the resource management area from Kemmerer, north and east of HWY 30 and north and west of HWY 189 be permanently closed to oil, gas, and methane activities and continuing in such a fashion into the Pindale resource management area. In addition scenic corridors should be

**** CONTINUE ON BACK FOR MORE SPACE ****

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NAME:	<u>Matthew W. Krall</u>
ORGANIZATION:	<u>self</u>
ADDRESS:	<u>709 Cedar Avenue</u>
CITY/STATE/ZIP:	<u>Kemmerer, Wyo. 83101</u>

- Yes, include my name and address on the mailing list so I can receive information on the Kemmerer Planning Area RMP Revision.
- No, do not include my name and address on the mailing list.

Please hand this form in or MAIL (post-marked by November 26, 2003) to:

BLM Kemmerer Field Office
312 Highway 189 North
Kemmerer, Wyoming 83101
Attn: RMP Revision

2003 NOV 26 AM 11:57
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maintained along HWY 189 to Pindale and the natural green river basin corridor. HWY 189 is the gateway into the National Park System, an historic route, provides an abundance of outdoor recreational opportunities and a diversity of scenic wonders. I see some of these corridors are already being impacted by these activities.

This should not be an environmental conflict but a common sense approach to the issue of cooperative responsibility to the environment and society, and the health and long term socio-economic welfare of affected communities.

Correspondingly to lessen the effects of habitat fragmentation, visual resources, loss of public domain, and their interrelationships to each other and other management issues I recommend the use of nine-point directional drilling techniques, consolidation of apparatuses and hardware, underground cauldrons to lessen visual deterioration, consolidation of road networks, and immediate reclamation of areas of surface disturbances.

The vision that this can be done in an esthetic manner will ensure that all issues of the RMP are equally valued and properly managed. I would hope that you would consider my comments in revising the RMP for the Kemmerer resource area.

Two other areas of minor concern include ORV use and grazing issues. The public land is being overrun with new roads and illegal ORV travel. Road closures to protect habitat and a public education program are essential to ensure enforcement of these issues and compliance with the public sector. The use of 4-wheeler travel in hunting areas are changing the code of ethics of hunting and in a negative way. I would suggest more road closures, which was a problem even before 4-wheelers invaded the management area, and larger signs and improved road blocks to educate the public.

All that can be said of the grazing issue is that some areas see none yet critical habitats for animals and birds such as leeks are being grazed to the point of decimation of leek populations. Management strategies should include removal of allotment fences, protection of critical and sensitive areas and a 3-fold management plan triangulated between the BLM, Forest Service, and the Wyoming Game & Fish Department.

Thank you for the opportunity to provide input on the RMP. It is important to give notice to the public on a more timely manner in the future.

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EOG Resources, Inc.
1540 Belco Drive
Big Piney, WY 83113-0250
P.O. Box 250
Big Piney, WY 83113-0250
(307) 276-3331

November 24, 2003

Don Ogaard
Bureau of Land Management, Kemmerer Field Office
312 Highway 189 North
Kemmerer, Wyoming 83101

RE: Issues of Concern With Respect to the Kemmerer Resource Management Plan,
Scoping Period

Dear Mr. Ogaard,

EOG Resources, Inc. (EOG) submits the following comments for consideration during the development of the Kemmerer Resource Management Plan (RMP) for the Bureau of Land Management (BLM). These comments identify significant issues that should be incorporated into the RMP/Environmental Impact Analysis (EIS) development in order to ensure document accuracy and adequacy.

Sufficiency of the Management Situation Analysis (MSA) to accurately describe baseline conditions. The MSA is used to provide baseline information for the RMP revision and EIS development. A summary is posted on the Kemmerer BLM web site. EOG is concerned that inaccuracies or incomplete explanations included in the MSA summary could result in an inaccurate or incomplete description of baseline conditions. A summary should contain sufficient text to allow a reader to easily comprehend the information it contains and why that information is relevant to description of the environment. If sufficient information is not included in the text of the MSA summary so that it is clear, such information should be edited from the MSA and included in the EIS with additional explanatory text. Also, the identification of issues and concerns should reflect the content of the overview of the resource area. If they are not consistent, an EIS analysis of that resource area may reflect bias and may lack impartial consideration.

- Section 2.1 Air Quality:
 - Concentrations of nitrogen-containing pollutants were measured at Centennial and Rocky Mountain National Park. Although the park is in the state of Colorado, the location of Centennial is not specified and brings the relevancy of the text into question.

- Ozone was measured at the Green River Basin Visibility Site and at Pinedale. Although a measurement was given for the former site, there was none given for Pinedale. Which measurement, assuming both measurements were contained in the text, would be considered baseline?
- References were made to two measurements of particulate matter in two different counties. Just one measurement was described in the text, and the reader is provided no explanation of what is considered to be the baseline.
- Although no issues or management concerns were identified with respect to air quality, the BLM must perform an adequate regional analysis to demonstrate that future impacts resulting from oil and gas development would not significantly impact air quality.
- Section 2.6 Health and Safety:
 - The health and safety overview singles out oil and gas activities as a primary health and safety issue in the management area; however, the description of issues and management concerns contains no reference to the oil and gas industry. The BLM must take care not to unfairly characterize the oil and gas industry as an adverse influence on human health and safety when a primary management concern is described as safety hazards associated with mining activities. Oil and gas operators take pride in their safety programs that prevent worker injury where occupational hazards can be great. Moreover, EOG would like the BLM to ensure that any discussion of illegal dumping on BLM lands is not a practice associated with the oil and gas industry.
 - Oil and gas operations are conducted under applicable national and state law. Regulations that apply to management of hazardous materials include: *Transportation of natural and Other Gas by Pipeline, Annual Reports, Incident Reports, and Safety Related Condition Reports, as amended* (49 C.F.R. 191); *Transportation of Natural and Other Gases by Pipeline: Control pipeline maintenance and operation - Minimum Safety Standards, as amended* (49 C.F.R. 192) regulated by the US Department of Transportation; industrial waste facility permits for solid waste disposal during construction and operations - *Wyoming Environmental Quality Act, Article 5, Solid Waste Management, as amended* (W.S. 35-11-501 through 35-11-520); and the response to releases of hazardous substances that enter or threaten to enter the waters of the state must meet state-specific requirements (WDEQ, WQ, Chapter IV, Section 4 (a) and (b)) [Revised July 1997].
- Section 2.8.1.2 Oil and Gas:
 - A baseline in terms of active wells in the management area is not provided.
 - Table 2: Oil and Gas Well Data is unclear. Of the wells listed in the table, is the reader to conclude that of the 1,440 wells completed, 1,024 of these wells are P&A, and 48 are inactive or are considered monitoring wells. Do the remaining 368 wells represent the number of active wells in the management area?
 - Descriptive text referring to "intensive exploration" should be quantified.
- Section 2.8.2.2 Oil and Gas:
 - The federal and state laws governing oil and gas operations in the Kemmerer Planning Area listed in this section primarily pertain to leasing. In addition to

the leasing laws, the National Environmental Policy Act, the Clean Water (CWA) and Clean Air Acts noted in the MSA, oil and gas development is regulated by many other laws. Some are administered by the State of Wyoming through the State Engineer's Office, State Historic Preservation Office, State Department of Transportation, and the Department of Environmental Quality - Solid Waste Division. Federal agencies that regulate oil and gas operations include the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, and U.S. Department of Transportation. County regulations also apply. The above list is not comprehensive.

- Although the Wyoming Oil and Gas Commission regulates oil and gas development associated with state and fee minerals and surface, the BLM and the corresponding surface management agency regulate oil and gas development on federal minerals in accordance with the 1920 Mineral Leasing Act. The BLM's responsibility extends to environmental protection, public health, and safety associated with oil and gas operations on public lands.
- Section 2.8.3.2 Oil and Gas
 - Disposal of produced water is identified as an issue and management concern; however, produced water disposal is managed by state agencies as the State of Wyoming has primacy over the CWA within the state. Although produced water disposal may be of concern to the BLM, it is incumbent upon the BLM to address its concern with the appropriate management agency, the State.
- Section 2.14 Socioeconomic Conditions
 - The MSA does not make clear that statistics that refer to "mining" also include incomes and revenues associated with oil and gas development. This deficiency should be rectified in the socioeconomic discussion in the EIS.
- Section 2.18.1.3 and Section 2.18.4 Transportation and Access; Section 2.2.3 Cultural Resources
 - Access restriction associated with the preservation of significant resource values associated with National Historic Trails should not preclude an operator's right to develop its leases. Mandating an arbitrary offset from designated trails can unreasonably prevent development. Operators are willing to make reasonable efforts to make their production facilities as unobtrusive as possible when located near trails. Recognizing that an identified management opportunity includes securing access to public lands for energy development, the BLM should actively pursue reasonable solutions acceptable to both the public and oil and gas operators.
 - Evaluating the historic setting and landscape for National Historic Trails does not necessarily require a decision that insists upon preservation of visual characteristics identical to those that existed during the times when the trails were actually in use. Inspection of Figure 2 in the MSA summary shows that all of the National Historic Trails cross or parallel major roads or highways and many travel through or adjacent to towns and cities. To insist that oil and gas development remain hidden from viewpoints along these trails is blatantly discriminatory against the industry.

Ability of the Kemmerer Reasonable Foreseeable Development Scenario (RFDS) to accurately predict oil and gas development during the next 20 years. The RFDS is used as the basis for developing the analysis of impacts to oil and gas leaseable minerals during the timeframe of the RMP/EIS. As such, the development of the RFDS must be as realistic as possible. EOG understands that the RFDS is in the process of development at this time and urges the BLM to consider the following comments for RFDS development in order to ensure the integrity of the EIS.

- Operators should be allowed to cooperatively develop the RFDS with the BLM and should be able to review the RFDS after it is developed in order to ensure document accuracy.
- In consideration of the potentially significant controls/restrictions that may be placed on the oil and gas industry by the decisions reached in the RMP/EIS process, EOG urges that the BLM allow sufficient time be allowed to conduct a thorough review of the data supplied to the BLM by management area operators for incorporation into the document analysis.
- The construction of assumptions upon which the RFDS and EIS are developed must be realistic and should accurately reflect actual conditions under which operators develop their leases to the greatest extent possible. To assume, for example, that there would be no restrictions that would preclude hydrocarbon development is an unrealistic assumption. Timing limitations, vehicle access restrictions, and areas of no, or limited, surface occupancy/development make this assumption untenable. One result of such an assumption could be that the RFDS may present a projected number of wells that is much greater than what would actually be allowed to occur. Correspondingly, the amount of surface disturbance projected by the RFDS would also be much greater than what would actually occur. An overestimate of surface disturbance may, in turn, cause greater, unnecessary concerns by the public about the magnitude and resulting impacts of hydrocarbon development.
- The RFDS and EIS must provide documentation of the assumptions that it uses to estimate surface disturbance. The RFDS will utilize assumptions that describe amount of surface disturbance associated with access roads, well pads, pipelines, power lines, and compressors. The citations for these assumptions must be more specific than to reference "BLM sources," for example. The source of the data upon which the guidelines are based should be documented and made available to the public.
- Data obtained from oil and gas operators would provide accurate data for use in developing assumptions used in the RFDS/EIS. At a minimum, the figures used to estimate future surface disturbance should be submitted to the operators for verification and concurrence.
- The information presented in the RFDS and EIS should be easily understandable and not open to misinterpretation. For example, a discussion of short and long term disturbance should make it clear that short term disturbance would occur during a limited time after a well is drilled. Drilling, however, may occur throughout the RMP time frame. Components of surface disturbance associated with well development should be clearly labeled. For example, disturbances

associated with wells, pipelines, compressors, etc. should be broken out and clearly identified.

- The RFDS should include specific details of current and projected take-away pipeline capacity from the management area. It is probable that oil and gas development in the management area over the time frame of the RMP would require supplementation of the current take-away capacity. In order to estimate the requirements for take-away capacity that would correspond to the expected level of development, the BLM should enter into discussions with management area operators and pipeline companies to project an appropriate scenario of take-away capacity. The need for an increase in trunk line capacity should be related to economic projections and energy needs for the management area and the nation. The BLM should discuss the surface disturbance associated with trunk line installation with management area pipeline companies. It is likely that additional trunk lines would be located along existing pipeline corridors, thereby minimizing the amount of associated surface disturbance.
- The RFDS must include a discussion of well life in the management area and should attempt to relate the number of wells drilled prior to the implementation of the RMP to the number that would be abandoned during the planning period. An estimate of wells that would be abandoned within the time frame of the planning period should be quantified so that the respective percentages of new and existing wells are made clear in the document.
- If there are well pads in the management area that have been reclaimed but have yet to be inspected and released from bonding requirements by the BLM, they should be excluded from the amount of disturbed lands in the management area. It is the BLM's responsibility to inspect reclaimed locations in a timely manner so that these formerly disturbed areas are not designated as currently disturbed lands.
- The RFDS and EIS should include an estimate of the compression needs required for future production. The documents should include a discussion of the amount of existing compression. Estimates of the number and types/horse power of compressors currently in use and projected for future production needs should be determined through discussions with management area operators and pipeline/gas transmission companies.
- As the national demand for energy sources increases toward as the planning period progresses, production increases are expected to come from, in part, CBNG production. CBNG development is extremely sensitive to gas pricing and demand. The BLM should account for a level of CBNG development within the RMP and EIS that may result from fluctuating market influences and increased market demand.
- EOG is convinced that future gas prices will support continued production throughout the time frame of the RMP. The RFDS and EIS should utilize this assumption in its development scenario.
- The RFDS and EIS should consider possible changes in spacing that may occur during the next 20 years and incorporate such possibilities into its projections. Well spacing is determined by the Wyoming Oil and Gas Conservation Commission and is determined on a formation-specific basis. It is possible that

production data may trigger a re-examination of spacing rules for the producing formations in the management area.

Alternatives development. EOG supports the development of alternatives that offer the public, including the oil and gas industry and other users of public lands, clear-cut, distinct resource management choices.

- It is absolutely essential that the RFDS be used to develop alternatives for the EIS that implements the new RMP. A carefully considered, cooperatively developed RFDS will allow the BLM to more accurately assess the extent of oil and gas development in the planning area.
- The EIS should describe a rationale for the development of each alternative considered. Alternatives should not be based on speculative determinations that the mineral resource can be developed regardless of the restrictions imposed upon minerals development. Alternatives should not affect an operator's ability to access the minerals that it has leased. Management area operators have the right to access their leases. An operator's inability to extract minerals from its leases could result from its inability to access the surface above the minerals.
- Potential takings should be limited by the careful development of alternatives that recognize that the methodology used by operators to develop the leased mineral resources cannot be mandated. An operator's inability to extract minerals from its leases is a denial of the rights associated with lease acquisition and could be construed as a taking. BLM Instruction Memorandum 92-67 clarifies 43 CFR 3101.1-2, which provides for a 200 meter general standard within which surface-use restrictions must fall. For any surface-use restriction that exceeds the 200-meter/60-day rule, the BLM bears the burden of establishing that the restriction is justified.
- The use of alternative drilling technologies should not be presumed to be feasible on anything but a well-specific basis. The use of directional drilling or any other non-conventional type of drilling or production technique cannot be presumed to be able to access minerals in those areas where operations are excluded or restricted. In addition, the use of these techniques would incur extra costs to the operator. Economic considerations may preclude their use.
- The EIS alternatives should include an alternative that allows mineral resource extraction by operators in the district to occur with the employment of reasonable and best management practices. This alternative would include all environmental impact mitigation measures and environmental protection initiatives that operators routinely and voluntarily undertake during their operations. Best management practices are those that are based upon the application of the operators' experience with scientifically proven procedures. This alternative should not prevent operators from accessing the surface above their leases and should not assume that the use of alternative technologies is technically and economically feasible.
- The EIS should not include "staged leasing" in its alternatives. Inclusion of a schedule that mandates when oil and gas development could occur through the time-limited release of leases imposes artificial constraints that could be detrimental to the regional economy. Staged leasing eliminates the supply and

demand aspects of a free market economy. If a tract has minerals that can be leased, development of these minerals should occur as market conditions allow.

- The BLM should consider a “common sense” approach to the development of alternatives and the implementation of the RMP. Specifically, the validity of the RMP should not be limited to a predetermined number of wells or level of development. The BLM, composed of professional resource managers, should be able to evaluate the viability of the RMP by examination of the results of the policies put in place by the RMP. If, at any time, it becomes apparent to the professional staff of the BLM that the RMP’s policies become obsolete or the resources of the management area are inappropriately managed in consideration of the BLM mandate to consider multiple use under the Federal Land Policy And Management Act of 1976 (FLPMA), it would be time to revise the RMP. To evaluate the usefulness of the RMP by determining whether a pre-determined number of wells has been exceeded is arbitrary and denies the use of professional evaluation by the BLM field office staff, the persons most qualified to determine plan viability.

Impacts to natural resources by oil and gas development. EOG believes that the only way that impacts can be analyzed in the management area is with the use of as much detailed area-specific information, including the experience of industry, agency, and consultant experience and understanding as can be assembled.

- The EIS should use data from the most recent studies conducted within the project area or from areas similar to that of the management area. Data from studies in areas not similar to the project area should be avoided. For example, in an analysis of impacts resulting from the release of CBNG produced water on the surface, conveyance loss estimates should be based on studies conducted within the management area where soil types, stream channel morphology, and climate are specific to this area. Guidance provided in the BLM National Environmental Policy Handbook H-1790-1 states that “existing environmental analyses should be used in analyzing impacts associated with a proposed action to the extent possible and appropriate. This approach builds on work that has already been done, avoids redundancy, and provides a coherent and logical record of the analytical and decision-making process.”
- The EIS must consider and should include data resulting from studies that demonstrate the beneficial effects of oil and gas development. Some studies that pertain to beneficial effects resulting from oil and gas development are listed below:
 - Easterly, T., A. Wood, and T. Litchfield. Undated. Circa 1992. *Response of pronghorn and mule deer to petroleum development on crucial winter range in the Rattlesnake Hills.* Unpublished Completion Report. Hayden-Wing Associates. 1991.
 - Hayden-Wing Associates. *Review and evaluation of the effects of Triton Oil and Gas Corporation's proposed coalbed methane field development*

on elk and other big game species. Unpublished report. Laramie, WY. 1990.

- Hayden-Wing Associates. *Review and evaluation of the regulation and effects of oil and gas development on mule deer, sage grouse, and raptors on the Big Piney-La Barge winter range.* Unpublished report. Laramie, WY.
- Johnson, B. K., L. D. Hayden-Wing, and D. C. Lockman. *Responses of elk to development of Exxon's Riley Ridge Gas Field in western Wyoming.* 1990.
- R. L. Callas, D. B. Koch, and E. R. Loft, Eds. *Proceedings of the 1990 western states and provinces elk workshop, Eureka, CA.* California Department of Fish and Game. Sacramento. 1990.
- Van Dyke, F. and W. C. Klein. *Response of elk to installation of oil wells.* *Journal of Mammalogy.* 77(4): 1028-1041. 1996.

- The BLM should avoid singling out oil and gas development as the sole source of surface disturbance and habitat destruction. Mining, for example, is also a significant source of surface disturbance.
- The BLM should consider the importance of oil and gas development to the economy of this nation while developing its management principles. While developing the RMP, the BLM should remember that it operates in accordance with FLPMA, which mandates that the BLM consider multiple uses for the lands it administers. Under FLPMA, the BLM must consider all of the land's inherent natural resources, including its mineral resources. While the purpose of the RMP is to manage all the district's resources in an environmentally responsible manner, it is under no obligation to manage all resources with equal emphasis.

Adaptive environmental management is not a viable management strategy. EOG supports the use of a defined management strategy based upon best currently available information.

- The BLM's use of environmental management strategies that may be reconsidered and changed over the RMP planning period presents a moving target of goals and objectives that operators cannot meet while planning their drilling and production programs. It allows the BLM to develop, alter and develop its management strategies in a never-ending planning cycle.
- The endorsement and use of adaptive environmental management provides an opportunity to focus groups to lobby the BLM to include their politically motivated agendas into RMP guidance. Any group would have the opportunity to assemble sufficient data that seemingly gives credence to its objectives for the sole purpose of advancing its aims. The BLM would be burdened with the responsibility of constantly evaluating such proposals for credibility.
- The introduction of new information or data that fundamentally changes the environmental management strategies decided upon in the RMP may effectively supplant strategies based upon data acquired over a long period of time. An altered management direction based upon new data would not have the benefit

and background provided by a strategy based on knowledge with a demonstrated historical background.

- EOG recognizes that the RMP must be written in sufficiently broad terms as to provide a direction for resource management and to provide a framework under which resource development can occur. If, over the time frame of the RMP, professionally accepted, but unanticipated, data becomes available that fundamentally alters the basic premises upon which oil and gas operators plan their future operations, the change in management direction should be implemented only after a review of the impacts that such a change may cause. Such an implementation should occur only after the adoption of a revised RMP and the associated NEPA processes.
- EOG acknowledges that a broadly written RMP would be implemented through a series of additional, subsequent NEPA documents that would address impacts that would result from well development, including well-specific EAs. EOG urges the BLM to consider the analysis of impacts resulting from typical field development using environmental assessments rather than environmental impact statements. Requiring the development of EISs to implement field development adds unnecessary delays and hinders timely extraction of the mineral resource. Large scale energy development should be addressed concurrently with the development of the RMP, which is implemented by an EIS.

Impacts to regional socio-economics. EOG supports the choice of a RMP based on an EIS that considers in its analyses the wide-ranging adverse effects (losses) to the regional economy that would result from hindering oil and gas exploration and development in the project area.

- The description of the affected environment should include a historical perspective of land use in the management area and the how the development of oil and gas resources has facilitated economic growth. This description would provide a context for current conditions and how different future development scenarios would affect the stability of the economy in the project area.
- The economic effects analysis should include beneficial impacts to the revenues generated in association with oil and gas operations in Lincoln, Uinta, and Sweetwater counties in addition to benefits to the State of Wyoming. The assessment of the economic health of the counties more directly impacted by the provisions included in the RMP should be differentiated from the impacts to the economic viability of the state.
- The EIS should analyze impacts to public services that depend upon tax revenues generated by oil and gas operations. The analysis should include quantification of incremental income resulting from the oil and gas industry to services such as public school districts.
- Typical or average well costs should not be used as a baseline to assess the economic viability of drilling and producing a well during the time frame of the RMP. Use of current figures based on current operational procedures for a period of 20 years is speculative at best. There are many factors that affect typical well costs. Each of these factors has the ability to alter well costs to the extent that

varying a single figure for any one factor would render an analysis using a static cost invalid. If estimates of future pricing are included in the EIS, sensitivity analyses should be included to demonstrate the effects of changes to the projected price to drilling and production activities and to the economy of the project area.

- The designation of Special Management Areas, areas of limited or no surface use, or areas with seasonal restrictions to development, should be quantified in the EIS in terms of economic impacts to the oil and gas industry.
- The EIS should include provisions describing how the potential for lost revenues to oil and gas operators resulting from short and long term lease access restrictions would be recovered.

Air quality analysis.

- The BLM should recognize in the EIS that emissions associated with oil and gas development are regulated by the Wyoming Department of Environmental Quality and that the BLM defers regulation of emissions to its authority.

Special Management Areas.

- Establishment of a SMA should not be allowed to impair existing lease rights.
- Designation of SMAs should be kept to a minimum in unleased areas. If a SMA is designated in an unleased area, the EIS should quantify the loss of production in terms of the value of the mineral resource and revenues to the local counties and state.

Preparation of Statement of Adverse Energy Impacts. As specified in Executive Order 13212, the BLM should prepare a Statement of Adverse Energy Impacts after the record of decision for the Kemmerer RMP is made if the decision has the potential to adversely impact energy production, development, and transmission. The statement would document the decision in accordance with the order, which was intended to expedite projects that increase production, transmission, or conservation of energy. A Statement of Adverse Energy Impacts should be developed for each alternative and should discuss the following topics:

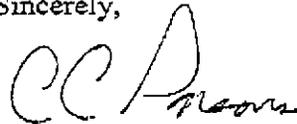
- The impact of timing restrictions;
- The impact of designated areas excluded from energy development;
- Costs to oil and gas development associated with the mandate of alternative drilling technologies, such as directional drilling; and
- Costs to consumers if energy development is hindered or delayed as supplies fall short of demand.

In summary, the ability to extract natural gas from the leased public lands administered by the Kemmerer BLM Field Office helps to maintain a stable economic platform for the counties directly affected by the RMP, makes an important contribution to the economic health of the State of Wyoming, and helps to satisfy the energy needs of our nation. EOG expects that the RMP will recognize and present analysis highlighting the importance of the role that the oil and gas industry plays in the economy by developing an affected environment description that contains a detailed historic perspective of the role of energy

development in the management area and an impacts analysis that fully considers the direct, associated, and cumulative effects of restricting energy development within its purview. EOG believes that the use of assumptions that unrealistically reflect the economics of drilling and production operations would result in a RMP/EIS that is speculative and would not provide a reasonably accurate projection of operator activity during the RFDS's time frame. To develop a RMP that attempts to accurately consider the factors relating to the oil and gas industry, the BLM must actively solicit data from the operators that are active the in the project area.

The hydrocarbon resources that exist beneath public lands are, in fact, owned by the public. Oil and gas operators in the management area provide the means to access and develop these oil and gas reserves, providing much needed energy to meet public demand.

Sincerely,



Curtis C. Parsons
Division Operations Manager

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The Pittsburg & Midway Coal Mining Co.

A ChevronTexaco Company
Kemmerer Mine • P.O. Box 950, Kemmerer, WY 83101 • Phone (307) 828-2200 FAX (307) 877-9089

November 24, 2003

Kemmerer Field Office
Bureau of Land Management
Department of the Interior
Kemmerer Field Office
312 Hwy 189 North
Kemmerer, WY 83101-9710

RE: Comments for the Management Situation Analysis Kemmerer RMP

To whom it may concern:

The Pittsburg & Midway Coal Mining Co.'s Kemmerer Mine would like to thank the BLM for the opportunity to discuss the Kemmerer RMP at the meeting held in Kemmerer on November 17th. Several items were discussed with local personnel. As a result of the meeting and review of the *Summary of the Management Situation Analysis* document, P&M would like to submit the enclosed comments for consideration in the development of the revised RMP for the Kemmerer Resource Area.

