U.S. Department of the Interior
Bureau of Land Management
Rock Springs District Office

Pinedale Resource Area

August 1991

Decison Record and Approved Coordinated Activity Plan for the Big Piney/La Barge Area

WYOMING






The Bureau of Land Management is responsible for the balanced management of the public lands and resources and their various values so that they are considered in a combination that will best serve the needs of the American people. Management is based upon the principles of multiple use and sustained yield; a combination of uses that take into account the long term needs of future generations for renewable and nonrenewable resources. These resources include recreation, range, timber, minerals, watershed, fish and wildlife, wilderness and natural, scenic, scientific and cultural values.

BLM-WY-ES-91-039-4410

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
WYOMING STATE OFFICE
P.O. BOX 1828
CHEYENNE, WYOMING 82003

Dear Reader:

The enclosed Decision Record and approved Big Piney - LaBarge Coordinated Activity Plan (CAP) describe the Bureau of Land Management (BLM) decision for managing the Big Piney - LaBarge CAP area. The decision is based on the Environmental Assessment (EA) for the Big Piney - LaBarge CAP, distributed December 11, 1990, and on comments received from federal, state, and county governments; industry; special interest groups; and individuals.

The EA, prepared by the BLM, fulfills the requirements of the National Environmental Policy Act of 1969 (as amended). The approved CAP is in conformance with the Pinedale Resource Management Plan (RMP, December 12, 1988). Since the CAP is within the scope of the Pindale RMP and decisions, an amendment to the RMP is not needed.

As provided by 43 CFR 4.4, the BLM decision to approve the Big Piney - LaBarge CAP is subject to appeal. If you wish to do so, you must file your appeal in writing, within 30 days from the date this decision is published in the *Federal Register*, with the State Director, Bureau of Land Management, Wyoming State Office, P.O. Box 1828, Cheyenne, Wyoming 82003. The appeal shall state clearly and concisely why you think the decision is in error.

If you have any questions, please contact Bill Daniels at (307) 7756-6105.

Sincerely,

Ray Brubaker

Ray Brubaker
Wyoming State Director

DECISION RECORD
AND
APPROVED COORDINATED ACTIVITY PLAN
for the
BIG PINEY - LABARGE AREA

Prepared by:
U.S. Department of the Interior
Bureau of Land Management
Wyoming State Office
Rock Springs District
Pinedale Resource Area

August 1991

Wyoming State Director

8-16-91
Date

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DECISION RECORD
for the
BIG PINEY-LABARGE
COORDINATED ACTIVITY PLAN

This document records the decision made by the Bureau of Land Management (BLM) for managing the BLM administered public land surface and Federal mineral estate in the Big Piney-LaBarge area of western Wyoming. Approximately 135,785 acres of public land surface and 196,841 acres of Federal mineral estate are within the area. The area is located in Sublette and Lincoln Counties near Big Piney, Marbleton, and LaBarge, Wyoming.

DECISION

The decision is to approve the attached coordinated activity plan (CAP) for managing the BLM administered public lands and resources in the Big Piney-LaBarge area. The approved CAP provides for managing the area in a manner that balances multiple uses and sustains long term yield of resources, and promotes stability of local and regional economies, environmental integrity and conservation of resources for future generations. The CAP represents the activity planning stage of the BLM planning process. The CAP refines and elaborates on the decisions made in the Pinedale Resource Management Plan (RMP) that pertain, specifically, to the CAP area.

The approved CAP recognizes the Big Piney-LaBarge area as one which is and will continue to be developed for its oil and gas resources. The CAP also recognizes that there are other important natural resources and values within the area that require consideration and protection from any unnecessary degradation. In planning the implementation, operation and abandonment activities for mineral resource development, consideration must be given to wildlife habitat, livestock grazing, recreation, travel, transmission and transportation rights-of-way, and other land and resource uses in the CAP area.

The Pinedale RMP includes a decision that the BLM administered public lands in the planning area are open to oil and gas exploration and development activities, subject to certain mitigation requirements for the protection of other resources. A reasonably foreseeable development scenario for oil and gas was analyzed in the Pinedale RMP/Environmental Impact Statement (EIS). The environmental assessment (EA) for the CAP area addressed a more current and higher level of expected development than was analyzed in the Pinedale RMP/EIS. With the necessary mitigation and monitoring requirements included, the environmental analysis concluded that no significant adverse impacts would result. Therefore, approval of the CAP accepts a higher level of development for the CAP area. This does not require an amendment to the Pinedale RMP because the RMP decisions do not change.

In addition, although the approved CAP refines the application of some mitigation requirements contained in the Pinedale RMP, this also does not require an amendment to the RMP. The refined application of mitigation for the CAP area is still within the scope, intent and objectives of, and in conformance with, the RMP decisions.

Prior to authorizing site specific actions (e.g., BLM proposed vegetative treatments, fencing or water developments, industry proposed pipelines, applications for permit to drill, etc.), the appropriate level of additional environmental analysis will be performed and documented in compliance with NEPA, and Department of the Interior and BLM manuals. There may also be additional planning and environmental analysis documentation needed as implementation of the CAP progresses.

Major Elements of the Decision

Management Emphasis

The approved CAP places emphasis on providing for two major concerns in the Big Piney-LaBarge area; (1) the ability to efficiently develop the oil and gas resources; and (2) the stabilization and increase of vegetative quality and quantity for livestock grazing, wildlife, watershed and recreational uses, and for improved visual quality and reducing affects of surface disturbance.

The CAP provides for vegetative treatments, improving reclamation efforts on disturbed areas, and protecting wildlife during critical life cycle periods. The CAP also encourages efforts to reduce the heavy deer and antelope populations which winter in the area. Vegeta-

tive treatments will be undertaken through the cooperative planning efforts of all the interests in the area. Initially, about 13,500 acres will be treated. Such treatments as brush beating, chaining and controlled burning will be applied. Evaluation of the effectiveness of these initial treatments will be used in determining further vegetative treatment opportunities in the CAP area.

Best Features of the Alternatives

The approved CAP does not represent, in total, any one of the alternatives studied in the EA for the CAP area. Rather, it combines the most balanced mix of elements from alternatives A, C, D and F, as reflected in the public comments, the input of the various interests, and the issues that were identified. The impacts of the approved CAP are discussed in the Finding of No Significant Impact, to follow.

Big Piney-LaBarge Working Group

A very important part of the decision for managing the CAP area will be the use of a working group, called the Big Piney-LaBarge Working Group (BPLWG), which will review and encourage the continual planning for coordinated resource management in the area. The BPLWG will be comprised of knowledgeable, interested citizens from the local area who will provide advice and recommendations to the BLM on the planning and resource management for the BLM administered public lands in the CAP area. The emphasis will be on resolving conflicts between wildlife and oil and gas development. The BPLWG may also serve as a sounding board for suggestions, complaints and matters of controversy, concerning management of the BLM administered public lands and resources in the area, especially on wildlife related issues. However, the Pinedale Resource Area Manager retains the ultimate decision making authority for the management of BLM administered lands and resources. The working group will not usurp or encroach upon the authorities or rights of any Federal or State agency, industry or any other governmental or private interests. Further details on the make-up, objectives and functions of this working group are presented in following sections of this decision record and in the CAP.

Minerals Management

A limit will not be placed on the level of additional oil and gas well drilling and development which can be conducted in the CAP area. However, because there are concerns and differing opinions regarding the degree of impact that may occur from an additional 600 to 900 wells that may be developed (i.e. within a ten year period as analyzed in the EA for the CAP), should the development level reach 500 wells within the next ten years, an environmental evaluation will be conducted to determine the level of impacts which are occurring. Further, at any point that monitoring indicates a substantial change in impacts, or that levels of impact beyond those analyzed in the EA are starting to occur, environmental evaluations will be initiated.

Of major concern to local public and business interests in the CAP area, is whether seasonal (winter) restrictions on the crucial big game winter ranges in the area will result in winter shut-down of in-field operations and drilling activities. This concern will be resolved through implementation of two provisions of this decision record and the approved CAP. They are, (1) the continual, orderly, coordinated management planning for the area; and (2) the involvement of the BPLWG in the planning and management of the area. For example:

> Opportunities for year-round geophysical exploration and well drilling activities will be included in the annual and long range planning for development and management of the CAP area. Sufficient geophysical exploration and well drilling locations can be identified far enough in advance so that; (1) locations that would potentially conflict with winter concentrations of big game and other wildlife can be scheduled for exploration or drilling during the spring, summer or fall; and (2) locations that would not conflict could be explored or drilled during the winter, if winter drilling is desired or necessary. The main objective of the BPLWG involvement would be to consider and recommend ways to maintain protection of wintering wildlife on crucial winter concentration areas and crucial winter ranges, while accommodating year-round geophysical exploration and drilling.

Reclamation

Improving the reclamation of disturbed lands in the area is also emphasized in the CAP. Use of any measures to improve the success of reclamation efforts will be considered. BLM will bring in experts in the reclamation of sites which are similar to those in the CAP area, to determine if revegetation and other reclamation practices for disturbed lands can be improved. Changes in seed mixtures and other reclamation procedures, such as transplanting and recontouring, will likely require some testing and monitoring to determine which practices are providing the best success and which may

be adopted for improving reclamation results. The BPLWG may also provide suggestions and recommendations for adoption or testing of reclamation practices.

It is important for the reader to understand that, although the analysis assumption for all the alternatives analyzed in the EA for the CAP was that 200 well sites would be reclaimed within the next ten years, industry representatives have since stated that a higher number of reclaimed wells is possible. Thus, reclamation of additional abandoned well sites will be another factor in evaluating the level and rate of successful range, watershed and wildlife habitat improvement within the CAP area.

Wildlife

Deer and Antelope Crucial Winter Range

Standard use restrictions (e.g., seasonal restrictions from November 15 to April 30) will continue to be applied as stipulations in future oil and gas leases. In the case of pre-existing oil and gas leases, that do not contain seasonal restriction stipulations for these crucial winter ranges, the BPLWG will review annual plans for drilling and field development activities and provide recommendations to the BLM concerning what activities would be appropriate during the winter months. Standard winter use restrictions will not be applied as conditions of approval (COAs) on applications for permit to drill (APDs) and on field development activities within deer and antelope crucial winter ranges, when recommendations of the BPLWG, to allow winter drilling and other field development activities, have been approved by the Area Manager. Other last minute or emergency situations must be considered by the Area Manager on a case-by-case basis. Further refinement of the application of these standard use restrictions, as mitigation requirements for geophysical exploration and other types of surface disturbing activities, are included in the CAP.

These and other management considerations for deer and antelope crucial winter ranges are described in the CAP. This includes involvement of the BPLWG in initiating recommendations for exceptions and modifications to use restrictions, without being requested by the land users.

Elk and Moose Crucial Winter Range

In comparison to deer and antelope, elk and moose crucial winter ranges involve a much smaller part of the CAP area. Standard use restrictions (e.g., seasonal restrictions from November 15 to April 30) will continue to be applied as stipulations in oil and gas leases, as COAs on APDs and field development activities, and as mitigation requirements for geophysical exploration and other types of disturbance activities, in elk and moose crucial winter ranges. Where weather or habitat conditions are not critical, the BLM may approve an exception to or modification of these restrictions, if requested by the user and if supported by environmental analysis. The BPLWG may also consider and make recommendations on proposed activities in these crucial winter ranges.

Sage Grouse and Raptors

Standard use restrictions for sage grouse breeding, nesting and wintering habitats (e.g., February 1 to July 31 or November 15 to April 30) will continue to be applied as stipulations in future oil and gas leases. Application of two of the standard use restrictions has been refined for sage grouse. These refinements involve two buffer zones that will be required around leks (i.e., grouse breeding areas). Where appropriate, these refinements will be applied as COAs on oil and gas APDs and field development activities, and as mitigation requirements for geophysical exploration and other types of disturbance activities in the CAP area. These provisions are described in detail in the CAP.

Standard use restrictions for raptor nesting and wintering habitats (e.g., February 1 to July 31 or November 15 to April 30) will continue to be applied as stipulations in future oil and gas leases, as COAs on oil and gas APDs and field development activities, and as mitigation requirements for geophysical exploration and other types of disturbance activities in the CAP area. These provisions are also described in detail in the CAP.

Rangeland and Livestock Grazing Management

Rangeland and livestock grazing management activities within the CAP area will be directed toward meeting the objectives established for range, vegetation and livestock grazing management in the Pinedale RMP and in the CAP. Within the CAP area, rangeland monitoring studies will be implemented on all "I" category grazing allotments and, only if needed, on "M" and "C" category allotments. These monitoring studies will be coordinated with and, where possible their locations will be combined with, those monitoring studies for watershed, wildlife habitat, soils and water quality. Any adjustments in livestock grazing use will be pursued first by negotiation and agreement with livestock operators. If this

approach is unsuccessful, then adjustments will be made by livestock grazing decisions, based on monitoring and consultation with livestock operators.

Allotment Management Plans (AMP's) will not be included as part of the CAP because parts of some of the grazing allotments are outside the boundary of the CAP area. However, prior to developing and implementing AMPs, range improvements included in the CAP may be implemented.

Transportation and Off-Road Vehicle Management

The BPLWG will help review and monitor the transportation system and road proposals in the CAP area. The working group will make recommendations to the Area Manager on roads that should be closed and rehabilitated and on the location, consolidation, etc., of road proposals. The working group will also be involved in considering permanent or seasonal road closures and permanent or seasonal closure of portions of the CAP area to off-road vehicular use. Consideration of these transportation and off-road vehicle management concerns will be part of the continual coordinated planning to reduce conflicts between wildlife and other activities in the CAP area.

Surface Disturbance

It is recognized that, in most cases, surface disturbing activities in environmentally sensitive areas can be accomplished economically and without unnecessary degradation, with some advance planning and proper design. Therefore, the surface disturbance restriction is refined for use in the CAP area as follows:

> Any proposed activity or surface use that would involve surface disturbance (e.g., geophysical exploration or construction activities, such as roads, well pads, pumping or storage facilities, pipelines, etc.) must be accompanied by appropriate engineering design, geotechnical analysis, mitigation planning , etc. This information must be of sufficient detail to demonstrate that the environmental aspects of concern will be adequately protected or that affects to them will be adequately mitigated.

The following areas or situations may require more detailed or complex designs, plans or analyses:

- slopes in excess of 25 percent
- within 500 feet of surface water and/or riparian areas
- within 1/4 mile, or the visual horizon (whichever is closer), of historic trails
- construction with frozen material or during periods when soil material is saturated or when watershed damage is likely to occur

ALTERNATIVES CONSIDERED

Six alternative coordinated activity plans (CAPs) for the Big Piney-LaBarge area were considered and analyzed. The environmental impacts of these were presented in the environmental assessment (EA) for the CAP, which was made available for public review from December 11, 1990, to February 15, 1991. The alternatives represented a broad range of reasonable management actions, resource allocations, and development levels.

Alternative A was the proposed plan (CAP) for the CAP area, based on the existing management direction provided in the planning decisions of the Pinedale RMP.

Alternative B represented more emphasis on development and used an interpretation of the provisions of 43 CFR 3101.1-2, which differs from the interpretation used in the other alternatives. This part of the regulations relates to the application of reasonable measures or COAs on APDs or field development activities in cases where surface protection stipulations are absent from an oil and gas lease and protective measures are later found to be necessary. This part of the regulations states, in part "... at a minimum, reasonable measures shall be deemed consistent with lease rights granted provided that they do not: require relocation of proposed operations by more than 200 meters; require that operations be located off the leasehold; or prohibit new surface disturbing operations for a period in excess of 60 days in any lease year ...". In Alternative B, this is interpreted to mean that the stated relocation distance and time period restrictions are the maximum that can be imposed. The interpretation used in the other alternatives is that the stated restrictions are the maximum that can be imposed as "reasonable measures", i.e., without support of further environmental analysis showing that more stringent measures are necessary.

Both alternatives C and D were developed as compromise alternatives.

Alternative C placed less emphasis on development than Alternative B (but more than Alternative A) and was developed to analyze shorter seasonal restriction periods and reduced areal extent for protection of deer and antelope crucial winter ranges.

Alternative D was suggested by the Rocky Mountain Oil and Gas Association (RMOGA), as a compromise alternative emphasizing vegetative improvements in lieu of seasonal restrictions on deer and antelope crucial winter ranges.

Alternative E was developed to analyze a scenario of no restrictions on oil and gas development. It emphasized development and deemphasized environmental protection, in comparison to the other alternatives.

Alternative F was suggested by the National Wildlife Federation, the Sierra Club and the Wyoming Wildlife Federation. It provided for the promotion of more intense wildlife habitat management with emphasis on environmental protection and less surface disturbance with deemphasis on development.

MITIGATION

Mitigation measures, to reduce or eliminate adverse impacts that may result from the allocation and authorization of uses of the BLM administered public lands and resources in the CAP area, are an integral part of the CAP.

MONITORING

The CAP appropriately provides for the design and implementation of monitoring requirements and studies in several of the resource programs in the CAP area. Monitoring will be conducted to evaluate and assure the effectiveness of the management practices on the area in meeting the management objectives. This will include: monitoring of range and watershed improvement and vegetative treatment activities, including those for wildlife habitat improvement; livestock grazing, pending development and implementation of complete AMPs; reclamation of surface disturbing activities, such as those associated with construction of roads, drill pads, transmission lines, etc.; attempts at new reclamation methods or seed mixtures; ground water and surface water quality; and air quality/visibility trends and conditions. The Area Manager will ensure prompt follow-up action where monitoring identifies that management is not being effective in meeting management objectives.

MANAGEMENT CONSIDERATIONS

In addressing the public comments and concerns on the CAP area that were expressed during the public involvement process, the many desires of the varied interests in the area were taken into account in formulating and deciding to adopt the attached CAP. This decision provides the best mix of management actions for the area that will balance multiple uses, sustained long term yield of resources and environmental integrity, with stability of local and regional economies and conservation of resources for future generations. The major constituent interests in the area are benefitted by this decision in the following ways:

The Local Communities

The provision for year-round drilling activities in the Big Piney-LaBarge field will help provide more opportunity for stabilizing the local economy in the area. Various opportunities for creating or maintaining steady jobs and income are associated with the provisions for no limit on well drilling levels, the emphasis on reclamation and on range and habitat improvement activities, the emphasis on resource studies and monitoring, and the increased emphasis on hunting and other recreational opportunities. The local communities will also be represented on the BPLWG, which should foster better communication with all other interests in the area and a better mutual understanding of coordinated resource management in the CAP area and on BLM administered public lands in general.

The Wildlife Interests

Wildlife interests will benefit through a partnership with industry and BLM for wildlife habitat management. Protection for wintering wildlife, including more sensitive species such as elk and moose, will continue to be provided, where needed, through involvement of the BPLWG and the continual, coordinated planning and management in the CAP area. Studies will be implemented to determine the extent of impact that the mineral development in the area has on the deer and antelope herds and their crucial winter ranges. The provisions for range and wildlife habitat treatment practices will improve the crucial ranges, and wildlife habitat in general, over time. There are also provisions for protecting other important wildlife, such as raptors and sage grouse, and their habitat in the area. Forested lands and mountain shrub communities in the area will be managed to provide for improved wildlife cover and other habitat factors. The management activities to be conducted under the various resource programs in the area include mitigation of impacts to wildlife and wildlife habitat.

The Minerals Industry

The industry interests will benefit from the provision for year-round drilling activities for the companies who operate in the CAP area. This includes more stability in field development through work crew retention. Through representation on the BPLWG, the industry will also benefit from the continual, coordinated planning and management of the area, including long range planning and decisionmaking for locating drilling and operating facilities, and realistic environmental protective or mitigative measures and COAs for APDs and field development activities. The provisions for coordinated planning of roads, operational facilities, reclamation efforts, etc., will foster greater efficiency in field development. The industry will also benefit from the sharing and use of information obtained from the studies and monitoring which is to take place.

The Bureau of Land Management

The BLM will benefit from the continued involvement of all the constituent interests in the coordinated planning, management and decisionmaking processes for the CAP area. When the concerns of all interests are considered, better planning and management decisions can be made. The BPLWG will help the Area Manager evaluate all factors, concerning all interests involved, in making management decisions for the CAP area. This involvement will also benefit BLM through fostering a more informed general public and constituent groups about the complexities and realities of multiple land and resource use planning and management. Another very important benefit to BLM will be more efficient, effective and balanced management of multiple resources and land uses in the CAP area.

PUBLIC PARTICIPATION

Public participation has occurred throughout the Big Piney - LaBarge CAP planning and environmental process. As noted in the CAP EA, this effort was spurred by the increased interest and accelerated scheduling for drilling oil and gas wells in the area west of Highway 189, between Big Piney and LaBarge, Wyoming. This level of planning, called Activity planning, is the third tier of the Bureau's planning process.

On March 20, 1990, a draft Big Piney-LaBarge CAP was circulated to the public. The "Dear Reader" letter in the draft explained; "...after this draft CAP has been reviewed, some provisions of the plan may be modified before the plan is summarized as the Proposed Action for an environmental assessment (EA)...". Written comments on the draft CAP were requested.

A public open house and meeting were held at the Marbleton Fire House in Marbleton, Wyoming, on April 5, 1990 to discuss and take comments on the draft CAP. Approximately 130 people attended the meeting. In addition, thirty-eight comment letters were received on the draft CAP. Substantive comments were considered in modifying the CAP as the Proposed Action for the EA and in developing the alternatives for the EA.

On December 11, 1990, the Big Piney - LaBarge CAP EA was distributed to the public. On January 24, 1991, a public open house and hearing were held in Marbleton, Wyoming, with 60 people attending. Forty-seven public comment letters were received on the CAP EA.

Comment letters on the CAP EA were received from the following:

Mike Sullivan, Governor of Wyoming
Wyoming Game and Fish Department
Wyoming Geological Survey
Wyoming Public Service Commission
Wyoming Department of Commerce
Wyoming Department of Agriculture
Wyoming State Land and Farm Loan Office
Wyoming Office of Industrial Siting Administration
Wyoming Association of Professional Archaeologists
National Wildlife Federation/Wyoming Chapter Sierra Club
BHP Petroleum
Western Oil Refining Company
Petroleum Association of Wyoming
Texaco U.S.A.
Celsius Energy Company
Mobil Exploration and Producing, Inc.
Enron Oil and Gas Company
Rocky Mountain Oil and Gas Association
True Oil Company
Cenex
Coastal Oil and Gas Company
Chevron U.S.A.
Exxon U.S.A. Inc.
BWAB Inc.
Mountain States Water Service Inc.
Krause Engineering
Dowell Schlumberger
Green River Valley Cattlemen's Association
Debbie March
Dave Covill
J.D. Lightner
Terrie A. Springman
Dennis J. Brabec
J.R. Schaefer
Darrell E. Ziomke
David Hindman
Warren E. Sorensen
Charles D. Mahoney
Rita J. Libra
Lee Shafer
Robin W. Groose
Tom Heydt
Robin Dean
John H. Melby
Gory K. Knapp
John Tanner
D.C. Getz

Issues Identified by the Public

Many of the public comments raised the same or similar concerns. Therefore, they were grouped into the eight general issues listed below:

1. Oil and Gas Lease Rights
2. Seasonal Wildlife Restriction
3. Oil and Gas Drilling Ceilings or Limits
4. Wildlife Habitat Condition and Mule Deer Population
5. Forage Utilization/Allocation Problems and Allotment Management Plan Implementation
6. Reclamation of Abandoned Oil and Gas Well Locations
7. Surface Disturbance Restrictions
8. Socio-Economic Tradeoffs
9. Air Quality

The BLM responses to the public comments are provided in Appendix DR-1 to this decision record. The comment letters received and the transcript of the January 24, 1991, public hearing are available for public viewing in the Rock Springs District Office and the Pinedale Resource Area Office.

Copies of the Pinedale RMP, the EA for the Big Piney-LaBarge CAP, the EA Decision Record, and the approved Big Piney-LaBarge CAP, are available upon request from the Pinedale Resource Area office or the Rock Springs District Office. The contacts, addresses and phone numbers are:

Mr. Arlan Hiner
Pinedale Area Manager
Bureau of Land Management
P.O. Box 768
Pinedale, Wyoming 82941
307/367-4358

Mr. Bill McMahan
Project Coordinator
Rock Springs District Office
P.O. Box 1869
Rock Springs, Wyoming 82902-1869
307/382-5350

FINDING OF NO SIGNIFICANT IMPACT

The alternatives analyzed and described in the Big Piney-LaBarge CAP EA were developed from input obtained through the public involvement process. They provide a broad range of reasonable management action, resource allocation, and development level options and alternatives. Positive elements and mitigation factors from alternatives A, C, D and F, addressed in the EA, were selected to develop the approved CAP. The evaluation and analysis of this combination of elements and factors resulted in identifying that, with two exceptions, the impacts of the approved CAP are the same as those of alternative C. The exceptions being, (1) that the socioeconomic affects of the approved CAP are more beneficial (i.e., the same as those for alternatives D and E); and (2) the cumulative impacts of the approved CAP (mostly resulting from the combined levels of industry development, high big game populations and past livestock grazing practices) are less than any of the other alternatives that featured a level of oil and gas development above 500 wells. The information presented in the Alternative Summary Comparison Table from the CAP EA is provided in Appendix DR-2 to this Decision Record to display the comparative impacts of the approved CAP and the other alternatives studied.

In evaluating and analyzing the approved CAP, no significant impacts or significant cumulative impacts were identified. Therefore, preparation of an environmental impact statement (EIS) for the CAP is not necessary. However, because of some concern about the degree of impact that may result, if new oil and gas development in the area were to reach levels of 600 to 900 additional wells within the next 10 years, an environmental review will be conducted by the BLM, if new development reaches 500 wells before the end of the ten year analysis period. This is not a limit for development in the area. Rather, it is a point where reevaluation of the impact level should occur to be both logical and timely for completion before the 600 well level is reached. Major factors which will be considered at that point will be the success of efforts to improve and increase reclamation, to reduce the deer and antelope populations, to improve the range, vegetation and habitat conditions, to reclaim roads and surface disturbances, and to reduce impacts on riparian areas. The various resource program monitoring studies to be implemented in the area will also provide a gage of the need for further environmental evaluation and documentation.