We would be happy clarify any issues that this submission may generate so that both parties are in agreement as to intent of the comments, if necessary please feel free to contact myself at 828-2213.

Sincerely,

D. J. Bettas
General Environmental Supervisor

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**Comments for the Bureau of Land Management's Kemmerer RMP
Summary of the Management Situation Analysis**

Mineral Resources – Leasables (Coal)

There appears to be inconsistencies with the management practices listed within the document. The document places management of Air quality under the jurisdiction of the Wyoming Department of Environmental Quality/Air Quality Division. The plan recognizes other Divisions within WDEQ except the Land Quality Division (LQD). The LQD recently signed a Memorandum of Understanding with the BLM that is not referenced. The other divisions within WDEQ have regulatory authority over permitted activities that occur on portions of the federal lands within the resource area. It appears there is duplication of jurisdiction that is evidenced in increased regulation from two directions. The document states that "The BLM coordinates activities in the Field Office with the Wyoming Game and Fish Department (WGFD) in managing fish, wildlife, upland game bird and waterfowl habitat to achieve and maintain sustainable populations and distributions." The WDEQ/LQD permits mineral activity through consultation and approval with the WGFD, BLM, USFWS, yet we find increased and conflicting regulatory burdens being placed by the BLM for wildlife concerns on the same activities after the fact.

Fisheries and Wildlife Resources

The crucial winter habitat map is a generalization that covers vast expanses of the resource area. Where detailed monitoring information is available and indicates otherwise, the boundaries should be adjusted to properly portray the actual crucial winter habitat for big game species. Some mineral activities are severely restricted by these determinations when in fact the activities are not within actual limits of crucial winter range. Coal mining regulations under the jurisdiction of WDEQ/LQD account for mining activities within the boundaries of areas designated as crucial habitat and should be allowed to be enforced as such. BLM is proposing increased management oversight of these areas when detailed monitoring data from mining has shown no impact to big game and consequently the WGFD through WDEQ/LQD has allowed reduced or discontinued monitoring at coal mines around the State. There should not be a duplicity of regulations to conduct mining activities. The BLM should be participating in the permit process through the WDEQ/LQD. The BLM is notified, along with the other agencies, during each permit renewal, review, and amendment. A copy of the mine permit is on file with the BLM and DEQ Annual Reports are submitted to the agency.

The plan states "The BLM coordinates activities in the Field Office with the Wyoming Game and Fish Department (WGFD) in managing fish, wildlife, upland game bird and waterfowl habitat to achieve and maintain sustainable populations and distributions." Yet there is a statewide sage-grouse plan adopted by the WGF Commission and a BLM handbook for sage-grouse management. It appears that the BLM goes beyond habitat management and enters into species management when they begin to dictate distances to nests or leks, for example. The distances being imposed are those found within the BLM's own guidelines for managing sage-grouse. If the BLM is managing habitat for the benefit

of the species then the distances should be decreasing instead of increasing over the State plan.

The full wording of the ACEC acronym is not presented prior to being used in the wildlife section on critical winter ranges. This does not allow for those unfamiliar with the term to research the topic as being of value for consideration.

The issue of fences for wildlife seems more related to highways and their associated right-of-way fences bisecting the resource area than any other fence issues for wildlife. The restrictions imposed by these fences are closely associated with serious safety issues. Alternate means of allowing migration by wildlife, essentially big game animals, may be a better consideration than altering fence designs. The vast majority of fencing within the resource area in recent years has been constructed by the BLM themselves. These fences should not be causing obstructions for wildlife. Regulated fences have for years been constructed to the BLM's various standards and should not be impeding wildlife movements as much as the highway right-of-way fences.

Mineral Resources - Salables

Moss rock is very popular as stated in the document. Areas of gathering leave voids in cover and production when the rocks are harvested. To discourage the increase in weeds on BLM lands it would be advantageous to seed areas of rock removal.

Rangeland Management

The rangeland management practices state that "the final designation of an allotment in one of these 3 categories (improvement, maintain, and custodial) is based on range condition, resource potential, present management situation, riparian areas, resource conflicts, and economic potential." It seems that with improved management schemes some allotments should be able to change classifications at some point in time. Periodic reviews should be scheduled to reclass allotments.

Recreation

With regard to mining on federal acres and recreation and off-highway vehicles there remains a safety issue. Federal acres properly incorporated into an active mining permit should be designated as closed during the period that they are part of an approved mining permit. There are other rules and regulations that permitted mines must comply with that preclude this multiple use concept from being safe and practical during the time that these lands are within an approved mine permit. Areas within the State of Wyoming have experience conflict with such combined uses as oil & gas on active mineral leases. The use of off-highway vehicles is becoming an increasingly growing concern to the resource area. More and more travel appears to be off designated roadways. Enforcement of rules on this appears to be near impossible as only one enforcement officer is employed by the agency for the three adjacent resource areas in the southwest portion of the state.

Special Management Areas

There seems little benefit to designating any rivers as wild and scenic rivers, this only restricts private property rights.

Cultural Resources
Industry must continually conduct cultural resource inventories in order to get them completed in a timely manner. The BLM continually states that they cannot conduct these inventories, as they should, in less than two years. The BLM needs to improve their appropriations and manpower with regard to the workload for cultural inventories in order to carry out their responsibilities in a timely fashion for reviewing projects. There are continual delays on projects, just for cultural reviews of studies and the continual requests for more information, information that should have been collected by the agency in the first place. If the agency was doing their job there wouldn't be any question of adequacy for cultural studies.

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**NATIONAL WILDLIFE FEDERATION · GREATER
YELLOWSTONE COALITION · DEFENDERS OF WILDLIFE ·
THE WILDERNESS SOCIETY · WYOMING OUTDOOR
COUNCIL**

November 25, 2003

BLM Kemmerer Field Office
Attn: Don Ogaard
312 Highway 189 North
Kemmerer, Wyoming 83101

RECEIVED
BLM KEMMERER F.O.
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Re: Scoping Comments for the Kemmerer RMP Revision

Dear Mr. Ogaard:

The following comments are submitted by the National Wildlife Federation, Greater Yellowstone Coalition, Defenders of Wildlife, The Wilderness Society, and the Wyoming Outdoor Council for consideration during the scoping process for the Kemmerer Resource Management Plan (RMP) revision and associated environmental impact statement (EIS) that were solicited by the Bureau of Land Management (BLM).

The Federal Land Policy Management Act (FLMPA) and related BLM regulations require BLM to manage the public lands and their resources pursuant to an RMP. All future actions must conform to the terms and conditions established in the RMP. Given this overarching importance, BLM must ensure careful adherence to the legal requirements applicable to an RMP established by FLPMA, and the requirements for preparing an EIS established by the National Environmental Policy Act (NEPA).

To help ensure those requirements are met, we ask BLM to consider the following comments. In the first section of these comments we ask BLM to consider requirements applicable to any EIS, particularly at the scoping stage. Next we ask BLM to ensure the RMP abides by the requirement to not allow unnecessary or undue degradation of the public lands. In the third section of these comments we present general requirements applicable to land use planning that are established by FLPMA. In the fourth and longest section we present a number of resource-specific concerns and the legal requirements applicable to those concerns that the EIS should consider and which the RMP should make provision for. In the final section of these comments we address needs related to a statement of desired outcomes for the RMP and alternatives that should be considered in the EIS. Special emphasis will be given throughout these comments to issues related to oil and natural gas leasing, exploration, and development.

REQUIREMENTS APPLICABLE TO AN ENVIRONMENTAL IMPACT STATEMENT THAT BLM MUST COMPLY WITH DURING SCOPING

The "scoping" stage of preparing an EIS requires BLM to make two determinations: (1) what is the scope of the project – in this case the RMP – to be analyzed in the EIS and (2) what are the issues that will be analyzed "in depth" in the EIS. 40 C.F.R. § 1501.7(a). See also BLM Handbook H-1790-1.V.B.1; BLM Handbook H-1601-1.III.A.1; 43 C.F.R. § 1610.4-1 (requiring scoping for RMPs to comply with Council on Environmental Quality scoping regulations). Other environmental reviews (such Biological Assessments and consultation for species listed pursuant to the Endangered Species Act) should be identified so that they can be done concurrently with the EIS and integrated with it. We believe the issues identified in these comments are within the legal scope of an RMP, and therefore they should be analyzed in depth in the EIS.

In determining the scope of the EIS, BLM must consider "connected actions," "cumulative actions," and "similar actions." 40 C.F.R. § 1508.25. Connected actions are actions that are "closely related" to the RMP. Closely related actions include any reasonably foreseeable oil and gas development projects that would not occur "but for" authorization provided in the RMP. Examples of oil and gas development actions/projects that would not occur but for authorization in the RMP include leasing, exploration projects, and full-field development projects. Thus, the EIS should address each of these types of connected actions/projects in detail, and given the significant amount of historical data that exists for these types of actions/projects they are reasonably foreseeable and a detailed consideration should be possible. Similar actions include authorizations for oil and gas development occurring on State and private lands in or adjacent to the geographic area of the RMP, Forest Service Forest Plans and other analyses authorizing oil and gas activities on nearby lands administered by the Forest Service, and RMPs for adjacent BLM Field Offices/Districts. The scope of the EIS should include a detailed analysis of these similar actions so as to foster informed public participation in the RMP revision and informed decision-making by BLM. Cumulative actions are actions that, incrementally, have cumulatively significant impacts, even if the individual impacts are minor. Thus, BLM should define the scope of the EIS to include analysis of the cumulative effects of actions/projects that have impacts in common with those resulting from oil and gas development. Impacts and actions that should be addressed in a cumulative fashion include, but are not limited to: road construction effects, activities leading to soil and vegetation disturbance, activities leading to changed habitat structure, activities leading to habitat fragmentation, and activities causing air or water pollution. These cumulative impacts result from a number of cumulative actions, including oil and gas development, and thus they must be addressed in a comprehensive manner. Similarly, the scope of the EIS must include consideration of direct and indirect impacts of oil and gas development activities. 40 C.F.R. § 1508.25.¹

An issue closely associated with the consideration of connected, related, and cumulative actions and impacts is the Reasonably Foreseeable Development (RFD) scenario for oil and gas development. This issue will be addressed below in the sections on socio-economic issues and oil and gas leasing issues. Suffice it to say here that development of a realistic, well supported,

¹ In this regard we ask BLM to consider the report "Fragmenting Our Public Lands, The Ecological Footprint From Oil And Gas Development," The Wilderness Society (C. Weller et al., authors), September 2002.

economically rational, and scientifically based RFD is crucial for a proper analysis and determination of connected, related, and cumulative impacts.

Council on Environmental Quality (CEQ) regulations require a reasonable range of alternatives to be presented and analyzed in the EIS so that issues are "sharply defined" and the EIS provides "a clear basis for choice among options . . ." 40 C.F.R. § 1502.14. CEQ regulations and court decisions make clear that the discussion of alternatives is "the heart" of the NEPA process. Environmental analysis must "[r]igorously explore and objectively evaluate all reasonable alternatives." Such objective evaluation is gravely compromised when agency officials bind themselves to a particular outcome or foreclose certain alternatives at the outset. Therefore, in the context of oil and gas development BLM must use the scoping process to develop alternatives that emphasize needed environmental protection even if such alternatives limit and/or strongly regulate oil and gas development and not dismiss such options without a thorough and careful analysis in the EIS. Elements of an alternative that achieves needed environmental protections are presented in the concluding section of these comments.

BLM should hold early scoping meetings, as provided for by CEQ regulations so that the public can be fully informed of and participate in the RMP revision process. 40 C.F.R. § 1501.7(b). These meetings should include meetings at times and places that allow the participation of people who do not live within the geographic boundaries of the RMP, or even within the State; for example, telephone conferences or web-based scoping meetings should be considered. See BLM Handbook H-1790-1.V.B.c.4 (encouraging use of "a variety of methods and mediums" for facilitating public participation in the scoping process). This recommendation is consistent with, and required by, BLM's land use planning regulations. 43 C.F.R. §§ 1610.2(a), (f).

BLM must bear in mind that the "primary purpose" of an EIS is to "insure that the policies and goals defined in [NEPA] are infused into the ongoing programs and actions of the Federal Government." 40 C.F.R. § 1502.1. The policies and goals of NEPA include,

- Encouraging a "productive and enjoyable harmony between man and his environment",
- Promoting "efforts which will prevent or eliminate damage to the environment and biosphere",
- Using "all practicable means and measures . . . to create and maintain conditions under which man and nature can exist in productive harmony . . .",
- Fulfilling "the responsibilities of each generation as trustee of the environment for succeeding generations",
- Assuring "all Americans safe, healthful, productive and esthetically and culturally pleasing surroundings",
- Allowing beneficial use of the environment "without degradation . . . or other undesirable or unintended consequences",
- Preserving "important historic, cultural and natural aspects of our national heritage . . .",
- Achieving a "balance between population and resource use . . .", and

- Enhancing “the quality of renewable resources” and maximizing recycling of depletable resources.

42 U.S.C. §§ 4321-4331. See also BLM Handbook H-1790-1.V. B.2.a.(3). Thus, the issues that BLM must identify for analysis in its EIS include the above goals and policies, and we ask BLM to “insure” that these considerations are “infused” into oil and gas leasing, exploration, and development activities considered in the EIS and authorized by the RMP.

NEPA requires BLM to make a number of considerations that we specifically urge BLM not to overlook. NEPA requires the BLM to “insure that presently unquantified environmental amenities and values” are given consideration, “recognize the worldwide and long-range character of environmental problems and thus support international efforts to prevent declines in the world environment,” and “initiate and utilize ecological information in the planning and development of resource-oriented projects.” 42 U.S.C. § 4332, 40 C.F.R. § 1507.2. See also BLM Handbook H-1790-1.V. B.2.a.(3). Thus, in revising this RMP, BLM should consider, analyze, and wherever appropriate facilitate, international efforts to prevent environmental decline. These include a number of international agreements and treaties for resource protection, such as United Nations biosphere reserves, migratory bird treaties, the Convention on International Trade in Endangered Species, and international efforts related to biological diversity preservation, among others. The EIS supporting the RMP should also explicitly address unquantified environmental values and ensure they are given equal emphasis relative to economic analyses, and ensure up-to-date ecological information is utilized in developing the EIS and RMP.

The BLM NEPA Handbook requires BLM to identify the purpose and need of the project being analyzed. BLM Handbook H-1790-1.V.B.e. While the purposes and needs for the RMP are broadly defined by the FLPMA and other law, BLM should give specific attention to the purposes and needs for oil and gas related activities that will be analyzed in the EIS. BLM should address in detail what the purpose of future leasing is. It should address what the purpose of future potential exploration and development activities would be. These considerations should be made with explicit recognition of the relative value of the RMP area for meeting local, regional, and national energy needs and what alternatives exist for meeting those needs locally, regionally and nationally. Alternative forms of energy such as wind power must be considered when determining the purpose and need for oil and gas development along with the relative contributions of alternatives and fossil fuels to climate change. The relative value of the area for meeting energy needs versus supplying environmental amenities/needs should be considered in identifying the purpose(s) and need(s) of oil and gas development. Similarly, identification of where specifically oil and gas leasing, exploration, and development is appropriate and inappropriate in the RMP area, and why, should be addressed in the EIS as part of the definition of the purpose and need for the RMP.

BLM’s Land Use Planning Handbook requires BLM to identify desired outcomes or desired future conditions resulting from implementation of the RMP. BLM Handbook H-1601-1.II.B.1. BLM should determine what the desired outcome(s) from oil and gas leasing, exploration, and development activities are, particularly with reference to the desired outcome(s) for endangered species protection, prevention of habitat fragmentation, protecting the naturalness

of landscapes and their aesthetic appeal, the prevention of unnecessary or undue degradation of public lands, the prevention of air and water pollution, and the protection of surface owner rights on split-estate lands. Mechanisms for resolving conflicts between the desired outcomes for oil and gas development relative to other resources should be identified in the EIS and adopted in the RMP. The requirement for BLM to prevent unnecessary or undue degradation of the public lands should be paramount in such balancing. Furthermore, some statutes, such as the Endangered Species Act, require that where there are conflicts between what is desired for oil and gas-related activities versus other resources, the objectives for oil and gas development must recede. The RMP should acknowledge this and make provisions for meeting this requirement. For example, closure of lands to certain resources uses, such as oil and gas development, is specifically provided for as a means to achieve desired outcomes. BLM Handbook H-1601-1.II.B.2. Measures for protecting the land to achieve desired outcomes should be developed at an appropriate scale, with a landscape or bioregional scale being the appropriate scale for many actions, particularly endangered species protection. BLM Handbook H-1601-1.III.A.4. Development of a statement of desired outcomes will be addressed further in the concluding section of these comments.

It is rarely possible for the BLM (or any other Federal agency) to obtain perfect amounts of information. BLM must not allow this fact to stymie environmentally informed decision-making by BLM. CEQ regulations essentially establish a presumption in favor of obtaining information that is essential to reasoned decision-making. *See* 40 C.F.R. § 1502.22. *See also* BLM Handbook H-1790-1.III.A.2.d. BLM should take steps to gather needed information in all but the narrow range of exceptions permitted by the CEQ regulations. But if BLM concludes information is not essential to reasoned consideration of alternatives, or the cost of obtaining the information is exorbitant, or the means for acquiring the information are unknown, the BLM must nevertheless scrupulously abide by CEQ guidance in this regard, namely that "credible scientific evidence" be presented relative to reasonably foreseeable significant adverse impacts (including low likelihood but catastrophic impacts) so that the impacts can be assessed based on approaches that are "generally accepted in the scientific community." *See* 40 C.F.R. § 1502.22(b). *See also* 40 C.F.R. § 1502.24 (requiring professional and scientific integrity in an EIS).

Monitoring of RMP implementation and the impacts resulting from plan implementation are crucial. A number of legal requirements apply to plan monitoring, and they should be carefully adhered to. *See, e.g.,* 43 C.F.R. §§ 1610.4-9, 1610.5-3; BLM Handbook H-1601-1.IV-VII. Likewise, the RMP should make provision for the effective enforcement of its provisions. It is worth noting that the standards and requirements developed in an RMP are mandatory and must be implemented, and not just when site-specific projects are pursued. *See Southern Utah Wilderness Alliance v. Norton*, 301 F.3d 1217 (10th Cir. 2002).

**“IN MANAGING THE PUBLIC LANDS THE SECRETARY SHALL, BY
REGULATION OR OTHERWISE, TAKE ANY ACTION NECESSARY TO PREVENT
UNNECESSARY OR UNDUE DEGRADATION OF THE LANDS”**

This provision from the FLPMA is a mandatory requirement applicable to all resource uses and decisions affecting BLM lands. 43 U.S.C. § 1732(b). Consequently, it must serve as a bedrock for all analyses in the EIS, and activities undertaken pursuant to the RMP. It is crucial to recognize that unnecessary or undue degradation must be prevented; the RMP must provide that both prongs of this standard are met. Clearly, the BLM bears a heavy responsibility before it can authorize activities that may degrade the public lands.

We urge BLM not to define “unnecessary or undue degradation” by default, in a negative fashion. In the context of oil and gas development, we specifically recommend that BLM reject the position that because regulations provide that an oil and gas lease conveys the right to “use so much of the leased lands as is necessary to explore for, drill for . . . and dispose of all of the leased resource . . .” essentially anything an oil and gas lessee proposes to do to develop a lease is “necessary” or “due” and therefore any resulting degradation of the public lands is not “unnecessary” or “undue.” See 43 C.F.R. § 3101.1-2 (but also providing for substantial retained discretion in BLM to regulate oil and gas development *despite* issuance of the lease). Instead, we urge BLM to require, in a direct and positive fashion, that oil and gas development not cause unnecessary or undue degradation, and to ensure that this is the case. The confusing, circuitous approach of defining unnecessary or undue degradation by default leads, for example, to an improper failure to require directional and horizontal drilling technologies, which may not be a lessee’s first choice, but which will still allow development of a leasehold but with far less degradation of the public lands, which is what BLM must concern itself with. Given the direct, unambiguous command from Congress to do whatever is necessary to prevent unnecessary or undue degradation, the RMP should define, and prevent, unnecessary or undue degradation in an equally direct, positive fashion. The recent decision in Mineral Policy Center v. Norton, Civil No. 01-00073 (HHK), (D.D.C. November 18, 2003) should be considered by the BLM to determine its responsibilities to prevent unnecessary or undue degradation of the public lands.

**BLM MUST ENSURE COMPLIANCE WITH THE LAND USE PLANNING
REQUIREMENTS OF THE FEDERAL LAND POLICY AND MANAGEMENT ACT**

Under FLPMA, land use plans for public lands are to “use and observe” multiple use and sustained yield principles, give priority to designation and protection of areas of critical environmental concern, and provide for compliance with pollution control laws, among other things. 43 U.S.C. § 1712(c). See also 43 U.S.C. §1711(a); BLM Handbook H-1601-1. Likewise, specific management actions must be done pursuant to multiple use and sustained yield principles. 43 U.S.C. § 1732(a). These requirements must be borne in mind as the RMP is developed.

The Requirement To Manage For Multiple Use And Sustained Yield Has Substantive Components That Must Be Adhered To

The definition of multiple use in FLPMA is long, but key provisions include the following: (1) Public lands and their resource values must be managed so that they "best meet the present and future needs of the American people;" (2) It is appropriate that some land be used "for less than all of the resources;" and (3) There must be harmonious and coordinated resource management that is done "without permanent impairment of the productivity of the land and the quality of the environment with consideration being given to the relative values of the resources and not necessarily to the combination of uses that will give the greatest economic return or greatest unit output." 43 U.S.C. § 1702(c). Sustained yield as defined in FLPMA can be achieved either by "high-level annual" or "regular periodic" output of resources, so long as this is accomplished in a way that can be maintained in perpetuity and is consistent with the definition of multiple use. 43 U.S.C. §1702(h). These definitions give substance to the requirement that land use plans and resulting management actions are to use and observe multiple use and sustained yield principles.

The purpose of this planning process must be to produce a plan that "best" meets the present and future needs of the American people. The RMP cannot adequately meet these needs, or generally meet these needs, or largely meet these needs, it must "best" meet them. FLPMA explicitly requires that what is "best" must be viewed from the perspective of the present and the future and all alternatives, including the proposed action, must be designed to satisfy this requirement. What is best now may not meet future needs, and since future needs may be unknown in some respects, the only way to "best" insure that future needs are met is to develop and select alternatives that have a large built in margin of safety. To achieve a large built in margin of safety the plan should emphasize resource and ecosystem protection, which will best ensure that future options are retained. Furthermore, what is "best" must be determined with *reference to the needs of the American people as a whole, not a small subset of the American people.*

FLPMA explicitly provides that the alternative plans that are developed need not accommodate all resource uses on all lands. This provision has special significance relative to oil and gas leasing, exploration, and development because too often essentially all lands are made available by BLM for oil and gas extraction. Therefore, we request that the alternatives developed for consideration in the EIS include a wide range of options relative to allocating lands in this area to oil and gas extraction activities. Moreover, FLPMA provides that areas where less than all resource uses are allowed should be "large enough to provide sufficient latitude for periodic adjustments" to accommodate changing circumstances. 43 U.S.C. §1702(c).

It is also important to emphasize that under FLPMA the alternatives that are developed must consider the relative value of the resources involved. By this legally required measure, rare, unique, and sensitive native species have a relative value far in excess of more common or easily replaced public land resources, or resources that can be provided from other lands. The same is true of many other resources, such as cultural and wilderness resources. Accordingly, the alternative plans that are developed, and particularly the preferred alternative, must give special emphasis to protecting and providing for relatively rare resources.

Since sustained yield can be achieved by providing for regular periodic outputs of renewable resources, we ask that BLM consider this measure of sustained yield rather than just high-level annual measures. Occasional (periodic) outputs of some resources may be a far more sustainable means to manage for multiple use in perpetuity than to attempt to produce the resource annually, especially at a "high-level." For example, drought could well make livestock grazing ill-advised and unsustainable in some years if other resource values such as wildlife are to be protected and maintained.

In addition to the requirement to manage for multiple use and sustained yield, Congress declared a policy in FLPMA that public lands are to be "managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values . . ." as well as to "preserve and protect certain public lands in their natural condition" and provide "food and habitat for fish and wildlife." 43 U.S.C. §1701(a)(8) (emphasis added). Consequently, Congress has made clear that strong environmental protection must be provided through the planning process for these public assets. The EIS should reflect this Congressional guidance in all alternatives that are developed and considered, especially in the plan that is finally selected.

Designation Of Areas Of Critical Environmental Concern Must Be Given Priority

Areas of Critical Environmental Concern (ACECs) are defined in FLPMA. Just as the definitions of multiple use and sustained yield give substance to FLPMA's requirements for management to be based on multiple use and sustained yield, the definition of ACEC gives substance to the requirement that priority be given to designation and protection of ACECs. ACECs are defined as areas "where special management attention is required . . . to protect and prevent irreparable damage" to important resources, including fish and wildlife resources, ecological features, and historical, paleontological and archeological resources. 43 U.S.C. §1702(a). Candidate ACECs must have relevance and importance. 43 C.F.R. § 1610.7-2(a). Since Congress required that designation and protection of ACECs be given priority in land use planning, it is critical that all alternatives developed in the EIS do so. 43 U.S.C. § 1712(c)(3).

We ask that BLM consider designating ACECs for all species that have been listed pursuant to the Endangered Species Act or recognized as sensitive species by BLM. The rarity and/or uniqueness of these species means they are "relevant" and "important" by definition. The fact that they are rare also shows "special management attention" is needed; or, in the case of inherently rare species, that special management is needed to protect what is often very limited habitat. Furthermore, in our view the loss of species through extinction or the continued decline of species (especially already-rare species) constitutes "irreparable damage" in both ecological and quality-of-life terms. Therefore, these species warrant improved protection through ACEC designations.

It is also worth noting that the Endangered Species Act (ESA) establishes requirements that can be achieved—and are required to be achieved—by ACEC designation. There is, of course, the well known jeopardy standard in section 7(a)(2) of the ESA that prohibits agencies from jeopardizing the continued existence of listed species or taking actions that result in the

destruction of adverse modifications of critical habitat. 16 U.S.C. §1536(a)(2). Designating ACECs is an obvious means of ensuring this duty is met, and is especially relevant given the priority Congress attached to designating ACECs during land use planning.