CONFORMANCE WITH THE PINEDALE RESOURCE MANAGEMENT PLAN

The approved Big Piney-LaBarge CAP (attached) is in conformance with the Pinedale RMP, approved December 12, 1988, and an RMP amendment is not required. The higher level of development accepted for the CAP area will not result in significant adverse impacts and does not change any RMP decisions. In addition, the refined mitigation for the CAP area is within the scope, intent and objectives of the RMP decisions.

Prior to authorizing site specific actions (e.g., BLM proposed fencing or water developments, industry proposed pipelines, applications for permit to drill, etc.), the appropriate level of additional environmental analysis will be performed and documented in compliance with NEPA, and Department of the Interior and BLM manuals. There may also be additional planning and environmental analysis documentation needed as implementation of the CAP progresses.

Ray Brubaker
Wyoming State Director
Bureau of Land Management

8-16-91
Date

APPENDIX DR-1

RESPONSES TO PUBLIC COMMENTS ON THE BIG PINEY - LABARGE COORDINATED ACTIVITY PLAN ENVIRONMENTAL ASSESSMENT

Following is a summary of the public comments received on the environmental assessment (EA) for the Big Piney - LaBarge Coordinated Activity Plan and the Bureau of Land Management (BLM) responses to those comments. The responses represent the explanation, answer, or interpretation of BLM's position in regard to the subject matter of the comments. The responses are based on BLM policy, Federal regulations and relevant court decisions.

1. Lease Rights

(a) Comment - Several reviewers stated that adding Conditions of Approval (COAs) to an Application for Permit to Drill (APD) was, in effect, adding stipulations to an existing lease and therefore constituted a violation of lease rights (breach of contract). Reviewers contend that BLM has no legal basis for the imposition of new restrictions on oil and gas leases which were initially issued without stipulations (because they are old leases, of which most are in this area) and that are currently held by production.

Response - BLM contends that imposing properly identified mitigation requirements (COAs) upon a lessee who pursues surface disturbing exploration and/or drilling activities is fully within the authority and responsibility of the BLM and does not constitute modifying or adding requirements to the lease. It is recognized that industry does not agree with this position.

The BLM processes for identifying appropriate and necessary mitigation are the BLM planning process and, in compliance with the National Environmental Policy Act (NEPA), the environmental analysis process. The NEPA analysis process is applied at the land use planning and the detailed activity planning stages of the BLM planning process and at the time of site specific implementation (or authorization) of projects or other actions provided in those plans. The Courts and the Interior Board of Land Appeals have addressed this issue on several occasions and we believe there is sufficient case law to support our position.

Therefore, our position and policy is to take a "hard look" at the environmental consequences of a proposed action at the field development and APD stage, and, if necessary, require mitigation measures (COAs) as means of reducing adverse impacts based on identification of relevant areas of environmental concern.

Most of the leases as originally issued in the Big Piney-LaBarge oil and gas field, do not contain stipulations authorizing the Secretary to deny, totally, any drilling activities upon the lease property. These leases were issued before the adoption of NEPA (1969). However, as supported in case law, the Secretary can impose "mitigation" measures upon a lessee who pursues surface disturbing exploration and/or drilling activities, to take environmental values into account in carrying out his regulatory functions.

However, within the Big Piney-LaBarge CAP area, the BLM concludes that, because the oil and gas operators involved want to be a cooperating party to the management and protection of relevant environmental concerns; and because of the high level of operator involvement throughout this coordinated activity planning effort; and because of operator commitment to work toward the maintenance of environmental integrity in this area, the hard-line, impersonal, regimented approach of conditioning APDs with standard mitigating requirements will not be followed.

Rather, as explained in the CAP decision record, the establishment of a *Working Group* will be used to provide advice and recommendations to the Pinedale Area Manager on plans for field development within the oil and gas area. The Working Group will be comprised of representatives from the oil and gas industry, ranching community, Wyoming Game and Fish, environmental interests, and BLM. This approach will foster confidence and trust among the users and general public. It will ensure a management of development activities that is considerate of the protective needs of the natural resources, while also providing for the enhanced economic interests of the local communities.

(b) Comment - Reviewers state that BLM does not have the authority to impose new restrictions on a lease that "exceeds the terms and conditions of existing leases". Reviewers reference BLM's own planning guidance pointing out that it's Supplemental Program Guidance (SPG) for Energy and Mineral Resources states: "Although lease terms cannot be modified by the RMP, the plan should establish the basis for working with existing leaseholders in the event that voluntary conformance can be obtained." Reviewers also point out BLM's Planning for Fluid Mineral Resources Handbook states relative to existing leases: "The constraints and requirements identified in a plan or plan amendment must be applied to all new leases and all lease renewals. Such constraints or requirements may also be applied to new use authorizations on existing leases provided that they are within the authority reserved by the terms and conditions of the lease."

Response - BLM does not disagree with the fact that it does not have the authority, once a lease is issued, "to impose new stipulations or new restrictions on a lease that exceed the terms and conditions of existing leases". This is the point of the BLM Supplemental Program Guidance and Fluid Mineral Resources Handbook. It is apparent that, in this case, the point of contention is what constitutes exceeding the terms and conditions of the lease.

Sufficient case law exists to clearly demonstrate that BLM does have the authority and responsibility to impose new restrictions (i.e., COAs, mitigation measures) once a lease has been issued (even though the lease does not include special stipulations), as long as BLM does not deny development of the lease or totally preclude surface disturbing activities.

(c) Comment - Reviewers referenced specific lease language that, in their opinion, made it apparent that the "dominant use" on the leased lands was mineral development. That lease language is as follows:

> "Reserved or segregated lands. — If any of the land included in this lease is embraced in a reservation or segregated for any particular purpose, the lessee shall conduct operations thereunder in conformity with such requirements as may be made by the Secretary of the Interior for the protection and use of the land for the purpose for which it was reserved or segregated, *so far as may be consistent with the use of the land for the purposes of this lease, which latter shall be regarded as the dominant use unless otherwise provided herein or separately stipulated.*" (emphasis added)

Response - The reviewers interpretation of the dominant use language is in error. To interpret this to mean mineral development is the dominant use on the leased lands is taking its intent out of context. The words "dominant use" contained in these older lease terms was intended to apply specifically to the intended purpose and use of "reserved or segregated lands". The Big Piney - LaBarge area does not involve reserved or segregated lands.

(d) Comment - Reviewers stated that lease development cannot be restricted beyond the special stipulations attached to a lease or be more restrictive than the provisions of 43 CFR 3101.1-2 allows. Reviewers also contend that compliance with post lease RMPs cannot be mandated. That the intent of 3101.1-2 is apparent, to temper impact to leases affected by future RMP objectives.

Response - There has been considerable confusion and disagreement over the meaning of the current 3101.1-2 regulation, which reads in part:

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

Industry believes the requirements of 3101.1-2 are maximums that can be imposed on the operator by the BLM, unless the requirement is an existing lease stipulation or a lessee agrees to add such a stipulation after the lease has been issued. No justification for moving a drilling location or delaying operations is needed if these distances and time limitations are not exceeded.

The intent of the regulation (3101.1-2), and BLMs policy and interpretation, is to specify the maximum restriction that can be imposed as a COA to a permit or authorization **without needing support of further planning or environmental analysis.** It is not intended to establish a limit which cannot not be exceeded, even if environmental conditions/impacts dictate that they should be exceeded. This would be completely contrary to the mandates of FLPMA and NEPA. Rather, these limits can be exceeded with proper support of further planning or environmental

analysis, which demonstrates consistency with lease rights and that the action is reasonable.

> "Proper support" means that the supporting analysis and rationale are documented in a current planning and/or NEPA document.
>
> "Consistent with lease rights" means that BLM is not denying the lessee the opportunity to develop the lease. For example, requiring a different location for a drill site and delaying operations during certain critical seasons for important resource values are consistent with lease rights.
>
> "Reasonable" means that an action can be relocated or delayed if unacceptable impacts would occur as proposed. For example, impacts to wintering mule deer on crucial winter range and under severe winter conditions (from proposed construction, drilling or well completion operations) could be determined by management to be unacceptable under the concept of multiple use. In this case it would be reasonable for BLM to protect the area from unacceptable impacts to deer on crucial winter range.

2. Seasonal Wildlife Restrictions

(a) Comment - Several comments from the oil and gas industry questioned the need for seasonal restrictions on oil and gas development to protect big game, specifically mule deer. People feel that because the big game have coexisted with oil and gas operations in the past, they will prosper in the absence of restrictions to oil and gas operations during crucial periods, such as severe winter conditions.

Some reviewers believe that the need for seasonal restrictions is based on false assumptions. The reviewers point out that they feel BLM is operating under the false assumption that wildlife, specifically mule deer, are harmed by oil and gas activities in "crucial winter habitats". The comments refer to the assumption that "...human activity is likely to cause higher deer mortality and temporary or permanent displacement...", as unsupported.

The report prepared by Hayden-Wing and Associates for the Rocky Mountain Oil and Gas Association (RMOGA) is often referred to as justification for not seasonally restricting certain oil and gas operations. This argument has been expanded to include pronghorn antelope, sage grouse and raptors. Some reviewers insist that the real issue is one of poor habitat, and they feel the answer to the resource challenges lie in reducing big game populations and improving habitat, and that no restrictions of oil and gas operations is necessary.

Response - The Hayden-Wing Associates' report (Final Review & Evaluation of the Regulations and Effect of Oil and Gas Development on Mule Deer, Sage Grouse, and Raptors, September 1990) states in part:

> "...Except when harassed by humans, mule deer appear to habituate to human-related activities. Harassment, though, has been shown to reduce fawn production by female mule deer." The report submits that "Minimum fawn mortality on the Big Piney-LaBarge winter range exceeds that on most other winter ranges and is greater than expected on the basis of winter severity conditions." (p.16) and further states "Chronic stress has been hypothesized to promote pathological conditions in free ranging animals, increasing their mortality and decreasing reproduction, but has not been demonstrated for mule deer. Harassing deer on winter range, though, will cause them to expend more energy to escape and avoid the source of disturbance and possibly other, benign human activities. Increased winter mortality is a likely consequence for wintering deer, particularly females, if they are subjected to over crowding, poor forage conditions and availability because of snow cover, and the metabolic demands of thermal stress and fetal development." (p.28).

We know from the literature, Wyoming Game and Fish reports, and the Hayden-Wing Associates report, that winter disruption and disturbance of deer can reduce mule deer fawn production and that fawn mortality is higher than normal on the Big Piney-LaBarge winter range. It is important to note that these fawn mortality calculations are based on mild winters. Under severe winter conditions, a high level of fawn and adult deer mortality would be expected. Add to this situation a high level of oil and gas activity and declining habitat conditions, along with deer congregating on plowed roads, and there is likely to be a higher deer mortality.

Under ideal conditions, big game would be expected to disperse into the best available habitat for foraging. During winter, a fraction of the total habitat is available

and stress to individuals is high due to snow and temperature conditions. This creates a bottleneck for herd survival and, in fact, under severe conditions, a large percentage of the herd will succumb to these adverse conditions. Usually, fawns and older animals are the first to die and a certain loss of these age groups will occur even during a mild winter.

Winter animal distribution occurs on a relatively small portion of the total habitat and in higher density per square mile than at any other time. This can result in heavy use of winter forage, which is often the most limiting factor to population size. Other factors which can compound an already stressful situation (to both the animals and the habitat) include stimuli that may cause the animals to congregate into even higher densities or expend more energy than is required to survive the cold and snow. Some of these stimuli can be managed, such as limiting or restricting wintertime construction and human occupancy.

The reason for the wintertime restriction (COA) on drilling and other surface disturbing activity is to inform the land user that, if he/she wishes to conduct activities during the crucial winter period, it will be necessary to assess the impacts of the proposal on the area identified as crucial winter habitat. Depending on the nature of the proposal, the severity of the weather conditions, the density and condition of the animals, and the availability and condition of forage, a determination would be made whether to allow the project to proceed during the winter or to delay it until the weather is less severe and/or animals have dispersed into other habitat.

Two questions remain; (1) What is considered enough or excessive disruption and disturbance?; and (2) Could increased disturbance occur in the absence of the winter range restriction on drilling activities?

Wyoming Game and Fish Department (WGFD) biologists and BLM biologists have spent several years observing deer in the CAP area. There are some areas where deer seem fairly accustomed to human activities. However, there are large areas, even within the developed oil and gas units, that have very little human activity, where deer do spook at the sight of a single vehicle and often run to cover out of sight of the vehicle. This would be considered enough or excessive disturbance when the animals are under stress of severe winter conditions.

Displacement of deer occurs whenever the deer move away from a vehicle and this can be observed daily along roads in the CAP area . Usually this is short term and of negligible impact. However, drilling and completion operations have been shown to take from three weeks to seven months. In an area where deer are not used to intense activity, displacement is expected. No doubt habituation of some deer will occur over time, but each situation needs to be evaluated independently. The BLM will accomplish this through establishment of the Big Piney - LaBarge Working Group (BPLWG), as explained in the Big Piney - LaBarge CAP.

The Hayden-Wing Associates Report states "...With access throughout the winter range, there is potential for people to harass mule deer, whether from existing roads or from off-road vehicles. Hayden-Wing Associates concurs with the recommendation by BLM that the petroleum industry close roads that are unnecessary for maintaining oil and gas operations...".

The Hayden-Wing Associates report bases the conclusion that "...oil and gas developmental activities have neither displaced nor depressed this mule deer population..." on "...what is known about mule deer behavior and information reported in the literature..." (p. 31). However, the report also includes that "...no literature specifically addressing the response of mule deer to oil and gas development was listed in any of the data bases searched..." (p. 20). Two unpublished studies were inconclusive. The report states "...The long-term extensive growth of this herd in the face of substantial, simultaneous, oil and gas activities is solid evidence that oil and gas activities has not had an significant negative effect on mule deer numbers on this winter range..." (p. 31). However, the report fails to give recognition to the fact that *winter drilling* has been minimal during the recent population increase (2 wells in 1985-86, 0 wells in 1986-87, 1 well in 1987-88, 2 wells in 1988-89).

The only site specific studies mentioned in the Hayden-Wing report showed that "...mule deer do not respond vigorously to traffic or existing oil and gas activities...". However, it was not recognized that the traffic and oil and gas activities in the observation area were routine maintenance activities during a mild winter (the type of activity that is not excluded by conditions of approval) and did not include construction of roads or well pads, or drilling and completion of new wells.

Several literature references on the effects of disruption and disturbance (or harassment) on deer, and on raptors and sage grouse are available from "The Hayden-Wing Report." There is literature summarizing what happens to nutritionally deficient deer during winter, and also literature that shows additional stress

on deer under less than maintenance rations as impacting them significantly. Field observations have shown that certain stimuli will cause deer to displace into adjacent habitat, depending on the type of activity, density of deer, and propensity for the deer to habituate to the activity.

Specific studies on the effect of oil and gas activity on deer are lacking in the literature, although several studies are currently underway. Caution is the guide, until site specific studies can support otherwise. Where deer density is high, forage conditions poor, the population hunted heavily, winter stress severe, and disturbances likely to add stress or cause displacement, the land management agency is mandated to address and resolve potential conflicts. This is the purpose and intent of the CAP and the Big Piney-LaBarge Working Group. It is planned that a study will be designed in the CAP area under the purview of the working group that will document the effects of oil and gas activity on mule deer.

(b) Comment - Several reviewers questioned the need for restrictions on activity to protect sage grouse and raptors.

Response - Sage grouse breeding consists of a complex early morning (and sometimes into the evening and late night) mating ceremony that involves a lek or strutting ground. Male birds display and defend territories within the lek while females enter this breeding ground, are fertilized, and nest in suitable areas (usually within 2 miles of the lek). The purpose of the restriction on construction activities and human occupancy on or near the leks is to keep from disturbing the breeding ritual and to protect nests during the nesting period, if they are in the path of new roads, well pads, pipelines, etc.

The Hayden-Wing Associates report recommended sage grouse habitat be addressed through a site specific evaluation of nesting suitability, with the degree of oil and gas activity allowed being based on the survey. The BLM standard practice has gone one step further by conducting an actual nest search of areas in the path of proposed surface disturbance or human activity, within the two mile area of nesting habitat, and relieving the restriction if: 1) the area of construction is unsuitable for sage grouse nesting; or 2) no nests are found during the nesting period. However, this nesting restriction has been eliminated in the CAP Decision Record as a result of industry and Wyoming Game and Fish input. The restriction now placed on leks is a 1/4 mile avoidance area and a restriction on surface disturbing and disruptive activities from 9:00 AM through 12 midnight, within 1/2 mile of the lek, during active mating.

Raptors are protected under the Migratory Bird Treaty Act. Disturbances during nesting can affect the productivity of raptors. It is documented that adult birds have been observed deserting eggs or young after being disturbed, damaging eggs and young if the adults are frightened, and creating adverse conditions for eggs and chicks from prolonged absence from the nest while avoiding disturbance. The purpose for the raptor nesting restriction is to encourage maximum survival of the young birds during this sensitive nesting period.

The Hayden-Wing Associates Report characterized the raptor section of the CAP as temporal and spatial restrictions that are too general, categorically exclusive, and unnecessarily restrictive. Hayden-Wing proposed several alternatives to be used, on both a site-specific and species-specific basis, to protect raptor nests. These include allowing activities to commence after hatching of young birds, moving the nest, moving hatchlings into foster nests, placing a temporary nesting deterrent over an existing nest prior to arrival by the parent birds, and eliminating the nest. The first alternative would be reasonable, if the proposed activity is far enough from the nest to keep from causing frightened adult birds to accidentally harm nestlings, miss feedings, leave nests unattended for long periods, etc. All the other alternatives would require a permit from the Federal and State authorities under the Migratory Bird Treaty Act and would most likely result in longer delay of the proposed activity beyond the nesting period. Further, as we use the restrictions in question, they allow for relief or adjustment, when appropriate, such as different chronologies for different species, nature of the operation, existence of visual buffers, or excepting the restrictions, if the anticipated problem is not realized etc.

(c) Comment - Some reviewers questioned the basis and accuracy of the formula used in the CAP environmental assessment to determine wildlife displacement due to oil and gas activity.

Response - A formula to predict the likely consequences of wintertime drilling was developed specifically for the CAP EA in an effort to quantify the potential effects of human activity. The specific components and parameters of this formula are described in the CAP Technical Report. While there is dissatisfaction among some of the reviewers over the parameters used in this formula, the professional

judgement of the field biologists was the basis for assessing the potential impacts on wildlife. Several assumptions, such as uniform deer distribution, distance of displacement, number of deer that will habituate to the disturbance, and uniformity of reactions among big game species were questioned. These are valid points which can only be addressed in site specific analyses. This will be one of the considerations of the Big Piney-Labarge Working Group. Until site specific analyses for individual projects are undertaken or new data gathered from the planned studies identified in the Decision Record, an approach based on professional judgement, such as was done for the CAP, must suffice.

(d) Comment - Several reviewers were concerned about the "decision points for shut-down" between drilling, completing, and putting a well on line. The need to finish a project once it is commenced was expressed.

Response - The current Wyoming BLM policy on this matter will remain in effect. This policy allows the Area Manager to shut-down operations, if necessary to project other resource values, at (1) the point of completing the drilling of a well; and (2) the point of well completion, before the well is put on-line (i.e., before ancillary facilities are constructed at the well site and/or before a pipeline is connected to the well). This also assumes that other resource concerns would be adequately mitigated or addressed to allow these actions to occur (e.g., frozen or saturated soil, cultural resources, steep slopes, etc.). This is a key item that will be included in considerations for wintertime drilling activities by the Big Piney-LaBarge Working Group and the Pinedale Area Manager.

3. Drilling Ceilings or Limits

(a) Comment - Several reviewers asked if there will be a limit on the number of oil and gas wells that will be permitted to be drilled in the CAP area.

Response - No limit will be placed on the level of additional well drilling and development which can be conducted in the CAP area. However, because there are concerns and differing opinions regarding the degree of impact that may occur from the additional 600 to 900 wells that may be developed in the assumed ten year period, should the development level reach 500 new wells within the next ten years, an environmental evaluation will be conducted to determine the level of impacts which are occurring. At any point that monitoring indicates a substantial change in impacts, or that levels of impact beyond those analyzed in the EA are starting to occur, environmental evaluations will be initiated.

(b) Comment - There is some disagreement among constituent interests about the level at which development impacts become significantly adverse.

Response - Based on the data gathered and the environmental analysis results, the interdisciplinary team believes, that, at the 500-600 additional well level, no significant adverse impacts would occur from well drilling activities or from cumulative impacts of all activities in the area. This is particularly true when the habitat and range improvement work that is approved in the CAP are taken into account.

(c) Comment - Several reviewers asked why the number of wells is an important factor.

Response - The development of drilling pads, roads and ancillary facilities such as pipelines are contributors to the reduction of habitat in the area and the number of wells is an indication of the level of impact occurring. As stated above, since there are differing opinions regarding the level of impact that will occur from an additional 600 to 900 wells, further evaluation of environmental affects will be conducted, should the level of new development reach 500 wells in the next ten years.

4. Wildlife Habitat Condition and Mule Deer Population

(a) Comment - Several reviewers commented that the true issue of the CAP, as it related to mule deer, was one of habitat condition and an overpopulation of deer. The restrictions on winter activity were viewed as over restrictive and unnecessary when the thrust of management should be toward habitat improvement and deer population control.

Response - The overriding issues as they relate to mule deer in the CAP area are poor habitat condition and high deer numbers. The solutions to these problems are the main thrust of wildlife management in the area. The BLM is committed to improving the reclamation techniques used in the area, returning unnecessary roads to deer habitat, treating and rejuvenating the decadent vegetation, avoiding surface disturbance to key forage species, and emphasizing a continued active well plugging and abandonment program. It is true that overpopulation is one factor that has caused habitat problems. This situation is being addressed by the WGFD through an increase in the number of hunting licenses issued in the area.

The seasonal restrictions to protect wintering mule deer primarily address a humane issue, i.e., disruption and displacement of deer under high stress conditions. A detailed explanation of this is provided in issue number two. The seasonal restrictions also address the habitat condition. If wintering deer, densely congregated on the winter range, are displaced by activities into even higher densities, the habitat into which they are displaced suffers a greater impact due to the increased forage utilization. This situation becomes even more critical when both high deer population and poor habitat condition exist, as is the case in the CAP area.

(b) Comment - Some reviewers said they felt that the oil and gas industry was being blamed for the decadent shrub condition. Several reviewers would liked to have seen more emphasis placed on habitat improvement by BLM and WGFD and less on activity restrictions.

Response - The charge that oil and gas is to blame for the decadent vegetation condition is the result of an inadvertent statement made in the CAP Environmental Impacts section. This is false and should have been deleted from the CAP EA. The oil and gas activities in the area are only responsible for habitat conditions to the extent that facilities have taken acreage out of production or where reclamation has been unsuccessful. Some of the developed oil and gas areas are not producing optimum deer habitat, but an effort at improving reclamation techniques is a vital part of the CAP Decision Record and should help alleviate any further problems with poor reclamation on the small percentage of habitat involved.

(c) Comment - Some reviewers felt that the BLM habitat improvement management strategy is not aggressive enough.

Response - BLM believes that its habitat improvement strategy is as aggressive as it should be at this time. There is no guarantee that habitat improvement can be accomplished on all portions of the winter range. The plan to treat no more than 10% of the habitat over 10 years using various treatments will give us an indication of whether the management objectives are being met. To go beyond 10 percent in ten years would excessively risk the loss of too much habitat, if the treatment does not prove successful. At first, the treatments will reduce the availability of forage, and full benefits are not expected until after the shrubs have adequate opportunity to respond, possibly 10-20 years. Monitoring of the planned treatments and improvements will indicate the success of the program and future improvement potential.

(d) Comment - Several people wanted clarification on what the BLM means by avoiding mountain shrubs.

Response - As "avoidance areas", mountain shrub habitat types are to be avoided by surface disturbing activities, to the extent possible. In cases where it is not possible to avoid these areas, intensive mitigation of the proposed surface disturbing activities will be emphasized. For example, a surface disturbing activity proposed in the mountain shrub habitat type would be relocated to an area outside this habitat type, if practical or possible. If not possible, and the activity must be conducted in a mountain shrub type, the WGFD will be consulted to help determine the extent of impact and the mitigation needed. A site specific reclamation plan may be required from the project proponent, specifying methods, techniques and time frames for reestablishing the mountain shrub habitat to predisturbance levels. Authorization of surface disturbing activities in the mountain shrub habitat type will depend on the acceptability of the reclamation plan. The BPLWG may also be consulted for recommendations on these situations from a long term planning perspective.

5. Forage Utilization/Allocation Problems and Allotment Management Plan Implementation.

(a) Comment - Several reviewers questioned how the BLM will allocate (adjust) forage for livestock and wildlife.

Response - The forage use by big game (primarily winter deer and antelope use) within the CAP area is not highly competitive with livestock use (primarily spring and summer cattle use). Therefore, the allocation of "available" forage (i.e., available for animal consumption, as opposed to some nonconsumptive use, such as ground cover for watershed protection) basically amounts to allocating the shrubby vegetation to big game use and allocating the grasses and forbs to cattle and small game use. The appropriateness of current stocking levels (livestock and wildlife) will be determined following evaluation at the end of one grazing cycle. Using a combination of actual livestock grazing use data, climatic data, vegetative utilization measurements, and range trend data, a determination can be made as to whether the livestock/wildlife forage allocation is proper. Actual livestock use and vegetation utilization data can be

prorated against the total allocated livestock grazing privileges to establish proper allocation for livestock. If increases or decreases in livestock forage allocation are necessary they will be shared equally among the individual range users based on a percentage of the total current active allocation. New forage inventories on livestock grazing allotments in the CAP area are not anticipated, unless an unforeseen need arises.

Utilization is defined as the percent of current year's vegetative growth of key species consumed by animals during a given grazing period. For the purpose of measuring livestock grazing use on the Calpet Common and North LaBarge Common grazing allotments, all measurements will be made on the current year's growth of key grass species.

At a given point during the growing season, if livestock utilization is 50 percent of the current available key grass species crop and the livestock are removed from the range before the end of the growing season, utilization will be substantially less than 50 percent of the total growth for the year, since regrowth occurs until the growing season ends. Residual vegetation from previous years' growth will not be considered in utilization measurements. Residual vegetation due to pasture grazing deferment will be beneficial for watershed protection during spring runoff, for small game forage and cover during the winter, and for livestock forage on spring turn out pastures.

Measuring livestock utilization on current year's growth only and removing livestock after 26 days (or when utilization levels reach 50 percent on key grass species), before grasses cure and before livestock would begin to make use of shrubby vegetation, will allow for substantial regrowth of grasses and forbs under most of the grazing treatments to be used in the area. Livestock grazing deferment, the subsequent regrowth on four of the six proposed grazing treatments each year, and the control of livestock use on shrubby vegetation should also provide for ample big game winter forage on these allotments.

(b) Comment - A few comments were concerned with why the BLM is limiting utilization of riparian areas to 40 and 50 percent when limits in the Bridger-Teton Forest Plan are 55 percent utilization on riparian areas in unsatisfactory condition and 65 percent utilization on those in satisfactory condition.

Response - The Forest Service utilization figures are meant to be maximum limits for the entire national forest. Limits on individual allotments and individual riparian areas within the national forest are to be established by an interdisciplinary (ID) team, including Forest Service employees, livestock permittees, and other concerned interests, at the time individual AMPs are developed.

Most of the riparian concerns in the CAP area are in annual precipitation zones of 7 to 14 inches, while many of the areas on the Bridger-Teton are in precipitation zones of 19 or more inches per year. Because of this difference, the CAP area riparian zones have much less potential for regrowth than the riparian zones on the national forest. Thus, riparian areas in the CAP area should be grazed at lower levels to account for the lower regrowth potential. Also, in many cases the soils in the CAP riparian areas are more fragile than those in the national forest areas. The shallower, rocky soils in the national forest are generally less susceptible to erosion than some of the deep loamy and silty soils in the CAP area. Therefore, riparian areas in the CAP area require that more vegetation remain on the ground (i.e., lower livestock utilization levels) to provide them adequate protection from erosion.

Finally, some of the riparian areas in the CAP area are badly deteriorated (probably more so than most of the riparian areas on the national forest). Livestock utilization levels in these deteriorated areas will be limited to no more than 40 percent of the annual year's growth. When an upward trend in the ecological condition of these areas becomes apparent (e.g., banks stabilize, additional forage becomes available, etc.), higher livestock utilization limits will be considered.

(c) Comment - Some questions were raised on how the CAP will relate to Allotment Management Plans (AMPs).

Response - AMPs will be prepared or revised for all "I" allotments within the CAP area. The final stages of AMP development for Calpet Common and North LaBarge Common grazing allotments will begin immediately after the Big Piney - LaBarge CAP is approved. Information needed to complete these AMPs on those portions of the grazing allotments that are outside of the CAP area is readily available and the remainder of the AMP development should be relatively straight foreword. Elk crucial winter ranges and calving areas and Colorado Cutthroat trout habitat are the major concerns to be further considered in developing these AMPs. AMP development or revision for the other I allotments in the CAP area will be scheduled for preparation in the next one to five years or as funding permits.

6. Reclamation of Abandoned Oil and Gas Well Locations

(a) Comment - Some comments received indicated that the assumed 200 wells to be plugged within the 10 year analysis period is the estimate of only one of the oil and gas companies operating in the CAP area and that the BLM should increase the well site reclamation estimates.

Response - All of the companies operating in the area were queried as to the number of wells they thought would be plugged. The resulting total was still 200 wells for the 10 year period, even though there were 36 wells plugged and abandoned on BLM administered public lands within the CAP area during 1990 alone. The assumption of 200 reclaimed well sites for the ten year period still represents a reasonable estimate of well site reclamation, while the actual result may be more or less.

(b) Comment - Some commentors questioned whether the 784 inactive wells (i.e., of 1864 wells drilled in the area, 1080 are active) represent further reclamation that was overlooked.

Response - The 784 inactive wells have already been plugged and abandoned and reclaimed. Thus, further reclamation opportunity has not been overlooked. However, the reclamation success on some of these sites may be less than adequate. This will be determined in conjunction with field monitoring.

(c) Comment - Some commentors questioned why the BLM couldn't specifically identify the roads in need of maintenance in the CAP.

Response - BLM personnel limitations and other priority work have prevented conducting an inventory of needed road maintenance and upgrading in the CAP area. Access roads that require upgrading will continue to be identified in consultation with the responsible operator(s). Refinement of the transportation network plan for the CAP area will also be considered by the Big Piney - LaBarge Working Group.

(d) Comment - Some commentors questioned why the BLM requires upgrading of existing access roads prior to allowing drilling equipment onto the location.

Response - Many of the existing, old roads in the CAP area are flat bladed or, if crowned, are improperly drained and surfaced. These are a principle source of increased sedimentation from runoff and often are a safety hazard. Because of the desire to reduce sedimentation and liability to public land users, if safety standards are not met, BLM policy requires that existing roads be maintained to BLM engineering standards. This means that roads not up to standards in the CAP area will be upgraded (i.e. crowned and ditched, resurfaced, etc.) to maintain road integrity.

(e) Comment - Some commentors expressed the concern that seasonal and permanent road closures could impact oil and gas production operations.

Response - There is **NO plan** to seasonally close roads in the CAP area, without first consulting and working with the operators in the area. Access to producing wells **will not be denied** for any reason. It is possible, through consultation with the Big Piney - Labarge Working Group, that access to certain roads in the area may be administratively limited to only the oil and gas operator, WGF personnel, law enforcement personnel, other affected parties, and the BLM, during seasonal periods of concern. The reasons for and alternative methods of closure will be considered by the Big Piney - LaBarge Working Group and other interests involved, and their recommendations provided to the Pinedale Area Manager for decision.

Operators in the area will not be denied access to roads which are essential to their operations. Well pads or other facilities that have more than one access route will be evaluated to determine the need for the additional access routes. The BLM will work with any affected operators/permittees before access roads are closed to ensure that the roads are not essential to their operations.

7. Surface Disturbance Restrictions

(a) Comment- Many comments were received identifying the 500 foot surface disturbance setback from surface water and riparian areas as arbitrary and too restrictive because there are alternative mitigation methods that can eliminate potential impacts. Some similar comments were received in reference to surface disturbance restrictions in general.

Response - The BLM has standard requirements that are appropriately included in use authorizations to ensure protection from or mitigation of adverse or undue and unnecessary environmental impacts. Wyoming BLM has also developed standard mitigation guidelines for surface disturbing activities that are used in the environmental analysis and planning processes to determine needed mitigation and stipu-

latory requirements. While these standards are based on years of experience, experience has also shown that it is necessary to have flexibility in their application on a site specific basis, because they may need to be modified to fit specific situations. Also, the BLM recognizes that, in most cases, surface disturbing activities in environmentally sensitive areas can be accomplished economically and without unacceptable adverse environmental impact, with some advance planning and proper design. Therefore, application of the surface disturbance restriction has been refined to provide the intended and needed flexibility within the CAP area.

(b) Comment - Several commentors asked why directional drilling of oil and gas wells was a required consideration.

Response - When surface features (e.g. topography, floodplain, etc.) or environmental conflicts limit or impede the feasibility of drilling a well from the proposed location, an operator has two options available to choose from. One of the options is to prepare appropriately detailed engineering designs and/or mitigation planning that would demonstrate how the environmental concern will be adequately protected or how the effects will be adequately mitigated. While this can be accomplished, in many cases it will often increase the cost of the project considerably. If it is not practical or possible to adequately mitigate the environmental impact, the location of the proposed well must be moved. Depending on the new drilling location, the operator may have to drill directionally to reach the desired downhole location. The BLM is requiring protection of certain resource values and one of the valid options that may be considered is directional drilling (see Michael Gold decision, IBLA 86-1575). The operator, not BLM, may propose to directionally drill, if it is the only environmentally or economically feasible solution. Thus, where necessary, "consideration" of directional drilling is required.

8. Socio-Economic Tradeoffs

Comment - Some reviewers felt that the socio-economic benefits of oil and gas activities far out-weigh the insignificant effects on other local resource values. Others pointed out that because no significant impacts were identified with any alternatives, the responsible approach for BLM to take is to adopt a management option which would benefit both habitat conditions and the local economy.

Response - While the socio-economic benefits are an important component in the decision-making process, sole consideration of social and economic benefit from a proposal to the detriment of the natural environment would violate both the basic premise of the National Environmental Policy Act and BLM's management mandate contained in the Federal Land Policy and Management Act. BLM concurs in the premise that adoption of a management option which would benefit both habitat condition and the local economy is best in this case. The BLM believes that the management option selected, the approved Big Piney - LaBarge CAP, best meets this objective.

9. Air Quality

Comment - The Wyoming Department of Environmental Quality (DEQ) was concerned that air pollution emissions from the proposed action and existing oil and gas wells were grossly over estimated. Conversely, the Forest Service was concerned about the possibility of emissions from the existing and proposed activities in the CAP area causing adverse air quality and visibility impacts in the designated Class I airsheds for the wilderness areas they manage.

Response - After investigating the Wyoming DEQ's concern, the BLM agrees that the number of emission sources considered in the CAP EA was estimated incorrectly. This resulted from two factors, (1) the number of emission sources was much too high for well field operations; and (2) the emissions factors used to calculate emissions were overly conservative (i.e., tending to over estimate). Because the Wyoming DEQ information is more current and accurate than that used for the CAP EA, the BLM has adopted the DEQ estimates for the number of emission sources and their suggested emission factors for well field operations. As shown below, none of the new emission estimates for the proposed action alternative will cause violations of state or federal air quality standards. The addition of the air pollutants, SOx, NOx and particulates, will add to visibility reduction during localized atmospheric stagnation episodes. However, this reduction should never become great enough to cause a public safety hazard. In addition, long range transport of pollutants will result in extremely low concentrations of air pollution arriving in Class I areas, such as the Bridger Wilderness, and will not result in any direct violation of air standards. This should significantly lower the Forest Service's concern for their Class I areas.

APPENDIX DR-1

Revised Air Emissions for The Proposed Action Alternative

Emission Source	Units	Unit of Measure	Pollutant	Amount (Tons/yr)
Well Drilling	32-100	Well	TSP or SO2	106 - 333
Well Drilling	32-100	Well	NO_x	1597 - 4990
Oil & Gas Cumulative (yr)			TSP or SO2	196 - 423
Oil & Gas Cumulative (yr)			NO_x	2067 - 5460
Oil & Gas Access Road Use	350	Mile	TSP	8.0
Surface Disturbance	609	Acres	TSP	27.7
Prescribed Burning	10650	Acres	TSP	20.0 to 35.0
Prescribed Burning	10650	Acres	PM10	15.7 to 27.8

Notes:

1. TSP means total suspended particulates.
2. PM10 means particulate matter ten microns or less in diameter.
3. NO_x means oxides of nitrogen.
4. Emissions factors are those which have been suggested by the Wyoming Department of Environmental Quality - Air Quality Division.
5. Prescribed fire emissions were calculated using the BLM Simple Approach Smoke Estimation Model (SASEM).
6. All emissions estimations are presented as ranges because implementation of development and activities will vary by year.
7. Cumulative oil and gas emissions were calculated assuming that there are 815 wells existing, but only 481 are producing. In addition, there are 9 compressors operating (six 250 hp units and three 125 hp units), four 100 hp water pumps, one 20 hp water pump, and ninety-five 10 hp pump engines existing in the field. Under the preferred alternative, 32 wells would be drilled per year (50 days of drilling for each well).
8. Access road use was estimated to be 700 miles of existing road plus 0.5 mile for each new well. TSP emissions were calculated using an emission factor of 48 lbs per year per mile of road. This factor was taken from the Riley Ridge EIS Air Quality Technical Report.
9. Emissions for disturbed areas were calculated using the USEPA AP-42 emissions factor for agricultural tilling. Using a silt content of 25% and a Thornthwaite PE index of 31, emissions are 91 pounds per acre of TSP.

APPENDIX DR-2

COMPARATIVE IMPACT SUMMARY OF THE CAP AND ALTERNATIVES

ITEMS	A	B	C[3]	D[3]	E	F
Existing wells in CAP area	1080	1080	**1080**	1080	1080	1080
Total wells to be drilled	300	600	**600**	900	900	200
Percent change over 10 years	28%	56%	**56%**	83%	83%	19%
Peak year - number of wells	50	100	**100**	150	150	20
Wells to be reclaimed[1]	200	200	**200**	200	200	200
Miles of road reclaimed	110	110	**110**	110	110	110
Total acres reclaimed	810	810	**810**	810	810	810
SOCIOECONOMIC IMPACTS						
Unrestricted drilling days	199	305	**244**	305	305	199
Direct income to area ($MM)	$132	$241	**$239**	$348	$348	$94
Oil/Gas						
Net new acres disturbed for 10 year period	90	990	**990**	1890	1890	-209
Wildlife						
Mule deer—Mortality[2]	40	45	**45**	55	55	38
Long term displacement	380	245	**150**	875	875	450
Acres habitat degraded	1000	4934	**1825**	9050	9050	735
Acres habitat improve (000s)	13	13	**13**	14	13	14
Antelope—Mortality[2]	65	60	**60**	50	50	67
Long term displacement	65	14	**25**	95	95	80
Acres habitat degraded	540	1487	**890**	2890	2890	390
Acres habitat improved (000)	11.7	11.7	**11.7**	12.7	11.7	12.7
Elk—Mortality[2]	5	0	**0**	5	10	6
Long term displacement	20	0	**0**	15	30	25
Acres habitat degraded	95	190	**190**	280	475	70
Acres habitat improved	300	300	**300**	325	300	325
Moose—Mortality[2]	40	5	**5**	30	35	42
Long term displacement	10	40	**40**	65	70	8
Acres habitat degraded	1550	3000	**3000**	4750	5250	1300
Acres habitat improved	500	500	**500**	500	500	500
Raptors—Animals displaced	10	20	**13**	30	30	8
Protected from displacement	30	20	**27**	15	10	35
Sage Grouse—Habitat degraded	70	150	**150**	230	450	50
Habitat improved/protected	2800	2800	**2800**	2900	2500	2900
Fish—% population lost	10%	18%	**18%**	25%	30%	9%
% habitat degraded	10%	20%	**20%**	28%	30%	9%
% habitat improved/protected	15%	15%	**15%**	15%	15%	15%

APPENDIX DR-2

COMPARATIVE IMPACT SUMMARY OF THE CAP AND ALTERNATIVES (Continued)

ITEMS	A	B	C[3]	D[3]	E	F
LIVESTOCK GRAZING MANAGEMENT						
Short term AUM loss	290	352	**683**	1024	1024	228
Long term AUM loss (10 year)	234	296	**124**	186	186	41
VEGETATION						
Acres disturbed short-term	4209	5109	**5109**	6009	6009	3099
Acres disturbed long-term	3399	4299	**4299**	5199	5199	3099
RECREATION						
Total user days	1500	1250	**1250**	800	800	1700
ORV user days	500	500	**500**	500	500	500
TRANSPORTATION						
Percent reduction roads	15%	15%	**15%**	15%	15%	?
VISUAL RESOURCE MANAGEMENT						
/-Class II (000s acres)		-.1	**-.1**	-1.6	-1.6	NA
/-Class III (000s acres)				-.03	-.03	NA
SALABLE MINERALS						
Total gravel pits	6	12	**12**	15	15	6
Total acres	110	230	**230**	290	290	110
SOILS						
Rate of loss—tons/acre/year	5.5	9.4	**9.4**	12.7	12.7	3.0
Total loss—tons/year (000s)	13.3	23.8	**23.8**	34.3	34.3	6.9
AIR QUALITY (cumulative)						
TSP (in tons/year)	232	252	**252**	286	286	223
SO_2 (in tons/year)	181	196	**196**	224	224	173
NO_x (in tons/year)	1906	2070	**2070**	2357	2357	1824
WATERSHED						
Sediment load increase (tons/year)	663	1188	**1188**	1713	1713	348
Salt added (tons/year)	0.6	1.1	**1.1**	1.5	1.5	0.3
FORESTRY						
Acres to be harvested	70	70	**70**	70	70	70

[1] More recent estimates indicate that wells to be reclaimed will be more than 200.
[2] Estimate of total deaths [regardless of cause (e.g. hunting, collision), for the analysis period.]
[3] Impacts associated with the approved CAP are shown in bold type.

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BIG PINEY - LABARGE COORDINATED ACTIVITY PLAN

INTRODUCTION

The Big Piney-LaBarge Coordinated Activity Plan (CAP) is a detailed, site-specific management plan developed to resolve conflicting resource uses and objectives on public lands, administered by the Bureau of Land Management (BLM), within the CAP area. The CAP area includes about 135,785 acres of public land surface and 196,841 acres of Federal mineral estate administered by the BLM. The CAP area is within the BLM Pinedale Resource Area and is located between Big Piney, Marbleton and LaBarge, Wyoming (see General Location Map and Map 1).

RESOURCE MANAGEMENT, OBJECTIVES, PLANNED ACTIONS AND REQUIREMENTS FOR THE BIG PINEY - LABARGE COORDINATED ACTIVITY PLAN AREA

BIG PINEY - LABARGE WORKING GROUP

Introduction

Instrumental to the successful implementation of this CAP and the orderly and efficient management of the CAP area, will be the use of a seven person working group, the Big Piney-LaBarge Working Group (BPLWG). The BPLWG will be comprised of a constituent representative from the oil and gas industry, service industry, ranching industry, local community, environmental interests, Wyoming Game and Fish Department (WGFD), and BLM.

It is expected that the working group representatives will provide a broader-based public perspective and insight that will enhance the Pinedale Area Manager's ability to make more informed management decisions that are compatible and consistent with the multiple use management objectives for the CAP area. Each representative is expected to provide information and expertise that will aid the group in providing more informed recommendations. For example:

— The representative for the oil and gas industry will provide an understanding of energy mineral exploration, development, operation and abandonment processes and requirements.

— The service industry representative will provide an understanding of the logistical requirements of well field servicing operations, including opportunities for mitigating operational impacts.

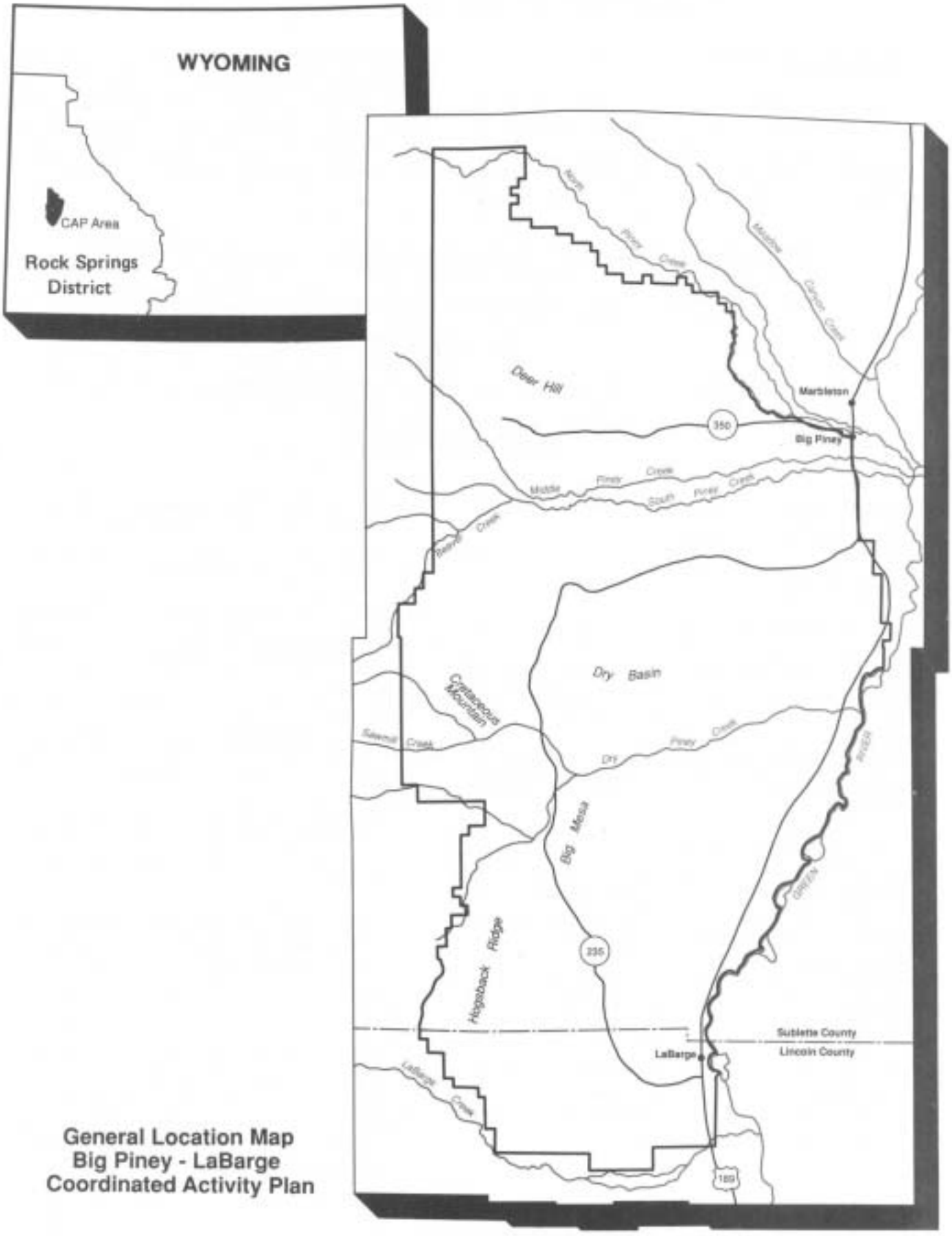
— The ranching industry representative will provide an understanding of livestock use and needs for forage and water and of ranching operations.

— The local community representative will provide an understanding of the local businesses, community services and infrastructures, as well as the feelings and concerns of the local citizens.

— The environmental representative will provide an awareness of environmental sensitivity and the need to guard against undue and unnecessary environmental damage.

— The WGFD representative will provide expertise and understanding of wildlife and wildlife habitat needs, state laws and regulatory requirements, and of wildlife population, distribution and harvest statistics.

— The BLM representative will provide expertise and understanding of the BLM multiple use and interdisciplinary land and resource management policies, and Federal laws and regulatory requirements associated with the management of BLM administered public lands and resources.



General Location Map
Big Piney - LaBarge
Coordinated Activity Plan

Objective

The general objective for involvement of the BPLWG is to attain better long range planning for orderly management of the CAP area. This includes consideration of planning for opportunities for year-round oil and gas drilling activities in harmony with management of environmentally sensitive areas. Specific objectives of the Group will include, but will not be limited to:

— helping to provide more opportunities for stabilizing the local economy given the unpredictability of energy development and the need for wildlife habitat protection;

— establishing better communication, cooperation and trust between the environmental and developmental publics who have shown interest in the area;

— exploring techniques for mitigating habitat loss and disturbance related to energy exploration and development;

— helping to delineate areas of poor habitat conditions with expected high winter animal densities as special habitat management zones, and recommending management strategies for these areas;

— helping to delineate areas of good habitat condition with expected low winter animal densities as potential wintertime development zones, and recommending management strategies for these areas;

— identifying areas where wintering animals are expected to habituate to human presence disturbances and other areas where human activity would be restricted, and recommending management strategies for these areas;

— refining the process for determining where and when exceptions to seasonal and other mitigating restrictions are appropriate;

— providing a forum for discussion and planning for and funding of habitat improvements, wildlife and other resource studies, monitoring, and other matters of concern to the successful management of the CAP area; and

— providing a forum for those with other land and resource use interests in the CAP area to interact with the minerals and wildlife interests, and providing opportunities for these other interests to participate in reviewing and making recommendations for planning and management proposals for the CAP area.

The ultimate goal of the BPLWG is to reach consensus in and prepare recommendations for the mitigation of long term wildlife habitat loss and of the effects of long term surface and wildlife disturbance from mineral and other development in the CAP area. To achieve this goal, the review of individual land use authorizations may, initially, require group discussion. Once the group becomes comfortable with its role, it may be inefficient for the group to evaluate individual or short term plans, and a strategy for more efficient group involvement in long term management is expected to evolve. The Group should be able to review issues of importance twice a year, once in the spring (April) and once in the fall (October). If more meetings prove necessary, they will be arranged.

Planned Actions and Requirements

The BPLWG representatives will be nominated from the local area (western Wyoming) by user constituencies, but appointment to the Group will be the responsibility of the BLM Pinedale Resource Area Manager. Determining factors for nomination and appointment to the working group will include the nominees' knowledge of local land use requirements and ability to effectively represent the interests of their constituents.

The working group will be self-governing but responsible to the Pinedale Area Manager on questions he/she wishes them to consider. The working group may also consider questions or issues of their constituents for presentation to the Area Manager. The working group will not usurp or encroach upon the authorities or rights of any Federal or State agency, industry or any other governmental or private interests. The authority and responsibility for decision-making for the public lands and resources in the CAP area remains with the Authorized Officer of the BLM. The Pinedale Area Manager is the BLM decision-maker for the area. The authority and responsibility for wildlife species management remains with the Wyoming Game and Fish Department. Private property rights will be preserved. Efficient development of energy resources will be accommodated within multiple use management principles.

The working group will meet at least semi-annually and will convene on other occasions, should the need arise.

The working group will be a sounding board for controversy, complaints and suggestions concerning management of the BLM administered public lands and resources in the CAP area, under the principles of environmental integrity, multiple use and sustained yield of resources. The charge of the group will be to:

— provide input and recommendations to the BLM Pinedale Resource Area Manager and, as appropriate, to the BLM Rock Springs District Multiple Use and Grazing Advisory Boards, concerning the detailed planning and management of the CAP area;

— allow diverse interests an opportunity to discuss and recommend ways to resolve conflicting viewpoints for managing and mitigating effects of oil and gas exploration and development and other activities within crucial wildlife habitat in the CAP area; to review and make recommendations on the plans of industry interests which operate in the area, and those of the WGFD and BLM;

— encourage the continual planning for coordinated resource management in the area; and,

— through their advice and recommendations, help provide for more orderly and appropriate development and conservation of resources, the preservation of wildlife, support of local economies, and better communication and cooperation among all interests.