But perhaps more importantly, section 7(a)(1) of the ESA requires all Federal agencies to “utilize their authorities in furtherance of the purposes of this chapter by carrying out programs for the conservation” of listed species. 16 U.S.C. §1536(a)(1) (emphasis added). This is a mandatory duty. Given the priority that Congress attached to designating ACECs, and its commandment that all agencies carry out programs to conserve listed species, it is apparent ACEC designation is precisely the kind of program Congress intended be used to further the conservation of listed species. Additionally, since agencies must further the purposes of the ESA by carrying out conservation programs, it is worth noting that one purpose of the ESA is to “provide a means whereby the ecosystems upon which [listed] species depend may be conserved.” 16 U.S.C. §1531(b). ACECs are clearly a flexible means to protect the ecosystems on which listed species depend, and thus they provide a convenient programmatic means to further the purposes of the ESA that BLM is required to fully utilize and implement. Given the priority for *endangered species protection* established by Congress, and the priority given to ACEC designation in FLPMA, ACECs should be used liberally to protect rare species in the RMP area.

Furthermore, we request that all riparian areas in the geographic area of the RMP be designated ACECs. The ecological value of these areas is universally acknowledged. It is also widely recognized that most riparian areas in the west are in a non-functioning or *functioning at risk* status. Thus, special management is needed. Riparian areas are discrete and easily recognized, generally speaking. Consequently, they would be relatively easy to delineate for special management. In the aggregate they have far more than local importance. This recommendation is in accordance with BLM’s Riparian-Wetlands Initiative, which will be discussed more below, as will additional needs for riparian area management. Reflecting the overarching importance of riparian areas, the BLM Manual specifically provides that important riparian-wetlands areas should be considered for designation as ACECs.

In addition to riparian areas, other areas that should be considered for ACEC designation are: big game wintering areas, migration and other ecological corridors, and areas with special breeding, feeding or sheltering value for wildlife, such as cliff areas used by raptors, prairie dog colonies, and caves. Areas of large, contiguous habitat, should also be considered for ACEC designation. Archeological, historical, and paleontological sites and resources should be protected through the liberal use of ACEC designations, as required by FLPMA.

Relative to ACECs, the RMP “shall include the general management practices and uses, including mitigating measures, identified to protect designated ACEC[s].” 43 C.F.R. § 1610.7-2(b). In our view, this requires the following. First, given the purpose of ACECs the requirement to “prevent irreparable damage” establishes a greater protective standard than either the nonimpairment standard in the definition of multiple-use or the prevention of unnecessary or undue degradation standard applicable to all actions. Compare 43 U.S.C. § 1702(a) with 43 U.S.C. §§ 1702(c), 1732(b). Second, wherever, an ACEC is designated, BLM should consider withdrawing the areas from operation of the mining and mineral leasing laws pursuant to 43

U.S.C. § 1714 so as to ensure there is no irreparable damage. Third, where a potential ACEC has only been identified, BLM must nevertheless "take all feasible action to assure that those qualities that make the resource important are not damaged or otherwise subjected to adverse change pending an ACEC designation decision." 45 Fed. Reg. 57318, 57326 (Aug. 27, 1980).

BLM Must Ensure Compliance With The Clean Water Act And Clean Air Act

The Clean Water Act

The FLPMA establishes a general requirement that land use planning and the resulting plan provide for compliance with "pollution control laws." 43 U.S.C. § 1712(c)(8). Compliance with the Clean Water Act (CWA) is an important element of this requirement.

The CWA establishes many requirements that BLM must adhere to in the RMP. It is imperative that BLM insure that waters on its lands comply with State water quality standards. It is critical to recognize that State water quality standards "serve the purposes" of the CWA, which, among other things, is to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters. . ." 33 U.S.C. §§ 1313(c)(2)(A), §1251(a). That is, a purpose of water quality standards is to protect aquatic ecosystems, and BLM must ensure this comprehensive objective is met by ensuring water quality standards are complied with. Water quality standards are typically composed of numeric standards, narrative standards, designated uses, and an antidegradation policy. All too often, however, only numeric standards are viewed as "water quality standards." That narrow view is incorrect. The Supreme Court held in PUD No. 1 of Jefferson County v. Washington Dep't of Ecology, 511 U.S. 700 (1994), that all components of water quality standards are enforceable limits. Consequently, the RMP must ensure all components of State water quality standards are met, not just numeric standards.

Adopting this legally sanctioned view of water quality standards is important. For example, a typical designated use for a stream might state that the stream is "protected for cold water species of game fish and other cold water aquatic life, including necessary organisms in their food chain." Designated uses of this sort encompass a far more holistic, ecosystem-based view than focusing on, say, the concentration of chloride in the stream (a numeric standard). Consequently, the RMP should provide that designated uses be fully achieved, and if they are not, require prompt management changes even if numeric standards are otherwise being met. Similarly, narrative standards can often embody a better ecological synthesis than numeric standards, and thus BLM should ensure that they too are achieved. For example, a State's narrative standard might make it illegal to contaminate a stream with "floating materials or scum that create objectionable odors or cause undesirable aquatic plant growth." If the State water quality standards applicable to the RMP area have made narrative provisions a component of water quality standards, the RMP should ensure these narrative standards are fully met, and modify management where they are not.

The State's antidegradation policy is also a critical component of water quality standards. See 40 C.F.R. § 131.12 and applicable State regulations. Of particular significance are Outstanding National Resource waters, where water quality must be maintained and protected. 40 C.F.R. §131.12(a)(3). Outstanding National Resource waters are waters that "constitute an

outstanding National resource, such as waters of National and State parks and wildlife refuges and waters of exceptional recreational or ecological significance . . ." Id. (emphasis added). While States designate Outstanding National Resource waters, the Clean Water Action Plan makes it appropriate for BLM to identify waters that should be fully protected by this designation during its planning process, and to make recommendations to the State and EPA accordingly.

In addition to the antidegradation policy's protections for waters that are meeting water quality standards, where State water quality standards have not been achieved despite implementation of point source pollution controls, section 303(d) of the CWA requires a State to develop a list of those still-impaired waters, with a priority ranking, and to set total maximum daily loads (TMDLs) of pollutants for the stream "at a level necessary to implement the applicable water quality standards. . . ." 33 U.S.C. §1313(d)(1)(C). Consequently, to the extent waters within the BLM's jurisdiction have been identified as water quality impaired segments, or contribute stream flow to such segments, the RMP should include affirmative steps toward reducing that impaired status, regardless of whether the State has made a specific allocation of pollutant load to BLM lands at the time the RMP is prepared. If any specific load allocation has been made by the State for activities on BLM lands, BLM should obviously ensure that these are complied with.

The RMP should ensure full compliance with sections 401 and 404 of the CWA. Section 401 requires State certification of compliance with State water quality standards prior to authorization of certain actions on BLM lands. 33 U.S.C. § 1341. The RMP should fully implement this requirement. Section 404 requires permits before discharges of dredged or fill material can be made into navigable waters, and BLM, through the RMP, should assist the EPA and Army Corps of Engineers with implementation and enforcement of this requirement, which, of course, is a powerful means for the protection of wetlands. See 33 U.S.C. § 1344.

An important step toward complying with the CWA can be made by ensuring the RMP adheres to and incorporates elements of the Clean Water Action Plan. The Clean Water Action Plan makes many provisions, but several are particularly relevant to public lands management. The Clean Water Action Plan requires "managing natural resources on a watershed basis . . ." <http://www.cleanwater.gov/action/c2b.html>. Federal agencies must adopt a policy that "will ensure a watershed approach to federal land and resource management that emphasizes assessing the function and condition of watersheds, incorporating watershed goals in planning, enhancing pollution prevention, monitoring and restoring watersheds, recognizing waters of exceptional value, and expanding collaboration with other agencies, states, tribes, and communities." Id. The BLM is specifically required to provide for "enhanced watershed restoration efforts, including the integration of watershed restoration as a key part of land management planning and program strategies," among many other requirements. Id. The BLM "will increase maintenance of roads and trails and aggressively relocate problem roads and trails to better locations. Where unneeded roads pose threats to water quality they will be obliterated and the land restored." Id. Implicit in this requirement is a prohibition on creating, or permitting, additional roads that could become problem roads, especially where there is no realistic basis given budget and personnel constraints to believe they can be adequately maintained. This requirement, of course, has special relevance relative to oil and gas extraction activities, which are typically characterized by

a profusion of roads. Relative to riparian areas, the Clean Water Action Plan requires that BLM "will enhance the quality of streams and riparian zones and accelerate restoration." *Id.*

Similarly, the RMP should make provision for implementing BLM's Riparian-Wetland Initiative, and seek to implement the specific objectives established in that initiative, particularly the objective of restoring 75% of riparian areas to "proper functioning condition." The importance of implementing the Clean Water Action Plan and the Riparian-Wetland Initiative will be addressed further, below, in the section on riparian area management.

The Clean Air Act

The RMP must manage actions on public lands to meet the air quality standards prescribed by Federal, State, and local laws. Meeting the requirements of applicable State implementation plans and ambient air quality standards is a must, and air quality in non-attainment areas must be improved. Protecting air quality should be a priority – not just an afterthought that is done if convenient or "feasible." The FLPMA requires BLM to consider the relative value of the various resources, and indeed clean air is quickly becoming (along with undeveloped landscapes) a most valued, yet dwindling resource. Therefore, BLM should take a proactive approach to managing air quality by, among other things: gathering baseline air quality data; setting aggressive standards; requiring any actions on public lands to meet those standards (i.e. no flaring, no two-stroke engine use on public lands, etc); analyzing the cumulative impact of any proposed action with other past, present, and reasonably foreseeable actions; establishing an effective monitoring program; and halting any actions that contribute to air pollution if such monitoring reveals that standards have been exceeded.

The EIS should address the issue of regional haze and the destruction of viewsheds caused by haze. Much of the air pollution causing this haze can be attributed to coal-fired power plants and a general increase in the burning of fossil fuels within and beyond the RMP region. Accelerated oil, gas, and coalbed methane development on Federal, State and private lands is another contributor. Part and parcel of reducing regional haze are the requirements in the Clean Air Act for the prevention of significant deterioration of air quality and protection of air quality in various airshed categories, particularly in Class I airsheds applicable to National Parks and wilderness areas. The EIS should address how prevention of significant deterioration requirements can be met, and the RMP should require steps to ensure they are met.

Oil and gas development activities directly contribute to air pollution in several ways, and all should be addressed in the RMP EIS. Oil and gas development activities produce large surface disturbances (pads and roads) and increase vehicle traffic, which contributes to particulate pollution. Oil and gas development activities also contribute to NO_x, SO₂, and volatile organic compound (VOCs) pollution, through activities like flaring, drilling, processing plants, and wellhead compressors and compressor stations, to name a few. The Environmental Protection Agency (EPA) has prepared a report on the oil and gas extraction industry.² Data in the report show the oil and gas extraction industry ranks as follows in terms of creating air pollutants among the 29 industrial sectors EPA had data for in 1997:

² Profile of the Oil and Gas Extraction Industry, EPA Office of Compliance, Sector Notebook Project, October 2000.

<u>Pollutant</u>	<u>Ranking (out of 29)</u>
CO	9 th
NO ₂	3 rd
PM ₁₀	14 th
Particulates	22 nd
SO ₂	2 nd
VOC	5 th

These data emphasize the importance of regulating air pollution from oil and gas development activities in the RMP area.

As indicated, air pollution problems, perhaps more than any other environmental problem, are not subject to human-created, artificial boundaries. Consequently, the EIS must consider air pollution problems existing in the RMP area (whatever their source) at appropriately broad scales.

THE ENVIRONMENTAL IMPACT STATEMENT MUST ADDRESS THE FULL RANGE OF RESOURCE ISSUES AND THE RESOURCE MANAGEMENT PLAN MUST ADOPT NEEDED PROTECTIONS FOR THOSE RESOURCES

BLM's Land Use Planning Handbook provides guidance on many of the resource needs, issues, and protections addressed below. BLM should fully comply with its provisions. See BLM Handbook H-1601-1, Appendix C.

Energy Development

Energy development is a potentially harmful activity that must be addressed in the EIS and regulated by the RMP. Wildlife habitat can be fragmented, scenic vistas can be marred and obstructed, air quality degraded, vegetation crushed and altered, and water sources drained and polluted. Primitive areas can be converted into industrial zones, and wilderness and wilderness quality lands can be trampled and degraded by oil and gas related activities. On "split-estates" the rights, and lives, of private surface owners can be severely impacted.

The concerns expressed in this section with regard to oil, gas, and coal development also generally apply to other leasable minerals, including but not limited to tar sands, oil shales, phosphate, and gilsonite. The EIS should make similar analyses relative to these minerals. Additionally, many of the recommendations in this section are in conformance with the report "Land Use Planning and Oil and Gas Leasing on Onshore Federal Lands."³ We request that BLM consider and respond to this report as it develops the RMP.

Oil and Gas Leasing and Land Use Planning Issues

We believe the revised RMP should prohibit future oil or gas leasing prior to completion of an EIS that analyzes the site-specific impacts of proposed leasing. It is crucial that this "look

³ National Academy of Sciences, 1989

before you leap" policy be adopted in the RMP to ensure that a lease is not issued before the site specific resource values in an area are fully understood. This is necessary to ensure that an informed balancing can be made pursuant to NEPA as to whether leasing is appropriate, or is outweighed by other resource values. Waiting to do site-specific analyses until after a lease is granted is simply too late: at that time the ability to regulate and control impacts is reduced. If leasing under the revised RMP occurs prior to completion of a site-specific EIS, options are foreclosed, in contravention of NEPA, the ESA, and the definition of multiple-use in FLPMA. Alternatively, the RMP should specify that all leases should be issued with a no surface occupancy stipulation on the entire lease pending completion of a site-specific EIS to determine if surface occupancy can be allowed. We believe these recommendations are consistent with the provisions in BLM's Land Use Planning Handbook. See BLM Handbook H-1601-1, at Appendix C page 16.⁴

Furthermore, it is crucial that lease stipulations that ensure necessary protection of public lands be developed and included in the RMP for attachment to all leases. See 43 C.F.R. §§ 3101.1-2 to 3101.1-3. Non-waivable no surface occupancy stipulations should attach to leases that could threaten important wildlife habitat or use areas, water resources, recreation areas, etc., particularly if site-specific impacts are unknown or poorly known when the land is leased. All riparian and wetland areas should be subject to no surface occupancy stipulations. The RMP should adopt a prohibition against leasing in any Scenic or Recreational river corridors, or potential corridors, not just Wild river corridors, and failing that no surface occupancy stipulations should be required. ACECs should not be subject to leasing, or, at a minimum, should be subject to no surface occupancy stipulations. Archeological, paleontological, and historical resources must be adequately protected. Lease stipulations are discussed in more detail in the section below dealing with big game species.

The RMP should guide and regulate the configuration and timing of lease offerings when parcels are offered for lease. Currently, industry nominates parcels that are typically scattered throughout millions of acres of public lands. As a result, pre-leasing environmental analyses are not based on common airsheds, river drainages, or other ecological units; nor do they adequately assess cumulative impacts. The RMP should ensure that these problems are not perpetuated.

As noted above, FLPMA requires consideration of the relative scarcity of the values involved, and the availability of alternative sites for producing those values must be considered. See, FLPMA § 202(c). Often, the most appropriate opportunities for oil and gas development from both an economic perspective and ecological perspective are within known and operating oil and gas fields, while the dwindling wildlife, scenic, wilderness and other resource values throughout the rest of the area are irreplaceable and should be protected. The EIS should consider this issue, and again, in our view, oil and gas drilling is not appropriate in potential wilderness areas, ACECs, important wildlife habitat, and in areas with important archeological, historical, or paleontological resources due to the great relative value of the resources involved.

⁴ In areas of high industry interest that also have other important values, BLM should permit only drilling of exploratory wells. In these areas, data from the initial wells could be used in more detailed environmental studies prior to any further activity. If the studies reveal the need to halt development, lease payments could be refunded.

The RMP should explicitly prohibit oil and gas leasing whenever the reasonably foreseeable development scenario (RFD) has been exceeded, especially if this development is occurring due to new technological innovations that have not been subject to adequate environmental review. Coalbed methane (CBM) is a clear example in this regard: many development proposals for this method of extracting methane far outstrip the RFDs in existing RMPs, largely because this technology was not even envisioned when many RMPs were prepared. Moreover, the environmental impacts may not have been adequately evaluated (water from CBM development is the obvious example). Under these conditions, leasing should not proceed until updated environmental analyses are completed, and the RMP should so provide. Recent decisions of the Interior Board of Land Appeals require the unique impacts of CBM development to be analyzed.

The BLM must objectively analyze any purported "limits" on oil and gas development in the RMP process, and continue regulating this activity as required by law. The BLM should focus analysis of the purported "adverse effects" of lease stipulations on energy supplies on realistic estimates of economically recoverable resources, not just "technically recoverable" resources. The recently released study done pursuant to the Energy Policy and Conservation Act (EPCA) failed to do this.⁵ If oil and gas is not economical to extract, there will be no adverse impacts on supply from stipulations designed to protect wildlife, archeological sites, recreation sites and other public assets. The BLM should use well-supported high and low range estimates of gas and oil prices in any analysis of the amounts of oil and gas affected by stipulations.⁶

BLM's regulations regarding environmental protection at the field development and well drilling stage are general and non-specific. See 43 C.F.R. § 3162.5-1(b). Consequently, the RMP should adopt specific definitions of what constitutes "due care and diligence," "undue damage to surface or subsurface resources" and what specifically must be achieved to "reclaim the disturbed surface" At a minimum, the requirements of Onshore Oil and Gas Order No. 1, especially relative to reclamation plans, must be strictly complied with, and the EIS should analyze whether wells reclaimed in the past pursuant to these requirements have actually been effectively reclaimed. If not, appropriate modifications should be made to ensure effectiveness. Just as important, it is crucial that the RMP and any subsidiary instruments (leases, APDs, surface use plans, etc.) provide assurance, based on a realistic assessment of past, current and

⁵Other shortcomings in the EPCA study include the following. While criticizing the use of economically recoverable resources due to variability and change in economic conditions, the study proceeded under a number of other assumptions that are also variable: the technology for extracting oil and gas is constantly changing, applicable lease stipulations change with time, and estimates of oil and gas resources are constantly changing. Thus, variability and change, standing alone, provide no basis for not considering resource availability from an economic perspective. Furthermore, the EPCA study presented the total amount of oil and gas present on all lands in several basins, yet only analyzed the amount of oil and gas on Federal lands subject to various "restrictions," thus inflating the proportion of oil and gas that is purportedly off limits. The study assumed that old leases without stipulations potentially limiting access effectively do have currently-applicable stipulations because conditions of approval act as a "proxy" for the "missing" stipulations. Despite these limitations, all of which inflate the amount of oil and gas purportedly subject to "restrictions," the EPCA study clearly showed that the vast majority of Federal oil and gas resources are available for development. And even where limitations apply, the study showed that most drilling can still occur from 6-9 months during the year. The EPCA study can be used as a starting point but due to its shortcomings it should not be used for decision-making without supplemental information.

⁶Of course, the stipulations and other protections may be fully warranted (or required) despite any effect they may have on energy supply, and the BLM should acknowledge this.

projected budgets and allocations of personnel, of adequate inspection and enforcement as a precondition to lease issuance and operations. Monitoring and enforcement needs are addressed further, below.

The lease acreages limits specified at 43 C.F.R. § 3101.2-1(a) should be monitored and enforced by BLM, and the RMP should make provision for such. BLM's LR2000 database makes this a relatively simple undertaking. To the extent BLM views this as an activity for the State Office or other BLM administrative level, the EIS should nevertheless discuss what actions are being taken at that other level and provide citizens with information so they can become aware of and monitor those efforts.⁷

The regulations at 43 C.F.R. § 3162.3-1(a)(3) allow BLM to regulate well spacing pursuant to "any other program established by the authorized officer"—well spacing designations of the State oil and gas commission are not controlling. BLM should fully utilize this authority by specifying, in the final RMP, well spacing densities that are appropriate for protecting other resource values in an area, as required pursuant to 43 U.S.C. § 1732(b) and other law.

Private landowners who live on "split estates" are often severely affected by BLM's oil and gas leasing decisions. BLM has often ignored or given little attention to the legitimate concerns of surface owners and their communities. BLM must minimize conflicts between surface owners and companies developing subsurface minerals by proactively seeking and addressing their concerns in the design and review of projects, including leasing itself. The RMP should provide for this. BLM should make full use of provisions in the Surface Mining Control and Reclamation Act that apply to all mineral development, not just coal. Areas used primarily for residential or related purposes can be deemed unsuitable for mineral development and withdrawn from leasing, or have development activities conditioned appropriately. 30 U.S.C. §1281. BLM also has general withdrawal authority pursuant to 43 U.S.C. § 1714. BLM should make use of these provisions, as well as its general authority to condition development, to protect private surface owners who could be adversely affected by oil and gas development.

Coalbed Methane Issues

As indicated above, extraction of CBM has become rampant in some areas, so special precautions must be taken in the RMP to ensure resource protection in the face of this development pressure. The RMP should prohibit discharge of water extracted from coalbeds onto the ground or into surface waters. This is particularly true of saline "produced" water. In addition to salinity problems, produced water—whether from CBM production or from conventional wells—can be contaminated with heavy metals (Se, As, Ba, Hg, etc.). Selenium may be of particular concern, especially relative to impacts on avian species, and it is important to note that if produced water is stored in reservoirs or pits, heavy metals can become even more concentrated than in the produced water itself. The EIS should consider the problem of produced

⁷ This point applies to any activity BLM claims does not need to be fully explored in the EIS or decided in the RMP. Even if true, the RMP and RMP EIS should still assist citizens who desire to get information about these activities and to participate in them. Thus, BLM should, at a minimum, provide a discussion of what is occurring at the other administrative level and provide basic contact information.

water storage pits/reservoirs leading to concentrated chemical solutions that harm wildlife (or other resources), and should particularly consider compliance with the Migratory Bird Treaty Act in this regard.

Water from CBM development should be reinjected in an environmentally safe manner (i.e., in a manner that ensures groundwater supplies are not contaminated). However, if water from CBM production is discharged, directly or indirectly, into streams, the impacts of augmented flows and increased concentrations of salts (ions) and dissolved solids on the ecological characteristics of the streams (perennial or intermittent) should be analyzed. Such analyses must account for the full range of variations in stream flow, effluent (produced water) concentrations, and sensitivities of different species at different life-stages. Impacts from altering stream thermal conditions and the timing of flows must be analyzed. Effects of discharged produced water on adjacent riparian areas, and the effects of increased turbidity and sedimentation should be considered. The analysis should consider lethal and sub-lethal effects on biota. If produced waters are or become a "discernible, confined and discrete conveyance . . . from which pollutants are or may be discharged", they must be treated as point source discharges of pollutants and a National Pollution Discharge Elimination System (NPDES) permit must be required. 33 U.S.C. §§ 1362(14), 1342. Based on these analyses, the RMP should provide standards to prevent or mitigate these impacts.

CBM development can lower water tables, which has widespread implications and therefore these issues must be addressed in the EIS. If produced waters are not reinjected, potential effects on agriculture must be considered. Dewatering coalbeds can increase the likelihood of difficult-to-control coal seam fires. Seepage of methane and its effects on vegetation, water (including domestic water and aquifers), and even the safety of people's homes must be considered. Again, the RMP must ensure these impacts are prohibited or mitigated.

CBM fields can have a much higher density of wells than occurs in conventional gas fields. Consequently, issues such as habitat fragmentation, outright loss of habitat, and impacts to visual resources are magnified. Because of this, the RMP must ensure that the unique impacts of CBM development are evaluated prior to leasing, and that such analyses do not simply duplicate the analyses done for conventional gas fields. As noted above, recent Interior Board of Land Appeals decisions require consideration of the unique impacts of CBM development.

Full Field Development and Application for Permit to Drill Issues

BLM sometimes seems to take the position that it must approve an application for permit to drill (APD) within 30 days. This is incorrect, and the RMP should specify the circumstances under which BLM may take more than 30 days to review an APD. Final action on APDs can be, and must be, delayed as needed to conduct needed, thorough environmental analyses. 43 CFR § 3162.3-1(h)(3); Onshore Oil and Gas Order No. 1, III.B.2. The list of reasons for extending the time for when an APD may be processed is not limited to just the enumerated concerns in Onshore Oil and Gas Order No. 1, and the preparation of an environmental assessment (EA) or EIS is a specific reason for extension of the APD processing time. Onshore Oil and Gas Order No. 1, III.D.

A specific purpose and need for an EA for an APD is to determine whether an EIS is needed. 40 C.F.R. § 1501.4; Onshore Oil and Gas Order No. 1, III.G.5.a. Yet it is extremely rare, at best, for an EIS to be prepared at the APD stage. The RMP should provide guidance for when the cumulative impacts of approving a number of APDs rises to the level of producing significant impacts on the human environment, requiring preparation of an EIS. This is especially important if drilling in an area has not previously been analyzed in a "full field" EIS because there is no question that the approval of several individual wells can have cumulatively significant impacts. And even if a prior full field EIS has been prepared, the RMP should provide guidance as to when supplementation of the prior EIS should occur. See 40 C.F.R. § 1502.9(c) (outlining requirements for supplementing an EIS).

Local residents and other concerned citizens wanting to be involved in the actual development of oil and gas fields and/or drilling of wells are often stymied. One reason participation is stymied is that BLM does not make Notices of Staking (NOS) and APDs readily available to the public in a timely fashion. In some cases citizens are expected to physically review NOSs and APDs by visiting the BLM office, or if they do not live nearby, to make weekly telephone calls to the BLM office to request that these documents be faxed to them. That is unacceptable, and in this day and age there is no reason they should not simply be posted on BLM websites in a timely fashion. Any proprietary or privileged information can be redacted. The lack of availability of NOSs and APDs hampers public participation, which violates NEPA. The BLM should include provisions in the RMP that will correct these problems. This recommendation is consistent with and required by the public participation provisions in the CEQ NEPA regulations, 43 C.F.R. §3162.3-1, and Onshore Oil and Gas Order No. 1. The Mineral Leasing Act provision related to notifying persons of APDs is a minimum requirement and does not supercede or abrogate other requirements, such as those in the CEQ NEPA regulations. See 30 U.S.C. § 226(f) (providing "[t]he requirements of this subsection are in addition to any public notice required by other law.") (emphasis added).