The BPLWG will be used to help coordinate the resource management of the CAP area. This will include making recommendations on how to accomplish management goals for crucial wildlife habitat; on opportunities for yearlong geophysical exploration, well drilling and completion of wells for those companies who so desire; and on keeping public constituencies aware of the coordinated resource planning for the CAP area.

The working group will review and make recommendations on annual and long range plans from industry, BLM, WGFD and local governments to help coordinate orderly management for both industry needs and wildlife habitat management. The Area Manager will carefully consider the recommendations of the group in making decisions concerning the CAP area. If decisions differ from the working group's recommendations, the Area Manager will provide written explanations for the differences.

MINERALS MANAGEMENT

Objective

The minerals management objective in the Big Piney-LaBarge CAP area is to make the public lands and federal mineral estate, administered by the Bureau of Land Management (BLM), available for orderly and efficient development of the mineral resources, in harmony with the management goals and objectives of the other land and resource uses in the area.

Planned Actions and Requirements

Oil and Gas

Development of oil and gas reserves within the CAP area will be continued.

A limit will not be placed on the level of additional oil and gas well drilling and development which can be conducted in the CAP area. However, because there are concerns and differing opinions regarding the degree of impact that may occur from an additional 600 to 900 wells that may be developed, should the development level reach 500 wells within the next ten years, an environmental evaluation will be conducted to determine the level of impacts which are occurring.

At any point that monitoring indicates a substantial change in impacts or that levels of impact beyond those analyzed in the environmental assessment (EA) for the CAP are starting to occur, environmental evaluations will be initiated.

All actions and activities associated with drilling, completing, and producing oil and gas wells will be in conformance with conditions of approval (COAs) for applications for permit to drill (APDs) and for field development activities.

Wells with no future potential for development (more than 200 wells over the next 10 years) will be plugged and abandoned. Associated well pads, access roads, pipelines, powerlines and other facilities will be reclaimed. Abandoned wells will be plugged in accordance with BLM approved procedures to protect freshwater aquifers and other subsurface resources. These well locations, and the locations of associated access roads, pipelines, power lines and other facilities, will be recontoured to natural shape and revegetated to stabilize the soil. The ultimate objective of stabilizing these sites is to reestablish adequate vegetative composition, cover and production needed for other land and resource uses in the area such as, wildlife habitat, livestock grazing, watershed and riparian areas, etc. (See Map 2 for the location of existing wells and roads.)

Production wells, roads and other facilities needed to produce the oil and gas reserves will be maintained by the lease or unit operator for the life of the wells or field. (See Map 3 for existing oil and gas units.)

Geophysical Exploration

Notices of intent for geophysical exploration will be considered on a case-by-case basis for approval by the Area Manager. Long range planning for this activity will be coordinated through the BPLWG on an annual basis.

All use authorizations for geophysical activities will include appropriate mitigation requirements for reducing impacts of surface disturbing activities, as presented in Appendix A, General Standard Operating Procedures for Surface Disturbing Activities.

Requirements, including seasonal limitations and restrictions on the use of explosives and vehicles, will be applied as necessary.

Solid Leasable Minerals

The CAP area will be kept open to consideration of exploration, leasing and development of all solid leasable minerals, such as coal and oil shale.

All exploration and development activities will be conducted in accordance with the procedures in Appendix A.

Locatable Minerals

All federally owned locatable minerals and all public land surface administered by the BLM in the CAP area will be kept open to the filing and location of mining claims.

Surface disturbing activities on mining claims requires a notice submitted to BLM for cumulative surface disturbances of 5 acres or less. A plan of operations is required for surface disturbances of more than 5 acres (43 CFR 3809).

Saleable Minerals

Applications for mineral material sales will be considered on a case-by-case basis. Use authorizations will include appropriate mitigation requirements for surface and other types of disturbances.

WILDLIFE HABITAT MANAGEMENT

Objective

The management objectives for wildlife habitat in the CAP area are to:

— maintain and improve crucial deer, antelope, elk and moose winter ranges and birthing areas;

— provide winter and transitional habitat to support and maintain healthy deer, antelope, elk and moose populations;

— mitigate wildlife habitat losses associated with the mineral development and other surface disturbing activities occurring in the area;

— protect breeding, wintering and nesting habitat for sage grouse and raptors;

— maintain, enhance, and restore riparian and fisheries habitat and associated streams; and

— protect threatened and endangered species habitat.

Planned Actions and Requirements

Wildlife Habitat and Seasonal Protection

Crucial Big Game Winter Ranges and Birthing Areas

Deer and Antelope. Where appropriate, standard use restrictions for deer and antelope crucial winter ranges will continue to be applied in future oil and gas leases issued in the CAP area. The season of concern is November 15 to April 30.

The opportunity for year-round geophysical exploration, well drilling and in-field development activities will be provided in the deer and antelope crucial winter range areas (Maps 7 and 8), under a controlled management philosophy, and with the management objectives for the crucial habitat in mind. It is possible that these types of activities can be conducted in crucial winter ranges, during the winter, without causing unacceptable impacts, when consideration is given to such factors as habitat and animal condition, animal densities and historical concentration areas, expected animal responses (including the likelihood of habituation to winter activities), and weather conditions and forecasts. Based on such factors, last-minute proposals for winter-time activities can also be analyzed for their appropriateness.

Studies, including the above biological and physical factors, will be implemented to determine the extent of impact that mineral and other development in the area have on the deer and antelope herds and their crucial winter ranges. Participation in and funding of these studies will be determined on a case-by-case basis and may involve BLM, WGFD, industry, educational institutions or other interested parties.

Parameters for these biological and physical factors will be considered and developed with involvement of the BPLWG. The objective will be to provide the needed protection on the crucial winter ranges concurrently with accommodating winter exploration and drilling programs for those companies that want them. In formulating their recommendations, the BPLWG will use information derived from studies and monitoring of man's activities on big game animals in the crucial areas, including the ability of the animals to habituate to man's activities during the winter and under various degrees of stress.

Winter surface uses and activities proposed in crucial deer and antelope winter ranges will be reviewed semi-annually by the BPLWG for conformance with this CAP and other long range plans. This includes review of operators' plans for annual and long-range geophysical exploration and field development. The BPLWG will provide recommendations to the Pinedale Area Manager on where those activities should and should not be allowed during crucial winter periods or conditions (usually from November 15 to April 30). Prior to November 15 each year, the Area Manager will consider and approve those winter activities to be conducted during the upcoming winter season.

Whether or not new or pre-existing oil and gas leases include use restriction stipulations for deer and antelope crucial winter ranges, such requirements in these areas will be provided further consideration through involvement of the BPLWG. (See Map 3 for locations of leases that include use restriction stipulations.)

It is important to note that as a result of the BPLWG review, operators should not have to request an exception or modification to seasonal restrictions for approval of APDs or in-field development activities in the deer and antelope crucial winter ranges. These matters will inherently be included in the BPLWG review and recommendations for the Area Manager's consideration and approval. However, this does not preclude an operator from requesting an exception or modification.

The BPLWG will also be involved in reviewing the aerial extent of the deer and antelope crucial winter ranges in the area and in providing input toward refining the crucial winter range boundaries. Deer populations in the CAP area are currently at a high level, in excess of the WGFD population management objective levels. When the deer populations reach the management objective levels in the area, the BPLWG will reevaluate the deer population and crucial winter range relationships and provide any further input and recommendations on winter restrictions in the crucial winter areas to the Area Manager. It is emphasized that the BPLWG will make "recommendations" on these matters; it will not make decisions for the land and wildlife management agencies.

Elk and Moose. In elk and moose crucial winter ranges (Map 8) and birthing areas, standard use restrictions (e.g., seasonal restrictions from November 15 to April 30 or May 1 to June 30) will continue to be applied as stipulations for geophysical exploration, in oil and gas leases, and in BLM authorizations for other types of disturbance activities issued in the CAP area. Standard use restrictions will also continue to be applied as COAs on APDs and field development activities in these areas.

Where weather or habitat conditions are not critical, the Area Manager may approve an exception to or modification of these restrictions, if requested by the user and if supported by environmental analysis. Appendix B describes the procedures for processing requests for exceptions from seasonal restrictions. The BPLWG may also consider and make recommendations on proposed activities in these crucial winter ranges.

Sage Grouse and Raptors

Standard restrictions for sage grouse and raptor breeding, nesting and wintering habitats will be applied as stipulations for geophysical exploration, in oil and gas leases, and in other use authorizations, where appropriate. The seasons of concern are February 1 to July 31 and November 15 to April 30.

These standard restrictions are further refined for application as COAs to APDs and field development activities and to other use authorizations in the CAP area, as follows:

Sage Grouse. Sage grouse breeding habitat areas (strutting grounds or leks) are avoidance areas for surface disturbing activities. That is, surface disturbing activities associated with such actions as well drilling, construction of roads and other types of rights-of-way, etc., will avoid the areas within a 1/4 mile radius of leks, if possible (see Map 8). In cases where it is not possible to avoid these areas, intensive mitigation of the surface disturbing activities will be emphasized.

Also within a 1/4 mile radius of leks, permanent and high profile structures, such as buildings, storage tanks, overhead powerlines, etc., will not be allowed.

During the sage grouse mating season, between March 1 and May 15, surface uses and activities will not be allowed between the hours of midnight and 9:00 AM, within a 1/2 mile radius of active leks (i.e., those leks occupied by mating birds). See Map 8.

Sage grouse nesting and wintering areas will be managed to maintain and improve nesting cover through shrub management practices.

If an occupied nest that would be adversely affected by surface disturbing activities is identified, surface uses and activities will be delayed in the affected area until nesting is completed (usually by June 30).

Raptors. Raptor nest and buffer surveys will be conducted within a one mile radius or linear distance of proposed surface uses or activities, if they are proposed to be conducted between February 1 and July 31 and:

— Raptor nests and associated buffers will be protected at any time the nests are occupied.

— Any active nests identified will be appropriately protected at all times, using Fish and Wildlife Service (FWS) guidelines and other established methods, and in coordination with that agency (An active nest is one which has been used within the past three years, but is not necessarily currently occupied).

— The proposed activities or surface uses will be authorized, if:

  — no active nests are found within the one mile survey area or,

  — active, unoccupied nests are located outside the proposed activity area or,

  — active nests are unoccupied or,

  — other adequate mitigation or protection methods are employed.

General Provisions

Exceptions to the wildlife habitat and seasonal protection limitations in any year may be approved in writing by the Authorized Officer (see Appendix B).

Typically, when an oil and gas drilling operation is allowed to commence, it will be allowed to be completed and the well put into production. However, in an emergency situation (e.g., fire, flood, severe weather), drilling or completion operations may be temporarily halted.

Prior to conducting any surface-disturbing activities on an area known or suspected to be essential habitat for threatened or endangered plant or animal species, the lessee/permittee/operator will be required to conduct inventories or studies in accordance with BLM and FWS guidelines to verify the presence or absence of such species. In the event a threatened or endangered species is identified, the lessee/permittee/operator will be required to modify operations to comply with protection requirements for the species and its habitat.

The FWS has determined that water depletions from the Colorado River System (Green River), including any recharge sources, could jeopardize any threatened and endangered species in the Colorado River System. Such depletions will require a conservation fee for those species.

Wildlife escape devices will be installed and maintained in all water troughs.

Decadent Sagebrush Vegetation Management

About seven percent of the decadent sagebrush-grassland and sagebrush-salt desert shrub vegetation types, within big game crucial winter ranges, will be treated by the year 2000 (Map 10). This involves about 10,865 acres of BLM administered public land in the CAP area. About 1,900 acres are between North and South Piney Creeks, and 8,965 acres are between South Piney and LaBarge Creeks. If these treatments meet the desired objectives, the program will be continued on additional acreage through the year 2010.

In mule deer transitional winter/yearlong range, up to 3,900 acres of decadent sagebrush-grassland vegetation on public lands will be treated by the year 2000. Treatment of additional transitional winter/yearlong range will continue if the desired objectives are met.

Desert shrub communities of Gardener's saltbush and winterfat will be inventoried to identify suitable treatment areas and methods for rejuvenation by 1995.

Mountain Shrub Vegetation Management

About 650 acres of the mountain shrub vegetation association will be treated to rejuvenate, perpetuate, and potentially expand the mountain shrub community.

Important mountain shrub communities (about 3,937 acres of public land in the CAP area) are avoidance areas for surface disturbing activities (see Map 6). To the extent possible, these vegetative communities will be maintained and protected from disturbance by such things as road, well pad, pipeline, etc., construction. In cases where it is not possible to avoid these areas, intensive mitigation of the surface disturbing activities will be emphasized.

If proposed surface disturbing activities cannot be avoided in a mountain shrub type, the WGFD will be consulted to help determine the extent and affect of the proposal. After consultation, the project proponent may be required to submit a site specific reclamation plan, including techniques to reestablish the mountain shrub community at predisturbance levels of density and species diversity, within a certain time frame (usually 10 to 20 years). This may require transplanting of on-site shrubs or planting of containerized shrubs. Authorization of surface disturbing activities in the mountain shrub vegetative type will depend on the adequacy and acceptability of the reclamation plan.

Saltbush, Winterfat, Bud Sage Management

Key mule deer winter vegetation types of saltbush, winterfat, and bud sage will be inventoried to identify suitable treatment areas and methods for rejuvenation.

Saltbush, winterfat, and bud sage vegetative types will be managed for reduced livestock grazing pressure and utilization. Deferred grazing system methods will be used.

Aspen Stand Management

Aspen stands in transitional winter/yearlong range will be inventoried to identify suitable treatment areas and methods for rejuvenation. There are about 1,054 acres of aspen association on public lands in the CAP.

Aquatic Management

Within the CAP area, Pinegrove, Sawmill, Fogarty, and Black Canyon Creeks are currently or potentially capable of sustaining fish. These streams will be managed in accordance with BLM's East Front Aquatic Habitat Management Plan and the WGFD Colorado River Cutthroat Trout Management Plan.

Wetland/riparian zones, and areas within 500 feet of them, are avoidance areas for surface disturbing activities. To the extent possible, these areas will be maintained and protected from disturbance by such things as road, pipeline, well pad, etc., construction. In cases where it is not possible to avoid these areas, intensive mitigation of the surface disturbing activities will be emphasized.

Revegetation

Revegetation of disturbed areas will include establishment or reestablishment of preferred big game forage species, including such species as fourwing saltbush, Wyoming big sagebrush, winterfat, and other shrub species adapted to particular sites.

LIVESTOCK GRAZING MANAGEMENT

Objective

The objectives for livestock grazing management in the CAP area are to:

- maintain or improve the composition and productivity of the vegetative resource, the ecological range condition and forage for livestock grazing (may include various types of vegetation treatments and changes in livestock grazing management practices);
- maintain or improve wildlife habitat and watershed conditions;
- reduce accelerated erosion in the Big Mesa pasture of the North LaBarge Common Allotment;
- improve success of vegetative reclamation efforts;
- eliminate continuous livestock grazing and provide periodic grazing deferment to all portions of the North LaBarge Common and Calpet Common Grazing Allotments;
- reconcile the discrepancy between the current livestock grazing forage allocation and the forage shown to be available on the 1961-62 range survey;
- establish accurate livestock stocking rates, consistent with proper grazing forage allocations, among the livestock operators in North LaBarge Common Allotment;
- improve livestock distribution; and
- mitigate livestock forage losses associated with the development of energy resources.

Planned Actions and Requirements

Allotment management plans (AMPs) for the livestock grazing allotments involved with the CAP area will not be completed as part of this CAP. The reason is that 22 individual grazing allotments are involved and only portions of most of them are within the CAP area (Map 9). The AMPs to be developed must cover complete grazing allotments and include consideration of the land and resource uses and values in all parts of the allotments (both within and outside the CAP area). The degree of detail, specificity, land area, and time involved

with developing these AMPs is beyond the scope and intent of the CAP.

Most of the livestock grazing management actions that may occur within the CAP area will be a function of implementing the AMPs as they are developed. However, the range improvements proposed for the CAP area may be implemented prior to completion of AMPs (See Appendix C and discussions below).

Rangeland monitoring studies will be installed on all "I" category allotments, and on "M" and "C" category allotments as needed. Monitoring intensity will be greater on "I" allotments than on "M" or "C" allotments. Within the CAP area, key areas will be monitored in pastures of the North LaBarge Common and Calpet Common Allotments (See Appendix D).

No adjustments in livestock numbers or use will be made on any allotment until sufficient monitoring data is available. Any needed adjustments will be implemented either through agreements with livestock operators (which is the preferred method) or by issuing livestock grazing decisions.

Deer Hills Allotments

Range improvements, such as stockwater reservoirs and check dams, will be implemented to provide better livestock distribution and reduce gully erosion within the Deer Hills Individual and Dan Budd Deer Hills Allotments.

Existing water control structures in the Deer Hills area will be reevaluated for their effectiveness and ability to meet new management objectives in the CAP area. Some damaged structures may be reconstructed and some that are poorly located or unnecessary will be abandoned. Reconstruction and abandonment of damaged reservoirs will be based on needs to correct poor locations of existing reservoirs, needs for silt traps, and needs for adequate livestock water.

Needs for new water control structures for watershed improvement will be identified. New reservoirs or structures will be installed upstream from the reconstructed reservoirs to ensure their success. A small riparian exclosure and some prescribed burning will also be proposed for this area.

Upper North LaBarge Allotment

The Deadline Ridge water pipeline and Spring Creek water pit, located in the Hogsback pasture, will be reconstructed. Water development in this pasture will improve livestock distribution and help achieve the other grazing objectives for the area.

North LaBarge Common Allotment

Forage Allocation and Recovery

The active licensed grazing use for the North LaBarge Common Allotment is shown in Appendix E. The proposed vegetation monitoring will be used to reevaluate and accurately establish the available forage in this allotment, to determine any need for adjustments in the forage allocations.

The BLM will establish accurate stocking rates and forage allocations among the range users in North LaBarge Common Allotment by using:

— utilization-pattern mapping and a combination of actual use data, climatic data and utilization measurements on key areas;

— annual actual use and utilization data, prorated against the total allocated grazing preference, to establish proper allocation;

— controlling utilization of key plant species to no more than 50 percent of current year's growth;

— intensified grazing management, including a "deferred grazing system".

Livestock Grazing Distribution

The needed changes in livestock grazing distribution in the North LaBarge Common Allotment will be accomplished through implementation of the proposed grazing system (Appendix E), a salting program, and the proposed range improvements (Appendix C), including needed watering facilities. The success of implementing the grazing system and attaining the anticipated improvement in livestock distribution is dependent on the successful implementation of the proposed range improvements.

The major emphasis of the grazing system will be to rotate the livestock grazing use and deferment of use over the entire allotment so that individual pastures are not grazed during the same time of year, every year. Through controlled timing of pasture usage, this grazing scheme will also intensify grazing use and force livestock into under utilized areas.

As range improvement projects are developed, the grazing system may be modified or refined, based on monitoring data. The goal is to develop an effective and

efficient grazing system that both benefits the range resources and facilitates the permittees' grazing operations.

Livestock will be removed when utilization of key vegetative species reaches the limit of 50 percent of the current year's growth.

Livestock grazing use will be decreased in the following excessive use areas:

— The northwest corner of Big Mesa pasture in the Dry Piney and Fogarty Creek areas;

— Dry Basin Draw in Cretaceous pasture;

— The entire east side of Trail Ridge pasture; and

— The area near Pinegrove Creek exclosures in Pinegrove pasture.

Livestock grazing use will be expanded into areas of low forage utilization on benches and mesas at higher elevations that could absorb more grazing use, including:

— Much of the east side of Big Mesa pasture where watering facilities are inadequate;

— The western part of Pinegrove pasture on Deadline Ridge; and

— The northern part of Cretaceous pasture.

Salt will be placed in designated locations to help direct livestock distribution. Salt blocks will be placed at least 500 feet away from live water, wetlands, riparian areas, reclaimed areas, or livestock watering facilities.

Big Mesa pasture will be subdivided into four smaller pastures, creating 11 pastures in the allotment (Map 10).

Up to four sections of drift fence and several new and reconstructed water developments will be needed to allow for a deferred grazing system of spring and fall use in a large area of traditional spring grazing.

The four proposed fences (3.65 miles) will be three-wire fences (with a smooth bottom wire), constructed to BLM design standards for wildlife areas, to allow movement of deer, antelope and other big game animals. Critical portions of these fences may need to be constructed as let-down-fence to provide for deer and antelope movement.

Summer Pasture

Cretaceous pasture will be used in a deferred grazing use system with Trail Ridge pasture. One additional water well in Cretaceous pasture will be needed.

Spring/Fall Pasture

East and West Chimney pastures will be used in the spring and fall and in conjunction with Cretaceous and Trail Ridge pastures.

The four pastures to be created from the Big Mesa pasture will be used in a deferred grazing use system with Pine Grove pasture. The use will be alternated between spring and fall, depending on forage conditions and regrowth of salt bush and winterfat.

Calpet Common Allotment

Black Canyon and Calpet pastures will be separated from the North LaBarge Common Allotment and will be combined to form the new Calpet Common Allotment (Map 10). The active licensed grazing use for the Calpet Common Allotment is listed in Appendix E.

The Calpet pasture may be divided (by fencing east to west) to create a north and south pasture, if adequate water can be developed on the south side. Owners of the JF Ranch plan to fence their State land to create a third pasture. A grazing system will be developed for the allotment when the pasture fencing is determined.

O'Neil Individual Allotment

About 640 acres of brush control may be conducted in this allotment to increase livestock forage and to improve watershed condition and wildlife habitat. This will be a cooperative project with participation of the livestock operator, the WGFD and the BLM.

RIPARIAN AREA MANAGEMENT

Objective

The objective for management of riparian areas in the CAP area is to maintain or improve riparian areas for livestock forage production, water quality and availability, and soil stabilization.

Planned Actions and Requirements

All management actions and authorized uses in riparian areas will comply with Executive Order (E.O.) 11988, *Floodplain Management*, E.O. 11990, *Protection of Wetlands*, and the State of Wyoming water quality standards.

Riparian/wetland zones (about 1,620 acres of BLM administered public land in the CAP area) are avoidance areas for surface disturbing activities. To the extent possible, these areas will be maintained and protected from disturbance by such things as road, well pad, pipeline, etc., construction. In cases where it is not possible to avoid these areas, intensive mitigation of the surface disturbing activities will be emphasized.

In the North LaBarge Common and Calpet Common Grazing Allotments, management of the following riparian areas will emphasize improving and maintaining vegetation production, water quality, wildlife and fisheries habitat, water availability to livestock, and soil stabilization:

> Dry Piney Creek, Fogarty Creek, Dry Basin Draw, the Beaver Creeks, Pinegrove Creek, the Sawmill Creeks, Black Canyon, and Beaver Dam Creek.

Vegetation utilization will be monitored in these riparian areas and will be limited as follows:

— On the Dry Piney Creek, Dry Basin Draw and Beaver Creek riparian areas, utilization will be limited to no more than 40 percent of the current year's growth; and removed

— On the Fogarty Creek, Pinegrove Creek, Sawmill Creek, Black Canyon and Beaver Dam Creek riparian areas, utilization will be limited to no more than 50 percent of the current year's growth; and

— On all riparian zones in the CAP area, utilization targets will be changed from percentages of annual forage growth to stubble heights, when data on these relationships become available (i.e., when it is determined what height of riparian vegetation must remain at the end of the use or growing season to adequately meet the riparian management objectives).

GROUNDWATER MANAGEMENT

Objective

The objectives for groundwater management in the CAP area are to:

— determine the presence and extent of any groundwater contamination in the Big Piney-LaBarge area;

— determine lateral and vertical continuity of various water-bearing zones and possible avenues of contaminant movement;

— identify potential water supplies which could be used in the range, livestock grazing and wildlife management programs.

Planned Actions and Requirements

Drilling, casing and cementing, and plugging of wells will be done in accordance with the procedures and constraints detailed in Appendix F (*Methods of Protection of Ground Water During Drilling and Abandonment Operations*).

A three year groundwater monitoring program in the Big Piney-LaBarge oil and gas production area will be funded and initiated by the BLM. The monitoring procedures to be used are described in Appendix D.

The components of the monitoring program include:

— concentration of the monitoring on the upper aquifers of the Wasatch Formation and aquifers within the Paleozoic carbonate section of the Darby Thrust Plate;

— using existing water wells (Map 3) used by the oil and gas industry and water supply wells for the towns of LaBarge, Big Piney, and Marbleton as the main sampling sources;

— collecting samples for analysis from thirty sample sites twice a year (May and September);

— requiring more extensive analysis in areas where significant contamination is found;

— holding the parties from whose facilities the contamination originates (if this can be determined) responsible for source detection and cleanup in a manner determined and agreed upon by the responsible parties, the Wyoming DEQ, and the BLM;

— reviewing the monitoring program after 3 years to evaluate findings, discuss problems, and to identify needed future actions and modifications of the monitoring program; and

— sharing and coordinating operation of the program, information collected, and any contamination problems or cleanup, with the operators, the public and the Water Quality Division of the Wyoming Department of Environmental Quality (DEQ).

SOILS AND WATERSHED MANAGEMENT

Objective

The objectives for soil and watershed management in the CAP area are to:

— maintain or improve watershed conditions;

— maintain or enhance the quality of surface water;

— protect all perennial, intermittent, and ephemeral drainages from adverse impacts of surface disturbance;

— reduce salinity and sediment loading in all perennial streams;

— maintain or improve the condition of wetlands; and

— maintain soil stability and productivity.

Planned Actions and Requirements

Watershed Conditions

The general standard operating procedures for surface disturbing activities (Appendix A) will continue to be applied to control and reduce sedimentation and salinity problems.

The design, placement, construction and reclamation of surface disturbing activities, such as roads, well locations, range improvements, pipelines and other rights of way will be given paramount consideration to ensure sedimentation and salinity contributions to stream channels in the area do not exceed EPA standards.