The EIS must address the issue of granting exemptions and exceptions to lease stipulations at the APD stage. At a minimum, the RMP must identify which stipulations cannot be relaxed and the specific conditions that must be met before a request to exempt or relax any of the others will be granted. In our view, relaxing environmental protections should not be allowed. All too often exemptions or exceptions are granted when a company needs "just a few more days" to complete drilling or other activities. This is not a sufficient reason in our view—the stipulations are clear and companies should be able to complete activities as agreed to, or wait a few months to complete them when resource damage is lessened. Allowing drilling to continue essentially for the convenience of a company leads to unnecessary or undue degradation. Another common rationale for permitting exemptions or exceptions are claims that "game species aren't on the winter range yet" and other similar justifications. Rationales such as this are insufficient: drilling during a restricted period may prevent animals that would have moved onto the range from doing so, it may disturb and stress animals that are in areas adjacent to or nearby the area being drilled, it may concentrate animals in areas that are not being drilled, it may cause undisturbed areas to be overgrazed and degraded, etc. At a minimum, granting exceptions and exemptions to stipulations constitute Federal actions subject to NEPA; that is an EIS or EA needs to be prepared before they are granted. The public participation requirements of NEPA must be fully complied with. Even if the RMP provides guidance on the circumstances

under which relaxation of environmental standards can be allowed, and such guidance was subject to NEPA (as it must be), BLM must still comply with NEPA when actual requests are made and the site-specific consequences can be analyzed. RMP level analysis supporting exemptions and exceptions is simply not site-specific enough to allow for approval of site-specific requests, and the RMP should so provide.

BLM employs Sundry Notices pursuant to 43 C.F.R. § 3162.3-2(a) (authorizing use of Form 3160-5, the Sundry Notice). In our experience, Sundry Notices are used for a wide array of activities, and not necessarily just for "further well operations", as required by the regulations. The RMP should define precisely when the use of Sundry Notices is appropriate, and in our view they are inappropriate for anything other than the enumerated activities mentioned at 43 C.F.R. § 3162.3-2(a). Additionally, the RMP should define when NEPA compliance is required and what opportunities exist for public involvement relative to Sundry Notices.

Toxic and Hazardous Wastes and Chemicals; Stormwater Runoff

The use of hydraulic fracturing and the impacts of drilling fluids (muds) and chemicals must be considered in the EIS. Hydraulic fracturing and drilling fluids contain a wide array of chemicals, many of which are clearly toxic or hazardous. The appropriateness of using these chemicals must be addressed in the EIS, and in particular the EIS and the final RMP should ensure compliance with the Clean Water Act, Safe Drinking Water Act, Toxic Substances Control Act, Resource Conservation and Recovery Act, and the Comprehensive Environmental Response Compensation Liability Act (CERCLA—the Superfund) relative to the use of these and other toxic and hazardous substances. We specifically recommend that, if "fracking" is contemplated, the option of requiring water only – i.e., prohibiting the use of toxic chemicals – be considered. The RMP should provide specific guidance regarding the requirements oil and gas companies must abide by to meet the requirements of these laws, and provide for complete and thorough compliance, monitoring, and enforcement by BLM. Spill prevention and cleanup requirements must be specified, and provisions for collecting and disposing of these wastes must be provided for in detail, again with sufficient monitoring and enforcement to ensure compliance. While Federal pollution and toxic and hazardous waste law may provide some exemptions for the oil and gas industry, BLM still has sufficient authority, and responsibility, under NEPA and FLPMA to require inventory and monitoring of these chemicals, as well as spill prevention, cleanup, and mitigation plans. See, e.g., 43 U.S.C. 1732(b); 43 C.F.R. §§ 3162.4-1(a), 3162.5-1(c)-(d); Onshore Oil and Gas Order No. 1, III.G.4.b.(7). See also Executive Order No. 13,016 (delegating authority to land management agencies to enforce CERCLA on lands they manage); BLM Manual MS-1703 (Hazardous Materials Management). In a related issue, BLM should ensure that oil and gas drilling operations (including well pads) comply with any applicable stormwater discharge requirements, including acquiring NPDES permits, as required.

BLM should work with the EPA relative to regulation of hazardous and toxic wastes generated from oil and gas development activities. EPA's report on the oil and gas extraction industry (see footnote 2) provides information regarding these substances and data on rates of inspection and enforcement actions for this industry. These data show oil and gas extraction facilities receive little in the way of inspection and enforcement relative to the other 29 industrial sectors, despite the significant levels of toxic and hazardous materials used and generated by the

industry. The RMP should make provisions for ensuring that, in cooperation with the EPA, the rate of inspections (and as necessary, enforcement) is increased.

Rights-of-Way

Rights-of-way are often part-and-parcel of energy development projects, as well as many other activities. All provisions in the Mineral Leasing Act and FLPMA must be adhered to relative to rights-of-way to help ensure environmental protection. We specifically request that the EIS address several issues. The issue of the impact of power lines on birds and bats should be addressed, particularly with regard to raptors. Electrocutions are one negative impact of power lines, and electrocutions could violate the Migratory Bird Treaty Act and Bald Eagle Protection Act, not to mention the ESA. The RMP should have provisions to ensure these laws are not violated if rights-of-way are granted, as well as provisions that specify thorough monitoring and the penalties that will be imposed by BLM for failure to comply. Perhaps just as importantly, power lines change the "structure" of habitat, which may create favorable conditions for some species but be unfavorable for others. For example, there is evidence that ferruginous hawks, which are becoming rare, can be placed at a competitive disadvantage to other raptors when power lines create perches in otherwise open habitat. Likewise, the increasingly imperiled sage grouse can be further threatened if raptors are provided hunting perches in habitat occupied by sage grouse. The EIS must take account of these kinds of effects, and the RMP must ensure they are avoided or at least mitigated. For example, the RMP should require that existing rights-of-way, with similar types of structures, be utilized to the extent possible. Similarly, the impacts rights-of-way have on habitat fragmentation must be analyzed in the EIS, and provision made to avoid or mitigate these impacts in the RMP.

Monitoring and Enforcement

The EIS should include a realistic assessment and analysis of oil and gas well plugging, abandonment, reclamation, and enforcement needs and problems. The RMP must provide that wells are abandoned and plugged in accordance with the provisions of 43 C.F.R. § 3162.3-4 and Onshore Oil and Gas Order No. 1. In addition, the BLM must not only quantify the needs that projected development will entail in terms of personnel and costs, it must also explain how it will ensure that these needs will in fact be met. In our view, if BLM lacks resources to engage in monitoring and enforcement sufficient to ensure compliance with all requirements applicable to oil and gas drilling on public lands within the RMP area, then it should not allow further development to occur—it should deal with the backlog of cleanup needs first. BLM has sufficient authority, and a responsibility, to prevent development if it lacks sufficient resources to ensure compliance with requirements applicable to oil and gas development. See, e.g., 43 U.S.C. 1732(b).

The RMP should ensure that reclamation standards are enforced and increase bonds to cover actual reclamation costs, so neither taxpayers nor landowners are left to foot the bill. In the past, BLM has estimated the cost of reclaiming just one well ranges from \$2,500 –\$75,000. The EIS should include up-to-date estimates for costs of reclamation of development activities in this area. The RMP should increase bonds as needed to ensure the full costs of reclamation are met and should not rely on per lease bonds (currently set at \$10,000) or on statewide bonds (now

\$25,000) if they will not cover anticipated costs. BLM has this authority. See, e.g., 30 U.S.C. § 226(f); 43 C.F.R. §§ 3104.1(a), 3104.5, 3106.6-2.

Coal Development

The RMP must ensure full compliance with the Mineral Leasing Act and Surface Mining Control and Reclamation Act (SMCRA) for any coal development in the RMP area. The RMP must assure the environmental protection performance standards and reclamation standards required by SMCRA are fully adhered to. The "federal lands program" for coal mining must also be carefully adhered to. The RMP should include provisions that will ensure that BLM works carefully with the State in the regulation of coal mining, and BLM must ensure the State is adequately implementing and enforcing the program. See 30 U.S.C. § 1273 (providing the Federal lands program must consider the "unique characteristics of the Federal lands in question" and that "at a minimum" the Federal lands program shall include the requirements of the State's program). The EIS should evaluate whether the State is in fact adequately protecting public lands resources and develop means to protect those resources as needed. It should also address any potential new coal mining or expansion of coal mining that might occur so that BLM can work with the Office of Surface Mining to ensure the requirements related to mining plan decisions can be fully complied with.

The provisions for unsuitability determinations in SMCRA must also be fully utilized and complied with. BLM should ensure that "Determinations of the unsuitability of land for surface coal mining . . . shall be integrated as closely as possible with present and future land use planning and regulation processes at the Federal, State, and local levels." 30 U.S.C. § 1272(a)(5). BLM should ensure that the suitability review for Federal lands complies with the requirements at 30 U.S.C. § 1272(b) and that any needed withdrawals and conditions are made, as provided for in that section. Similarly, BLM should ensure that existing suitability determinations are as up-to-date as possible and in conformance with the RMP. As mentioned above, the provisions at 30 U.S.C. § 1281 should be fully utilized to protect surface owner rights. Roadless areas, ACECs, unique wildlife habitats, and other special management areas should not be deemed suitable for coal mining.

Renewable Energy Sources and Global Warming

The EIS must fully address renewable sources of energy in at least two regards. First, it must address potential renewable sources of energy available from lands within the RMP area. It should address the relative merits of pursuing these types of energy developments versus fossil fuel development. It should fully address the potential negative impacts of renewable sources of energy. For example, wind energy farms can have negative consequences for avian species if not properly designed and sited. Biomass energy, if it is derived from old growth forests or other inappropriate sources, can wreak havoc on ecosystems or be little more than a guise for logging. The EIS must address these issues fully and openly. The RMP should adopt provisions to ensure these negative effects are avoided or at least mitigated. Second, the potential for renewable energy sources developed elsewhere to obviate the need for fossil fuel development in the RMP area should be addressed. Almost all agree, fossil fuels are not a long-term solution to our

energy needs and that renewable energy production must be fostered, so the EIS should address this aspect of energy development.

The EIS should also consider ways the BLM itself can maximize the use of renewable or alternate energy sources, and increase the efficiency of energy use in all activities BLM undertakes, including in its buildings and automobile fleet. The RMP should require increased use of renewable or alternate sources of energy by BLM and should include requirements for increased energy use efficiency. These efforts should be documented and publicized.

The EIS should address the problem of global warming and the steps BLM can take to reduce this problem. For example, coal seam fires could unnecessarily contribute to global warming. Flaring of hydrocarbon by-products contributes to global warming, and much of that may be unnecessary. BLM should make a thorough analysis of how activities it undertakes or authorizes contribute to the generation of carbon dioxide or other "greenhouse gasses," and the RMP should make provisions to reduce and minimize them.

Livestock Grazing

Livestock grazing can have profound impacts on wildlife and the public lands. See 43 U.S.C. §§ 1901(a)(1) (determining that "vast segments" of the public rangelands are in unsatisfactory condition), 1751(b)(1) (finding that much federal rangeland "is deteriorating in quality"). Recognizing this, BLM adopted standards and guidelines for grazing administration in 1995 that are designed to restore and protect range health and degraded range conditions. See 43 C.F.R. Subpt. 4180. The RMP should provide a clear and binding schedule for ensuring that the three steps the grazing rules establish for determining if grazing needs to be modified are accomplished in a timely manner.⁸ Furthermore, for allotments that have already been assessed, provision should be made in the RMP for future assessments and determinations—the standards and guidelines are intended to be an ongoing, prominent factor in grazing management, and the Fundamentals of Rangeland Health are standing national requirements. It is also worth noting that pursuant to the Public Rangelands Improvement Act (PRIA), "the goal" of rangeland management "shall be to improve the range condition of the public rangelands . . ." 43 U.S.C. § 1903(b) (emphasis added).

BLM's standards and guidelines and the Fundamentals of Rangeland Health also have potential applicability and utility for properly managing all resource uses in the RMP area. For example, many standards and guidelines and the Fundamentals of Rangeland Health would be appropriate as stipulations to oil and gas leases to ensure there is not unnecessary or undue degradation. Consequently, as part of this planning effort, the BLM should consider what changes if any are needed to extend the standards and guidelines and Fundamentals of Rangeland Health to all other programs, and the RMP should provide for their adoption as requirements to guide all future management activities and decisions. The standards and guidelines, and the Fundamentals of Rangeland Health, provide a convenient existing means to meet many of the requirements highlighted in these comments, which BLM, through the RMP, should take advantage of.

⁸ The three steps are: assess rangeland health, determine if grazing is a significant factor causing unhealthy rangelands, take appropriate actions to eliminate or modify grazing by the start of the next grazing season.

In addressing livestock grazing in this plan, we urge the BLM to pay special attention to the following. Monitoring and follow-up monitoring needed to ensure any changes necessary to meet the standards and guidelines must be provided for in the RMP. The condition of springs and riparian areas, including biotic and abiotic components, and whether they are in proper functioning condition must be given special attention. The condition of upland areas, including cryptobiotic crusts must be carefully monitored and protected. In all cases where these important resources and areas are not functioning properly, the BLM must include in the RMP mandatory steps that will be taken to remedy these failures.

We also ask that BLM address compliance with the "Comb Wash Decision" in the EIS and the RMP itself. National Wildlife Federation v. BLM, 140 IBLA 85 (1997). That appeal not only affirmed the longstanding rule that NEPA requires the BLM to analyze the site-specific impacts of grazing, it must also engage in "reasoned decision-making" on the question of whether to allocate lands and associated resources to this particular use. The EIS should include the required analysis of site-specific impacts of grazing and the required discussion of the balancing of values that will ensure that grazing best meets the present and future needs of the American people. As noted above, this balancing is required so as to meet the requirement that public lands are managed on the basis of multiple use and sustained yield. See 43 U.S.C. §§ 1702(c), 1732(a). The Comb Wash Decision held that this balancing is mandatory, and the plan should reflect both that this balancing was carried out and what its results were, on a site-specific basis.

In accordance with the standards and guidelines, the Comb Wash Decision, and provisions in the FLPMA and PRJA, the EIS should determine the suitability of lands within the RMP area for livestock grazing and the RMP should require adjustments accordingly. There is no doubt BLM has this responsibility and authority. See, 43 U.S.C. §§ 315 (grazing districts must be chiefly valuable for grazing), 315a (BLM can do "any and all things" necessary to manage grazing), 1701(a)(8) (public lands to be managed to protect environmental values), 1702(c) (multiple use management allows for areas to be deemed unsuitable for certain uses and requires consideration of relative resource values), 1712(a)-(c) (land use plans to be based on multiple use), 1712(d) (land use classifications can be modified or terminated), 1712(e) (allowing for elimination of principle or major uses), 1732(c) (revocation of permits authorized), 1752 (allowing discontinuation of grazing permits and a determination in land use plans of whether lands "remain available for domestic grazing"), 1903(b) (allowing for discontinuation of grazing pursuant to land use planning decisions). See also Public Lands Council v. Babbitt, 529 U.S. 728 (2000) (holding that allocation of forage in a land use plan pursuant to 43 C.F.R. § 4100.0-5 does not, on its face, violate the Taylor Grazing Act). Livestock grazing, like all land uses, should only occur in areas where it has been carefully determined, pursuant to the land use planning process, to be a suitable use of the land. The suitability determination should be made in the RMP at two levels: (1) for the RMP area as a whole and (2) for site-specific areas.

As noted above, the impacts of grazing on riparian areas should receive particular attention in the EIS, and the RMP should make binding and mandatory provisions to deal with the impacts of grazing in riparian areas. BLM's Riparian-Wetlands Initiative acknowledged the importance of insuring that livestock grazing is compatible with riparian habitat protection, and

set an ambitious goal for the agency to achieve. It is now years past the date the Initiative set, so the BLM has no excuse for failing to include, in the RMP, binding benchmarks to ensure its goal is finally achieved. This could require reducing or eliminating livestock grazing in some riparian areas due to their overwhelming ecological importance and the generally recognized negative impacts of grazing on riparian areas. Upland areas, too, may require special livestock management in order to ensure the restoration of fragile areas and cryptobiotic soils, or to protect remnant high condition/seral stage vegetation. BLM should not rely on water developments as a way to transfer grazing pressure from riparian areas to other (usually upland) areas. This approach often does not solve problems; it just moves them from ecosystems with a relatively high ability to recover due to the availability of water (riparian areas) to ecosystems with little or no ability to recover from excessive livestock grazing (uplands).

Requirements related to the Clean Water Act were mentioned above, but they bear repetition in the context of livestock grazing. BLM should ensure there is sufficient water quality monitoring relative to the impacts of livestock grazing, and take concrete steps to guarantee that livestock grazing does not adversely impact water quality or impair designated beneficial uses of these waters. The BLM must collect all data necessary to evaluate and achieve compliance with water quality standards, including in particular standards related to fecal coliform bacteria. Compliance with the Safe Drinking Water Act should also be addressed.

BLM should recognize and analyze the significant adverse impact of livestock grazing on cultural resources and fulfill its obligation to identify and proactively protect cultural resources. It should also analyze the full suite of economic impacts of livestock grazing, including the direct and indirect costs of the grazing program. The public, the taxpayer, the BLM, the permittees, and the neighboring communities are impacted economically by management choices for grazing on BLM lands. These impacts must be thoroughly analyzed. Only by doing so can the BLM determine the costs and benefits of the proposed action and alternatives to the proposed action. Furthermore, such analysis is part of the FLPMA balancing test and will help determine whether grazing should occur on the relevant allotments.

Off-Road Vehicles and R.S. 2477

Off Road Vehicle (ORV) use is addressed by Executive Orders 11644 (1972) and 11989 (1977), and by regulations at 43 C.F.R. § 8340 *et seq.* Section 8342.1 provides that:

- (a) Areas and trails shall be located to minimize damage to soil, watershed, vegetation, air or other resources of the public lands, and to prevent impairment of wilderness suitability;
- (b) Areas and trails shall be located to minimize harassment of wildlife or significant disruptions of wildlife habitats. Special attention will be given to protect endangered or threatened species and their habitats;
- (c) Areas and trails shall be located to minimize conflicts between off-road vehicle use and other existing or proposed recreational uses of the same or neighboring public lands, and to ensure the compatibility of such uses with existing conditions in populated areas, taking into account noise and other factors;

(d) Areas and trails shall not be located in officially designated wilderness areas or primitive areas. Areas and trails shall be located in natural areas only if the authorized officer determines that off-road vehicle use in such locations will not adversely affect their natural, esthetic, scenic or other values for which such areas are established.

Based on this language, and on the enormous potential for damage posed by the use of ORVs, we urge the BLM to require the following in the RMP:

- The RMP should designate specific trails open for ORV use;
- Trails designated as open should be clearly marked so that all users will be aware of where ORV use is, and is not, allowed (this will also assist in effective law enforcement);
- The RMP should prohibit ORV use unless routes are specifically marked and designated as available for that use (i.e., BLM should adopt a "closed unless posted open" policy);
- Even where a route is recognized, constructed, and maintained, BLM still has a responsibility to determine whether recreational ORV use is appropriate on that route. Similarly, where routes are open for administrative purposes (including authorized uses by permittees), BLM should still ensure the authorization is tailored as narrowly as needed to ensure resource protection while allowing for the valid administrative access. The RMP should make provisions that reflect these requirements.
- The RMP should implement effective, frequent monitoring of ORV impacts, and set clear benchmarks which, if exceeded, trigger closure of an area to ORVs. If monitoring and enforcement cannot be effectively accomplished due to lack of personnel or resources, the RMP should not allow the use.
- In accordance with 43 C.F.R. § 8342.2(c), the RMP should prohibit ORV use in wilderness study areas, other areas the BLM has inventoried and found to have wilderness character, and areas within citizen-proposed wilderness areas. These lands comprise a fraction of the lands within the RMP area, and leave plenty of lands open for ORV use elsewhere.
- The RMP should prohibit ORV use in critical wildlife habitat, winter range, areas critical for nesting, breeding or other reproductive behaviors, and habitat for threatened, endangered or sensitive species.
- Riparian areas and wetlands are of critical importance to the biological functioning of the RMP area, and are exceedingly rare. ORVs, except on designated trails, are not appropriate in these fragile ecosystems, and the RMP should so provide.
- Pursuant to 43 C.F.R. § 8342.2(a), ORV use impacts must be evaluated "on all resources and uses in the planning area." Thus, the EIS must evaluate the impacts of ORV use on the full range of resources present in the area, including wilderness quality lands, non-motorized recreation, grazing, water quality, wildlife habitat, scenic quality and other uses.
- The RMP should prohibit unrestricted, cross-country ORV use in the RMP area. Public lands users should not be permitted to access public resources and destroy or damage them for recreational (or economic) purposes without being held responsible for mitigation or costs associated with any damage. ORV use should not be an exception to that rule.

Furthermore, too often we have seen RMPs promise to develop travel plans later, but they never do materialize as other post-planning priorities take over. Moreover, the stopgap method of allowing ORV use on "existing" trails pending completion of the trail designation process equates to an open designation as ORVs create new tracks every season. The "existing trails" designation also creates an enforcement nightmare, with BLM rangers unable to sanction anyone whose wheels are on a track, even if that track was made the previous weekend.

In general, BLM should evaluate the road system in the RMP area and determine the minimum system of routes necessary. Based on that analysis, BLM should close redundant routes; roads with no destination or purpose; illegal, "ghost," or "wildcat" routes; and roads in sensitive areas. The RMP should make these closures immediately effective, provide for the reclamation of closed routes, and ensure sufficient funding for reclamation, monitoring, and enforcement. These provisions are consistent with and required by the Clean Water Act Plan (see above) and other law.

Claims pursuant to R.S. 2477 can be a severe threat to public land resources. The RMP should defer determining the validity of R.S. 2477 right-of-way claims until there is a generally applicable unambiguous legal requirement for BLM to do so, which it currently lacks. At this time, authority to determine the validity of these claims is limited to quiet title actions. If a determination of the validity of an R.S. 2477 right-of-way is made, BLM should adopt the standards set forth in Southern Utah Wilderness Alliance v. BLM, 147 F.Supp.2d 1130 (D. Utah 2001). That is, valid claims must show evidence of intentional physical construction, of a publicly used highway with some clear destination, on public lands that had not otherwise been reserved for public purposes. *Id.* Any determination of the validity of an R.S. 2477 claim should be an open process with full opportunities for public involvement and comment.

Noise

The EIS and the RMP itself should address issues related to noise, and its impact on the remoteness and quietness that so many seek on the public lands. We particularly ask that the EIS address, and the RMP provide requirements to minimize, the noise created by oil and gas development activities, especially the noise problems from compressors and compressor stations. Noise occurring due to oil and gas exploration and well drilling should also be minimized. ORV noise should also be addressed.

Invasive Species, Noxious Weeds, and Management of Native Vegetation

We ask that BLM ensure the RMP provides for compliance with Executive Order 13112, which established requirements and procedures Federal agencies are to adhere to relative to invasive species. Section 2 of the Executive Order requires BLM to identify actions that may affect the status of invasive species and to then:

Use relevant programs and authorities to: (i) prevent the introduction of invasive species; (ii) detect and respond rapidly to and control populations of such species in a cost-effective and environmentally sound manner; (iii) monitor invasive species populations accurately and reliably; (iv) provide for restoration of native

species and habitat conditions in ecosystems that have been invaded; (v) conduct research on invasive species and develop technologies to prevent introduction and provide for environmentally sound control of invasive species; and (vi) promote public education on invasive species and the means to address them

Just as important, the Executive Order requires BLM to “not authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species in the United States or elsewhere unless, pursuant to guidelines that it has prescribed, the agency has determined and made public its determination that the benefits of such actions clearly outweigh the potential harm caused by invasive species; and that all feasible and prudent measures to minimize risk of harm will be taken in conjunction with the actions.” The EIS should fully analyze the extent of the invasive species problem in this area, the causes, and options for both restoration and prevention in the future.

We believe BLM should consider whether it is more effective and efficient, ecologically and economically, to simply avoid certain ground-distributing activities so as to ensure the requirements of the Executive Order are complied with. For example, not building certain roads or authorizing certain oil and gas drilling activities may be a very cost effective, as well as ecologically effective, means to prevent the spread of invasive species, and the RMP should establish guidance as to when avoidance of ground-disturbing activities is preferred and appropriate. Similarly, the effect of ground disturbance resulting from rangeland management actions, including grazing itself, on invasive species status should be fully considered, and again the RMP should establish standards as to when these activities may be inappropriate due to invasive species considerations.

The flip side of preventing invasive species from becoming established is protecting native plant species and communities, especially rare and special status species. The BLM should conduct surveys to determine the location and characteristics of native plant communities and rare or special status species. The survey results should be presented in the EIS, and the RMP should establish standards for protecting native plant communities and rare or special status species. BLM’s grazing regulations and the PRIA establish that native species and plant communities are to be given preference over non-native species and communities (whether invasive or intentionally created), so the RMP should establish standards to ensure these requirements are met. To prevent invasive species dominance, and to favor native species and plant communities over non-natives, we make the following specific requests:

- The RMP must insure that no cross-country vehicular (motorized and bicycle) travel is allowed in known habitat or locations of sensitive plant species.
- The RMP must not allow surface disturbing activities in threatened, endangered or sensitive plant species habitat.
- The RMP must target areas with threatened, endangered, or sensitive plants for noxious weed control activities as a first priority.
- The RMP must exclude areas with threatened, endangered, or sensitive plants from fuelwood cutting areas.
- BLM must review grazing allotments and address the protection of areas with threatened, endangered, or sensitive plants species.