Construction and development activities for such things as roads, well locations, pipelines, and other types of rights of way will not be allowed within 50 to 100 feet of the channel or inner gorge of intermittent drainages, or within 500 feet of surface water or riparian areas. Exceptions will only be allowed in cases where detailed plans (e.g., engineering design, geotechnical analysis, etc.) demonstrate that the surface disturbance impacts on these areas can be mitigated.

Any needs for graveling, redesign, or seasonal closures of oil field roads will be coordinated with the oil field operators.

Livestock watering and salting facilities will be constructed or placed away from riparian and wetland areas to reduce grazing pressure impacts on these areas.

Cumulative Surface Disturbance

On highly erodable soils in the CAP area (Maps 4 and 5 and Appendix G), surface disturbance on slopes of 10 percent or greater will generally be prohibited. Exceptions will only be allowed in cases where detailed plans (e.g., engineering design, geotechnical analysis, etc.) demonstrate that the surface disturbance impacts on these sensitive areas can be mitigated.

If surface disturbance is allowed on highly erodable soils with slopes of 10 percent or greater, the area of "unreclaimed" surface disturbance will be limited to no more than 10 percent of the highly erodable soils within a watershed at any given time.

Implementation of the Tip Top watershed management plan will be continued to attain sufficient vegetative ground cover to check erosion and stabilize soils and gullies.

Baseline Monitoring

The water quality gaging station on Dry Piney Creek (located in Sec. 27, T. 28 N., R. 113 W.) will be monitored from April to September for the next 5 years to establish a temporal representation of water quality in the CAP area.

A sediment sampler will be installed in an undisturbed "control" watershed (about 500 acres located in parts of Sections 23, 24, 25, 26, 35, and 36, T. 28 N., R. 113 W. - See Map 11). The sampler will be monitored to determine the level of sediment load of an undisturbed watershed in the CAP area.

No surface disturbance will be allowed in the control watershed for the next five years. As a control, the undisturbed surface condition of this watershed is needed for future evaluation of the effectiveness of management and management practices in the CAP area.

The acceptable increase in sediment load level in the CAP area is 10 percent. Should the management practices in the CAP area not be effective in controlling the sediment load at or reducing it to this level, it may be necessary to reduce surface disturbing activities in the CAP area or to employ different management practices or mitigation measures to reduce the sediment load to the acceptable level.

AIR QUALITY MANAGEMENT

Objective

The objective for air quality management in the CAP area is to coordinate air resource and air quality management activities with the Wyoming DEQ and other state agencies, local governments, Indian Tribes and other interested federal agencies (e.g., USFS, FWS).

Planned Actions and Requirements

The BLM Rock Springs District will coordinate the design of a cooperative study plan to assess the status of air quality/visibility in the CAP area. Under technical advisement from the Wyoming DEQ, industry, and other interested parties, the extent and duration of any needed air quality monitoring for the CAP area will be determined.

Requirements to mitigate air quality impacts and to ensure compliance with state air quality standards will be included in BLM use authorizations in the CAP area on a case-by-case basis. This may include restrictions on venting and flaring of natural gas and requirements for dust abatement measures.

TRANSPORTATION MANAGEMENT

Objective

The objectives for transportation management in the CAP area are to:

— provide adequate information for BLM and users planning and operations in the area;

— provide transportation coordination in the area with users and county and state governments;

— provide safe and adequate BLM roads in the area;

— protect scenic, cultural, and historic values;

— eliminate the proliferation of roads in the area; and

— ensure that designs, construction, maintenance activities, and recordkeeping for road projects in the area meet BLM and user needs and are performed in an acceptable manner.

These objectives will be accomplished in cooperation with the oil and gas industry, livestock operators, landowners, county and State agencies, and other users.

Planned Actions and Requirements

A transportation plan will be developed for the CAP area.

The BLM will complete an inventory of all existing roads and trails (Map 2) in the CAP area and will establish a minimum road network needed to support oil and gas operations and other uses in the area. Existing roads and trails will also be reviewed by the BPLWG to help identify and recommend opportunities for traffic management in the CAP area. The existing roads and trails and road network will be monitored and evaluated on a continuing basis.

In considering new road construction in the CAP area, minimizing road density will be a primary goal. All new roads on BLM administered public lands in the area will be designed to the appropriate BLM road standards (BLM Manual 9113) necessary for the intended road functions.

A comprehensive route analysis will be conducted on each new road proposal in the CAP area. The analysis will include consideration of such things as:

— road necessity;

— alternate routes;

— conformance of proposed road design with BLM standards;

— surface disturbance that will require special attention (e.g., highly erodable/wet/saturated soils, steep slopes, etc.);

— need for additional engineering (e.g., slopes greater than 15 percent, road grade greater than 8 percent, bridges or drainage crossings, etc.).

BLM road standards (for drainage, safety, etc.) will also be employed in the course of maintaining, realigning, reconstructing, or closing existing roads on BLM administered public lands in the CAP area. The BLM will work with operators to identify those existing roads that must be upgraded to standards and those that are excess to needs and that must be closed and rehabilitated.

Roads and trails in areas of heavy big game use will be given priority consideration for seasonal travel restrictions. This will help establish zones for minimal human activity to help mitigate the impacts of winter vehicular traffic on big game animals.

Selected roads will be closed to public access, as needed, to protect wintering, breeding, or nesting wildlife from disturbance and stress during these critical periods. Road closures for these purposes will be accomplished with gates and signs stating, "Road Closed To Protect Wildlife." Exceptions will be allowed for essential access to service producing oil and gas wells, range improvements, etc. Exceptions will also be allowed for performance of essential duties of WGFD, BLM, law enforcement and other such personnel.

Areas where roads cross slopes greater than 15 percent in the CAP area have the highest potential for increased or accelerated erosion. These areas will be identified and will be matched with the erosive soils data in the soils technical report (Map 5 and Appendix G) for the CAP area to determine which areas to inspect and monitor. This will be an ongoing process associated with oil and gas field development.

Access to new oil and gas wells or drilling locations will be over existing roads whenever possible. Where new access is needed, erosive soils, steep slopes, and mountain shrub communities will be avoided to the extent possible to minimize impacts on watersheds, water and air quality, and wildlife habitat.

Lease and unit operators will close and reclaim approximately 110 miles of existing roads (see Map 2 for reclaimable roads and Appendix H for calculations). Reclamation of some of these roads started in 1989.

Proposals for new linear utility transmission facilities (e.g., pipelines, powerlines), and other linear right-of-way proposals will be evaluated using the criteria established in Appendix A. Locations where existing utility transmission lines are concentrated will be followed wherever possible, if they serve to best avoid or reduce environmental impacts, while meeting general objectives for proposals. BLM will continue to monitor and evaluate utility transmission lines and other linear rights-of-way to identify where maintenance and additional mitigation efforts are needed.

SURFACE DISTURBANCE MANAGEMENT

Objective

The objective for management of surface disturbing activities in the CAP area is to protect sensitive resources and areas from adverse affects of surface disturbance and from disruptive human presence and activities. This includes, but is not limited to, protection of:

— streams from increased sedimentation and water quality degradation;

— wildlife from disruption during mating, nesting, calving, fawning, or wintering;

— threatened/endangered species and their habitats, and crucial wildlife habitat from disturbance or destruction;

— wetland/riparian habitat from degradation and loss;

— recreation sites and developments from disruption or removal;

— historic trails from physical and visual adverse impacts;

— watersheds from loss of soil material and vegetation cover causing increased erosion; and

— cultural sites from unmitigated adverse impacts.

Planned Actions and Requirements

It is recognized that, in most cases, surface disturbing and disruptive activities in environmentally sensitive areas can be accomplished economically and without unacceptable adverse environmental impact, with some advance planning and proper design. Therefore, the surface disturbance restriction is refined for use in the CAP area as follows:

> Any proposed activity or surface use that would involve surface disturbance or disrup-

tive activities on BLM administered public lands in the CAP area (e.g., geophysical exploration or construction activities, such as roads, well pads, pumping or storage facilities, pipelines, etc.) must be accompanied by appropriate engineering design, geotechnical analysis, mitigation planning, etc. (Note that the term "disruptive" pertains primarily to human presence and related activities that may cause displacement of or excessive stress to wildlife during critical life-cycle periods.) This information must be of sufficient detail to demonstrate that the environmental aspects of concern will be adequately protected or that affects to them will be adequately mitigated. The following areas or situations may require more detailed or complex designs, plans or analyses:

— slopes in excess of 25 percent;

— within 500 feet of surface water and/or riparian areas;

— within one-quarter mile or the visual horizon (whichever is closer) of historic trails;

— construction with frozen material or during periods when the soil material is saturated or when watershed damage is likely to occur; and

— when the ground is frozen below the depth of usable topsoil to a maximum topsoil depth of one foot, and culverts and/or gravel cannot be installed to BLM standards.

Where proposed surface disturbing or disruptive activities may affect sensitive resources or areas, documented consideration of reasonable alternatives for avoiding the sensitive resources or areas will be required.

The following sensitive resources and areas are avoidance areas for surface disturbing activities and, where appropriate, for disruptive activities:

— steep slopes or erodable soils (Maps 4 and 5);

— important wildlife habitat such as mountain shrubs (Map 6);

— streams, ponds, wetlands, or riparian areas (Map 6);

— crucial wildlife habitat (Maps 7 and 8);

— class II VRM areas (Map 11);

— historic trails (Map 11);

— intermittent/ephemeral drainages;

— recreation sites and developments; and

— cultural sites.

To the extent possible, these sensitive resources and areas will be avoided by surface disturbing activities associated with such actions as well drilling, construction of roads and other types of rights-of-way, etc. In cases where it is not possible to avoid these areas, intensive mitigation of the surface disturbing activities will be emphasized.

All surface disturbing activities will be subject to appropriate application of the General Standard Operating Procedures (Appendix A).

All removal and storage of construction spoil material will be according to approved engineering designs. Care will be taken to avoid mixing spoil and topsoil.

Erosion will be controlled on topsoil stockpiles through appropriate construction design and with seeding and/or mulching if necessary.

All management actions and authorized uses in riparian areas will comply with Executive Order (E.O.) 11988, *Floodplain Management*, E.O. 11990, *Protection of Wetlands*, and the State of Wyoming water quality standards.

Where streams, riparian or wetland areas cannot be avoided:

— surface disturbance activities will be scheduled to occur during the driest period possible to minimize damage and to coincide with clearing operations;

— banks will be stabilized to limit erosion during the clearing operations;

— techniques that minimize damage to stream banks and channels will be used;

— channel stabilization evaluations will be completed during on-site inspections; and

— if sensitive riparian vegetation may be affected, site specific construction, stabilization, and reclamation criteria must be submitted to and approved by BLM before a use authorization will be issued.

It shall be the responsibility of the applicant to comply with the construction practices and mitigating measures established by 33 CFR 323.4, which set forth the parameters of the "nationwide permit" required by Section 404 of the Federal Water Pollution Control Act. If the proposed action exceeds the parameters of the nationwide permit, the applicant shall obtain an "individual permit" from the appropriate office of the Corps of Engineers and provide BLM a copy of that permit prior to commencing actual construction. Failure to comply with this requirement shall be cause for revocation of an authorization.

VISUAL RESOURCES MANAGEMENT

Objective

The visual resources management (VRM) objective in the CAP area is to maintain the general integrity of visual resources while allowing for modifications and changes needed to meet other resource objectives.

Planned Actions and Requirements

A program will be initiated to improve the visual quality of oil and gas fields in the CAP area. This will primarily involve coordinating and working with the companies to paint existing facilities to blend with the natural surroundings.

Projects of all types will generally be required to conform with the VRM objectives (Map 11). On a case-by-case basis, projects will be evaluated for their site specific and general impact to the visual quality of an area and mitigation measures will be developed to reduce or eliminate those impacts.

The BLM will conduct a detailed review of the existing VRM classifications in the CAP area to update, correct, refine and map the visual management classification areas. This will be done to identify areas with high visual quality values that need special management emphasis.

OFF-ROAD VEHICLE USE MANAGEMENT

Objective

The objectives for off-road vehicle (ORV) use in the CAP area are to:

— allow off-road vehicular travel where it is in conformance with the Pinedale RMP and where it is compatible with other resource management objectives in the area; and

— provide adequate protection from impacts of off-road vehicular use to sensitive resources and areas.

Planned Actions and Requirements

Off-road use of motorized vehicles in the entire CAP area is limited to existing roads and trails, except for over-the-snow vehicles.

This ORV designation is intended to prevent indiscriminate vehicular travel across roadless, undisturbed, steep or erosive terrain. It is not intended to prevent authorized actions, such as geophysical exploration, or the performance of necessary tasks, such as picking up game kills or maintaining range improvements.

Authorized actions, such as geophysical exploration, are subject to restrictions and mitigations that eliminate or reduce surface damage to acceptable levels. Typical mitigation measures that will be applied to geophysical exploration activities in the limited ORV use areas include:

— constructing barricades at seismic line intersections with roads to prevent future vehicle travel along the "seis" lines;

— prohibiting vehicular travel when the soil is saturated or during periods when significant watershed damage (e.g., erosion from rutting, formation of rills/gullies, etc.) is likely to occur.

During severe winter, high stress periods, when disruption of the wintering deer and antelope can have serious consequences, the deer and antelope crucial winter ranges in the CAP area will be closed to all unauthorized vehicular travel from November 15 through April 30, on an as-needed basis. This seasonal limitation will be implemented in consultation with the WGFD.

Vehicular use in the CAP area will be monitored periodically to determine actual vehicular use and public demands or needs for vehicular travel in the area. Monitoring will also include identifying needs for specific road closures and reclamation.

RECREATION MANAGEMENT

Objective

The recreation management objective for the CAP area is to accommodate existing recreational uses and to prevent or mitigate environmental impacts to recreational values in the area.

Planned Actions and Requirements

The BLM administered public lands within the CAP will be managed to provide public recreational opportunities, to the extent they are compatible with other resource management objectives and consistent with public safety requirements.

CULTURAL AND PALEONTOLOGICAL RESOURCES MANAGEMENT

Objective

The objectives for management of cultural and paleontological resources in the CAP area are to:

— identify and protect cultural and paleontological resources;

— minimize conflicts between these resources and other resource uses;

— provide for appropriate mitigation of unavoidable adverse effects on cultural and paleontological resources; and

— provide for the scientific and educational use of cultural and paleontological resources.

Planned Actions and Requirements

The cultural resources management process described in Appendix I will be followed.

The provisions of the Oregon/Mormon Pioneer National Historic Trails Management Plan will be followed for any actions affecting the Lander Road.

Paleontological and historical sites will be protected through the use of surface and subsurface protection stipulations and discretionary management authority.

Agreements which allow for orderly development of the oil and gas resources, while protecting National Register-eligible historic properties, will be pursued and implemented for the CAP area. Such (programmatic) agreements will take into account the needs of the cultural resource database and the levels of development proposed in the area. They will provide for avoiding redundant reviews and management actions and for the mitigation of adverse effects to any National Register-eligible historic properties affected by development activities. The BLM, the Wyoming State Historic Preservation Office, the Advisory Council on Historic Preservation, project proponents, and other interested parties would the participants in such agreements.

LANDS AND REALTY MANAGEMENT

Objective

The objectives for lands and realty management in the CAP area are to support the goals and objectives of the other resource programs for managing the BLM administered public lands and to respond to public demand for land use authorizations.

Planned Actions and Requirements

Proposals for the disposal of public land will be considered on a case-by-case basis. Appendix J lists lands identified as suitable for consideration for disposal, exchange, and acquisition for community and industrial expansion.

Land exchange will be the preferred method for disposal or acquisition of public lands by BLM.

Prior to taking any disposal action, an environmental analysis will be conducted on the proposal and the involved lands will be evaluated for compliance with the disposal criteria in Appendix J and for consistency with the Pinedale RMP.

Consideration will be given to obtaining legal public access to 440 acres of public surface surrounding the Sixty-Seven Reservoir. This action would enhance public recreation opportunities and BLM's ability to improve management of the riparian habitat at the site.

FOREST MANAGEMENT

Objective

The objective for forest management in the CAP area is to enhance health, productivity and biological diversity, and to improve wildlife habitat on the BLM administered forested lands in the CAP area, consistent with the forest management objectives in the Pinedale RMP and the 20-year Timber Harvest Schedule/Forest Management Plan for the Pinedale Resource Area.

Planned Actions and Requirements

About 70 acres of the 316 acre multi-aged Douglas-fir stand on the west side of Hogsback Ridge will be selectively harvested. About 22 percent of the total stand will be cut to improve stand conditions, by removing trees that are dead, infested, and susceptible to infestation by various diseases and insects, including the Douglas-fir beetle. This harvest constitutes approximately 7 percent of the 953 acres allocated to harvesting within the Deadline-Pinegrove Forest Management Unit (FMU), through the year 2008 (refer to the Pinedale RMP).

The harvest may be accomplished through various means available including, commercial timber or firewood sales, or individual fire wood permits.

The trees that are not cut within the harvest area will be left to provide a seed source for establishing new trees and to provide hiding cover and other habitat requirements for wildlife.

Prior to conducting the harvest, a site-specific environmental analysis and environmental assessment (EA) will be completed to incorporate the necessary restrictions and mitigation requirements for the project (in conformance with the Pinedale RMP).

FIRE MANAGEMENT

Objective

The objectives for fire management in the CAP area are to:

— protect public safety, life, and property; and

— provide the maximum benefits of prescribed fire to general resource management.

Planned Actions and Requirements

Fire management in the CAP area will be conducted in accordance with the fire management plan for the Rock Springs District.

Within the CAP area, priority safety consideration will be given to oil and gas operators; isolated residents; the communities of Big Piney, Marbleton, and LaBarge; and the satellite camps of Rainbow, Western, Calpet, and Dry Piney in times of wildfire. Prescribed burning projects will also be appropriately coordinated with these entities and with county and state fire organizations.

Prescribed fire will be a management option for vegetation manipulation (e.g., brush control, slash disposal, seedbed preparation, disease or insect control, vegetative species control, etc.) and other applicable resource management objectives.

Prescribed fire for vegetation manipulation will require an individual Prescribed Fire Management Plan, establishing a prescribed set of conditions, for each given treatment area. This will include provisions for avoiding smoke violations of air quality standards.

RECLAMATION/RECLAMATION MONITORING

Objective

The reclamation objective in the Cap area is to achieve soil stability and reduced runoff and erosion on disturbed lands in the area. This includes reestablishment of native vegetative ground cover, restoration and improvement of habitat and range conditions for wildlife, livestock grazing and watershed stability, and restoration of visual quality to meet established visual resource management objectives on all areas of surface disturbance.

Planned Actions and Requirements

Improving the reclamation of disturbed lands in the area will be emphasized. Use of any measures to improve the success of reclamation efforts will be considered.

The BLM will consult with experts in the reclamation of sites which are similar to those in the CAP area to determine how revegetation and other reclamation practices for disturbed lands can be improved. Various vegetative seed mixtures and reclamation procedures, such as recontouring, planting or transplanting, will likely require some testing and monitoring to determine which practices are providing the best success and which may be adopted for improving reclamation results.

Reclamation procedures are described in Appendix A. These may be refined as the result of technical reviews for reclamation improvement.

BLM will require reclamation plans for proposals involving surface disturbance. Oil and gas exploration and development proposals will comply with 43 CFR 3164, Onshore Oil and Gas Order No. 1, Part III G, 4(b)(10); other related rights-of-way will comply with 43 CFR 2802.4(h) or 2882.3(m).

Well abandonment, and related reclamation will comply with the standard reclamation procedures described in Appendix A or as refined by technical reclamation reviews. See Map 2 for road and well locations and Appendix H for reclamation opportunity calculations.

All reclamation will be monitored (including the review of some past reclamation efforts) to track its effectiveness in, and to identify needed adjustments to, reaching the following revegetation and reclamation goals:

- immediate site stabilization to limit wind and water erosion;
- control of noxious weeds in cooperation with County weed and pest control programs;
- reestablishment of vegetation, consistent with site objectives for livestock, wildlife and watershed needs, with vigorous stands of self sustaining, desirable plant species; and
- reduction of visual contrast and enhancement of aesthetic values.

Reclamation monitoring will be a joint effort between the BLM and lessees/operators/permittees in the CAP area. Monitoring procedures for reclamation, water quality, wildlife, and rangeland vegetation are described in Appendix D.

MULTIPLE USE/RESOURCE MONITORING

Objective

The objectives for multiple use/resource monitoring in the CAP area are tracking and ensuring the effectiveness of all resource management in the area toward; (1) attaining the construction, operation, maintenance, and reclamation objectives associated with surface disturbing activities; (2) attaining the vegetative resource management objectives for the various resource and land uses in the area; and (3) conforming with the decisions of the Pinedale RMP.

Planned Actions and Requirements

Monitoring will be conducted and guided by procedures discussed in Appendix D and as required by 40 CFR 1500-1508, 43 CFR 1600 and 43 CFR 4120.

APPENDIX A

GENERAL STANDARD OPERATING PROCEDURES FOR SURFACE-DISTURBING ACTIVITIES

The following are general standard operating procedures applied to surface-disturbing activities. These measures are applied, when necessary, to reduce environmental impacts. Some projects may require construction and use plans (CUP) and(or) erosion control revegetation and restoration plans (ERRPs). These situations will also require a site specific environmental analysis to address impacts and appropriate mitigation measures.

HANDLING OF TOPSOIL AND SPOIL

Before a surface disturbing activity is authorized, the amount of topsoil to be removed and storage areas will be specified. The need to strip topsoil along buried pipelines, or other buried linear facilities, will be determined on a site specific basis. The general policy will be to strip topsoil unless it can be shown that the specific operations will not negatively impact soil compaction, stability, or fertility. Topsoil in excess of six inches may be stored, if it is available, so that it may be used offsite in areas that do not have adequate topsoil. Areas which have stored topsoil will be marked for use as borrow areas for other areas deficient in topsoil. Whenever possible, topsoil will be used for immediate reclamation. For topsoil stockpiles that are to be kept through the winter, erosion will be controlled by reducing the piles to less than 3 feet in height and by seeding and/or mulching them.

Topsoil stockpiles will be designed to maximize surface area to reduce impacts to soil microorganisms. All surface vegetation will be incorporated directly into the topsoil as organic matter and seed source unless brush is required to be handled separately.

For pipelines on slopes less than 10 percent, a minimum of six inches of topsoil will be stripped from the trench and spoil storage side and placed into a berm by side casting with a grader. For pipelines that are less than 9 inches in diameter, topsoil will not normally be stripped from the working side of the trench.

After the pipe is installed and the spoil material has been compacted back into the trench, topsoil will be spread over the spoil storage and pit area, water bars installed, and reseeded. Care must be taken to not block drainage ditches.

For roads on slopes of less than 10%, available topsoil will be stripped from the construction area and placed in berms by sidecasting with a grader.

After access construction, the topsoil will then be spread back onto the road outslopes and cut slopes.

CONSTRUCTION, MAINTENANCE AND RECLAMATION OF ROADS

Recognized roads, as shown on the Rock Springs District Office Transportation Plan, will be used when the alignment is acceptable for the proposed use. Generally, roads will be required to follow natural contours; be constructed in accordance with standards as described in BLM Road Standards and BLM Manual section 9113; and be reclaimed to BLM standards.

Access roads will be constructed to the standard necessary to accommodate their intended functions. All roads in the oil field will be treated as "all weather roads." Unless the road sub grade material has enough gravel in it as determined by the authorized officer (AO) all "all weather roads" will be graveled with 2 inch pit run or crushed gravel. All roads constructed by non-government entities across public lands must be designed by or under the direction of a licensed professional engineer. The engineer must certify that the road was built as designed. Soil compaction is required during road construction and culvert installation.

Authorized users are responsible for preventive and corrective road maintenance on all roads associated with field operations. This includes crowning, cleaning ditches and drainage facilities, culvert installation, graveling, dust abatement, or other requirements as directed by the AO.

Riprap will be required at the inlet and outlet of all culvert installations. The minimum size will be determined by the AO's representative.

APPENDIX A

Surface runoff and sedimentation control will be incorporated in all access road design in accordance with BLM Manual 9113 guidelines and installed as approved by the A.O. Road grades, ditches, culverts, sediment traps,, material cut and fill, and topsoil and spoil areas will be designed and located in the field prior to construction.

Access road culvert location and spacing will be approved by the AO using BLM Road Standards Manual 9113 Illustration 9 "Recommended Spacing for Lateral Drainage Culverts in Various Soil Types", shown below. The culvert spacing shown in feet under the erosion index of 10 to 40 will be used.

Spacing for Drainage Laterals

Recommended Spacing for Lateral Drainage Culverts in Various Soil Types*

Soil Types	EROSION INDEX 10	20	30	40
Silty sands, sand-silt mixtures, inorganic silts and very fine sands, silty or clayey fine sands	X——	X		
Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts, organic silts and organic silty clays or low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays			X——	X

*Unified Soil Classification

Road Gradient in percent	Erosion Index 10	20	30	40
2	900'	1225'		
3	600'	815'	1070'	1205'
4	450'	610'	800'	905'
5	360'	490'	640'	725'
6	300'	410'	535'	605'
7	255'	350'	455'	515'
8	225'	305'	400'	450'

To control or reduce sediment from roads, guidance involving proper road placement and buffer strips to stream channels, graveling, proper drainage, seasonal closure, and in some cases, redesign or closure of old roads will be developed when necessary.

On newly constructed roads and permanent roads, the placement of topsoil, seeding, and stabilization will be required on all cut and fill slopes unless conditions prohibit this (e.g., rock). No unnecessary side-casting of material (e.g., maintenance) on steep slopes will be allowed.

Snow removal plans may be required for access which have winter use so that snow removal does not adversely affect drainage systems, reclamation efforts or other resources adjacent to the road.

Reclamation of abandoned roads will include reshaping, recontouring, resurfacing with topsoil, installation of water bars, and drill seeding on the contour. The removal of structures such as bridges, culverts, cattleguards, and signs usually will be required. Stripped vegetation will be spread over the disturbance for nutrient recycling, where practical. Fertilization or fencing of

these disturbances will not normally be required. Additional erosion control measures (e.g., fiber matting) and road barriers to discourage travel may be required.

CONSTRUCTION OF WELL PADS AND FACILITIES

Prior to construction, the proposed pad location will be surveyed and staked and all erosion control design considerations will be reviewed (See Operating Order #1 for required engineering and design information).

The well pads will be laid out so that they are parallel to the contour and the pit is uphill whenever possible (H2S wells may require an exception).

The drill pads will be designed and constructed to disturb the smallest practicable area that will still provide for efficient and safe operations.

All cut and fill slopes will be staked out at least every 50' on slopes with greater than 3' cut and /or fill to identify where topsoil will be removed. Spoil storage areas also must be staked so topsoil can be stripped and stored prior to any other dirt work. All cut and fill work will be balanced to minimize excess spoil material required during pad construction.

If excess spoil exists it will have to be incorporated into the pad fill slope by compacting the spoil in six inch lifts using water and rubber tire vehicles and/or sheep's foot rollers or placed in designated areas and stabilized. The areas of the pad that will support the drill rig and any other heavy equipment will be compacted.

All precautions necessary to stabilize structures will be taken during construction.

During the construction phase, interceptor ditches will be installed above the cut, where necessary. Collector ditches and sediment control structures, designed for a 10-year/24 hr event, may be required below the fill. Water, with a flow less than the 10-year/24 hr storm event, will be diverted and/or collected before being discharged from the disturbed area.

Qualified supervision will be provided during the installation of all erosion control structures including the construction of berms, dikes, trenches and the outslope fill.

No surface disturbance is allowed on slopes in excess of 25 percent unless erosion controls can be ensured and adequate revegetation is expected. Detailed engineering proposals, revegetation and restoration plans and a site specific environmental analysis will be required in these areas.

On producing locations spoil material will be replaced as close to the original contours as the placement of production facilities allows. Operators will be required to reduce cut and fill slopes to 3:1 or less. In those areas where final spoil grading is not possible, spoil will be graded to a gentle slope capable of maintaining a temporary vegetation cover for erosion control. Terraces or elongated water breaks (erosion control measures) will be required after slope reduction. Facilities will be required to approach zero runoff from the location until the area is stabilized to avoid contamination and water quality degradation downstream. All unused portions of facilities on producing well locations will be reduced to 3:1 slopes or less, resurfaced with topsoil and seeded with soil stabilizing species. Topsoil will be taken from the storage pile and spread six inches deep onto the unused portion and chiselled on the contour.

On well pads and larger locations, special attention will be given to sections of the surface use plan covering reclamation. This plan will include objectives for successful reclamation including: soil stabilization, plant community composition, and desired vegetation density and diversity. After they are constructed, reserve pits will be evaluated to determine the need for lining.

CONSTRUCTION AND RECLAMATION OF PIPELINES AND COMMUNICATION LINES

Existing crowned and ditched roads will be used for access where practical to minimize surface disturbances. Pipelines are to follow new or existing roads or existing buried pipelines where it is practical. The pipeline trenches will not be placed in the access road borrow ditches unless no other reasonable alternative is available.

Generally, pipelines will be laid on the surface when slopes are over 25 percent and where rock outcrops are crossed. When possible pipelines should be built perpendicular to the contour in order to minimize the amount of area required for construction .

Clearing of pipeline and communication line rights-of-way will be accomplished with the least degree of disturbance to topsoil. Vegetation removed from the right-of-way will also be required to be spread to provide protection, nutrient recycling, and a natural seed source.

To promote soil stability, the compaction of spoil material free of vegetative material back into pipeline trenches following each lift replacement. The first lift should be 18" deep to reduce the chance of puncturing the pipeline. The rest of the lifts should be 8" deep or less. The soil berm above the pipeline trench shall not settle below the original ground surface or rise any more than 3" above it. Any areas that do not meet this requirement will have to be brought in compliance and reseeded. Water bars, mulching, and terracing will be required, as needed, to minimize erosion. Instream protection structures (e.g., drop structures) may be required in drainages crossed by a pipeline to prevent erosion.

When the need is clearly identified through an environmental analysis or monitoring studies, linear disturbances will be fenced to protect the revegetated area from damage due to domestic and wild animals and off-road vehicles.

If linear facilities follow the same right-of-way for all or part of the route, they will generally be required to be constructed so that only one reclamation effort is required. Generally, they will be required to be constructed either concurrently or during the same field season.

GEOPHYSICAL OPERATIONS

All of the standard practices for surface disturbing operations will apply to geophysical operations. The most critical management practice is compliance monitoring during and after seismic activity. Compliance inspections during the operation ensure that stipulations are being followed. Compliance inspections upon completion of work ensure that the lines are clean and the drill holes are properly plugged.

RECLAMATION

Reclamation will be required on all disturbed areas. On roads left intact for access purposes, the stabilization of all disturbed areas, except the running surface, will be required.

Reclamation (by the operator or grant holder) will be initiated as soon as possible after a disturbance occurs. Construction of erosion and runoff control measures and placement of topsoil will be required after recontouring. Continued efforts will be required until satisfactory vegetation cover is established and the site is stabilized.

Site-specific reclamation plans will identify and provide reclamation erosion control methods for potential surface water impact for pipeline stream crossings. Stream channels will be restored to preconstruction grade and stabilized using appropriate methods, such as riprap, gabions and bulkhead retaining walls, timber, hay bales, and silt fences.

The collection and analysis of soil samples from disturbed areas may be required as part of reclamation planning to determine appropriate seed mixtures, and nutrient deficiencies. Soil testing and reports will be the responsibility of the grantee or lessee. Testing (as determined by BLM) may include: pH, mechanical analysis, salt, exchangeable sodium percentage, nitrogen, phosphorus, and(or) potassium content.

Fertilization may be required if there is evidence of a nutrient deficiency. If needed to produce adequate germination and growth, the topsoil and selected seed species would be inoculated with soil microorganisms. The site will be drill seeded or broadcast (if slopes exceed 30 percent or contain 35 percent surface rock content).

Coarse materials with large voids will be compacted or covered with fine textured spoil material prior to topsoil placement to prevent sifting of topsoil into the spoil.

Severely compacted soils will be cross-ripped to a depth of two feet with two foot centers in order to gain a more desirable seed bed.

During the operational life of a facility, (e.g. producing well, manifold, microwave tower, block valve, etc.), disturbed surface area not needed for operations will be reclaimed. This will entail spreading stockpiled spoil materials unto the areas to be reclaimed and then spreading stockpiled topsoil over the spoil. The areas will then be seeded and mulched as specified.

Stockpiled spoil will be replaced immediately after abandonment of surface facilities. Spoil and topsoil replacement will be completed at the first appropriate time during the following field season (May - October) to allow for fall seeding and mulching.

Grading may be required to improve steep, long and/or rough slopes in preparation for seed bed manipulations and planting.

In particular, grading will be used to blend cut-and-fill slopes with adjacent undisturbed areas while minimizing slope length, improving stability, reducing runoff, and decreasing erosion. Grading will provide for uniform distribution of spoil and topsoil. Grading will be used to implement one or more of the following specialized techniques; slope rounding, bench grading, stair-step grading, contour furrowing and berm placement on top of cut or fill slopes.

Snow fences, placed to increase snowfall depth over a reclaimed area, and reshaping to create shallow depressions (to catch surface runoff) may be required in areas receiving 10 inches or less of annual precipitation.

If environmental analysis or monitoring identifies the specific need, well sites and sensitive areas along linear rights-of-way will be fenced to protect the revegetated areas from damage by domestic and wild animals and off-road vehicle use. All fences will be built in accordance with the BLM fencing manual and Wyoming State Laws on legal fencing in effect at the time of reclamation. Fences will be kept in a usable condition until reclamation has been accepted by the authorized officer. After reclamation has been approved and the fences have been removed , the authorized officer can then release the operator or grantee from any further liability.

Off-road vehicle barriers will be installed, where necessary, and will consist of boulders, pylons, brush piles or other feasible barriers as required on a site-specific basis.

Seeding

On all areas to be reclaimed, seed mixtures will be required to be site-specific and will be required to include species promoting soil stability. Livestock palatability and wildlife habitat needs will be given consideration in seed mix formulation. Interseeding, secondary seeding, or staggered seeding may be required to accomplish revegetation objectives. During rehabilitation of areas in important wildlife habitat, provision will be made for the establishment of native browse and forb species, if determined to be beneficial for the habitat affected.

Topsoil will be distributed uniformly on the area to be reclaimed. If there is between 2 to 3" of topsoil available for reclamation, it may be mixed with the top 3" of "acceptable" spoil prior to seeding the site. If 4" to 6" of topsoil is available no mixing will be required. Following topsoil application, seed bed preparation procedures will be determined on the basis of the physical and chemical characteristics of the topsoil and the physical nature of the site itself. A friable, but firm seed bed will be required.

Final seed bed preparation will be scheduled for completion immediately prior to seeding to maximize seeding effectiveness and seedling establishment. If top soil spreading is completed on a site during Spring and seeding is going to be delayed until fall, a suitable cover crop (an annual grass) will be broadcast seeded for stabilization and weed control.

All disturbed areas will be seeded using a drill equipped with a depth regulator. All seed will drilled on the contour. The seed will be planted between one-quarter and one-half inches deep. Where drilling is not possible (too steep or rocky), the seed will be broadcast and the area raked or chained to cover the seed. If the seed mixture is broadcast the listed rate will be doubled. The seeding shall be repeated until a satisfactory stand, as determined by the AO, is obtained.

Each operator will submit the seed certification tags from each bag of seed used, upon request of the AO. In addition, the company will submit a list of what species were actually seeded and the actual application rate for each site.

The following are representative seed mixtures and rates that will be used. The seeding rate will generally be 12 - 15 lbs/acre. The seeding rate will be doubled if the seed is broadcast.

SITES WITH TOPSOIL AVAILABLE: (Soil amendments and mulch may be required.)

APPENDIX A

_____ A. Dry alkaline sites and shale slopes (areas with a pH between 8 and 9)
Vegetation present: Greasewood, Shadscale, Gardner Saltbush.

Species	lbs/acre
Rosana Western Wheat	6
Pubescent Wheat	6
Winter Fat	2*
Fourwing Saltbush	1
Gardner Saltbush	1*
Tall Wheatgrass	4

Other possibilities

Saltgrass
Alkali Sacaton
Russian Wildrye**

* Plant only if present in the area.
** Plant on saline sites with slopes of 5% or less.

_____ B. Dry loamy sites (areas with a pH of 8.4 or lower and less than 12 inches of moisture). Native vegetation is commonly Wyoming big sage and thickspike wheatgrass.

Species	lbs/acre
Thickspike Wheatgrass	6
Rosana Western Wheatgrass	6
Indian Ricegrass	2
Great Basin Wild Rye	1-2
Fourwing Saltbush	1-2
Wyoming Big Sage	1-2
Winter Fat	1-2*

Other possibilities

Blue bunch wheat grass
Needle and Thread
Bluebunch Wheatgrass
Slender Wheatgrass 3-4
Streambank Wheatgrass 3-4

_____ C. Loamy sites (areas with a pH of 8.4 or lower and more than 12 inches of moisture). Vegetation is usually Needle and Thread, Thickspike, Bluebunch Wheatgrass, and Wyoming Big Sagebrush.

Species	lbs/acre
Thickspike Wheatgrass	6
Smooth brome	6
Pubescent wheatgrass	1
Blue Bunch wheatgrass	1-2
Stream Bank wheatgrass	1-2
Wyoming Big Sage	1-2
Intermediate Wheatgrass	1-2
BitterBrush	1-2
Snowberry	1-2*

_____ D. Mountain Shrub - deep loamy soils with 14 - 18 inches of moisture.

Species	lbs/acre
Smooth Brome	5
Intermediate Wheatgrass	4
Slender Wheatgrass	2
Big Bluegrass	1
Mountain Brome	2
Blue Bunch Wheatgrass	1
Basin Wild Rye	1
Mountain Mahogany	1-2
Service Berry	1-2
Bitter Brush	1-2

_____ E. Aspen Conifer - higher areas or north facing slopes with 16 - 20 inches of moisture.

Species	lbs/acre
Smooth Brome	6
Slender wheatgrass	2
Orchard Grass	2
Timothy	2
Alpine Timothy	1
Intermediate Wheat	2
Meadow Foxtail	1
Sticky Geranium	1

SITES WITHOUT TOPSOIL AVAILABLE OR WITH HIGH SALINITY: (Soil tests required prior to seeding and added soil amendments will be required in most cases.)

_____ A. Moderate pH and Salinity.

Species	lbs/acre
Crested Wheatgrass	12-15
Slender wheatgrass	3
Smooth Brome grass	2
Streambank wheatgrass	2

_____ B. Highly saline sites (EC=10 or greater). Species listed in accordance with their ability to tolerate high salinity. (Other soil amendments will be required in most cases.)

Species:	lbs/acre
Tall Wheatgrass	6
Slender wheatgrass	6
Tall Fescue	6
Western Wheatgrass	6
Russian Wildrye	12*

*Seed alone and on slopes less than 5%.

Follow-up soil testing and/or seeding or corrective erosion control measures will be required on areas of surface disturbance which experience reclamation and/or erosion failure.

Treatments

Mulches will be applied on seed beds with high soil erosion potential or where seed bed microclimate may limit seedling establishment. Any mulch used will be free from mold, fungi, or noxious weed seeds. Mulch may include native hay, small grain straw, wood fiber, live mulch, cotton, jute, synthetic netting, and rock. Straw mulch should contain fibers long enough to facilitate crimping and provide the greatest cover. Some type of matting may be required in more severe conditions such as steep slopes, sandy soils, and other poor soil sites which need site condition modifications to enhance seeding success.

The grantee or lessee will be responsible for the control of all noxious weed infestations on surface disturbances. Control measures will adhere to those allowed in the Rock Springs District Noxious Weed Control EA (USDI 1982a) or the Regional Northwest Area Noxious Weed Control Program EIS (USDI 1987).

Ripping and chiseling will be used to break up compacted soils, increase water penetration, promote root growth, and control erosion. Ripping (2' deep) will normally be used on compacted spoil material and old road beds prior to spreading topsoil. Chiseling on the contour (12" deep) will be done after the site is contoured, ripped, the topsoil is spread, and soil amendments are added.

On sites where quick establishment of shrub and/or small tree species is desirable, bare rooted and containerized species will be hand planted to supplement drilling or broadcast seeding. Shrub species will be planted in areas where wildlife forage is essential, mass slope failure is possible, or along stream crossing to facilitate site stability and wildlife habitat restoration.

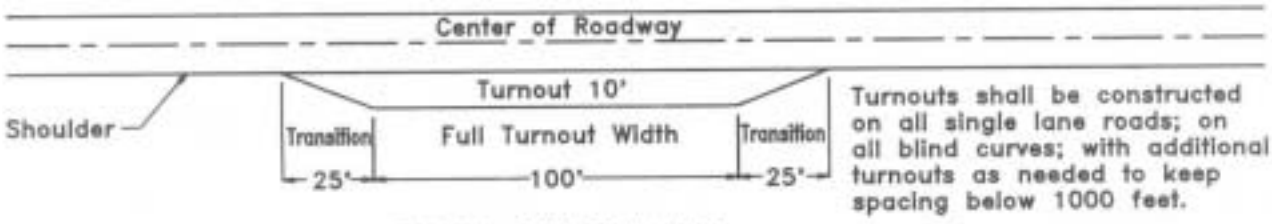
Hydroseeding may be required on steep, gravelly slopes which require the seed to be "anchored" onto the soil surface prior to a mulch treatment. Care will be taken to assure that the solution is not harmful to the seed mix components.

AIR QUALITY PROTECTION MEASURES

As projects are planned that include possible major sources of air pollutant emissions, special air quality protection related stipulations are added to BLM permits and rights-of-way grants. In addition, the BLM coordinates with the Wyoming Department of Environmental Quality/Air Quality Division (DEQ/AQD) during the process of analysis that may lead to the issuance of permits to construct emission sources. This coordination often results in the technical review of applications for permits and(or) identification of additional stipulations to be applied to these permits.

The release of hazardous air contaminants, particularly the emissions from sour natural gas sweetening plants (a process used to remove H2S from natural gas resulting in the emission of sulfur dioxide), is a public concern. BLM requires industry to prepare detailed analyses of risks involved with the development of sour gas pipelines and treatment facilities. These analyses are designed to project impacts both to the public and to resource values. Plant siting will be scrutinized to provide for public safety and to ensure that only areas with the least potential for the transport of pollutants to the wilderness are considered.

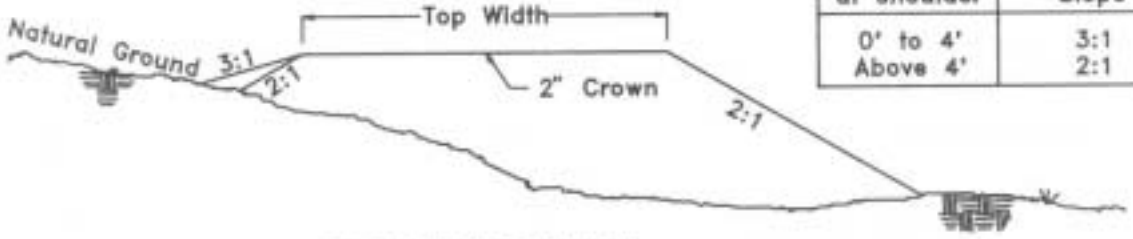
To aid in achieving these goals, BLM will consult with the State of Wyoming, the U.S. Forest Service, industry, and the public to ensure that the most technically sound, environmentally balanced, and economically feasible decisions are made.



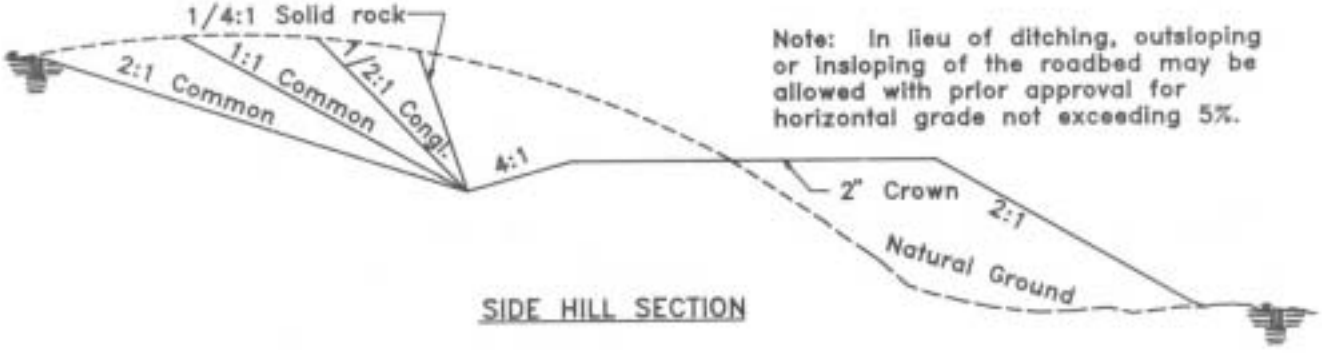
Turnouts shall be constructed on all single lane roads; on all blind curves; with additional turnouts as needed to keep spacing below 1000 feet.

TYPICAL TURNOUT PLAN

Height of fill at shoulder	Embankment Slope
0' to 4'	3:1
Above 4'	2:1

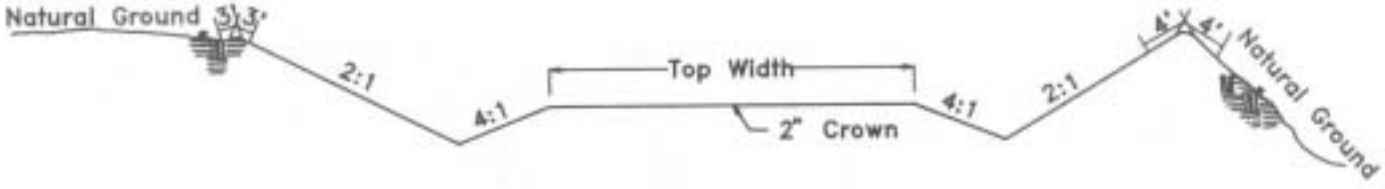


EMBANKMENT SECTION

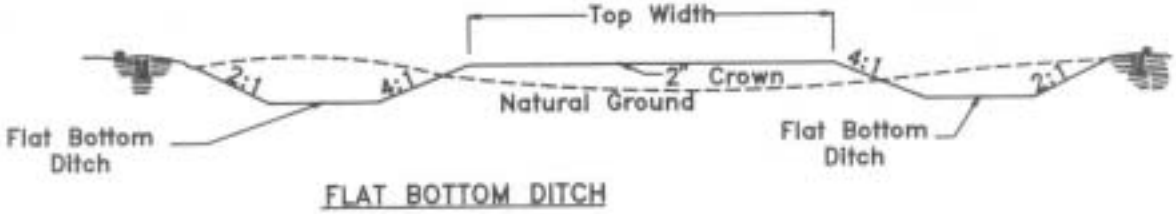


Note: In lieu of ditching, outsloping or insloping of the roadbed may be allowed with prior approval for horizontal grade not exceeding 5%.

SIDE HILL SECTION



CUT SLOPE ROUNDING



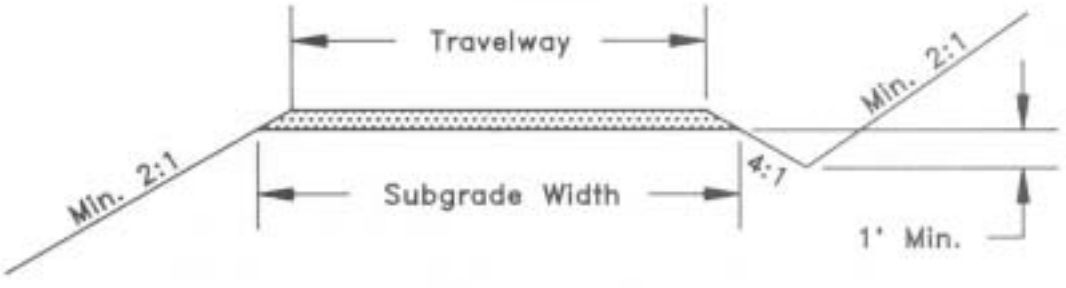
FLAT BOTTOM DITCH

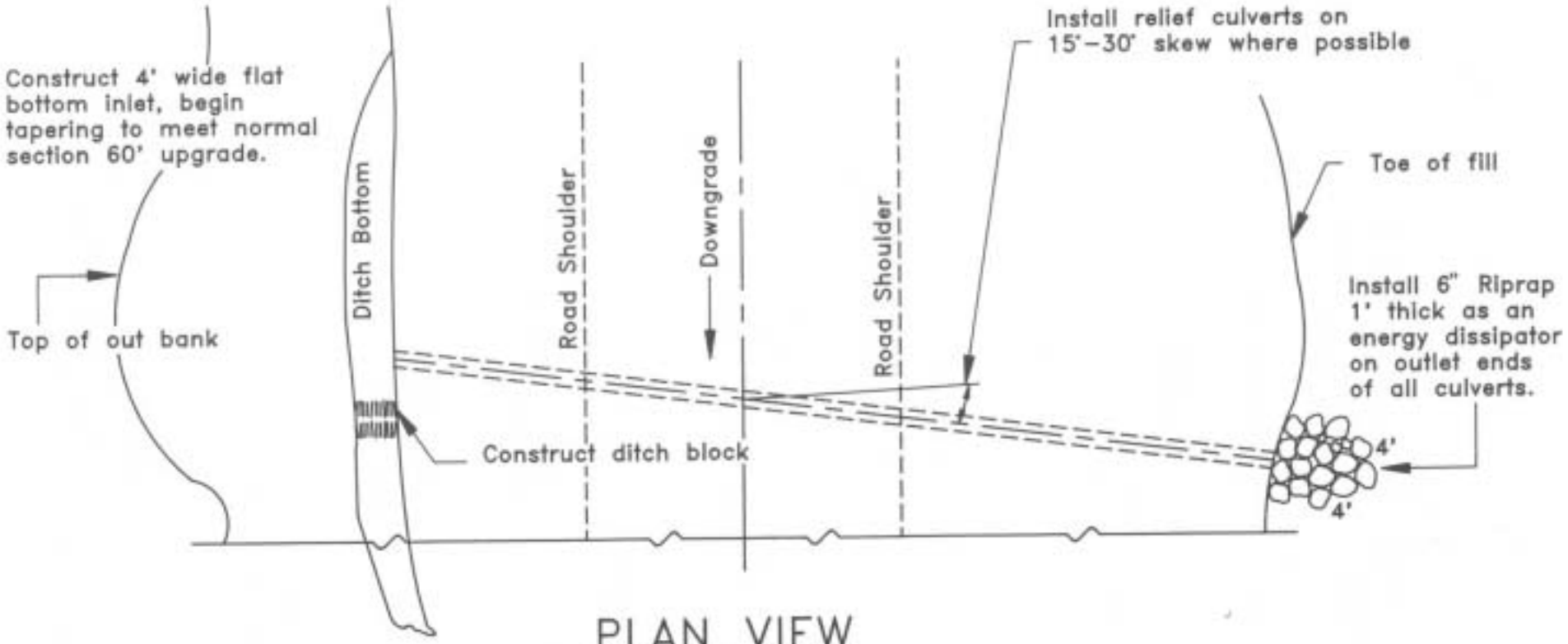
TYPICAL ROAD SECTION

MINIMUM ROAD STANDARDS

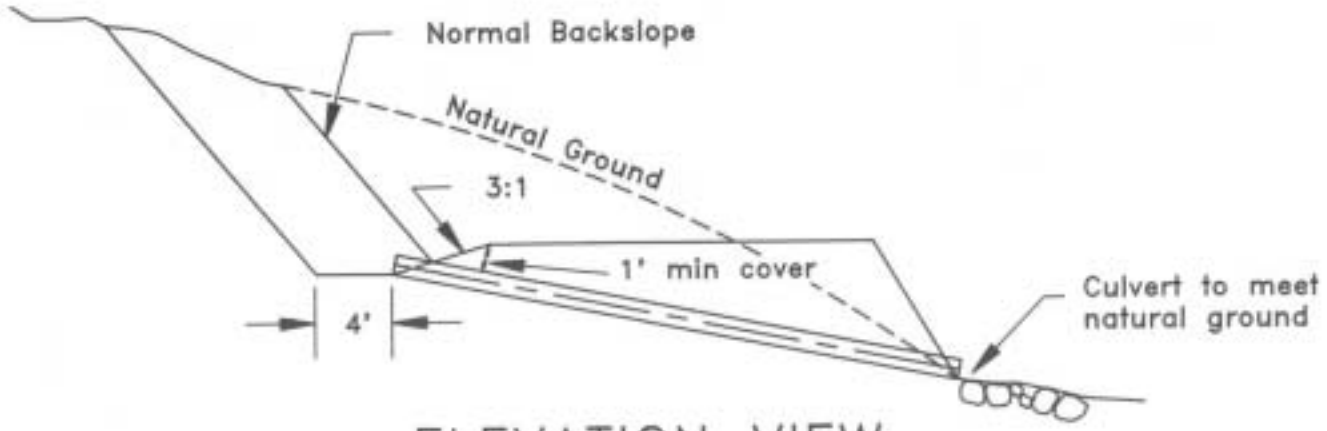
	Single Lane	Double Lane
Width – subgrade	16' (with turnouts)	24'
Average Design Speed	15–25 m.p.h.	25–35 m.p.h.
Maximum Grade	10% *	10% *
Minimum Radius (feet)	65	100
Normal Cut Slope (back slope)	2:1	2:1
Normal Fill Slope	3:1	3:1
Normal Ditch (one foot deep)	4:1	4:1

* Any grade above 8% requires a complete engineering analysis. An engineering analysis is required for all roads.