- The RMP must not permit communication sites, oil and gas drilling pads, utility rights-of-way, and road rights-of-way in known areas with special status species populations.
- BLM must augment law enforcement personnel and field staff, and instruct them to concentrate efforts in areas with special status species habitat in order to curb noncompliance activities and protect sensitive species from irreversible impacts.
- The RMP must not allow reseeding or surface-disturbing restoration after fires in areas with special status plant species, as the natural diversity and vegetation structure must be allowed to provide regeneration.
- BLM must survey the planning area to document all “relict” or undisturbed plant communities—areas that have persisted despite the warming and drying of the interior west over the last several thousand years, or have not been influenced by settlement and post-settlement activities (livestock grazing, roads, energy development). These are unique areas that can be used as a baseline for gauging impacts occurring elsewhere in the planning area. The RMP should provide that relict and undisturbed plant communities must be managed for their protection; no activities that could negatively affect these communities should be allowed.
- Protection of riparian plant communities should receive special attention in the RMP (see section on riparian habitat management, below), and native cottonwood and willow communities along riparian areas should be targeted for protection and reestablishment where they have been eliminated or degraded.

There are a variety of vegetation restoration methods that can be used to restore and promote a natural range of native plant communities in the planning area. BLM must prohibit methods and projects that do not achieve the objective of restoring and promoting a natural range of native plant communities. Consequently, we believe BLM should establish the following standards in the RMP:

- Chaining, roller-chopping, or similar methods of vegetation manipulation must be prohibited due to the widespread disturbance they cause.
- Livestock must be excluded from a restoration/revegetation site for enough time to document that the restoration is successful.
- Although control of noxious weed species is a priority, chemical treatments of noxious weed species should be used only if damage to other resources in the area is significant, imminent and certain, and if damage to other resources (e.g., the damage to native species) is determined to be of less significance than the noxious weed problem. Other means of noxious weed control should be given first priority.
- BLM must prioritize areas for which fire could improve the vegetation communities and then allow natural fires to burn in these areas (see section on fire policy, below).
- BLM must establish monitoring plots to determine the effectiveness of the treatments used for invasive plant control *and* to provide baseline data of overall change in conditions.
- Fuelwood harvesting must be carefully regulated, and should be concentrated in areas that have already been disturbed.

Wilderness, Wilderness Study Areas, and the National Landscape Conservation System

The EIS must address protection of existing wilderness study areas (WSA's) and any designated wildernesses in the RMP area. The provisions at 43 U.S.C. § 1782(c), 43 C.F.R. Part 6300, and BLM Handbook H-8550-1 (Interim Management Policy for Lands Under Wilderness Review), as well as the Wilderness Act itself, must be fully complied with. The RMP should establish standards to ensure that the wilderness qualities of existing wildernesses and WSA's are not impaired or degraded. For example, we believe oil and gas development activities in WSAs should be prohibited or regulated to the full extent permitted by law. Exploration leaves long-term marks on the landscape, which should be avoided to the extent possible. Oil and gas drilling activities also impair and degrade wilderness qualities and should be prohibited except under no surface occupancy stipulations. Ensuring nonimpairment is a nondiscretionary duty that BLM must meet. Southern Utah Wilderness Alliance v. Norton, 301 F.3d 1217 (10th Cir. 2002).

Likewise, we believe citizen-proposed wilderness areas should receive the same considerations and protections as WSAs so long as they comply with the Wilderness Handbook requirements relative to wilderness inventory areas (WIA's). Pursuant to BLM Handbook H-6310-1 (Wilderness Inventory and Study Procedures) and the FLPMA §201, 43 U.S.C. § 1711(a) (requiring the Secretary of Interior to "prepare and maintain on a continuing basis an inventory of all public lands and their resources and other values"), and FLPMA §202, 43 U.S.C. § 1712(a) (requiring the Secretary of Interior to "develop, maintain, and, when appropriate, revise land use plans which provide by tracts or areas for the use of the public lands"), BLM must consider supplemental and new information concerning WIAs that were previously considered for WSA status.⁹ Specifically, BLM Handbook H-6310-1.06.E provides that:¹⁰

In order for such requests from the public to be considered, they should be accompanied by (a) a map which identifies the specific boundaries of the area in question; (b) a detailed narrative that describes the wilderness characteristics of the area and documents how that information significantly differs from the information in prior inventories conducted by BLM regarding the wilderness values of the areas; and (c) photographic documentation.

BLM must ensure in the EIS that any supplemental or new information relative to WIA's previously inventoried for WSA status is fully and appropriately considered so that modifications and additions to WSAs can be made in the RMP. Activities that could impair wilderness qualities in citizen-proposed wilderness areas should not be permitted.

⁹See BLM Information Bulletin No. 2001-042 (Jan 12, 2001) ("Recently Issued Solicitor's Opinion Regarding Land Use Planning - Jack Morrow Hills Opinion") ("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.").

¹⁰It is also worth noting that where citizen-proposed wilderness areas have been introduced as legislation they are properly considered under BLM Handbook H-6310-1.06.D.

In addition to ensuring proper management of wilderness resources, the RMP should also provide for proper management of components of the National Landscape Conservation System (NLCS). These areas should be managed to ensure the values that led to their special management status are given first priority, and incompatible uses should not be allowed. Additionally, the RMP should identify and recommend potential additions to the NLCS. Likewise, the RMP should ensure BLM's Grasslands Initiatives,¹¹ as applicable, are fully implemented by adopting measurable objectives for their implementation.

Wild and Scenic Rivers

In formulating, analyzing, and making decisions regarding future management in the RMP area, the BLM must comply with the National Wild and Scenic Rivers Act of 1968. 16 U.S.C. §§ 1271-87. As Congress made clear, the purpose of the Act is to safeguard one of the Nation's most spectacular and critical resources—our rivers. To that end, the Act requires that rivers of the Nation which

possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values, *shall* be preserved in free-flowing condition, and that they and their immediate environments *shall* be protected for the benefit and enjoyment of present and future generations.

16 U.S.C. § 1271 (emphasis added).

In fulfilling the requirements of this statute, the BLM should consider that rivers and streams in the RMP area are of tremendous importance to the wildlife and fish, and the beauty and recreational appeal of the area. Water is the lifeblood of the arid west, and a priceless resource. Unless the BLM is willing to protect these vital corridors, its efforts to preserve ecosystem integrity, conserve wildlife and fish, and manage the public lands in the best interests of the American people, may be for naught.

Recognizing the importance of rivers to every aspect of public land values, the Wild and Scenic Rivers Act requires the BLM, as part of its land use planning duties, to consider whether the rivers under its jurisdiction qualify for inclusion in the Wild and Scenic Rivers System. 16 U.S.C. § 1276(d); BLM Manual MS-8351 (Wild and Scenic Rivers Policy). To do this, the agency must first make a determination of which river segments are "eligible" for inclusion in the system. The agency must consider all stream segments under its jurisdiction and must recognize that all free-flowing rivers and streams with outstandingly remarkable values are eligible for Wild and Scenic River designation.

Second, the BLM must determine which of the eligible segments are "suitable" for designation as Wild and Scenic Rivers. In this phase, BLM evaluates rivers eligible for inclusion in the system in terms of conflicting uses. Conflicting uses must be real and reasonably foreseeable, not theoretical or unsubstantiated. The BLM's suitability determinations must

¹¹Great Basin Restoration Initiative, Sagebrush Ecosystem Conservation Initiative, and Prairie Conservation Initiative.

reflect that the law favors inclusion of eligible rivers in the Wild and Scenic Rivers System, as opposed to exclusion.

As BLM practice makes clear, when the agency deems a river eligible for status as a Wild and Scenic River, it must manage the river to preserve its outstandingly remarkable qualities until the agency can address its suitability. In turn, once the agency determines a river is suitable, the agency must take all management steps necessary to protect the river so that Congress may have a meaningful opportunity to include the river in the Wild and Scenic Rivers System. To do otherwise would run counter to agency policy, undermine the Act, and disregard FLPMA's requirement that the BLM protect resources valuable to the American people, such as rivers that are eligible or suitable for Wild and Scenic River designation, for the benefit of future generations and without undue degradation of these resources. 43 U.S.C. § 1702(c); 43 U.S.C. § 1732(b). Additionally, BLM must reconsider rivers that have previously been inventoried to determine whether they may now possess the qualities required for designation as a Wild or Scenic River—just as wilderness inventories require on-going updates and modifications, so do Wild and Scenic Rivers inventories.

Locatable Minerals

The location of a mining claim alone does not give rise to a vested property right. Instead, a mining claim only creates a vested property right if there has been a discovery of a valuable mineral; until that condition has been demonstrated, no rights exist. In determining whether such a discovery has been made, the BLM must take into account the cost of the recovery of the mineral and the costs associated with compliance with all State and Federal laws and regulatory requirements, including those intended to protect the environment. Unless a claimant can prove that it can recover the mineral at a profit, the BLM has no choice but to reject a claimant's mining plan of operations. The BLM has the authority to contest mining claims on these grounds "when such action is deemed to be in the public interest." Of determinative importance in defining the "public interest" is the requirement that BLM "shall" take actions to prevent unnecessary or undue degradation of the public lands, and this provision has special force and effect relative to "hard rock" mining. 43 U.S.C. § 1732(b). The RMP must include binding provisions that reflect these requirements.

The BLM should consider withdrawal of special places from mineral entry. Often mineral claims have a low potential for economically recoverable mineral deposits, there can be severe impacts due to the scale of modern mining activities, and the public interest of protecting more valuable resources (including wildlife habitat, water, recreation, wilderness, etc) can outweigh the mineral values. Special places that should be considered for withdrawal include, but are not limited to, lands proposed for wilderness designation, important wildlife habitat, water sources, and unique geologic formations.

Visual Resource Management

It is BLM policy that visual resource management (VRM) classes are assigned to all public lands as part of the Record of Decision for RMPs. The objective of this policy is to "manage public lands in a manner which will protect the quality of the scenic (visual) values of

these lands." BLM Manual MS-8400.02. Under the authority of FLPMA, the BLM must prepare and maintain on a continuing basis an inventory of visual values for each RMP effort. 43 U.S.C. § 1701; BLM Manual MS-8400.06. In addition, NEPA requires that measures be taken to "... assure for all Americans . . . aesthetically pleasing surroundings." Once established, VRM objectives are as binding as any other resource objectives, and no action may be taken unless the VRM objectives can be met. See IBLA 98-144, 98-168, 98-207 (1998). The RMP must make clear that compliance with VRM classes is not discretionary.

In order to comply with the laws and regulations, the visual qualities of all lands within the RMP area must be inventoried, and VRM classifications for such lands must be analyzed in the EIS. We submit that all areas proposed for wilderness designation, whether citizen-proposed or otherwise, must be designated as VRM I "to preserve the existing character of the landscape." This would also be true for any visual ACECs identified during the RMP revision process. Visual sensitivity within these areas is very high; the visual quality of these areas is of deep concern to thousands of individuals and local and national organizations; and any action that would impact visual resources within these areas would be extremely controversial and typically unnecessary or undue.

Oil and gas development severely degrades the visual quality of an area. We submit that all areas not currently being developed for oil and gas production should be classified as at least VRM II, in order to "retain the existing character of the landscape." The fact that development has occurred in the past, however, should not limit VRM classifications. Indeed, BLM objectives for visual resource classes contemplate rehabilitating such areas in order to meet the VRM class determined through the RMP revision process. In addition, it must be noted that other management actions must reflect VRM classifications. For example, oil and gas leasing may need to be prohibited or no surface occupancy may be required so as to comply with the VRM class.

Cultural and Paleontological Resources

Most if not all historical, archeological, and paleontological resources (hereinafter, "cultural resources") are strictly non-renewable: once marred or destroyed, they are forever lost to future generations. Such fragility demands utmost care and humility from BLM managers and planners. The RMP should reflect—and require—this conservative approach to managing these priceless and irreplaceable resources.

BLM's multiple-use mandate requires land managers to consider the value of cultural resources in their decision-making process. Unfortunately, these resources are frequently given short shrift in this calculus. Their value is not easily measured, and as a result they are sacrificed in pursuit of more obviously economically profitable resources. The RMP should ensure this problem is avoided.

RMPs are the principle guide for the BLM's management of cultural resources. See BLM Manual MS-8100.08.A.1.a. Therefore, BLM's preparation of the RMP EIS provides an excellent opportunity for the agency to address concerns about these resources and to implement policies that will protect and preserve cultural resources.

The BLM's management of cultural resources is governed and guided by a host of laws, orders, and regulations. These include, but are not limited to, the Antiquities Act of 1906, the National Historic Preservation Act (NHPA), Executive Order 11593, the Archaeological Resources Protection Act (ARPA), and the Native American Graves Protection and Repatriation Act (NAGPRA). BLM's decisions regarding cultural resource management are also governed by the FLPMA and NEPA. The BLM must adhere to these and other laws when preparing and implementing the RMP, and must provide evidence of cultural resource consideration as part of the EIS prepared as part of the RMP revision process. See BLM Manual MS-8100.08.A.1.b.(3).

As noted above, the BLM's multiple-use mandate requires managers to balance resource use and resource preservation. BLM Manual MS-8100.08.A.1.b.(2) states that land use plans should take into account the effects other land and resource uses may have on cultural resources. The manual notes that the need for additional information should be evaluated, responsibilities assigned, and schedules established at the outset of the planning process. See BLM Manual MS-8100.08.A.1.b.(2). In other words, not only must the BLM examine the effects of other land and resource uses on cultural resources, it must evaluate whether or not it possesses sufficient information to assess these potential resource conflicts. If the agency lacks enough information to make informed decisions, it must collect data according to a plan and schedule established at the outset of the planning process. The BLM should clearly spell out the process the agency will follow in order to comply with the procedures outlined by BLM Manual MS-8100.08.A.1.b.(2).

Of particular concern in the planning process is the preparation and maintenance of cultural resource inventories. FLPMA requires the Secretary of the Interior to "prepare and maintain on a continuing basis an inventory of all public lands and their resources and other values." 43 U.S.C. §1711(a). Surveys for cultural resources are also mandated by ARPA. See 16 U.S.C. 470ii (requiring the Secretary of the Interior to develop plans for surveying lands to determine the nature and extent of archaeological resources and to prepare a schedule for surveying lands that are likely to contain the most valuable archaeological resources); Executive Order 11593, Protection and Enhancement of the Cultural Environment (requiring federal agencies to nominate to the Secretary of the Interior all sites that appear to qualify for listing on the National Register of Historic Places). Further, the NHPA mandates that the BLM establish a preservation program to identify, evaluate, and protect historic properties, and to nominate qualifying properties to the National Register of Historic Places. See 16 U.S.C. § 470h-2.

The RMP must ensure these legal mandates are fully complied with. The required inventories and programs can—and should—serve to identify areas of resource sensitivity and should be used proactively by the BLM in its planning and management in order to avoid resource conflicts.

Another concern is consultation with Native American tribes during the planning process. BLM is required to consult with tribes under FLPMA, NEPA, American Indian Religious Freedom Act, NAGPRA, and Executive Order 13007, in order to learn of tribal concerns and places of traditional religious or cultural importance to the tribe within the planning area. BLM

Manual MS-8120.51.A describes consultation requirements during land use planning. See also BLM Handbook H-8160-1 (Procedural Guidance for Native American Consultation); BLM Manual MS-8160 (Native American Consultation). The BLM must specifically request the views of tribal officials, and must solicit the views of traditional leaders or religious leaders. BLM must be diligent in its pursuit of this information.

BLM Manual MS-8120.32.A makes clear that the BLM can prevent unauthorized use of cultural properties through a variety of measures, including administrative protection measures. The manual specifically notes that the BLM's protective measures may include "withdrawal, closure to public access and off-road vehicles, special designations," etc. See BLM Manual MS-8120.32.A. The EIS should identify areas where cultural sites are at risk, and the RMP should employ one or more of these administrative measures to protect these resources. The areas designated should be of sufficient size to allow viable protection of the resources; designation of just the site itself may not allow for effective management. More specifically, the BLM should consider closing culturally sensitive areas to mineral leasing and entry, grazing, and designating ACECs to protect fragile cultural resources. Also, the RMP should specify a travel plan for ORVs that limits vehicle travel to routes that do not pass near culturally sensitive areas. All ORV routes designated in the RMP should be surveyed for cultural resources to ensure the protection of those resources. Finally, the EIS should address the impacts of oil and gas exploration and development activities on cultural resources, with particular attention being given to the effects of the use of explosives or "vibroesis" vehicles during exploration activities. The RMP should make provisions that ensure these activities will not destroy or alter cultural resources.

Recreation Management

The recreation resource on public lands is becoming increasingly valuable: more people want to recreate on a finite amount of public land. Recreationists desire solitude, clean air, clean water, vast undeveloped landscapes, and a place to witness healthy natural systems thriving with native plants and wildlife. The RMP should accommodate those desires.

In order to ensure the continued viability of these desired experiences, the BLM must manage public lands under a "recreation opportunity spectrum," or ROS. Increasing recreation pressure dictates the need to include more lands within ROS classes that protect the land's undeveloped, wild character, i.e. primitive and semi-primitive non-motorized recreation classes. These designations allow for multiple activities of the sorts most desired by the public: camping, picnicking, hiking, climbing, enjoying scenery, wildlife or natural features viewing, nature study, photography, spelunking, hunting (big game, small game, upland birds, waterfowl), ski touring and snowshoeing, swimming, fishing, canoeing, sailing, and non-motorized river running.

All lands within WSAs, BLM inventoried lands of wilderness character, proposed wilderness, and ACECs should be managed as ROS class primitive, while other spectacular and important lands in the RMP area, such as important wildlife habitat, should be managed as ROS semi-primitive non-motorized.

Socio-Economics

As noted above, consideration of oil and gas development potential in the RMP area must address potential oil and gas reserves/resources from the standpoint of economically recoverable resources and not just technically recoverable resources. The purpose of the RMP is to guide actual management actions for approximately 10 years; oil and gas extraction activities will be largely driven by real world economics, not by technical feasibility, which only sets a theoretical outer boundary to the actual level of development. It would, of course, be appropriate and useful for BLM to address economically recoverable oil and gas resources from the standpoint of "high" and "low" price scenarios.

Addressing oil and gas socio-economic issues from an economically recoverable perspective is appropriate in at least two specific regards. First, as noted above, this should be the basis for any decisions resulting from studies done pursuant to EPCA. Second, economic recoverability should guide BLM's development of the Reasonably Foreseeable Development Scenario (RFD) applicable to oil and gas development in the RMP area. Basing the RFD, and resulting forecasts (like job growth and revenues) and decisions on technically recoverable resources unrealistically inflates the likely level of oil and gas development and has little utility in the real world. As mentioned above, development of the oil and gas RFD on the basis of economically recoverable resources is also necessary for a proper analysis of connected, related, and cumulative actions and impacts, as required by NEPA.

Furthermore, we request that BLM consider addressing reasonably foreseeable development scenarios in a broader context than just oil and gas development. For example, non-economic expansion of demand for wilderness is "reasonably foreseeable" and is just as certainly "development" as expansion of oil and gas activities is. And, of course, there is a strong economic component to activities like wilderness use. We believe this approach is in accordance with the requirements of NEPA and FLPMA and BLM's Land Use Planning Handbook.

In considering oil and gas development potential in the RMP area, BLM should address the viability of recovering oil and gas from existing—proven—fields as opposed to creating new fields where the oil and gas potential is less known. In our view, it is appropriate from economic and environmental perspectives for BLM to favor development in existing fields and discourage it or prohibit it in undeveloped areas, especially in areas with other important resources. See 43 U.S.C. § 1732(b).

BLM should address the economics—as well as the technical feasibility—of requiring oil and gas companies to utilize directional drilling and other techniques that reduce the "footprint" of oil and gas development activities. Oil and gas companies have a vested interest in reducing short-term costs. In contrast, BLM has a duty to define what drilling techniques will be utilized on public lands (as well as when they will be used and where they will be used) on the basis of broader public interest considerations. See 43 U.S.C. §§ 1732(b); 1702(c) (multiple use to be based on relative values and "not necessarily [] the combination of uses that will give the greatest economic return or the greatest unit output").

Considerations of the contribution of the oil and gas industry to employment, income, and other economic measures must include a national, State, and regional perspective of the relative value of these activities. As mentioned, FLPMA requires BLM to manage the public lands to achieve what is "best" for the "American people," not just local economies. Moreover, these analyses must consider *not only* the present contribution of various sectors of the economy, but also trends that are apparent. The EIS should realistically address the socio-economic impacts of the boom and bust development cycle associated with oil and gas drilling and development.

Fire And Fire Policy

The EIS should address issues related to fires and fire policy. It is crucial that the RMP establish an ecologically based fire restoration program so that fire can play its natural, and necessary, role in the RMP area. With the necessary ecological role of fire defined as an underpinning, the RMP can then address more specific issues, and should:

- Provide that fire suppression efforts and related vegetation management efforts (like thinning) are focused on the "wildland urban interface." Remote areas where fire causes few if any problems and may in fact be an important component of ecological health should not be subject to mechanical vegetation management activities pursued to accomplish fire policy.
- Prohibit any mechanical treatments (e.g., thinning) of vegetation in wilderness areas or wilderness study areas.
- Prohibit road building as a means to accomplish any vegetation treatments in furtherance of the fire policy. If "non-permanent" roads are allowed, there should be stringent assurance they will in fact be temporary.
- Be consistent with the Western Governors Association's 10-year Comprehensive Wildfire Strategy prepared in 2001.
- Provide that funds for fire management should be used, in accordance with our recommendations on invasive and exotic species, to eradicate flammable invasive species such as cheatgrass. They should also be used to restore native species less likely to create fire problems, and for restoring seed banks of native species.
- Provide that riparian areas should be restored so that they can serve as natural firebreaks.

Any attempts in the RMP to "cut red tape", "improve the regulatory process", or prevent "needless delays", as called for in the *Healthy Forests Initiative*, must nevertheless fully comply with all applicable law, and in particular must not limit the ability of concerned citizens to participate in decisions related to fire management and policy. Rhetoric should not be the basis for fire policy and management. For example, if the BLM proposes to base fire suppression and/or related vegetation management activities or policies on purported delays due to administrative challenges or lawsuits, it should provide credible data from the RMP area in the EIS to support such a claim.

Additionally, the EIS should address underlying assumptions or conditions that influence fire policy in a thorough and scientifically credible manner. The full costs and benefits of fire

suppression and related vegetation management activities should be illuminated, particularly relative to other means of reducing fire hazards, such as allowing natural fires to burn or "prescribed" burning. Land exchanges and other similar methods for preventing encroachment of housing developments among otherwise remote BLM lands should be addressed. The relative importance of past fire suppression policy and drought in creating "unnatural" fuel accumulations and creating hazardous fire conditions should be thoroughly addressed and analyzed. Whether fuel accumulations are in fact "unnatural" should be fully explored.

Wildlife Resources And Management

The following concerns regarding wildlife touch on a number of issues. One common need, however, is the following. When considering impacts to wildlife, BLM must do more than consider just the area actually impacted by a given activity. The effects of oil and gas development, for example, are far broader and more pervasive than just the public land acreage converted to bare dirt for roads and oil pads. In this regard, the report "Fragmenting Our Lands, The Ecological Footprint From Oil And Gas Development" should be considered.¹² BLM must ensure its analyses of impacts to wildlife consider indirect, connected, related, long-term, and cumulative impacts in as quantitative, and scientifically supported, a manner as possible. BLM must also ensure that it fully complies with BLM Manual MS-6840 (Special Status Species Management).

Threatened and Endangered Species Management

Several relevant provisions of the ESA that must be considered in the EIS and complied with in the RMP were mentioned above in the context of ACECs. Of course, the Section 7 "duty to ensure" listed species are not jeopardized, the duty to ensure critical habitat is not destroyed or adversely modified, and the duty to proactively seek to conserve listed species, apply to all management actions. These requirements can be furthered if the RMP: (1) adopts strong provisions for the protection and conservation of listed species, and (2) adopts measurable objectives for upward population trends for all listed species present or likely to be present in the RMP area. For example, the RMP should comply with and seek to implement any recovery plans and/or biological opinions applicable to listed species in the planning area.

Additionally, there are two other areas of crucial importance relative to the Section 7 "duty to ensure" that BLM must abide by to protect threatened or endangered species. First is the need to engage in careful biological assessments (BA) or other ESA-related analyses to determine if listed species in the RMP area are likely to be adversely affected by the RMP, or by actions carried out under the RMP. It is critical that only credible and reputable scientists conduct BAs and other ESA-related analyses, and BLM must ensure that this is the case by establishing criteria for the quality of BAs and other ESA-related analyses—whether prepared by/for BLM or by/for an applicant—in the RMP. BLM should monitor and enforce these requirements. This is consistent with the requirement to use the best available science established by the ESA. See, also, BLM Manual MS-1601-1 at Appendix G pages 5,13-16; BLM Manual MS-6840.2.E.2-5. Additionally, BLM sometimes has totally merged BAs with accompanying EISs, making ESA compliance totally indistinguishable from NEPA compliance.

¹² See footnote 1 for full citation.

In our view this is inappropriate because the substantive requirements of the ESA (imposing mandatory duty to conserve listed species) cannot be met by totally merging them with the procedural requirements of NEPA (requiring analysis and disclosure of environmental impacts). The RMP should prohibit this approach and certainly it should not be utilized in the RMP EIS itself.

Second is the need to engage in consultation with the Fish and Wildlife Service and/or the National Marine Fisheries Service (collectively, "the Services") relative to any listed species that occur in RMP area that may be adversely affected by the RMP or by actions authorized by the RMP or contemplated in the RMP. We believe that consultation regarding the RMP is required and should be initiated or reinitiated relative to all listed or proposed species and their critical habitat in the RMP area so as to ensure that the activities authorized or contemplated in the RMP do not jeopardize listed species or result in the destruction or adverse modification of critical habitat. Consultation should be completed and any biological opinion(s) issued by the Services adopted by BLM and made a binding part of the RMP (and activities occurring under it) prior to approval of the RMP. The RMP should establish criteria to ensure that the regulatory requirements for reinitiating consultation are complied with at the earliest possible time so as to ensure species are not jeopardized. See 50 C.F.R. § 402.16 (establishing reinitiation criteria). Moreover, the prohibition on foreclosing reasonable and prudent alternatives, as provided for in section 7(d) of the ESA, must be enforced by the RMP. These recommendations are consistent with BLM's Land Use Planning Handbook and its Special Status Species Manual. See BLM Handbook H-1601-1 at Appendix C Page 5-7; Id. at Appendix G; BLM Manual MS-6840.2.E.