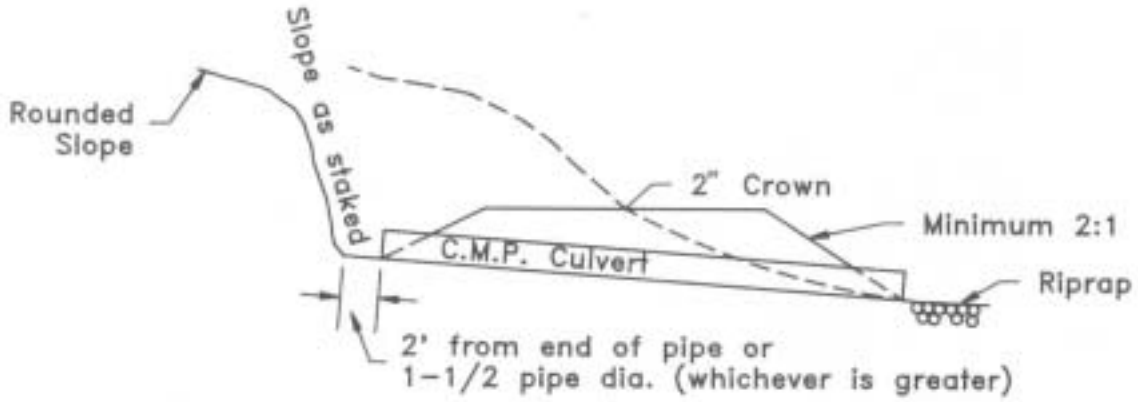


PLAN VIEW

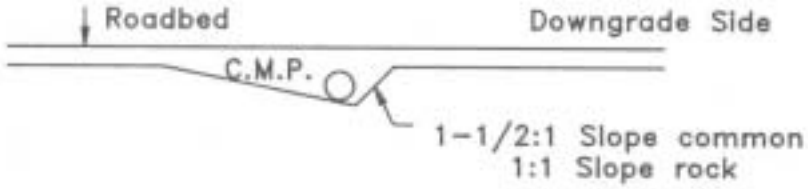


ELEVATION VIEW

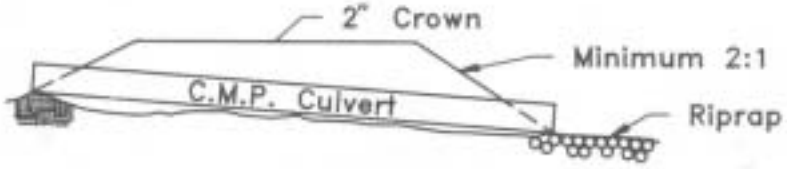
CROSS DRAIN



C.M.P. CULVERT INSTALLATION
CUT SECTION



C.M.P. CULVERT INSTALLATION
DITCH CONSTRUCTION AT SIDE HILL

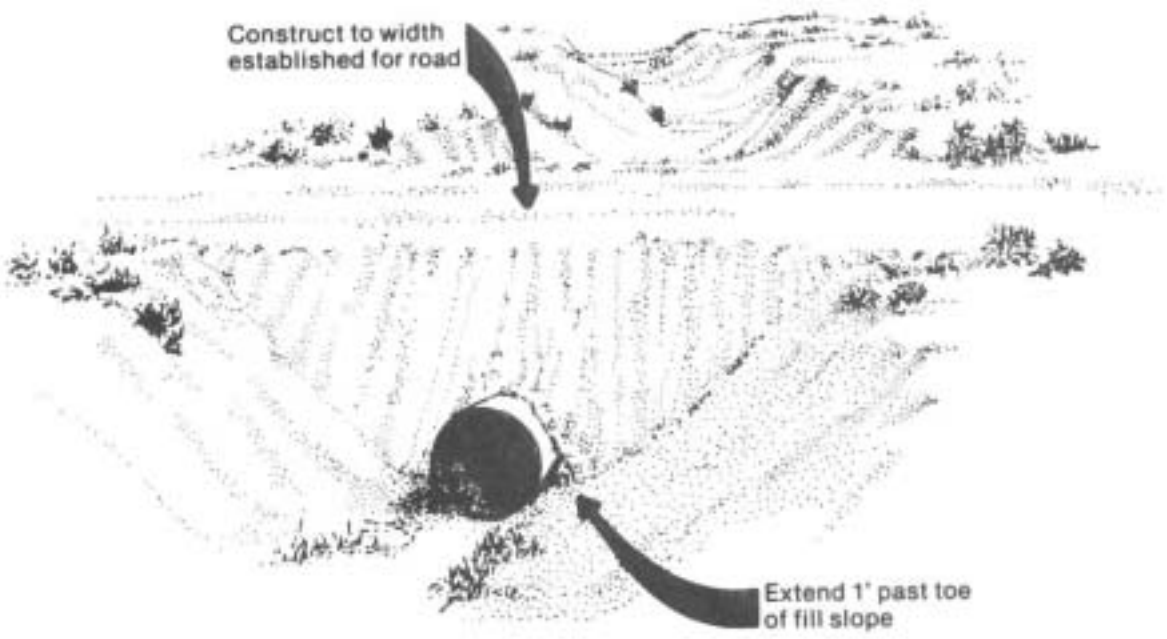


C.M.P. CULVERT INSTALLATION
EMBANKMENT SECTION

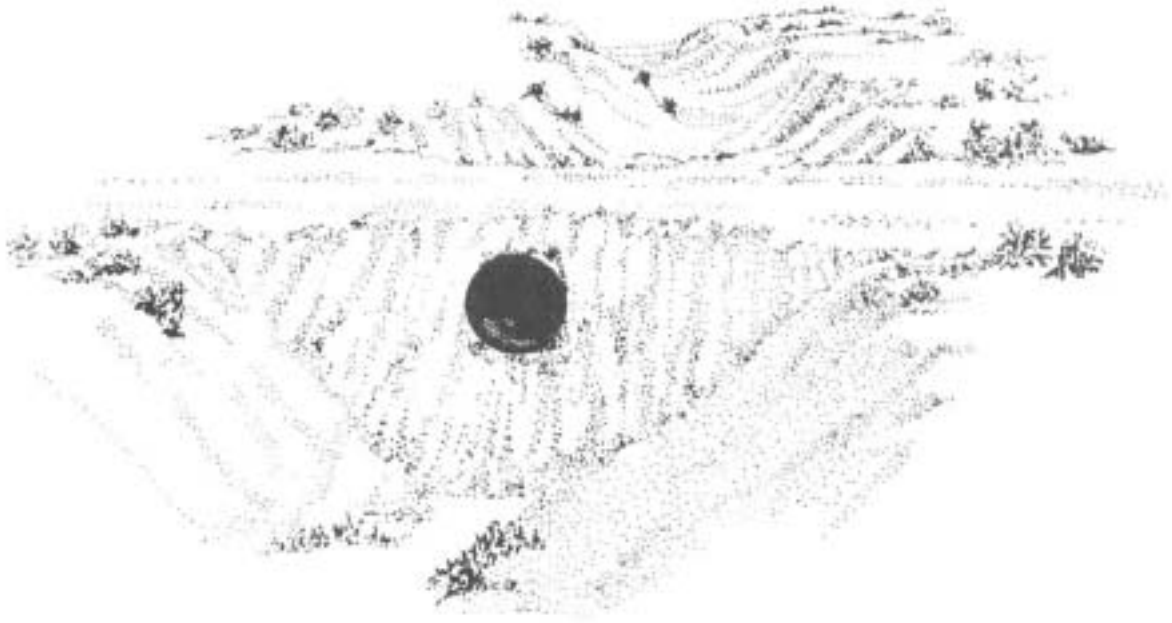
General Notes:

1. In bedding of C.M.P. culverts, if the foundation is rock, excavate to depth of 8 in. below culvert grade and replace with earth cushion.
2. Minimum cover over culvert is 1'.
3. Minimum culvert diameter 18".
4. Minimum culvert spacing:
   (a) 1- 2% grade - 1000 feet minimum
   (b) 2- 4% grade - 800 feet minimum
   (c) 4- 6% grade - 600 feet minimum
   (d) 6- 8% grade - 400 feet minimum
   (e) 8-10% grade - 250 feet minimum
5. Maximum grade 10%.

TYPICAL CULVERT CONSTRUCTION



ACCEPTABLE



NOT ACCEPTABLE

APPENDIX B

PROCEDURES FOR PROCESSING REQUESTS FOR EXCEPTIONS OF SEASONAL STIPULATIONS AND/ OR CONDITIONS OF APPROVAL

1. A request for exception of lease stipulations or permit conditions of approval must be initiated in writing by the operator. This may be done concurrently with submission of an application (typical for situations involving lease stipulations), or subsequent to permit approval (in the case of COAs attached to approved permit).

2. When requested concurrently with an application, the exception of a stipulation or COA is considered as part of the project proposal in RMP and NEPA compliance review.

3. For separate requests, the request is considered as a unique action and is analyzed and documented individually for RMP and NEPA compliance.

4. In both cases, processing includes coordination with Wyoming Game and Fish Department (WGFD) for seasonal wildlife-based lease stipulations or permit COAs. The general factors that need to be considered when evaluating a request are provided in Table B-1.

5. The unpredictability of weather, animal movement and condition, etc., preclude analysis of requests related to wildlife far in advance of the time periods in question.

6. Analysis of requests include review of potential mitigation measures and alternatives (traffic restrictions, alternative scheduling, staged activity, etc.).

TABLE B-1

Factors to be Considered When Evaluating Proposals to Except Stipulations on Oil and Gas Leases or Conditions of Approval for APDs or Geophysical Exploration Permits

The oil and gas industry interests in the CAP area have asked the BLM to change from a list of "factors to be considered", to a list of "decision criteria used", when evaluating proposed exceptions of lease stipulations or conditions of approval (COAs) for APDs or geophysical exploration permits. Upon considering this request, the BLM agrees that this would be a desirable goal. Because of the myriad of variables that are involved, and because sufficient data upon which to design such criteria (that would be applicable to the CAP area) is not available, it is not possible to develop these criteria at this time. However, the BLM will work toward developing such a set of decision criteria. This would begin by utilizing the experience and function of the BPLWG and the findings of the study on affects of oil and gas development on mule deer, and be continued through the various monitoring and other studies that will be conducted in the area. In the interim, the following factors will be used when evaluating and determining whether exceptions will be allowed.

All evaluations conducted must include documentation of the analytical procedure used (e.g., Wildlife/ Fisheries Productivity Analysis - BLM 6000-INT-14 Training Handbook) and the rationale for the conclusions reached.

I. Abiotic Factors

A. Climate

— What are the seasonal weather patterns for the area?

— What are the current snow conditions (depth, crusting, longevity)?

— What are the current and historic precipitation records (amount, periodicity, form)?

— What are the current and historic temperature conditions (norms, lows, recent longevity)?

— What are the current wind chill factors as an indication of animals energy use (daily periodicity and recent longevity)?

B. Water

— How might the proximity of available water affect animal populations in the area?

— What is the water quality relative to wildlife usability and suitability for fish and aquatic organisms?

— Will the proposed activity create any water hazards (e.g., fish barriers, entrapment, drowning hazards, etc.)?

— Will fish and wildlife habitat be affected by any change in water quality?

C. Space

— Are there any topographic/geographic habitat limitations present (e.g., escarpments, etc.)?

— What are the current road/access networks and their relationship/proximity to animal use areas and waters supporting fisheries (road density, screening, juxtaposition relative to migration routes)?

— What are the location and density of oil and gas development facilities, as well as other management facilities (e.g., fences), and their impact on wildlife use areas and waters supporting fisheries (facility hazards)?

— Will increased incidence of special competition, both interspecies and intraspecies, result from proposed activities?

— What is the juxtaposition of forage, cover, and water relative to habitat usability?

D. Soils/Surface Disturbance

— What is the location and condition of roads and drill pads relative to steepness and soil stability?

— What is the location and design of stream crossings relative to stream bank and stream channel stability?

II. Biotic Factors

A. Forage

— Will forage competition, both interspecies and intraspecies, result from the proposed activities?

— Are there impacts to forage as a result of oil and gas activities?

— Will proposed activities affect forage quality, quantity, and availability?

— Is there a potential for increased occurrence of gam dame (i.e., damage claims) resulting from oil and gas activities?

B. Cover

— What is the availability of adequate (quality and quantity) cover, both vegetative and topographic, for both terrestrial and aquatic species?

C. Mortality/Natality

— What is the current estimate of animal condition in the area?

— What is the likelihood of introduction of disease and increased incidence of epizootics?

— What is the likelihood of increase predation resulting from decreased habitat security and overcrowding as a result of displacement?

— Are there current or potential stress related problems in animal populations resulting from human disturbance and displacement (overcrowding and adverse behavioral modifications resulting from human activities)?

— Is there a likelihood of decrease natality and recruitment resulting from overcrowding?

— What is the likelihood of accidents (e.g., wildlife collisions with vehicles, or poaching) resulting from increased human activity?

D. Resource Concerns

— Is the original resource concern protected by the stipulation still valid? If not, is there any possibility the original resource concern will return? (Determination must be supported by resource data).

— Do new resource concerns exist? If so, what are they, and how do they relate to this proposal?

APPENDIX C

GRAZING ALLOTMENTS AND MANAGEMENT CATEGORIES, RANGE IMPROVEMENTS AND IMPLEMENTATION SEQUENCING, AND GRAZING ALLOTMENTS AND MANAGEMENT CATEGORIES

CATEGORIES: "I" Allotment = Improve Category (e.g., conditions need improvement, conflicts, etc.) ; "M" Allotment = Maintenance Category (e.g., conditions satisfactory, no serious conflicts, etc.); "C" Allotment = Custodial Category (e.g., conditions variable, low production potential, limited conflicts, etc.).

Grazing Allotments

Allotment Number *	Allotment Name
High Priority "I" Allotments	
2201	Upper North LaBarge
2077	North LaBarge Common
2035	Deer Hills Individual
2150	Deer Hills Common
"I" Allotments	
2127	McNinch Deer Hills
2129	West of Ranch
2032	Dan Budd Deer Hills
2194	LaBarge Unit Individual
2196	Johnson Ridge
"M" Allotments	
2034	Adjacent To Ranch
2141	Beaver Creek Individual
2142	Beaver Creek Meadows
2100	Dry Piney Individual
2086	Guio Sections
2099	Jory Individual
2091	LaBarge Individual
2161	Norris North Piney
2163	O'Neil Individual
2128	Section 18 Individual
2195	South Piney Individual
2074	South Piney Ranch
2204	Yose Individual
"C" Allotments	
2198	Beaver Tract Individual
2206	Bird Individual
2080	Fox-LaBarge Individual
2079	South Piney Place Meadow
2179	Spence Place Individual

APPENDIX C

RANGELAND IMPROVEMENTS AND IMPLEMENTATION SEQUENCING

Allotment	Pasture	Project	Proposed Sequence by Year	Approx Cost	JDR #	Proposed Funding* Source	Location	Proposal
Upper North LaBarge Individual	Hogsback	Spring Creek pit reconstruction	1	1,000	2438	BLM	SWSE sec. 25, T.27N., R.114W.	Proposed reservoir sealing and snow fence construction.
		Deadline spring and pipeline reconstruction	1	7,200	4307	BLM	secs. 23,25,26,27, T.27N., R.114W.	Proposed spring reconstruction, fencing spring source, and equipping with storage tank. Pipeline reconstruction and possible relocation.
	Gentle Annie/Conway	Burn	4	16,000		BLM\ WGFD	secs. 14,15,22,23 T.27N., R.114W.	Burn about 1,000 acres. Rest from livestock grazing for two years.
LaBarge Individual		*	*	*		*	secs.11,14,15 T.27N., R.114W.	* *
Deer Hills Individual	West	Riparian exclosure	2	1,500		BLM	SENW sec. 6, T.30N., R.113W.	Proposed new fence to create a 10-acre riparian exclosure.
		Burn	3	2,800		BLM	NESE sec. 6 and N1/2S1/2 sec. 5, T.30N., R.113W.	Proposed prescribed burn of approximately 400 acres to rejuvenate sagebrush and increase grass production.
		Deer Hills Reservoir #1 reconstruction	3	5,000	1921	BLM	NWSW sec. 8, T.30N. R.113W.	
		Deer Hills Reservoir #2 reconstruction	3	5,000	1922	BLM	SWNE sec.8, T.30N., R.113W.	
	East	Deer Hills Reservoir #5 reconstruction	3	500	2146	BLM	NWSW sec. 10, T.30N., R.113W.	Abandon and reclaim to reduce existing erosion.

APPENDIX C

RANGELAND IMPROVEMENTS AND IMPLEMENTATION SEQUENCING (continued)

Allotment	Pasture	Project	Proposed Sequence by Year	Approx Cost	JDR #	Proposed Funding* Source	Location	Proposal
Dan Budd Deer Hills Individual	North	Fork Reservoir #2 reconstruction	3	10,000	1804	BLM	NWNE sec. 17, T.30N., R.113W.	
Dan Budd Deer Hills and Johnson Ridge Individual		Burn	5	5,600		BLM\ WGFD	secs. 17,18,19,20 T.30N, R113W. secs. 13,14,24, T.30N., R.114W.	Burn about 700 acres. Rest from livestock grazing for two years.
O'Neal Individual		Brush beating	4	6,400		Rancher\ BLM\WGFD	secs. 14,15, T.29N., R.112W.	Proposed cooperative venture between John J. Chrisman, BLM, and WGFD designed to improve grass production and rejuvenate decadent sagebrush (approximately 640 acres).
Calpet Common	State (2,210 acres: 630 public 1,580 State)	Fence	5	16,100		Rancher	sec. 36, T.27N., R.113W., secs. 1, 12, T.26N., R.113W.	Proposed for user construction on State land. Approximately 2 1/2 miles of fence and two cattleguards (3 wire fence). This fence is on hold pending Wyoming State Highway Department, decision to fence Calpet Highway right-of-way.
	Calpet (14,144 acres)	Fence Water Gap	4	9,200		BLM\ Rancher	NE and SE sec. 21, T.26N., R.113W.	Proposed for BLM to supply material and user to construct approximately 2 1/4 miles of fence (4 wire fence)
		Slide Rock reservoir	2	500	2316	BLM	NENW sec. 20, T.26N., R.113W.	Abandon and reclaim existing reservoir.
		"	"	5,000	"	BLM	SENE sec. 19, T.26N., R.113W.	Build new reservoir.
		Chain\Spray and Seed	3	65,000		BLM\ WGFD	secs. 26,33, 34,35 T.27N., R.113W.	Chain or spray about 1,600 acres. Seed about 1/2 this area. Rest from livestock grazing for two years.

APPENDIX C

RANGELAND IMPROVEMENTS AND IMPLEMENTATION SEQUENCING (continued)

Allotment	Pasture	Project	Proposed Sequence by Year	Approx Cost	JDR #	Proposed Funding* Source	Location	Proposal
Calpet Common (continued)	Jory(560 acres:320 public, 240 deeded)	Unrecorded reservoir	1	?		Enron	NESW sec. 29, T.27N., R.113W.	Enron offered to repair reservoir for the user. BLM needs to complete clearance, develop construction specifications, and authorize project.
North LaBarge Common	East Chimney (18,354 acres)	Dry Basin pipeline extension	5	1,000	2432	BLM	secs. 19, 20, T.29N., R.111W.	Proposed construction of 3/4 mile of pipeline and one trough.
		South Piney Ridge reservoir reconstruction	2	2,500	1736	BLM	SENW sec.22, T.29N., R.112W.	Build a new pit in the upper end of the existing reservoir.
		Chain and seed	1	70,000		WGFD	secs. 33,34,35 T.29N., R.112W. secs. 3,4,5,6,7,8 T.28N., R.112W.	Chain about 1,500 acres of sagebrush. Reseed 1/2 the area with saltbush and winterfat, rest from livestock grazing for two years.
	West Chimney (18,004 acres)	West Chimney pipeline construction	5	2,000		BLM	secs. 20, 21, T.29N., R.112W.	Proposed construction of one mile of pipeline and one trough from West Chimney well (JDR #4507) into East Chimney pasture.
	Cretaceous (12,872 acres)	South Piney well	3	13,500		BLM	NESE sec.22, T.29N., R.113W.	Proposed new well. Drill, case, and equip with submersible pump, storage tank, and trough.

APPENDIX C

RANGELAND IMPROVEMENTS AND IMPLEMENTATION SEQUENCING (continued)

Allotment	Pasture	Project	Proposed Sequence by Year	Approx Cost	JDR #	Proposed Funding* Source	Location	Proposal
North LaBarge Common (continued)	Cretaceous (continued)	Remove fence	1	50		Mobil\ Ranchers	NWSE sec. 1, T.28N., R.114W.	Old Mobil disposal pits make good water catchments in an area where water is needed. These pits do not appear to have been used for disposal. Coordinate with Mobil to reach an agreement to remove the fence around these pits. Soils tests may be needed to determine if the pits have been used to assure that no contaminants are present.
		Burn	2	17,000		BLM\ WGFD	secs. 21,22,27, 28,29,30,31,32 T.29N., R.113W. secs. 1,2,12 T.28N., R.114W sec. 7 T.28N., R.113W.	Burn about 2000 acres. Rest from livestock grazing for two years.
	Big Mesa (40,120 acres)	Saddle Ridge drift fence	5	9,600		BLM	secs. 4,5,6, T.27N., R.113W.	Proposed new fence approximately 1 3/8 miles and one cattleguard on Calpet highway (3-wire fence).
		Chevron drift fence	5	12,500		BLM	secs. 15,22,26, T.27N., R.113W.	Proposed new fence, two lengths of fence approximately 2 miles total, and two cattleguards (3-wire fence).
		Bird Nipple drift fence	5	2,850		BLM	sec. 8, T.27N., R.112W.	Proposed new fence approximately 3/4 mile long (3-wire fence).
		Dry Piney drift fence	5	5,700		BLM	secs. 26, 22, T.28N., R.113W.	Proposed new fence approximately 5/8 mile long and one cattleguard (3-wire fence).

APPENDIX C

RANGELAND IMPROVEMENTS AND IMPLEMENTATION SEQUENCING (continued)

Allotment	Pasture	Project	Proposed Sequence by Year	Approx Cost	JDR #	Proposed Funding* Source	Location	Proposal
North LaBarge Common (continued)	Big Mesa (continued)	Bird Nipple well	3	8,750		BLM	NESW sec. 8, T.27N., R.112W.	Proposed new well. Drill, case, and equip with submersible pump and trough.
		Bird Nipple pipeline	3	900		BLM	NESW, SWNE sec. 8, T.27N., R.112W.	Proposed new pipeline from Bird Nipple well. Approximately 1/4 mile pipeline and one trough.
		Twin Peaks well reconstruction	4	1,000	1890	BLM	SWNE sec. 19, T.28N., R.112W.	This well was drilled by the BLM in 1962 and never equipped. Look into feasibility of equipping with submersible pump and trough.
		Little Mesa well	3	8,750		BLM	NWSW sec. 33, T.28N., R.112W.	Proposed new well. Drill, case, and equip with submersible pump and trough.
		Wildcat spring and pipeline reconstruction	1	500	2393	BLM	SW sec. 36, T.28N., R.113W. sec. 1, T.27N., R113W.	Collector system needs reconstruction. Spring source needs to be fenced. The pipeline needs to be cleaned out and patched in one place.
		Bird Spring reconstruction	1	1,500	1916	BLM	SESE sec. 35, T.28N., R.113W.	Collector system needs reconstruction. Approximately 100 yards of pipeline needs to be replaced. The fence around this facility needs to be reconstructed.
		West Bird spring pipeline construction	2	1,600	1883	BLM	NESE sec. 3, T.27N., R.113W.	Construction of approximately 5/8 mile of pipeline and one trough in secs. 2,3, T.27N., R.113W.