In the context of oil and gas leasing, "incremental step" consultation is of particular concern, and the EIS must address this issue. See 50 C.F.R. § 402.14(k); Endangered Species Consultation Handbook at 5-7.¹³ In our view, the decision in Conner v. Burford, 848 F.2d 1441 (9th Cir. 1988) should control all consultation in the context of oil and gas development. We recognize without approving, however, that BLM will likely reject this proposition outside of the Ninth Circuit. Nevertheless, we ask that BLM consider the rationale (if not the holding) expressed in Conner so that listed species receive the maximum amount of protection possible. To that end, BLM must assist the Fish and Wildlife Service in conducting the most fully informed consultation possible, including assisting it to develop "views on the entire action." See 50 C.F.R. § 402.14(k). BLM must fulfill its "continuing obligation to obtain sufficient data upon which to base the final biological opinion on the entire action." Id. (emphasis added). BLM must assist the Fish and Wildlife Service in developing a fully informed understanding of the effects of the entire action, even if incremental step consultation is used. Id. The RMP should confirm and reinforce these duties and requirements. Section 7(a) (1) of the ESA requires this.

BLM's planning handbook requires that a result of consultation/conferencing and the planning process itself must be the establishment of "conservation elements" that are presented in the RMP. See BLM Handbook H-1601-1 at Appendix G page 5. It is imperative that these elements take account of all critical life stages (e.g., juveniles vs. adults) and ecological needs (e.g., breeding, feeding, shelter and cover) for all proposed and listed species, including ensuring protection of important habitat for these species.

¹³ U.S. Fish and Wildlife Service, March 1998.

ESA Candidate and BLM Sensitive Species

BLM must ensure full compliance with BLM Manual MS-6840.06.E (Special Status Species Management). BLM Manual MS-6840.06.E requires that “protection provided by the policy for candidate species shall be used as the minimum level of protection for BLM sensitive species”—that is:

Consistent with existing laws, the BLM shall implement management plans that conserve candidate species and their habitats and shall ensure that actions authorized, funded, or carried out by the BLM do not contribute to the need for the species to become listed.

BLM Manual MS-6840.06.C & .06.E. See BLM Manual MS-6840.06.C (1&3) (discussing BLM’s responsibility to confer with U.S. Fish & Wildlife Service regarding individual species’ needs). BLM Manual MS-6840.06.C.2 imposes a series of additional substantive obligations on the BLM regarding candidate [and therefore sensitive] species management:

2. For candidate species [and sensitive species] where lands administered by the BLM or BLM authorized actions have a significant effect on their status, [the BLM shall] manage the habitat to conserve the species by:
 - a. Ensuring candidate [and BLM sensitive species] are appropriately considered in land use plans (BLM 1610 Planning Manual and Handbook, Appendix C).
 - b. Developing, cooperating with, and implementing range-wide or site-specific management plans, conservation strategies and assessments for candidate [and sensitive] species that include specific habitat and population management objectives designed for conservation, as well as management strategies necessary to meet those objectives.
 - c. Ensuring that BLM activities affecting the habitat of candidate [and sensitive] species are carried out in a manner that is consistent with the objectives for managing those species.
 - d. Monitoring populations and habitats of candidate [and sensitive] species to determine whether management objectives are being met.

Additionally, BLM must ensure compliance with BLM Manual MS-6840.22. Provisions here require BLM to take a broad and proactive approach to special status species management, and in the context of planning require that, “Land use plans shall

be sufficiently detailed to identify and resolve significant land use conflicts with special status species without deferring conflict resolution to implementation-level planning."

Game Species, Raptors, and Sage Grouse

The State fish and game agency collects and analyzes a wide range of information related to game species. The BLM should fully utilize this information as it develops the RMP. In particular, this information should be utilized to help determine stipulations, conditions of approval, and other protections for game species (and other species) that apply to fluid mineral and other mineral development activities. Relative to big game, we urge the BLM to protect more than "critical" big game winter ranges. This approach is biologically and ecologically unsupportable and results in unnecessarily and unduly restricted protections. We therefore request that protective measures (stipulations, etc.) be considered not just for "critical" winter ranges, but also for all winter range areas, particularly relative to oil and gas extraction activities. To the extent BLM excludes "general" winter range areas from the application of protective measures, it should provide a biologically defensible rationale for such a decision

Raptors also often receive protective stipulations and other protective measures, particularly in the context of oil and gas development activities. The EIS should examine existing stipulations and protections to determine their effectiveness and to determine whether they should be modified so as to protect these magnificent birds. Too often raptor stipulations only apply to occupied nests. Again, however, this is an inappropriately restricted approach from a biological and ecological perspective. The EIS should examine whether habitat that could potentially be occupied by raptors, such as previously utilized nests, should receive protection so as to ensure the continued viability of raptors in the RMP area. It should consider all biological needs of raptors and develop suitable protections for all significant life-stages of the various raptors, all of which should be included in the RMP. Additionally, the EIS should address compliance with the Bald Eagle Protection Act and Migratory Bird Treaty Act and the RMP should specify the means by which BLM will ensure compliance with these laws as well as pursue (or facilitate) enforcement of them.

The sage grouse too often receives special protective measures, particularly in the context of oil and gas development activities. Typical stipulations limit oil and gas development activities when sage grouse are utilizing known leks. BLM should reexamine whether these types of stipulations are sufficient, standing alone, to protect the viability of sage grouse populations. It is axiomatic that wildlife require all environmental features (food, cover, shelter) necessary to support all life-stages. Focusing exclusively on one element of a species' ecological needs not only might fail to protect the species, it might also blind BLM to other critical factors affecting the species. For example, it is well known that sage grouse chicks need access to wet meadow areas so they can find high-protein insects to support early growth. Dense stands of sagebrush are critical winter habitat. It is also well known that the sage grouse may qualify for listing as a threatened or endangered species, so BLM has heightened obligations to protect the species. Furthermore, the appropriate means to protect sage grouse is to not only focus management efforts (and protective measures) on particular habitat needs (e.g., protecting leks), but also to ensure sagebrush habitats, an increasingly imperiled ecosystem, are protected. The

same, of course, is true for many other species, including such sagebrush obligate species as Brewer's sparrow, sage sparrow's, and sage thrashers; and of course the same is true for species dependent on other habitats and ecosystems.

Consideration of the above issues is necessary to prevent unnecessary or undue degradation of wildlife on the public lands. Additionally, the protections discussed above involve "timing limitations" during actual exploration or drilling for oil and gas. The EIS should consider whether other types of stipulations are needed (including no surface occupancy), and also whether stipulations and protections are required for ongoing operations so as to effectively protect wildlife. If additional, needed protections are identified, they should be adopted in the RMP. The need to not grant exemptions and exceptions to stipulations on oil and gas leases was discussed above in the section on oil and gas activities at the APD stage

In addition to data available from the State game and fish agency, we also want to draw BLM's attention to the National Wetland Inventory, GAP analyses, State Natural Heritage Program databases, and various bird surveys (e.g., Christmas bird counts, breeding bird surveys, etc.). There are many other similar sources of data. BLM should seek out and fully utilize these data in the RMP revision so that it can adequately manage and protect the priceless wildlife resources in the RMP area.

Wildlife Diversity Must Be Ensured

BLM has a duty to protect the diversity of all native wildlife on public lands by providing for ecosystem-based management. The FLPMA requires public land management to protect ecological and other values, and also requires that they be managed for multiple use and sustained yield. 43 U.S.C. §§ 1701(a)(7)-(8). The NEPA requires BLM to fulfill its trustee obligation for future generations, assure productive surroundings, avoid environmental degradation, preserve important natural aspects of our national heritage, and enhance the quality of renewable resources. 42 U.S.C. §§ 4331(b)(1)-(6). The CWA established the objective of restoring and maintaining the chemical, physical, and biological integrity of the Nation's waters, which of course includes the RMP area. 33 U.S.C. § 1251. The ESA establishes the purpose of conserving the ecosystems upon which threatened and endangered species depend on. 16 U.S.C. § 1531(b). BLM's livestock grazing standards and guidelines establish standards of ecological health applicable not only to livestock grazing, but to resource management generally. See 43 C.F.R. subpt. 4180. The Clean Water Action Plan establishes the need to manage public lands on a watershed—that is, ecosystem—basis. Read together, these and other legal standards establish that BLM must ensure the ecosystems it manages are fully protected so as to enhance biological diversity.

With this in mind, we ask that the RMP provide for the following steps to ensure that wildlife diversity is protected. As requested above, all riparian areas should be designated ACECs and given special management. It is widely recognized that (1) riparian areas in the west are crucial centers of biological diversity and (2) most BLM riparian areas are in unhealthy condition. Consequently, special management provisions for these areas must be made in the RMP. Riparian area management is discussed in more detail below. The RMP must also ensure that other special habitats are protected and enhanced. As noted, all wildlife requires adequate

habitat for feeding, reproducing, and hiding or resting (sheltering), and the plan must ensure that such is provided for all species at all critical life stages. Wintering areas, colonial or other concentrated avian nesting areas, spawning beds, and traditional birthing areas are examples of the special habitats the RMP should provide for and protect.

In addition to protecting special habitats, the plan must provide for protecting certain species to ensure that biological diversity is protected. Certainly species listed pursuant to the ESA and BLM and/or State sensitive species must receive species-specific attention, but other species should receive special emphasis as well. The plan should identify and provide for the protection of "keystone" species, which can be literally key to preventing undesirable, cascading ecological effects, such as widespread extinctions. Prairie dogs are an example of a keystone species that demand special management efforts. The status of carnivores is often indicative of the overall environmental health of an area, and thus they warrant special management prescriptions, and in any event there is widespread public demand and support for protecting these magnificent creatures. It is also important to note that there are keystone resources that are critical for protecting a host of species. Springs or other water holes, deep pools in streams, and salt or mineral licks are examples. BLM should ensure that the RMP makes special provision for protecting keystone resources.

The EIS must carefully evaluate problems resulting from habitat fragmentation and the need for maintaining the connectivity or linkage of habitats. Habitat fragmentation is strongly associated with the road building that accompanies most, if not all, traditional management activities. By altering the physical environment, roads and highways modify animal behavior. Many species shift home ranges, change movement patterns and even reproductive and feeding behaviors to avoid roads. Perhaps the most pervasive, yet insidious, impact of roads is providing access to natural areas and encouraging further development. Additional information on the impacts of roads on wildlife can be found at <http://www.defenders.org/habitat/highways/new/ecology.html>, which we incorporate into these comments by this reference, and ask BLM to consider. Based on the information from this and other sources, it is apparent that the RMP must limit habitat fragmentation resulting from road building, protect current roadless areas, provide for aggressively closing unneeded or ecologically destructive roads, and provide for maintaining needed roads so as to reduce negative environmental impacts. The RMP must also limit habitat fragmentation resulting from other activities, such as the construction of well pads.

More generally, the BLM should consider the principles of island biogeography so as to ensure that fragmentation does not degrade existing wildlife habitats. That is, it must insure that small islands of habitat are not created by management activities such as logging, chaining, or oil and gas development. The RMP should ensure both that the total areas of important habitats are maintained and that these habitats are not further fragmented. Creating habitat fragments impedes dispersal, colonization, and foraging. Moreover, fragmented habitats can have altered environmental conditions and allow for intrusions of pests (weed invasions and cowbird nest parasitism are classical examples). We specifically requests that BLM limit any further fragmentation of sagebrush communities, which are critical to many species on many BLM lands, and which is an increasingly imperiled ecosystem.

The flip side of habitat fragmentation is maintaining migration corridors and other ecological linkages. The conservation biology literature indicates it is probably more effective to preserve existing corridors/linkages than to attempt to create new ones. It is crucial the EIS identify all existing migration and other movement corridors. The RMP must ensure that management actions authorized by the RMP protect the ecological integrity of these corridors and linkages. Big game migration routes have been widely documented, but riparian areas, mountain ranges and ridges, and other areas serve as important linkages among habitats (and even eco-regions) that must be preserved. Ensuring that corridors remain as wide as possible is the best way to ensure that they are in fact effective.

The principles of island biogeography should also guide BLM in creating protected areas. Here, an obvious application is the creation of ACECs. Modern conservation biology has firmly established that larger protected areas are of greater value, and are more effective, than smaller areas for maintaining the ecological integrity of a protected area. Consequently, when BLM designates ACECs, or other areas, to protect wildlife, it should ensure they are large enough to protect the species, habitat, or ecological attributes for which the ACEC is created.

We also request that BLM consider and enunciate in the RMP a policy relative to habitat "edge." Increasing edge has been common in classical wildlife management because it was perceived as a means to increase biological diversity, or more particularly, as a means to benefit certain games species. Modern conservation biology, however, recognizes a number of problems associated with increasing the amount of edge, such as: modifying microclimates needed by some species, increasing impacts of wind in some communities, increasing the incidence of fire, and increasing predation and competition from exotic and pest species that are often well adapted to the disturbed conditions that characterize ecological edges. Furthermore, even if increasing edge increases overall biological diversity, it can be harmful to certain, usually rare and/or specialized, species. Similarly, increasing edge can be problematic for species that require large, undisturbed blocks of habitat, such as many predators. We believe it would be inappropriate to increase edge to the detriment of rare or highly specialized native species or species that need large contiguous habitats, and the RMP must ensure that this does not occur.

It may be impossible to fully protect biological diversity (and to effectively manage many other resources) without considering other landowners and landholdings within the RMP area. Therefore, we request that the EIS consider other landholdings relative to BLM's efforts to protect biological diversity. Land exchanges could be warranted in some circumstances, and if so the RMP should provide for initiating any needed legislative authority or other processes. The Land and Water Conservation Fund, as well as the new Land Conservation, Preservation and Infrastructure Improvement Fund, are two funds that might allow acquisition of important inholdings, or other lands, in fee simple or perhaps via other mechanisms such as conservation easements. The RMP should establish a program or at least guidance for how BLM will attempt to work with other landowners relative to biodiversity protection efforts, and make provision for accessing funding needed to implement those efforts.

It is critical to note that biological diversity encompasses far more than just species diversity. Genetic diversity and the diversity of biological communities are also components of biological diversity. Consequently, the RMP should make provisions for maintaining these

elements of diversity, although our reservations regarding increasing edge should be borne in mind relative to modifying community level diversity.

It is also critical to note that protecting biological diversity can only be dealt with appropriately at the planning level; it certainly cannot be dealt with appropriately or effectively at a project-specific level. The reason for that is readily apparent: fragmentation, connectivity and other factors affecting biological diversity are inherently landscape level considerations, not site specific. The project level is simply too small a scale to effectively consider what are inherently ecosystem level concerns and processes. The import of this is that the RMP should establish specific, binding limits on road densities and other disturbances that cannot be exceeded in the planning area. This is the only way to ensure biological diversity is preserved, and that ecosystem attributes are not "nickel and dimed" to death by individually small but cumulatively significant site-specific projects. The BLM should consider bio-regional plans developed by the Nature Conservancy in assessing broad-scale needs relative to biodiversity protection.

Part and parcel of planning for maintaining biological diversity via ecosystem-based management is a need to ensure that indirect and cumulative impacts of management actions are fully considered. As noted above, the NEPA regulations provide guidance in this regard. Cumulative impacts are the incremental impacts of actions, past, present and future, regardless of whom undertakes them. See 40 C.F.R. §1508.7. Indirect effects of an action are further removed from the action itself, but still are reasonably foreseeable. See 40 C.F.R. §1508.8. See also 40 C.F.R. §1508.25(c). It is worth noting that the ESA provides somewhat similar definitions for these concepts that are applicable to listed species. See 50 C.F.R. § 402.02 (defining actions, action areas, and effects of the action in very broad terms). The RMP EIS must take special care that these "second-order" impacts are fully considered and analyzed if BLM is to meet its legal mandate for ecosystem management and preserving biological diversity. Again, these considerations should not and cannot be left to the project level because the perspective at that point is too constrained to permit meaningful ecosystem level analysis.

Riparian Areas

The RMP area contains remarkable riparian areas that are vitally important to the ecological health of the region. Properly managing riparian areas is a critical component of managing for biological diversity and for meeting many other needs. Only about 1% of the lands managed by the BLM are wetlands, yet these are some of the most ecologically important landscapes under BLM jurisdiction. Consequently, and as discussed above, it is critical that the Clean Water Action Plan and Riparian-Wetlands Initiative be fully implemented by the RMP, and that riparian areas be afforded ACEC protection.

Riparian areas and wetlands provide rare oases of lush vegetation and water in an arid environment. As a result, they are rich in wildlife like birds, deer, elk, amphibians, fish, cougar, bobcat, and other species. They also improve water quality by filtering sediment and other pollutants, stem erosion, improve groundwater reserves, reduce the risk of flash flooding, and provide shelter for wildlife. They are also often home to important cultural sites. See BLM's Riparian-Wetlands Initiative for the 1990's (RWI) at 7-8; BLM Handbook H-1737.08-09.

Because of the critical importance of these areas, two Executive Orders require their protection. Executive Order 11988 (1977) requires federal agencies to avoid adverse impacts associated with the occupancy of floodplains. Executive Order 11990 (1977) requires federal agencies to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial value of wetlands. Further, all federally approved activities must include all practical measures to minimize adverse impacts to wetlands and riparian areas.

The BLM's policy is to "maintain, restore, or improve riparian-wetland ecosystems to achieve a healthy and proper functioning condition that assures biological diversity, productivity, and sustainability. . ." BLM Handbook H-1737.06. RMPs must "recognize the importance of riparian-wetland values, and initiate management to maintain restore, improve or expand them." Id. at 1737.06.B.4.

The cornerstone to effective protection of riparian areas is the completion of a comprehensive inventory of the riparian and wetlands resources within the bounds of the RMP area. These areas should be identified and their functioning condition should be evaluated. See RWI at 16 (noting need for inventories). "Improving the functioning condition of these areas is the focus of BLM's riparian-wetland restoration goal." RWI at 11.

Based on the critical importance of riparian areas, and the considerations set forth above, we urge the BLM to incorporate into the RMP specific, measurable riparian and wetland area protections. These include, among other things:

- Completion of "a broad inventory" of all riparian areas and an evaluation of their functioning condition pursuant to BLM Manual MS-1737.22 ("Inventories are usually conducted prior to preparation of . . . RMPs;" and "an RMP will generally require broad inventory"). This inventory should be done prior to preparation of the RMP EIS and should be presented in it.
- Specification of the steps that will be undertaken so that riparian areas that are not in properly functioning condition can be restored, and how the condition of areas that are in properly functioning condition will be maintained.
- *Exclusion of ORVs from riparian areas and wetlands except on designated routes;*
- Incorporation of riparian and wetland area protection with protection of the associated watersheds. BLM Manual MS-1737.32; Clean Water Action Plan.
- Assurance that livestock grazing standards and guidelines and *Fundamentals of Rangeland Health* are complied with, and that livestock grazing is excluded from riparian areas as needed;
- Development of an effective monitoring program that measures biodiversity and wildlife populations, soil erosion, vegetation health, the presence of non-native species, water quality and quantity, and the impacts of other uses such as grazing, ORVs, recreation uses, and other activities;
- A prohibition on oil and gas leasing and development in riparian areas, or a requirement for no surface occupancy stipulations. Analysis should be provided in the EIS of how mineral development and associated impacts such as waste pits, roads, pipelines and other uses will be regulated so as to avoid impacts to riparian areas and wetlands;

- A prohibition on the issuance of rights-of-way in riparian and wetlands areas, or in areas where such use would adversely impact riparian areas;
- Identification of lands for acquisition in riparian or wetlands areas that are ecologically, hydrologically or geologically linked to BLM wetlands and crucial to their functioning;
- Designation of riparian areas and wetlands as ACECs .

ELEMENTS OF THE RESOURCE MANAGEMENT PLAN STATEMENT OF DESIRED OUTCOMES AND ALTERNATIVES FOR CONSIDERATION IN THE ENVIRONMENTAL IMPACT STATEMENT

Statement of Desired Outcomes

As noted above, BLM's land use planning handbook requires BLM to provide a *statement of desired outcomes* in its land use planning process. BLM Handbook H-1601-1, II.2. Elements of a statement of desired outcomes for oil and gas extraction activities were discussed above. Here we present more general considerations that should guide the statement of desired outcomes. The various laws that collectively establish a requirement to engage in ecosystem management and ensure protection of biological diversity also establish elements of a statement of desired outcomes.

As required by the ESA, BLM should seek to conserve the ecosystems upon which endangered and threatened species depend on in the RMP area. As required by the Clean Water Act, BLM should seek to restore and maintain the chemical, physical, and biological integrity of all waters in the RMP area. Additionally, the plan should seek to eliminate the discharge of pollutants into waters in the RMP area, "provide for the protection and propagation of fish, shellfish, and wildlife," and provide for "recreation in and on the water[s]" in the RMP area. 33 U.S.C. § 1251(a)(1)-(2). The Clean Air Act declares a national purpose to "protect and enhance the quality of the nation's air resources so as to promote the public health and welfare . . ." 42 U.S.C. § 7401(b)(1). Pursuant to FLPMA, BLM should ensure that public lands in the RMP area are managed to protect the "quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values," as well as ensure compliance with the definitions of multiple use and sustained yield. 43 U.S.C. §§ 1701(a)(8), 1702(c) and (h). No unnecessary or undue degradation of the public lands can be allowed. 43 U.S.C. § 1732(b). BLM's Fundamentals of Rangeland Health and the grazing standards and guidelines are a blueprint for ecosystem-management-based goals that BLM should apply to all activities in the RMP area. See 43 C.F.R. Subpt. 4180. Likewise, the Clean Water Action Plan and Riparian-Wetlands Initiative establish goals for watershed planning that should be adopted in the RMP. The Wilderness Act should provide the desired outcome for all BLM roadless areas, namely they should be managed so that they remain "an area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain." 16 U.S.C. § 1131(c). Taken together, these laws define what BLM's statement of desired outcomes should be under the RMP, and the RMP should ensure such outcomes are implemented on the ground. The report "Conservation Management of America's Public Lands: An Assessment and Recommendations

for Progress 25 Years After FLPMA”¹⁴ provides further guidance on many of these elements and should be considered by BLM as it adopts a statement of desired outcomes for the RMP.

Alternatives

To ensure the above desired outcomes occur, BLM must develop alternatives in the EIS that explicitly incorporate the above legal obligations, and the preferred alternative certainly must meet these legal standards. Alternatives embodying these elements must not be treated as straw men whose only function is to provide “extremes” against which to contrast “moderate” alternatives because all of the elements (affirmative protection of endangered species, restoration of the ecological integrity of the Nation’s waters, etc.) are legally required and have been established as the desired outcome for the public lands by Congress. To the contrary, BLM must provide full, careful, and objective consideration of alternatives embodying these elements.

As noted above, under the CEQ regulations rigorous analysis of all reasonable alternatives is “the heart” of an EIS. Under the FLPMA, the chosen alternative must “best” meet the needs of the American people as a whole. The FLPMA makes it explicitly appropriate that not all uses be accommodated in all areas, and requires consideration of the relative values of resources, which cannot be defined in solely economic terms. The elements of an alternative outlined here are appropriate and reasonable under these standards, and thus should be fully considered in the EIS and adopted by BLM in the RMP.

Thank you for considering these comments and please contact me if you have any questions.

Sincerely,

Lloyd Dorsey, Wyoming Representative
Greater Yellowstone Coalition

Noah Matson
Director Public Lands Program
Defenders of Wildlife

Peter Aengst
Regional Associate
The Wilderness Society

Kathleen Zimmerman
Senior Land Stewardship Policy Specialist
National Wildlife Federation

Bruce Pendery
Director of Public Lands
Wyoming Outdoor Council

¹⁴ A White Paper by the National Wildlife Federation and the Natural Resources Defense Council, October 2001.

Location: KEMMERER

Date: 22 Nov 03

KSL-0035

Thank you for your input.

GIRLY.

- 1) PLEASE FOCUSING + ASSIST THE CITY OF KEMMERER IN PERMITTING SUITABLE GRAVEL EXTRACTION SITES.
 - 2) THE BLM SHOULD CONSIDER TRANSFER VIA THE R+PP PROCESS, OF ESCROWED LAND PARCELS TO EMULD LAKE. THE NATURAL ONE BEHAVIOR + WHO STATEMENTS FOR GREENSPACE USE
 - 3) IDENTIFY SUITABLE LOCATIONS FOR ALTERNATE ENERGY DEVELOPMENT, eg WIND POWER. THESE LANDS SHOULD BE MADE AVAILABLE FOR PRIVATE DEVELOPMENT. POSSIBLE ROUTES OF LINES FOR ELECTRIC + GAS TRANSMISSION SHOULD BE IDENTIFIED AND LISTED FOR PRIVATE + COOP DEVELOPMENT.
 - 4) BLM SHOULD PURSUE AN ACTIVE ENGAGEMENT ACQUISITION PROGRAM TO PROVIDE RECREATION TRAILS. HEAR COMMENTS. SNOW MOBILE, WALKING, BIKING + HORSE TRAILS ARE NEEDED
 - 5) GRAZING USE SHOULD BE REASSESSED AS A BUSINESS NOT A SPECIAL INTEREST POLITICAL GROUP. GRAZING SHOULD BE EVALUATED AGAINST WATER QUALITY, ENERGY DEVELOPMENT, RECREATION, PUBLIC ACCESS. THE TAYLOR GRAZING ACT IS OUTDATED AND WASTEFUL OF RESOURCES.
- **** CONTINUE ON BACK FOR MORE SPACE ****

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NAME:	<u>ROBERT A. GREENE</u>
ORGANIZATION:	<u>CITIZEN + KEMMERER CITY COUNCILMAN</u>
ADDRESS:	<u>1434 7th WEST AVE</u>
CITY/STATE/ZIP:	<u>KEMMERER WY 83101</u>

- Yes, include my name and address on the mailing list so I can receive information on the Kemmerer Planning Area RMP Revision.
- No, do not include my name and address on the mailing list.

Please hand this form in or MAIL (post-marked by November 26, 2003) to

BLM Kemmerer Field Office
 312 Highway 189 North
 Kemmerer, Wyoming 83101
 Attn: RMP Revision

RECEIVED
 BLM KEMMERER F.O.
 2003 NOV 28 PM 3:11



BLM Kemmerer Field Office Planning Area
Resource Management Plan (RMP) Revision Process



KSL-0036

Thank you for your input.

Date: 11/25/03

PLEASE PRINT LEGIBLY.

I would like to see the BLM get more long term tangible commitments from ranching and developers. In the past and present there are studies and basically donation commitments but then years later the companies change ownership or the lease is handled by someone new. Every time the same except for the development and impact.

I really do not think anyone needs any more more deer or related studies. I think this is obvious to almost everyone what they need.

I would like to see a policy that requires developers to develop an equal amount of land they use and set it aside as a wildlife sanctuary. For every acre of road or development they should be required to acquire and donate back 2 long term grazing rights and make improvements on an equal amount of land. If someone permanently impacts 600 total acres for example think they should be required to acquire the grazing rights, burn clear, reseed, and fence an equal amount of 600 acres for wildlife. I think the areas really need to be fenced or in a couple years the livestock just destroys any improvements.

*** CONTINUE ON BACK FOR MORE SPACE ***

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NAME:	MARK FRUECHTE
ORGANIZATION:	
ADDRESS:	240 Darby Lane
CITY/STATE/ZIP:	EVANSTON WY 82930

- Yes, include my name and address on the mailing list so I can receive information on the Kemmerer Planning Area RMP Revision.
- No, do not include my name and address on the mailing list.

Please hand this form in or MAIL (post-marked by November 26, 2003) to:

BLM-Kemmerer Field Office
312 Highway 189 North
Kemmerer, Wyoming 82401
Attn: RMP Revision



Resource Management Plan (RMP) Revision Process



KSL-0037

Date: 11/26/03

Thank you for your input.

PLEASE PRINT LEGIBLY.

I believe they are numerous issues that need to be addressed in this next RMP. I'm a native of Wyoming & have lived in this state my entire life & I am becoming more & more concerned about what is happening to our wildlife & beautiful landscapes. The oil & gas industry seems to be booming again & it really concerns me on how much more land they will soon allow up. I think it is good for Wyoming's economy now, but what about 30 yrs from now when the resource is finally depleted & the landscape completely decimated, where will they turn then to support this economy. I believe the reason why most people live here is because of the wildlife & uninhabited areas & everything else these areas have to offer. I think we should also be as focused on these things also to provide Wyoming as a long term economy. We have something very special here, this one of the last wild areas left & I'm tired of seeing the Bush administration think that because hardly any people live here they can get their way. This scenic land continues to be degraded every year as more & more oil & gas wells pop up. I know we can not stop the development all together but I believe there are some other things that should happen. They have the technology to drill

*** CONTINUE ON BACK FOR MORE SPACE ***

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NAME:	Rillip Krall
ORGANIZATION:	
ADDRESS:	1671 Nations Ave.
CITY/STATE/ZIP:	Kemmerer, WY 83101

- Yes, include my name and address on the mailing list so I can receive information on the Kemmerer Planning Area RMP Revision.
- No, do not include my name and address on the mailing list.

Please hand this form in or MAIL (post-marked by November 26, 2003) to:

BLM Kemmerer Field Office
 312 Highway 189 North
 Kemmerer, Wyoming 83101
 Attn: RMP Revisions

many wells from one location, I believe this could greatly reduce land being destroyed. I also feel they (oil & gas companies) should have to do some habitat mitigation projects. Whatever land they destroy they should have to do habitat improvements for the same amount of acreage in areas such as crucial winter range areas. The highway department has to do something when it comes to wetlands that they destroy, I don't believe this is any different. I think these areas should be fenced in to keep livestock out. I know this would be a difficult task maintaining these fences, but I think we could also look to the community to help with projects like these. I know I would be willing to donate my time to a worthy cause such as this. This kind of leads me to my second concern which is overgrazing. I see it every year after they bring the sheep back down to the deserts. We are exceeding the carrying capacity of these grazing allotments year in & year out. We are in the middle of a drought & the fact of the matter is the landscape can no longer support as many livestock & wildlife as it used to & the wildlife are the ones that have to suffer because of this. I don't understand how you guys can allow 5,000 sheep to graze through crucial winter ranges such as Nugget Canyon & have the livestock graze ever everything down to nothing and have the deer show up a month later & scratch & paw all winter starving to death, some dying & most barley making it. Is there not other areas that we can bring these livestock through? I will give you an example of watershed that has been overgrazed since I have been here. Slate Creek used to be beautiful brook trout fishery years ago, now it is a silted in stream where chub minnows are the prominent fish. This is happening everywhere just not at Slate Creek. Livestock numbers need to be reduced some to prevent this. The last thing I would like to comment about is ATV use off designated roads. I'm so tired of walking into an area & hearing a fourwheeler right behind me, where there is no road. A perfect example of this & one that I still plan on pursuing is where the fire was at the Commissary Ranches. Most of the land has been fenced off by landowners except one last road that is public. ATVs have built their own road through a riparian area that they are tearing all to hell & then accessing a road that was built to fight the fire & never existed in the first place to drive a mile into an area that never had a road & they also continued from the end of the road another 1/4 of mile through sagebrush openings. This road should have destroyed after the fire was put out. We need to have someone enforcing off road use. Let Chris Quinn or someone else enforce besides the guy for all of Lincoln County. I know you guys have a difficult job making everyone happy but I really believe some decisions need to be made that will protect the wildlife that has happened to us.

Frank Kraft



Kemmerer Field Office Planning Area
Resource Management Plan (RMP) Revision Process



KSL-0038

Thank you for your input.

Date: 11-26-03

PLEASE PRINT LEGIBLY.

I STRONGLY FEEL THAT THE BLM PROPERTIES ARE BEING SEVERLY OVERGRAZED. THE NATIVE GRASSES DO NOT HAVE A CHANCE TO RECOVER. WHEN WE ARE IN A DROUGHT SITUATION, THE BLM SHOULD HAVE THE RIGHT TO LOWER (ANIMAL NUMBER NUMBER OF ANIMALS) ALLOWED ON GRAZING ALLOTMENTS.

THIS WOULD IN TURN EFFECTIVELY HELP MANAGE WILDLIFE HABITAT AND MIGRATION CORRIDORS, VEGETATION, AND MANAGEMENT OF THREATENED, ENDANGERED SPECIES AND THEIR HABITATS.

I FEEL THAT ACCESS TO AND TRANSPORTATION, OFF ROAD VEHICLES SHOULD BE LOOKED AT. THIS ALSO AFFECTS WILDLIFE HABITAT

THANK YOU

Michael D Kohout

*** CONTINUE ON BACK FOR MORE SPACE ***

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NAME:	MICHAEL D KOHOUT
ORGANIZATION:	
ADDRESS:	421 EMERALD
CITY/STATE/ZIP:	KEMMERER, WYO. 83101

- Yes, include my name and address on the mailing list so I can receive information on the Kemmerer Planning Area RMP Revision.
- No, do not include my name and address on the mailing list.

Please hand this form in or MAIL (post-marked by November 26, 2003) to:

BLM Kemmerer Field Office
312 Highway 189 North
Kemmerer, Wyoming 83101
Attn: RMP Revision



KSL-0039

November 25, 2003

United States Department of the Interior
Bureau of Land Management
Kemmerer Field Office
312 Highway 189 North
Kemmerer, WY 83101

RECEIVED F.O.
BLM KEMMERER
2003 NOV 28 PM 3:13

Attn: Don Ogaard, RMP Project Manger

RE: Comments on Kemmerer RMP and EIS

Dear Mr. Ogaard:

In response to the published notice of intent to revise the Kemmerer Resource Management Plan, Solvay Minerals respectfully submits the following comments regarding resource issues.

Energy and mineral resource exploration and development, with potential establishment of special management areas:

There are several issues regarding the contemporaneous development of oil / gas and trona resources. Although this issue is currently under review, the protection of underground miners and the protection of the trona resources are of utmost importance. Actual tests conducted by the joint industry committee and modeling efforts support conclusions that despite current technology, development of deep gas in and around the trona mines carries significant risk to miners and is ill-advised. Additionally, Solvay Minerals understands that to date, drilling efforts in the southern portion of the Known Sodium Lease Area (KSLA) have been unsuccessful and likely indicate the absence of commercial gas resources in the area. While Solvay Minerals believes the safety of miners and protection of the sodium reserve is paramount, we also believe that deep drilling can take place outside the mechanically mineable trona area with relatively low risk providing that suitable buffer zones and drilling practices are adhered to. Solvay engineers also believe that shallow gas drilling (less than 3,000 feet) within the mechanically mineable trona area may be possible using appropriate drilling rules and arrangements with the trona operators. Solvay Minerals understands that the BLM is well aware of these issues and is currently evaluating alternatives.

Permit processing:

BLM plays an important role in protecting the cultural, fisheries, and wildlife resources in the Kemmerer Planning Area. Recent projects at Solvay Minerals that required lease authorization from BLM, including cultural and wildlife surveys, were addressed by BLM in a timely manner. Solvay Minerals appreciates the expeditious review and approval of projects by BLM.



November 25, 2003

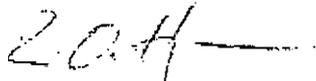
Page #2

KSL-0039

BLM relationship with mineral leasees:

The BLM is responsible for managing minerals on public lands. Solvay Minerals believes that the BLM maintains a good relationship with mineral leasees and is attentive to the needs of leasees while executing their primary responsibilities in the public trust.

Sincerely,



Ronald O. Hughes
Resident Manager
Solvay Minerals

cc: File

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BLM RENO/NEVADA F.O.
2003 NOV 28 PM 3:13



Written Comment Form
 Kemmerer Field Office Planning Area
 Resource Management Plan (RMP) Revision Process

828-4539



KSL-0040

Date: _____

Thank you for your input.

PLEASE PRINT LEGIBLY.

Wyoming's Public Land is Everyone's. Be we can not allow
 anyone to Build Roads, Well sight Down For Weeks &
 Put up fences For Roads to Run Like Stank!

In my Area we are over Grazing the land leaving
 no food on Winter Ranges

I Think We need to limit the Road building
 limit the Oil & Gas Companies & How Bad & Deep
 about For Weeks on Public Road only!

At this time there is a Band of Sheep out
 Between Kemmerer & Fossil, Why are they out
 this late in the year!

P.S. I Think Soling Down the Road By Round
 Mounds Was a Great Plus!

*** CONTINUE ON BACK FOR MORE SPACE ***

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NAME: <u>Dean Taylor</u>
ORGANIZATION:
ADDRESS:
CITY/STATE/ZIP:

- Yes, include my name and address on the mailing list so I can receive information on the Kemmerer Planning Area RMP Revision.
- No, do not include my name and address on the mailing list.

Please hand this form in or MAIL (post-marked by November 26, 2003) to:

BLM Kemmerer Field Office
 312 Highway 189 North
 Kemmerer, Wyoming 83101
 Attn: RMP Revision



Kemmerer Field Office Planning Area
Resource Management Plan (RMP) Revision Process



Location: Kemmerer

Date: 11-25-03

KSL-0041

Thank you for your input.

WITNESS MY HAND AND SEAL.

FIRST OF ALL I WISH TO WITHHOLD MY NAME & ADDRESS FROM PUBLIC REVIEW & FROM DISCLOSURE UNDER THE FREEDOM OF INFORMATION ACT, AS PAST EXPERIENCES HAVE CAUSED VISCIOUS ATTACKS FROM OPPOSING PARTIES.

I HAVE NOT HAD A CHANCE TO COMPLETELY READ THE RMP, BUT THERE ARE SEVERAL ISSUES THAT I WOULD LIKE TO COMMENT ON. ONE BEING "THE MULTIPLE USE CONCEPT" OF I FEEL IT IS BEING ABUSED TO THE UTMOST BY CERTAIN GROUPS. IT HAS COME TO MY ATTENTION THAT THERE ARE PUBLIC LANDS, SUCH AS THE LOWAH FIELD, UP BY PINOAK THAT HAVE BECOME OVERRUN BY INDUSTRY & NOW HAVE BECOME SO POLLUTED THAT CONSIDERATIONS ARE UNDERWAY TO CLOSE THIS LAND TO THE PUBLIC. THIS IS TOTALLY WRONG & SHOULD NOT BE TOLERATED! THIS LAND IS ONE OF THE LARGEST WINTER RANGES FOR WYOMING'S DEER POPULATION & A POPULAR RECREATION AREA FOR CROSS COUNTRY SKIERS, PHOTOGRAPHERS, SIGHT-SEER'S, SNOWMOBILERS & SUCH. I AM WORRIED ABOUT OUR RESOURCE AREA & THE IMPACT IT WILL HAVE ON RESIDENTS & WILDLIFE & ENVIRONMENT IN OUR RESOURCE AREA. MANY PEOPLE FROM ALL OVER THE U.S. USE OUR AREA FOR RECREATION OPPORTUNITIES. THIS HAS TO BE STOPPED AS MOST IF NOT ALL THE OIL & GAS IS SHIPPED FROM WYO. ANYWAY.

I ALSO WISH TO COMMENT ON GRAZING OF PUBLIC LANDS. I FEEL IT IS BEING ABUSED, ESPECIALLY DURING DROUGHT YEARS. I FEEL THE GRAZING PERIODS ARE MUCH TOO LONG & ABOVE

**** CONTINUE ON BACK FOR MORE SPACE ****

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NAME: _____
 ORGANIZATION: _____
 ADDRESS: _____
 CITY/STATE/ZIP: _____

- Yes, include my name and address on the mailing list so I can receive information on the Kemmerer Planning Area RMP Revision.
- No, do not include my name and address on the mailing list.

Please hand this form in or MAIL (post-marked by November 26, 2003) to:

BLM Kemmerer Field Office
 312 Highway 189 North
 Kemmerer, Wyoming 83101
 Attn: RMP Revision

BLM RECEIVED
 NOV 28 PM 3:15
 KEMMERER F.O.

SEEN MANY ABUSES OF THOSE PERIODS EXTENDING WELL INTO THE WINTER MONTHS. THE MONITORING OF THESE GRAZING PERIODS SEEMS TO BE NON-EXISTENT. NUMBERS OF ANIMALS & LENGTH OF PERIODS ARE NOT BEING MONITORED, I FEEL, LIKE THEY SHOULD. I FEEL NUMBERS & PERIODS SHOULD BE SMALLER & SHORTER RESPECTIVELY ESPECIALLY DURING PERIODS OF DROUGHT. IT SEEMS BLM & USFS HAVE STRONG CONCERNS ABOUT ORV'S DESTROYING CRUCIAL HABITAT. THERE ARE SOME ISOLATED CASES WHERE THAT OCCURS, BUT THERE ARE WIDESPREAD CASES OF TRAILS & PLOTS OF GROUND THAT ARE PULVERIZED BY SHEEP & CATTLE, ESPECIALLY AROUND WATERING AREAS, TIMBERED AREAS, SALT BLOCK AREAS. I SAW MORE SALT BLOCKS THIS PAST YEAR (2003) THAN EVER BEFORE. THESE ARE WILL TAKE GENERATIONS OF YEARS TO EVEN BECOME USEABLE HABITAT FOR WILDLIFE & OTHER SPECIES. WILDLIFE DEPENDS ON THIS HABITAT YEAR ROUND FOR CONSECUTIVE YEARS & LIVESTOCK USES IT PERIODICALLY. WILDLIFE MUST TAKE PRECEDENCE ON PUBLIC LANDS. BLM & OTHER GOV'T AGENCIES BENEFIT FROM GRAZING FEES & NO ONE ELSE DOES, OTHER THAN RANCHERS. EVERYBODY ELSE, SUCH AS BUSINESSES, RECREATIONISTS & THE STATE OF WYOMING BENEFITS FROM WILDLIFE! MONEYS GENERATED THROUGH HUNTING, SIGHTSEEN & OTHER RECREATION OPPORTUNITIES ON PROPERLY MANAGED PUBLIC LANDS BRING FAR MORE WEALTH TO MANY PEOPLE BESIDES AGENCIES & SELECT INDIVIDUALS & SHOULD BE ^{MANAGED} AS SUCH.

ANOTHER ISSUE I AM CONCERNED ABOUT & THAT IS THE USE OF "CONTROLLED BURNS". I FEEL THIS PROCESS IS ALSO BEING USED TO BENEFIT EVERYTHING BUT WILDLIFE. MOST OF THESE AREAS ARE BEING USED FOR ADDITIONAL GRAZING OPPORTUNITIES & NOT FOR WILDLIFE. I KNOW OF MANY BURNS IN CREEK BOTTOMS, TIMBERED AREAS, HILLSIDES & OTHER SAGEBRUSH AREAS THAT ARE BEING GRAZED WITHIN A YEAR & NEVER GET A CHANCE TO GET ESTABLISHED. WILDLIFE NEVER GETS THE CHANCE TO ESTABLISH AREAS OF HABITAT FOR THESE NEEDS. MOST PLANTS THAT DO COME BACK ARE GRASSES WHICH MAINLY BENEFIT LIVESTOCK & IT TAKES YEARS FOR ~~SHRUB~~ SHRUB COMMUNITIES TO EVEN COME BACK & MOST DO NOT. WILDLIFE NEEDS SHRUBS BOTH FOR COVER & FEED. THE BURNING PROCESS NEEDS TO BE RE-EVALUATED. IT IS A VALUABLE TOOL IF USED PROPERLY. AND SPEAKING OF CONTROLLING, I HAVE NOTICED THAT MORE & MORE OF THE RANGELAND IS BEING COVERED BY THISTLE & HAS CHOKED OUT OTHER USEFUL PLANTLIFE & FEEL THE RMP NEEDS TO ADDRESS THIS NOXIOUS PLANT. ONE OTHER AREA OF MAJOR CONCERN OF MINE IS THE DECLINE OF SAGE GROUSE & I FEEL THIS IS PARTIALLY THE FAULT OF MANAGEMENT OF PUBLIC LANDS FOR SPECIAL INTEREST, RATHER THAN THE FULL IMPLEMENTATION OF "MULTIPLE USE." I FEEL THAT PREDATORS ARE A PROBLEM BOTH FROM THE AIR & GROUND BUT SAGEGROUSE & THEIR YOUNG NEED LOW GROWING PLANTS TO SUSTAIN LIFE BOTH FROM THE STANDPOINT OF FOOD & COVER. I HAVE SEEN AREAS OF SAGE WHERE EVERYTHING ~~at~~ FROM THE GROUND TO 12" HIGH HAS BEEN EATEN & TRAMPLED. THE SURVIVAL OF YOUNG SAGEGROUSE DEPENDS ON THIS LOW GROWING FORAGE.

THE BOTTOM LINE IS RECREATION ON PUBLIC LANDS NEEDS TO TAKE

PRECEDENCE ON PUBLIC LANDS UNDER THE "MULTIPLE USE CONCEPT" AS IT PROVIDES 365 DAYS A YEAR USAGE & ITS ECONOMIC BENEFITS & ITS ENVIRONMENTAL BENEFITS FAR OUTWEIGH ALL OTHER USAGES. RECLAMATION OF FOSSIL MINING & OTHER MINING USAGES NEED STRICTER ENFORCEMENT, ALSO. ROADS TO OIL/GAS WELLS NEED TO BE MINIMIZED AS TO LENGTH & NUMBERS & RECLAMATION OF THOSE AREAS NEED TO BE RESTORED FOR THE WILDLIFE HABITAT THAT WAS DESTROYED DURING EXPLORATION & A GOOD EXAMPLE OF THIS IS THE DISASTER AREAS THAT SUPPLY EXXON & KEANS RIVER PIPELINE. ANTELOPE & OTHER SPECIES THAT WERE PLENTIFUL IN THESE AREAS HAVE ALL BUT DISAPPEARED DUE TO THOUSANDS OF ROADS & WELLS THAT HAVE DESTROYED THEIR HABITAT & SANCTUARY & THEREBY DIMINISHED RECREATIONAL OPPORTUNITIES FOR MILLIONS OF PEOPLE ACROSS THIS COUNTRY. NO BODY WANTS TO DRIVE ONE ROAD AFTER ANOTHER & COME TO DEAD ENDS AT WELL SITES, ERASING THE REASON THEY WERE THERE IN THE FIRST PLACE. THEREBY, RECREATION OPPORTUNITIES BECOME FRUSTRATION OPPORTUNITIES! HUNTING OPPORTUNITIES ARE DIMINISHING DUE TO THE DESTRUCTION OF PUBLIC LAND, BECAUSE HUNT OBJECTIVES HAVE TO REMAIN LOW DUE TO HABITAT LOSS, THEREBY CAUSING FINANCIAL LOSS TO LOCAL COMMUNITIES THROUGH LOW NUMBERS OF HUNTERS, SIGHTSEERS, PHOTOGRAPHERS & SUCH, NOT TO MENTION WILDLIFE AGENCIES WHO DEPEND ON THESE REVENUES TO HELP MANAGE THESE SPECIES. PLAIN & SIMPLE, THE RMP NEEDS TO PUT RECREATION AT THE TOP OF THE LIST OF PRIORITIES & MANAGE PUBLIC LANDS TO BENEFIT THE MAJORITY & NOT THE MINORITY!

THANK YOU FOR THE OPPORTUNITY TO ALLOW THESE COMMENTS TO BE INCLUDED IN THE RMP PROCESS! AS STATED AT THE START I WISH TO REMAIN ANONYMOUS & WITHHOLD MY NAME & ADDRESS FROM PUBLIC REVIEW & FROM DISCLOSURE UNDER THE (FOIA).

RECEIVED
BLANKENHORN
2003 NOV 23 01

Comment(s) from Kemmerer Web Site
KSL-0042

Date Comment Received	Contact	Resource Type	Comment
11/18/2003	Samuel O. Bennion Private Land Owner 14987 Hwy 30 PO Box 55 Cokeville, WY 83114	Fisheries	The Wildlife numbers (deer elk antelope) are above objective in the west Green River area and have been through the last last 4 or 5 drought years.
		Mineral Resources	More oil and gas development be encouraged on BLM Lands.
		Visual Resources	Livestock pictures need to be used in BLM posters not just wildlife.
		Livestock Grazing	<p>The BLM has and is managing the Grazing Forage with the Livestock numbers while wild life numbers are never adjusted. BLM should compensate for the Private AUM's that they do not allow to be used when they close allotments or shorten grazing seasons. *Note: the examples and number in the following example are arbitrary and used to make the following points Ex. Permit A</p> <ul style="list-style-type: none"> ◆ Consists of Private Property yeiling 100 AUMs exchange of use and 100 private AUMs or 50% exchange of use. ◆ The cost is \$200.00 per year for permittee to use BLM permit. Let's say this year the BLM closes the Permit half way through the grazing season.. Permittee's Livestock are removed. In this case \$100.00 can be refunded by BLM Permittee is impacted in the following ways: <ul style="list-style-type: none"> ▪ Pasture for Livestock needs to be purchased to replode ▪ BLM AUMs ▪ BLM doesn't change the wildlife usage. ▪ BLM should require the wildlife numbers usage to change. ▪ BLM should be responsible for the replacement pasture. ▪ BLM should compensate for the costs involved in the 50 AUMS's (privat) the Permittee is not allowed to use because of allotment closer (those costs include yearly maintained and initial investment .
RMP Revision Process	The BLM is managing the grazing with Livestock number while wildlife numbers are always increasing. Whenever there is a shortage Livestock numbers are reduced. More controlled Burns need to be done. One season should be enough to miss after controlled Burns.		

Comment(s) from Kemmerer Web Site
KSL-0043

Date Comment Received	Contact	Resource Type	Comment
11/21/2003	Matthew T. Ware Sweetwater County Commissioner 585 Prospect Drive Rock Springs, WY 82901	Social And Economic Conditions	I would like to see a good analysis of how the different alternatives will impact the surrounding communities. For instance if trona production or natural gas production is impacted this has a direct impact on the local community. We have a long term trend of negative impacts to schools Families, jobs, and the overall economy when our local industries are negatively impacted. I would like to see a good analysis of these factors including impact to local schools, housing prices, local employment, and local tax revenues.

Comment(s) from Kemmerer Web Site
KSL-0044

Date Comment Received	Contact	Resource Type	Comment
11/21/2003	Kelly Hoffman 730 E. Main Street Cokeville, WY 83114	Recreation	The BLM needs to keep their plans and objectives in compliance with existing multiple use laws and stop closing off areas to recreational use. This is an important part of living here in Southwest Wyoming and we have been losing more and more of the privileges of using public lands due to the pressure of special interest groups (also known as environmentalists) and it is time the BLM stood up for the rest of us that want to use the land not lock it up in wilderness or block public use.
		Transportation and Access	<p>We need the BLM to be more public friendly when it comes to access on BLM lands. The use of roads needs to be looked at objectively not always through the eyes of groups that have a lot of money to pressure the BLM into their own point of view. Why can't we have the BLM and Forest Service get together and designate some trails that 4 wheelers and motorbikes can use while keeping the pickup trucks and larger vehicles off? All you have done so far is close numerous two track roads that have been used for decades and made a lot of people mad. There are trails in other areas like the Grey River area that have trails that are designated for 4 wheelers and the like and keep the larger vehicles off. We need your help to make it an enjoyable experience again to be on public lands not finding all but the very main roads left open to use. We can protect the environment and still use the land.</p> <p>I don't agree with the idea that land has to be shut off and / or made into wilderness to be protected. Let some of the rest of us be able to use the land as well not just someone who has the physical ability and desire to hike into an area. Maybe we as humans could be included in all these environmental impact assessments along with the animals and plants and land.</p>
		Livestock Grazing	Livestock grazing is a good range management tool when used right and should be continued. These people have invested a large amount of time and money into projects that benefit wildlife along with the livestock. Sure there needs to be monitoring of grazing so it isn't over done but the standards have to be realistic not ones that are arbitrary depending on who is in charge of the BLM or other federal agencies on any given year. I don't personally have any interest in the grazing of livestock on federal lands but I think a lot of the time it is forgotten that these people had an interest established many decades ago before others decided they wanted to have a hand in it. There is a lot of private land intermixed with the federal lands around this part of the state and hunters recreationalists and everyone else benefits by the access they have on and through these private lands that they might not otherwise enjoy. Let's work together and help everyone enjoy the lands we have around us.

Date Comment Received	Contact	Resource Type	Comment
11/21/2003	William R. Taliaferro Green River and Big Sandy Livestock Copanies 106 Cedar Street Rock Springs, WY 82901	Air Quality	Air Quality if fine within the Kemmerer Resource Area
		Cultural Resources	Has been a large impedement to buisness and for improving and even maintaining improvements within the area. Via the guise of \"Cultural Resources\" the history of the area has been re-written in order to stifle the production of oil and gas production. It's a costly make work program that for all practical purposes is basically worthless. However we do have two quarter corners fenced off that were or are mistaken for immigrant graves.
		Fire Management	More fires should be allowed to burn rather than expend resources to put them out. Save the structures but let more areas burn so that monster fires are avoided in the future.
		Fisheries	If we allow the \"Native Species\" mentality to permeate wildlife management we'll eventually end up with poor fisheries a few cutthroat trout and the trash fish of the past.
		Geology and Geologic Hazards	None that I know of and when Yellowstone errupts again it probably won't matter.
		Lands and Realty	Its impossible to get land trades or sales completed because of the costs incured by the Government for Cultural Resouces and Endangered Species studies.
		Mineral Resources	The area has massive amounts of resources but some people within the Bureau have done their best to stall and impeded mineral development.

Comment(s) from Kemmerer Web Site
KSL-0045

Date Comment Received	Contact	Resource Type	Comment
11/21/2003	William R. Taliaferro Green River and Big Sandy Livestock Copanies 106 Cedar Street Rock Springs, WY 82901	Paleontology Resource	Thank goodness there is private and state land in the area so these resources could be excavated sold and displayed otherwise it would remain buried.
		Social and Economic Conditions	If it weren't for mineral production and some livestock grazing. Lincoln and Uinta counties would be worse than poorest areas in Appalachia.
		Special Status Species	Most environmental groups and some government agencies would give every species some special status especially if this would impact the legitimate efforts of the species Homo Sapien
		Transportation and Access	Could be better but there seems to be a real reluctance within the office to bring the area into the new century instead the efforts seem to be to drive everything back to the mid 1800s.
		Vegetative Resources	These are pretty good througout the area however some excessive wildlife populations are affecting resources along the few wetlands in the area
		Visual Resources	Another term that's impacting economic and the social needs of the area. One of those ideas to drive us closer to 1800 than 2004.
		Water Resources	Limited and Thank God this resource belongs to the State and occurs mostly on private lands.
		Off-Highway Vehicles	A way for people to recreate within the area.

Date Comment Received	Contact	Resource Type	Comment
11/21/2003	William R. Taliaferro Green River and Big Sandy Livestock Copanies 106 Cedar Street Rock Springs, WY 82901	National Historic Trails	The only significant part of this is the historic route they followed however the ruts wouldn't be there today if it weren't for sheep wagons truck associated with ranches sportsmen and the mineral industry using the routes. Where better routes have been built or used the old trails are gone.
		Livestock Grazing	Has been and continues to be a large user of the area's vegetative resources despite the efforts of some to eliminate this use.
		Renewable Energy	I assume this refers to Wind Generation and I doubt we'll see much of this since the wind isn't consistant enough in the area to use effectively. If it were we would be using wind mills to pump water however its not dependable.
		Special Designations	If this can be used to encumber some one or some industry I'm sure the enviroment community will try to use this.
		Utility and Communication Corridors	These need to be expanded and the ability to cross federal land needs to be unimcumbered if we are going to provide the population centers of this nation with the resources they need.
		Alternatives	We'll see what's conjured up here. No comment.
		Purpose and Need	There probrably isn't any need. If the money time and effort used to do these EIS's and resource management plans were used on resource maintainance and improvements most problems could be elimanated. While non essential staffs could be reduced and save the taxpayers a bundle of money.
		RMP Revision Process	It's almost a make work project.

Comment(s) from Kemmerer Web Site
KSL-0045

Date Comment Received	Contact	Resource Type	Comment
11/21/2003	William R. Taliaferro Green River and Big Sandy Livestock Copanies 106 Cedar Street Rock Springs, WY 82901	Mitigation Measures	Another nice encumbering term to baffle everyone.
		Cumulative Impacts	Another term of which improper assumtions are made from poor models.
		Wildlife	Too many elk are wintered in the area and too many antelope summered in the area. This winter might deplet and its a sorry state of affairs if the BLM and the Game and Fish Commission allow these animals to starve if conditions get bad as they will one of these years.

Comment(s) from Kemmerer Web Site
KSL-0046

Date Comment Received	Contact	Resource Type	Comment
11/24/2003	Scott G. Britton General Chemical (Soda Ash) Partners PO Box 551 Green River, WY 82935 sbritton@genchem.com	Mineral Resources	<p>Kemmerer RMP website 24-Nov 2003 BLM Field Office ATTN: Mr. Don Ogaard RMP Project Manager 312 Highway 189 North Kemmerer WY 83101</p> <p>Dear Mr. Ogaard:</p> <p>This letter is in response to BLM's request for input on the Kemmerer Resource Management Plan (RMP) revision. General Chemical (Soda Ash) Partners applauds your effort to update and correct the existing RMP with this revision. To that end General Chemical (Soda Ash) Partners asks the Kemmerer RMP address the following:</p> <ul style="list-style-type: none"> • The emerging conflict between mining trona and drilling gas wells needs to be considered and clearly addressed in the RMP. The safety of the underground miners is the single most important factor to consider in addressing this issue. • The RMP should consider the relative importance of predictable sustainable and stable growth in the soda ash industry. To this end the RMP should reflect choices that support long term growth of the soda ash industry. <p>General Chemical (Soda Ash) Partners appreciates the time and interest of the BLM in soliciting our input in the RMP revision. Should you have additional questions or need for additional information please do not hesitate to contact me.</p> <p>Regards Peter J. Kalivas Vice President Manufacturing</p>
		Other Comments	Please direct correspondence about the oil/gas - trona conflict issue to my attention. Thank you Scott Britton

Date Comment Received	Contact	Resource Type	Comment
11/24/2003	Nathan G. Maxon Box 96 Fort Bridger, WY 82933 n_maxon@yahoo.com	Fisheries	<p>R116W Sections 11 14 15</p> <p>This reach of willow creek is home to Colorado river cutthroat trout. It is evident that willow once flourished here. Grazing and extirpation of beaver has left this riparian area in very poor condition. Many old dead willow plants abound while those that are living are few in number. The creek itself receives very little shade owing to a lack of overhanging vegetation or undercut banks. This area should receive some consideration for habitat improvement. I would like to see a reduction of the AUM's on the willow creek allotment as well as a fence protecting the riparian area and it's few living willows. It might also be beneficial to the trout if beaver were re-established throughout this reach.</p>
		Lands and Realty	<p>I think that a committee of unbiased citizens should be enlisted to make qualitative assessments of all land parcels involved in swaps. This would help ensure that fair trades are made.</p>
		Mineral Resources	<p>Extreme care should be taken with regard to crucial big game winter range. The areas delineated by the Wyoming game and fish as critical deer winter range should be respected. No winter exceptions in these areas. But wells should be spaced at low densities such as 80 acres per well pad if drilling is going to occur in the summer. Pronghorn antelope are declining throughout the west. Only in Wyoming do we have strong populations. This could change as we continue to disturb landscapes for minerals. Antelope range throughout the district during the winter it is not accurate to say that these animals only use delineated critical winter range. It is well known that herds of over 700 animals travel together in the winter moving constantly.</p>

Date Comment Received	Contact	Resource Type	Comment
11/24/2003	Nathan G. Maxon Box 96 Fort Bridger, WY 82933 n_maxon@yahoo.com	Special Status Species	Serious efforts should be made to inventory for both Boreal Toads and Columbia Spotted frogs. We need to know where populations of these animals exist. When populations are found habitat should be protected. In these cases grazing should be eliminated near wetlands and riparian areas and reduced in upland areas that host important overwintering sites.
		Vegetative Resources	Grazing reductions should be implemented in critical winter range.
		Water Resources	All known springs should be fenced. I have visited many of these springs which are important for wildlife and livestock. Some of them have been completely fouled by the cows and host very little vegetation. These springs may contain springsnails that are highly endemic.
		Off-Highway Vehicles	OHV's should be limited to roads only. No trails should be built explicitly for their use.
		Livestock Grazing	I think that the majority of the range is overgrazed. Last year I saw a prairie dog eating greasewood...it was the only thing left. I want to see AUM reductions especially in drought years and where the permittee violates the terms of the lease. I also think that the price per AUM should be raised to reflect its real market value. Small business owners rarely receive subsidies so why should livestock operators. There is growing public resentment over grazing. It would be nice to have even a few areas where wildlife doesn't have to compete with livestock.
		Renewable Energy	It might be wise to implement seasonal mitigation effort for windmills. The overthrust belt is a known raptor migration corridor. During the spring and fall migrations many collisions could occur. Before mills or roads are permitted be sure that our natural heritage is protected.
		Special Designations	Raymond Mountain should remain a wilderness study area with all accompanying protections. There are many other areas within the district that should receive this designation. One area in particular is the Bridger Badlands with its scenic and fossil values.

Comment(s) from Kemmerer Web Site
KSL-0047

Date Comment Received	Contact	Resource Type	Comment
11/24/2003	Nathan G. Maxon Box 96 Fort Bridger, WY 82933 n_maxon@yahoo.com	Mitigation Measures	Seasonal wildlife closures should be sacred.
		Wildlife	Wildlife would do better with better forage. This means fewer AUM's permitted on allotments

Comment(s) from Kemmerer Web Site
KSL-0048

Date Comment Received	Contact	Resource Type	Comment
11/25/2003	Wayne Burkhardt Ranges West 2410 Little Weiser Road Indian Valley, ID 83632 rangeswest@ctcweb.net	Lands and Realty	The RMP should provide for an accelerated land exchange program in the areas of checkerboard ownership or other small tract in-holdings. Land exchanges would be beneficial to the agency private landowners and the public.
		Mineral Resources	The RMP should provide mineral production on public land while assuring appropriate rehabilitation/re-vegetation on all disturbed sites (wells access roads, pipelines, etc.). It should address prevention and treatment of noxious and invasive weeds on these disturbed sites as well.
		Vegetative Resources	The RMP should recognize the need to maintain the ecological role of fire in promoting stand renewal in the sagebrush steppe and aspen/mountain brush vegetation types. prescribed fire and other vegetation treatments should be available to assure that the natural plant succession processes are maintained to provide biological diversity and productivity on range landscapes. The RMP should recognize the need to maintain an aggressive control and prevention program against noxious and invasive plants.
		Livestock Grazing	The RMP should encourage the development of coordinated and cooperatively developed grazing management plans. The RMP should provide for the construction and maintenance of management facilities necessary for the proper management of livestock (pasture fences water developments, vegetative treatments, etc.). The RMP should recognize livestock grazing as having economic significance to local communities
		Special Designations	The RMP should critically analyze the cumulative effects of special land designations on future management options for land uses such as grazing mineral production and vegetation management (prescribed burns or other cultural practices). Special designations frequently limit or preclude future management options activities and facilities that are necessary to properly manage livestock grazing (fences water developments and vegetation treatments). When specially designated areas are located within grazing allotments the effects of the restrictions often extend beyond the special status boundaries by impacting management options on the entire allotment. These special designations can become a de facto means of removing livestock grazing.

Comment(s) from Kemmerer Web Site
KSL-0049

Date Comment Received	Contact	Resource Type	Comment
11/25/2003	Wayne Burkhardt Ranges West 2410 Little Weiser Road Indian Valley, ID 83632 rangeswest@ctcweb.net	Off-Highway Vehicles	The RMP should address OHV use and abuse. Special efforts should be made to inform and educate OHV users about identifying noxious and invasive weeds preventing weed spread effects of invasives on wildlife habitat and consequences of weed infestations.

KSL-0050

11/17/03

Public Scoping Meeting

Location: Kemmerer

Comments recorded on flip charts

- Predator control for protection of Sage Grouse
- Listing of Sage Grouse- Don't want it listed
- Hunting of predatory animals
- Wolves in planning area
- ESA recovery plans
- Weeds – invasive species
- Wildfires – cheatgrass
- Stipulations on public lands – users to control noxious weeds
- Noxious weed transport on vehicles, streams, irrigation ditches
- Halogeton on noxious weed list
- Wildlife numbers must be managed to responsibly manage the range
- Private AUMs exchange of use; use & control. Compensation for private AUMs not used due to restrictions (e.g. drought removes grazing early)
- Manage AUMs- grazing/ livestock, but not wildlife numbers
- ROWs – weed issue
- Coordinate T.E.s with Forest Service in joint areas
- Better involvement by BLM with local planning for resource development.
- Need OHVs to control livestock off of existing trails
- Need to control OHVs along the Green River & Fort Reserve
- Concerned about visual aspects of wind farms particularly in relation to historic trails.
- Likes current access on existing 2-track roads and only closing them when washed out or mudholes
- Closure of road south of Opal in vicinity of water tank- want it closed
- Want unauthorized dumping cleaned up in same area- Opal
- Concern that BLM is not managing according to the Sage Grouse Management guidelines
- Concern that BLM does not follow State (WDG) recommendations for Sage Grouse protection- BLM increases the restriction
- Bettas P&M Coal Mine

KSL-0051

11/18/03

Public Scoping Meeting

Location: Evanston

Comments recorded on flip charts

- Socioeconomic effects of BLM decisions in Cumberland Allotment in Rich County, Utah
- SW Dirt Ryders would like an open OHV area designation.

KSL-0052

11/19/03

Public Scoping Meeting

Location: Rock Springs

Comments recorded on flip charts

- Wheat Creek Meadows – How will resources be managed to improve conditions?
 - Public access for wildlife observation, while still protecting habitat
 - Many swales/ruts of Sublette Cutoff and Dempsey-Hockaday Trail are within area and should be protected and interpreted
 - Improve livestock control and season of grazing use
- National Historic Trails
 - Oil and gas impacts must be managed to protect them
 - More interpretive signs and ruts identification will help protect trails
 - Hawkwatch international- migration counting site on Commissary Ridge- interpret the site for the public and preserve it.
- Range allotment management- during drought when livestock not allowed to graze, monitor after precipitation to determine if part of season could be grazed
- Limit livestock grazing on narrow strip between private land along Lincoln County #306 Road.
- Do viewshed analysis on historic trails to ensure protection of trails & their use
- ATV & OHV use has increased greatly in the last 5 years. Need to start to control use. (Commissary Ridge Area) Soils, water, & wildlife affected
- More gas; less BLM

BJORK • LINDLEY • LITTLE • PC

LAWYERS

PETER A. BJORK*
LAURA LINDLEY
DAVID R. LITTLE
ROBERT C. MATHEUS†
DAVIN B. SCHLEER*
CHRISTOPHER G. HAYES**
ANN M. EASTBURN*

*Of Counsel
*Special Counsel
†Also admitted in Wyoming
*Also admitted in Louisiana

November 14, 2003

Bureau of Land Management
Kemmerer Field Office
312 Highway 189 North
Kemmerer, WY 83101

Attention: Mr. Tom Davis

Re: RMP Revision

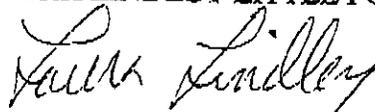
Dear Mr. Davis:

This letter responds to BLM's Scoping Notice with respect to the proposed revision to the Kemmerer RMP. The timing of the plan revision presents an excellent opportunity to incorporate the EPCA inventory results into the plan decision. We urge you to provide realistic opportunities for the development of oil and natural gas from federal lands with only necessary restrictions on surface use. In particular, we recommend that the reasonably foreseeable development (RFD) scenario analyze sufficient potential development so that the document will have a useful life for planning purposes. However, the plan should emphasize that the RFD is used only as a tool to analyze potential impacts and does not constitute a cap or decision limiting the amount of development which may occur in the resource area.

Thank you for your consideration of these comments.

Very truly yours,

BJORK LINDLEY LITTLE PC



Laura Lindley

LL/dfi

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2003 NOV 17 AM 9:22

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BLM KEMMERER F.O.
2003 DEC - 1 AM 10: 21

Edward M. Bown
Attorney and Counselor at Law
1015 East 3900 South
Salt Lake City, Utah 84124-1110
Telephone: 801-281-0930
Fax: 801-281-0968

November 25, 2003

Mr. Jerry Pierce
Bureau of Land Management
Kemmerer Field Office
312 Highway 189 North
Kemmerer, WY 83101

Re: RMP Revision Process

In accordance with our telephone conversation this morning concerning the above captioned matter and to furnish BLM with clear copies of the Written Comment Forms, I forwarded to you by telefax on November 24 and this morning November 25, 2003, I am enclosing herewith duplicate copies of the Written Comment Forms I forwarded as follows:

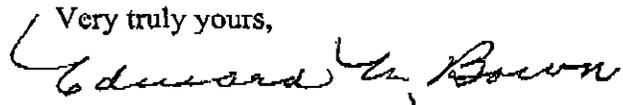
- 1) Edward M. Bown, Attorney at Law, (as Interested Public);
- 2) Edward M. Bown, Attorney at Law, as Attorney for our group of cattle permittees in the Cumberland\Uinta Grazing Allotment, Rock House Grazing Allotment and Cumberland Flats Grazing Allotment, whose names are set forth on Exhibit "1" annexed hereto and by this reference made a part hereof;
- 3) Diamond W Ranch Co., Inc., cattle permittee;
- 4) Rees Land & Livestock Co., cattle permittee; and
- 5) JW Ranching Co., Inc., cattle permittee; and
- 6) K-Ron Ranch, LLC, cattle permittee.

I will mail this letter to you (and the enclosures referred to above) today in the U.S. Mail, postage prepaid, in order that you will have clear and legible copies of the Forms I earlier forwarded to you.

Please file this letter and enclosures in the (RMP) Revision Process files and in the event you have any questions, please do not hesitate to give me a call.

Thank you again for your cooperation.

Very truly yours,



Edward M. Bown



Written Comment Form
Kemmerer Field Office Planning Area
Resource Management Plan (RMP) Revision Process



Location: _____

Thank you for your input.

Date: November 24, 2003

PLEASE PRINT LEGIBLY.

(See Exhibit "A" annexed hereto and by this reference specifically made a
part hereof.) (2 Pages)

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BLM KEMMERER F.O.
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**** CONTINUE ON BACK FOR MORE SPACE ****

Public comments submitted for this planning effort, including names and street addresses of respondents, will be available for public review in their entirety after the comment period closes at the Kemmerer Field Office during regular business hours (7:45 a.m. to 4:30 p.m.), Monday through Friday, except federal holidays. Individual respondents may request confidentiality. If you wish to withhold your name or address from public review or from disclosure under the Freedom of Information Act (FOIA), you must state this prominently at the beginning of your comments. Such requests will be honored to the extent allowed by law. All submissions from organizations or businesses, and from individuals or officials representing organizations or businesses, will be made available for public inspection in their entirety.

NAME:	Edward M. Bown - Attorney at Law
ORGANIZATION:	Interested Public
ADDRESS:	1015 East 3900 South
CITY/STATE/ZIP:	Salt Lake City, Utah 84124-1110

- Yes, include my name and address on the mailing list so I can receive information on the Kemmerer Planning Area RMP Revision.
- No, do not include my name and address on the mailing list.

Please hand this form in or MAIL (post-marked by November 26, 2003) to:

BLM Kemmerer Field Office
312 Highway 189 North
Kemmerer, Wyoming 83101
Attn: RMP Revision



Written Comment Form
Kemmerer Field Office Planning Area
Resource Management Plan (RMP) Revision Process



Location: _____

Thank you for your input.

Date: November 24, 2003

PLEASE PRINT LEGIBLY.

(See Exhibit "A" annexed hereto and by this reference specifically made a part hereof. (2 pages))

Multiple horizontal lines for writing comments.

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2003 DEC -1 AM 10:21

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NAME:	Edward M. Bown - Attorney at Law
ORGANIZATION:	Attorney for our group of cattle permittees in the Cumberland-Uinta
ADDRESS:	1015 East 3900 South
CITY/STATE/ZIP:	Salt Lake City, Utah 84124-1110

Grazing Allotment; Rock House Grazing Allotment; and Cumberland Flats Grazing Allotment.

- Yes, include my name and address on the mailing list so I can receive information on the Kemmerer Planning Area RMP Revision. (Also see Exhibit "1" annexed hereto)
- No, do not include my name and address on the mailing list.

Please hand this form in or MAIL (post-marked by November 26, 2003) to:

BLM Kemmerer Field Office
312 Highway 189 North
Kemmerer, Wyoming 83101
Attn: RMP Revision



Written Comment Form
Kemmerer Field Office Planning Area
Resource Management Plan (RMP) Revision Process



Location: _____

Thank you for your input.

Date: November 24, 2003

PLEASE PRINT LEGIBLY.

(See Exhibit "A" annexed hereto and by this reference made a part hereof)
(2 pages)

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NAME: Diamond-W Ranch Co., Inc. c/o Simeon Weston
ORGANIZATION: (Cattle Permittee in the Cumberland-Uinta Grazing Allotment; Rock House
ADDRESS: P. O. Box 214 Grazing Allotment & Cumberland Flats Grazing
CITY/STATE/ZIP: Randolph, Utah 84064 Allotment)

- Yes, include my name and address on the mailing list so I can receive information on the Kemmerer Planning Area RMP Revision.
No, do not include my name and address on the mailing list.

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Kemmerer, Wyoming 83101
Attn: RMP Revision

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Written Comment Form
Kemmerer Field Office Planning Area
Resource Management Plan (RMP) Revision Process



Location: _____

Date: November 24, 2003

Thank you for your input.

PLEASE PRINT LEGIBLY.

(See Exhibit "A" annexed hereto and by this reference made a part hereof.)

(2 Pages)

the financial effect on Rich Co. Utah and
the people who own the private land
in Uinta & Lincoln Co Wyo. need to be
respected in the RMP. and the time and
work that we put into the C.R.M.P. that
is in place on the Cumberland & Uinta
allotment!

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NAME:	Rees Land & Livestock Company	<i>Charles & Bonnie Rees</i>
ORGANIZATION:	(Cattle Permittee in the Cumberland-Uinta Grazing Allotment; Rock House	
ADDRESS:	P. O. Box 189	Grazing Allotment & Cumberland Flats Grazing
CITY/STATE/ZIP:	Woodruff, Utah 84086	Allotment)

- Yes, include my name and address on the mailing list so I can receive information on the Kemmerer Planning Area RMP Revision.
- No, do not include my name and address on the mailing list.

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Written Comment Form
Kemmerer Field Office Planning Area
Resource Management Plan (RMP) Revision Process



Location: _____

Thank you for your input.

Date: November 24, 2003

PLEASE PRINT LEGIBLY.

(See Exhibit "A" annexed hereto and by this reference specifically made a part hereof.)

(2 Pages)

Multiple horizontal lines for writing comments.

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NAME:	JW Ranching Co., Inc. c/o Burdette Weston
ORGANIZATION:	(Cattle Permittee in the Cumberland-Uinta Grazing Allotment; Rock House
ADDRESS:	P. O. Box 13 Grazing Allotment and Cumberland Flats Grazing
CITY/STATE/ZIP:	Laketown, Utah 84038 Allotment

- Yes, include my name and address on the mailing list so I can receive information on the Kemmerer Planning Area RMP Revision.
- No, do not include my name and address on the mailing list.

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BLM Kemmerer Field Office
312 Highway 189 North
Kemmerer, Wyoming 83101
Attn: RMP Revision

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Written Comment Form
Kemmerer Field Office Planning Area
Resource Management Plan (RMP) Revision Process



Location: _____

Date: November 25, 2003

Thank you for your input.

PLEASE PRINT LEGIBLY.

(See Exhibit "A" annexed hereto and by this reference made a part hereof.)

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NAME:	K-Ron Ranch, LLC	
ORGANIZATION:	Cattle Permittee in the Cumberland-Uinta and Rock House Grazing	
ADDRESS:	c/o Simeon Weston, P. O. Box 214	Allotments.
CITY/STATE/ZIP:	Randolph, Utah 84064	

- Yes, include my name and address on the mailing list so I can receive information on the Kemmerer Planning Area RMP Revision.
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Kemmerer, Wyoming 83101
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Exhibit "A"

TO: Bureau of Land Management
FROM: EDWARD M. BOWN, ATTORNEY FOR CATTLE PERMITTEES
SUBJECT: RMP scoping comments

The following represent our comments to BLM on the RMP scoping.

Vegetation:

The RMP should recognize the need to maintain the ecological role of fire in promoting stand renewal in the sagebrush steppe and aspen/mountain brush vegetation types. Prescribed fire and other vegetation treatments should be available to assure that the natural plant succession processes are maintained to provide biological diversity and productivity on range landscapes.

The RMP should recognize the need to maintain an aggressive control and prevention program against noxious and invasive plants.

Minerals:

The RMP should provide mineral production on public land while assuring appropriate rehabilitation/re-vegetation on all disturbed sites (wells, access roads, pipelines). It should also address prevention and treatment of noxious and invasive weeds on all disturbed sites as well.

Lands and Realty:

The RMP should provide for an accelerated land exchange program in the areas of checkerboard ownership or other small tract in-holdings. Land exchanges would be greatly beneficial to the agency, private landowners, the public and simplify the use of such lands.

The RMP should identify the need for road and trail maintenance. This is a public safety, soil erosion and public access issue.

Livestock grazing:

The RMP should encourage the development of coordinated and cooperatively developed grazing management plans.

The RMP should provide for the construction and maintenance of management facilities necessary for the proper management of livestock grazing (pasture fences, water developments, vegetative treatments, etc.).

The RMP should recognize livestock grazing as having economic significance and other benefits to local communities.

Special Designations:

The RMP should critically analyze the cumulative effect of special land designations on future management options for land uses such as grazing, mineral production and vegetation

management (prescribed burns or other cultural practices). Special land designations will definitely limit and in many cases, preclude future management options, activities and facilities that are necessary to properly manage livestock grazing (fences, water developments and vegetation treatments). When specially designated areas are located within a grazing allotment, the effects of the restrictions often extend beyond the special status boundary by impacting management options on the entire allotment. These special designations can become a de facto means of removing livestock grazing.