APPENDIX C

RANGELAND IMPROVEMENTS AND IMPLEMENTATION SEQUENCING (continued)

Allotment	Pasture	Project	Proposed Sequence by Year	Approx Cost	JDR #	Proposed Funding* Source	Location	Proposal
North LaBarge Common (continued)	Big Mesa (continued)	Oreana spring reconstruction	1	1,000	2270	BLM	SENE sec. 18, T.27N., R.113W.	Collector system and pipelines need to reconstructed and spring source needs to be fenced.
		Big Mesa storage tank	3	?		Enron	SENW sec. 4, T.27N., R.113W.	Cooperative venture between Enron, BLM, and range users. Enron supplies water and storage tank. BLM and users supply approximately 2 1/8 miles of pipeline, 3 troughs and labor.
		Big Mesa pipeline	4	3,900		BLM\ Ranchers	secs. 4, 9, T.27N., R.113W. secs. 33, 34 T.28N., R.113W.	
		Road reservoir reconstruction	2	2,500	1817	BLM	NENW sec. 5, T.27N., R.112W.	Reconstruct, if possible, a small pit in the upper end of existing reservoir would be acceptable.
		Buttes End reservoir reconstruction	2	200	1879	BLM	SWNW sec. 17, T.27N., R.112W.	Channeling water from the adjacent drainage to this newly reconstructed reservoir should provide a reliable water source. Range users offered to construct the needed 200 yards of channel once this project is authorized.
		Chevron reservoir	2	5,000		BLM	SENE sec. 23, T.27N., R.113W.	Proposed new reservoir construction.

APPENDIX C

RANGELAND IMPROVEMENTS AND IMPLEMENTATION SEQUENCING (continued)

Allotment	Pasture	Project	Proposed Sequence by Year	Approx Cost	JDR #	Proposed Funding* Source	Location	Proposal
North LaBarge Common (continued)	Big Mesa (continued)	Bird Nipple reservoir	2	5,000		BLM	S1/2S1/2 sec. 31, T.28N., R.112W. or N1/2N1/2 sec. 6, T.27N., R.112W.	Proposed new reservoir. A suitable location for a reservoir in this drainage remains to be identified.
		Radio Tower reservoir	2	5,000		BLM	NENE sec. 28, T.28N., R.112W.	Proposed new reservoir construction.
		Big Mesa reservoir	2	7,500		BLM	NESE sec. 27, T.28N., R.113W.	Proposed new reservoir construction.

*Any mitigation money that may be donated by oil and gas industry could also be committed to these resource improvements.

APPENDIX D

MONITORING OIL AND GAS, ROADS, WILDLIFE, RANGELAND, GROUNDWATER AND WATERSHED

To meet the objectives of the CAP, and conform with the Pinedale RMP, monitoring will be accomplished by BLM and/or required of operators (oil and gas, rancher, right-of-way applicants, etc.). Monitoring is a requirement provided for in the Code Of Federal Regulations (40 CFR 1505.2(c) and 1503.3). The regulation, in its requirements relative to NEPA and Agency Decision making, states "...A monitoring and enforcement program shall be adopted and summarized where applicable for any mitigation" (1505.2(c)).

The BLM will conduct extensive monitoring inspections of construction, drilling, and rehabilitation operations, through a compliance officer and/or interdisciplinary team, to ensure acceptable attainment of objectives. The monitoring inspections will be based upon the standards in Appendix B (Standard Practices Applied To Surface Disturbing Activities).

Specific monitoring that will be implemented includes oil and gas, wildlife, and forage.

OIL AND GAS

Reclamation: All past, present, and future reclamation will be monitored to ensure the following goals have been met with regards to successful revegetation and restoration.

- Immediate site stabilization to limit wind and water erosion.
- Establishment of vigorous stands of desirable plant species to limit invasion by noxious weeds.
- Implementation of noxious weed control in cooperation with County Weed and Pest Control Agent.
- Establishment of vegetation consistent with livestock and wildlife needs.
- Reduction of visual contrast and enhancement of aesthetic values.
- Compliance with site-specific revegetation requirements.
- Regenerating and self-supporting vegetation.

Monitoring of a reclaimed area is a joint effort between the BLM and the operator. The BLM will inspect the site immediately after the initial seeding and the following fall for compliance with the reclamation requirements. The operator is responsible for notifying the BLM as soon as the site has met the reclamation objectives identified for the site. If the BLM agrees that the site's reclamation objectives have been met on wells where final reclamation has been completed, the operator is released from any further reclamation responsibilities. If the BLM does not feel the reclamation objectives have been met, further treatment may be prescribed. The reclamation monitoring goal for revegetation will be to adequately characterize ground cover and vegetation canopy cover, and to determine vegetation species occurrence.

This data will be compared to acceptance criteria as follows: reclamation vegetative cover is 50 percent of pre-disturbance vegetative cover at 2 years, and 80 percent of pre-disturbance vegetative cover at 5 years. Other acceptance criteria may be adopted as a result of a reclamation technical review.

Monitoring will consist of a step-point transect which will record ground and canopy cover from a minimum of 100 points in the reclaimed area. This data would be compared against acceptance criterion 2 (BLM Manual, Physical Resource Studies, 4412.14 D2 and 4).

To use acceptance criterion 1, a second transect would be run in the adjacent undisturbed vegetation recording ground and canopy cover on a minimum of 100 points. This cover data would be compared to the 2 year and 5 year pre-disturbance cover parameters.

During monitoring, species will be identified and recorded in the reclaimed area to determine the composition. This data will be compared with the species that were in the seeding requirements. Evaluations will be made of the effectiveness of the seeding effort and appropriateness of the seed mix.

Erosion condition ratings for the reclaimed sites will also be evaluated at the same time the vegetation is monitored. This will be done by visually assessing the amounts of soil movement, surface rock, pedestaling, flow patterns, and rills (BLM's Erosion Condition Class Rating system).

ROADS

As a continuing monitoring effort all existing access roads will be continually evaluated to determine if they are: 1) still necessary, 2) safe, and 3) whether they have erosion problems. The roads will be reclaimed or maintained as is appropriate. It will be the responsibility of the authorized users to conduct preventative and corrective road maintenance, throughout the life of their operations, on the roads permitted for their use.

WILDLIFE

The scheduling of wildlife monitoring activities is dependent upon the implementation of habitat improvement treatments. Specific monitoring practices will be as follows:

— Mule deer distribution within the CAP area will continue to be monitored annually following the completion of the Wyoming Range Mule Deer Mortality Study. Classification will occur at a level adequate enough to obtain estimates of post-treatment mule deer densities during mid-winter. Mule deer classification activities will fall under the responsibility of the WGFD.

— At least one permanent line intercept transect with a belt transect and permanent photo points will be established within each treatment area before and after treatment implementation. From these permanent transects post-treatment estimates of browse species canopy cover, browse species density by age class, and browse species hedging classes within each treatment area will be obtained. Monitoring intensity will be at least once every 3 years. These monitoring responsibilities will be shared jointly by BLM and WGFD.

— Two permanent 0.05 acre (0.02 ha) exclosures (1 livestock exclosure, and 1 livestock and big game exclosure) will be established within the sagebrush-grassland, sagebrush-salt desert shrub, and mountain shrub-sagebrush types within the CAP area. Within these exclosures, all of the vegetative characteristics outlined will be monitored, as appropriate, at least once every 5 years. The construction and monitoring responsibilities will be shared jointly by BLM and WGFD.

— Utilization levels within and adjacent to treated areas (key areas) will be monitored using currently accepted BLM methods. These monitoring responsibilities will be shared jointly by BLM and WGFD.

RANGELAND

General: In conformance with the Pinedale RMP, monitoring studies will be installed on all "I" category allotments, and on "M" and "C" category allotments as needed. Monitoring intensity will be greater on "I" allotments than on "M" or "C" allotments.

Key areas have been identified for monitoring in this plan, but only for those pastures of North LaBarge Common and Calpet Common allotments, and then only for those pastures that lie within the CAP boundaries (see Table F-1). Key areas for the other pastures in these two allotments have been tentatively located and will be identified in forthcoming AMP revisions.

Every effort will be made to include affected and interested parties throughout the monitoring period for these allotments. Pre-season and post-season range tours are customary with BLM Range Conservationist and LaBarge Roundup Association members. Utilization and distribution problems have been identified during these range tours over the past 3 years. This information was used to identify the key areas listed in Table F-1. These tours have been very beneficial in the drafting of this plan and should be continued at least through the time that this can be declared a successful and workable plan. The grazing permittees will be invited to participate in this monitoring effort to the extent that they see fit. In addition to the permittees, the following groups have been or will be invited to participate in the monitoring effort on these allotments:

Natural Resource Defense Council (NRDC)
Wyoming Game and Fish Department
National Wildlife Federation
Wyoming Wildlife Federation
U.S. Environmental Protection Agency

APPENDIX D

TABLE D-1
MONITORING STUDIES TO BE ESTABLISHED

Key Area[1]	Legal Description of Study	Utilization	Trend
CALPET COMMON			
Calpet Pasture			
Birch Creek	LOT 9 Sec. 2 T26N, R113W	X	
Calpet	NWNW Sec. 4 T26N, R113W	X	
NORTH LABARGE COMMON			
Hogsback Pasture - Big Mesa (SW)			
Water Tank	NESW Sec. 8 T27N, R113W	X	
Wildcat Canyon Pasture - Big Mesa (SE)			
Bird Draw	SWNE Sec. 12 T27N, R113W	X	
Dry Piney Pasture - Big Mesa (NW)			
Dry Piney	NESE Sec. 32 T28N, R113W	X[2]	X[3]
Yose Canyon Pasture - Big Mesa (NE)			
Yose Canyon	SWSE Sec. 29 T28N, R112W	X	
East Chimney Pasture			
Flat Top	SWNE Sec. 4 T28N, R112W	X	
West Chimney Pasture			
Chimney Butte	SWNE Sec. 1 T28N, R113W	X	
Cretaceous Pasture			
Dry Basin	NWNE Sec. 1 T28N, R114W	X[2]	X[3]
Mountain Home	SWNE Sec. 30 T29N, R113W	X	

[1] Trend study areas where "Permanent Plot Transects" may be necessary.
[2] Utilization studies in riparian areas which involve the "Paired Plot" (utilization cage) method.
[3] Trend study areas where the "Green Line Riparian Monitoring Method" may be incorporated.

Monitoring Studies

The primary studies to be established are: actual use, utilization climate, trend, and observation. The timing suggested for these studies are important but personnel and funding limitations may require some modification in the frequency of data collection. All data and photos will be kept in individual analysis files for these allotments. The collection and evaluation of the data will be a joint effort by the livestock operators and BLM.

Actual Use: Actual use data will reflect the actual dates and numbers of livestock grazed in a pasture or allotment. It will be obtained from the operator soon after the use is made (e.g., after pasture changes, moving off allotment, etc.). These data are extremely important in evaluating the AMP. When used in conjunction with other data, such as forage utilization and climate, it can be useful in adjusting allotment grazing capacities.

It is also important to record other use made in the pasture or allotment. This type of use could include trespass livestock, or wildlife. It is very difficult to obtain accurate data for wildlife, but every effort must be made to record this information as it is observed, particularly if an unusually heavy concentration of animals remains in a pasture or allotment.

APPENDIX D

All deviations from licensed use must be noted. Water hauling, water problems, death and losses, management problems, etc., should be noted on the actual use form.

Utilization: Utilization is defined as the percent of the current year's growth consumed by animals during a given grazing period. These data can be used in conjunction with actual use and climate data to make stocking adjustments. This will be done by comparing measured utilization rates with proper or allowable rates for a particular key species. The following methods will be used to collect forage utilization data:

1. Key Forage Plant Method for use pattern mapping.

2. Ocular Estimate by Plot and/or Height-Weight Curves for key areas.

3. Paired Plot Method for riparian areas.

Data will be gathered when livestock are moved from a pasture or allotment. Measurements may be necessary before the scheduled move date if appearances indicate that 50 percent utilization is being approached. Key species will be selected for the purpose of measuring utilization. Key species will vary substantially between key areas due to large differences in topography and elevation. Key species will be identified during the 1990 and 1991 grazing seasons. To insure consistency in measuring utilization from year to year, a permanent transect will be established in selected key areas. This transect will consist of a marker post and compass direction in which the transect will be walked from the post. This will insure that the utilization will be measured in the same area year after year.

Utilization cages will be set up in some key areas, particularly in riparian areas, to aid in determining the appearance of ungrazed plants so that a more accurate estimate of utilization can be made. Utilization data may also be collected in other areas of the allotment so that an accurate estimate of utilization allotment wide may be made.

Livestock utilization will be measured on the current standing vegetation at the end of the grazing period designated for a particular pasture. Treatments other than "Early Fall" and "Late Fall" will allow for forage regrowth prior to the end of the growing season. Spring grazing treatments will be limited to 26 days or less and substantial regrowth will occur. On most years, grasses that were grazed during the spring grazing treatments will regrow to full maturity and produce seeds. If livestock utilization is 50 percent of the current crop at the time livestock are removed it will be substantially less than 50 percent of the current years growth after regrowth occurs.

Although range management literature may contain a wide range of recommendations on proper degrees of grazing use, those listed in this plan are based on research and experience which indicates that most native forage plants can remain vigorous and productive if at least 50 percent of the annual forage growth remains at the end of the growing season (SCS National Range Handbook). However, in riparian areas with past utilization problems (Dry Piney Creek, Dry Basin Draw and Beaver Creek), livestock utilization will be limited to no more than 40 percent of the annual forage growth. Livestock utilization targets in all riparian zones in the CAP area will be changed from percentages of annual forage growth to stubble heights when data on these relationships become available.

Climate: Precipitation data will be collected from rain gauges in or near the allotments. This is currently being collected from three locations:

Calpet gauge - SESE Sec. 26 T27N, R113W
Graphite Hollow gauge - SWSW Sec.23 T27N, R114W
Deer Hills gauge - NWSW Sec. 24 T30N, R113W

Temperature and precipitation data will also be obtained from the National Climatic Data Center site at Big Piney.

Trend: Trend data will indicate the direction of change in the general health of the range resource. These data can be used in conjunction with other monitoring data to assist in making adjustments in grazing use.

Photo points will be the primary tool for evaluating trend on this allotment. They shall be marked with a post and identified by legal description and compass bearing such that the photo can be repeatable. The purpose is to establish a photographic record that will show changes as a result of management. Closeup photographs of an established plot show the soil surface characteristics and the amount of ground surface (at a given time) covered by vegetation and litter. General view photographs present a broad view of the area. These photographs, compared with other photographs of the same site taken in later years, furnish visual evidence of vegetation and soil changes.

If high intensity trend monitoring becomes necessary, "Permanent Plot Transects" will be established in critical key areas. These transects will be established and data

will be collected according to Wyoming Rangeland Monitoring Handbook (H-4423-1). Under the "Permanent Plot Transect" method, ten 9.6-square-foot plots will be systematically spaced along a permanently located transect. The following indicators of trend can be monitored under this method: cover, composition (by weight and cover), density, frequency, production, age class, and utilization. This method of tracking trend is very time consuming and is usually only done for monitoring a specific problem. A minimum record of change can be maintained through photographs taken of each plot at specified time intervals.

Trend monitoring in riparian areas is more time consuming than upland trend monitoring. "Permanent Plot Transects" or any of the other fixed plot methods require substantially more time for establishment and data collection in riparian communities than in upland communities. Fixed plot methods are designed to quantify small changes in plant community composition over long periods of time. Plant succession in riparian areas moves rapidly. By using a line intercept method, change can be tracked by observing changes in plant community types rather than changes to composition within a plant community.

The "Green Line Riparian Monitoring Method" is an adaptation to a technique originated for the Forest Service Intermountain Region 4, by Alma H. Winward. This method relies on identification of riparian plant community types on a pace (step) transect. It is based on the premise that, given site specific objectives, some plant communities are more desirable than others. By observing these communities over time, trend toward or away from objectives may be tracked. Riparian objectives may be defined by specifying short-term improvements utilizing a desired plant community approach.

Observation: Written records of what happens on an allotment are extremely important. This includes things such as droughts, trespass livestock, problems with range improvements, etc. Any item that may be important in evaluating the allotment must be documented.

In this category are also livestock operator contacts. The livestock operator is in much closer contact with the allotment than most BLM employees. BLM will work closely with the operator and record his observations to achieve an accurate evaluation of the range and management systems. Livestock operator contact will receive high priority.

Schedule for Collecting Monitoring Data

Actual Use: Actual use data for livestock will be obtained from permittees by Actual Grazing Use Reports 15 days after the close of the grazing period for the allotment. Actual use may also be requested after pasture moves in the spring and summer.

Utilization: Forage utilization will be measured on an annual basis. Every attempt will be made to measure utilization within two weeks of the time that livestock have been removed from the pasture. Utilization measurements may be necessary before the scheduled move date if excessive use is becoming apparent.

Climate: The rain gauge will be read four times each year as near as possible to April 15, July 1, September 1, and October 15. National Climatic Data Center reports are published monthly and include daily temperature and precipitation data.

Trend: Initially, trend photos will be read at yearly intervals. After full implementation of the AMP, trend photos will be taken at the completion of each grazing cycle. If "Permanent Plot Transects" are established, they will be read at the completion of each grazing cycle initially and extended to five year cycles, if no specific problem is identified.

Observation: This will be an ongoing process.

Evaluation: At the end of each grazing cycle, after implementation of this plan, an evaluation report will be made in accordance with BLM Manual 4413. The purpose of the evaluation will be to determine the effectiveness of the plan in meeting the objectives and also to insure that the forage allocations are appropriate. If the objectives are not being accomplished, or the forage allocations are not appropriate, a change to the plan or forage allocations may be necessary.

Key Areas: Within the Calpet Common and North LaBarge Common allotments, potential key areas (Table F-1) and associated monitoring studies were identified during the 1989 grazing season. Alterations to the key area selection and monitoring studies will be carried out during the 1990 grazing season. Most monitoring studies will established during the 1990 and 1991 grazing seasons (key species will be identified at this time). Additional monitoring studies may be incorporated as needed.

GROUNDWATER

General: Plans for groundwater monitoring in this area were initiated by the Riley Ridge EIS prepared for the Exxon CO2 project. The Record of Decision (1984) for that EIS called for groundwater monitoring, the exact nature of which was to be determined.

Because little was known about the area's groundwater system, BLM entered into an interagency agreement with USGS Water Resources Division in Cheyenne. Under this agreement, a base level study defining the aquifer system in the Big Piney/LaBarge area was completed in 1988 at a cost to the BLM of approximately $50,000. The study, "Hydrogeology of the Riley Ridge-LaBarge Area, Southwestern Wyoming", included water quality data available at the time. This report, coupled with water quality data collected during permitting of Exxon's Riley Ridge project (Water Resources Technical Memorandum B710, prepared by Environmental Research and Technology, Inc.), provides background groundwater quality data and for the area. Hydrocarbon seepage suspected of being associated with oil and gas production has been discovered in several isolated locations within the Big Piney/LaBarge producing area.

Several specific areas of contamination are at or near The Hogsback, in the Hogsback Unit. This contamination was/is in the form of condensate and oil flowing with water from existing springs. Two of the seeps appear to have stopped, while one continues. Mobil, as operator, continues to monitor these seeps and contain the hydrocarbons at the surface. Mobil Oil's typing of condensate from one of the seeps determined that the hydrocarbons originated from the same source as Frontier Formation production at two Mobil wells. Typing of seep oil at another location by Exxon failed to tie seepage to any nearby production. Reports by both operators conclude that the seepage is natural. The BLM is unsure of these conclusions based on historical and geological data.

Historical data indicates one natural seep location in the Big Piney/LaBarge producing area. This seep was first documented in 1907 and was responsible for much of the initial interest in the area as an oil field. Located in the SE1/4 of Section 34, T27N-R113W, the seep lies at the center of LaBarge Field where oil production is from shallow wells drilled into the Almy/Ft. Union section. No other reports of naturally occurring surface seepage have been found. To date, no production from either the Wasatch or the Darby plate Paleozoic section has been established. These sections appear to be water bearing only. Production from shallow formations in the CAP area is restricted to the Almy/Ft. Union Formation(s), which are the only near surface water bearing zones that are naturally hydrocarbon bearing.

Oil was also found floating on groundwater during excavation for Northwest Pipeline Company's facilities. The Wyoming DEQ is currently working with Northwest to determine the source of this contamination.

It is because of these oil seeps and contamination problems, and the fact that over 1,860 wells have been drilled here since the 1920s, that concerns have been raised. Many older wells, both producers and plugged and abandoned wells, may have deteriorating cement or casing which could result in the mixing of lower quality, high salinity waters and hydrocarbons with useable waters. Increased salinity is of particular concern in the Colorado/Green River system of which this groundwater/surface water system is a part.

Groundwater monitoring: As outlined in Appendix C, the BLM currently is requiring surface casing and cement through the Wasatch Formation, or isolation of other zones from the Wasatch, in an effort to protect the water bearing zones in that formation. The Wasatch is the chief source for groundwater in the area.

A groundwater monitoring program is proposed which would include the entire Big Piney/LaBarge producing area. As stated above, groundwater monitoring was called for in the Riley Ridge EIS/ROD. All operations under this program, information collected, and any contamination problems or cleanup would be coordinated with the Water Quality Division of the Wyoming Department of Environmental Quality (DEQ) and the oil and gas operators in the area (Enron, Texaco, Mobil, Chevron, Western, Exxon, and Wexpro).

Sampling would begin in the Spring of 1991 and continue for 3 years. At the end of 3 years, the program would be reviewed and modified as necessary. A report would be prepared by BLM at the end of this 3-year period to summarize the findings, discuss problems, and present recommendations for future actions.

Thirty sample sites would be included in the program. Existing water wells (Map 3) used by the oil and gas industry, and town water supplies in LaBarge, Big Piney, and Marbleton would be the main sampling sources. Based on operator-supplied information, a number of water wells which are now on pump have been selected for sampling. Spacing is such that they should provide for representative sampling of the aquifers. Sampling would concentrate on the upper aquifers of the Wasatch Formation and aquifers within the Paleozoic carbonate section of the Darby thrust plate.

Sample collection would be the responsibility of the BLM. Samples would be collected twice yearly (May and September) and submitted for analysis. BLM would distribute the data to the operators and to the Wyoming DEQ. The data would also be made available to the public. Sampling would be in accordance with techniques outlined in Chapter 2 of Handbook on Recommended Methods for Water Data Acquisition (USGA 1980b).

Sample analysis would include the following parameters, which were chosen as the minimum necessary for adequate sampling while still being representative of the known composition of area groundwater:

- Cations (sodium, potassium, magnesium, calcium)
- Anions (chloride, sulfate, carbonate, bicarbonate)
- Trace elements (barium, chromium, iron)
- Other constituents (pH, conductivity, total alkalinity)
- Total Dissolved Solids, chemical oxygen demand).

These parameters are basic to most water quality sampling, with the exception of chemical oxygen demand (COD). COD evaluates both the organic and inorganic content of water. When used in conjunction with all sample parameters, it can give a good assessment of the presence of organic compounds (including hydrocarbons). COD would be used in place of an oil and grease measurement. It should provide a more accurate assessment of hydrocarbon contamination, and is cheaper than the oil and grease measurement.

If significant contamination is found, more extensive analysis would be required, but only in the area where it is located. The operator from whose facilities contamination is determined to originate (if this can be determined) would be responsible for source detection and cleanup in a manner determined and agreed upon by the operator(s), the DEQ, and the BLM.

Significance criteria would be based on water quality data documented in the two previously referenced documents; the USGS Water Resources Investigations Report, "Hydrogeology of the Riley Ridge-LaBarge Area, Southwestern Wyoming", and Environmental Research and Technology, Inc.'s "Water Resources Technical Memorandum B710". Map 6 from the USGS paper, entitled Surface and ground-water quality, presents Stiff diagrams and contouring of area water quality.

This information, in conjunction with specific water quality data from Memorandum B710, would be the base from which water samples will be compared. For example, if monitoring indicates total dissolved solids (TDS) levels are well above (i.e. 500-1000 mg/l TDS) what is expected in a certain location based on the background information, significant degradation may be occurring and further analysis of that area would be considered.

Criteria for other sample parameters would also be based on the previously collected background data, which, again, is presented on Map 6 of the USGS paper and in Memorandum B710. A major departure from the expected constituent values (i.e. the major anions and cations tested for) may also be an indication that further testing is necessary. Also, if the COD exceeds 50 mg/l, significant contamination may be present. This measurement is evaluated in conjunction with other measurements to ensure that it is indicating the presence of organic contamination.

The monitoring program hopefully would add to our understanding of the area's aquifer systems. The Wasatch aquifer system includes many discrete water-bearing sand lenses separated by relatively impermeable beds. It is unknown if, or to what extent, the permeable beds are interconnected. Less is known about interconnections between porous water-bearing zones in the Paleozoic carbonates. Because the available wells are developed in various sands and carbonate sections in different formations, water quality data may indicate whether mixing of aquifers is occurring.

Mixing of aquifers is of concern due to the large number of wells which penetrate rocks bearing waters of varying quality as well as hydrocarbons. Several fields in the area produce from strata in close stratigraphic proximity to good quality aquifers (Fort Union "Almy" and Mesaverde near the Wasatch). Artificial pressure variations (e.g., water flooding), as well as natural pressure variations, can lead to aquifer mixing, especially when aquifers are breached by wellbores.

Information may also be gained about groundwater supplies which could be made available for other resource activities such as wildlife and grazing management.

BLM policy is to comply with State requirements regarding the use and protection of groundwater. Federal laws and regulations (including FLPMA and Execu-

tive Orders) define BLM's responsibility relative to groundwater. The BLM has authority and responsibility to monitor activities so as to protect and enhance the quality of the environment. Oil and gas leasing and subsequent permitting of development have the potential to result in environmental quality problems such as groundwater contamination.

WATERSHED

Baseline Monitoring

The USGS water quality gaging station on Dry Piney Creek, Sec. 27, T. 28 N., R. 113 W. was reactivated by the USGS in April, 1990, and will continue to the end of September for the next 5 years to get a temporal representation of water quality. To augment this data, the BLM, concurrent with the USGS, will sample Fogarty Creek and the upper reaches of Dry Piney Creek three times during the field season to get a spacial representation of water quality.

A single stage sediment sampler will be installed in a small undisturbed "Order 2" watershed (a watershed with two drainages), located in T. 28 N., R. 113 W., Sections 23, 24, 25, 26, 35, and 36 (Map 11), to determine the level of sediment load indicative of an undisturbed watershed. If temporal data suggests that the sediment load has exceeded 10 percent and the BMPs are not alleviating this level, then it is possible that activity in the area will have to be reduced until the sediment load is at an acceptable level.

No surface disturbance will be allowed to take place in the control "Order 2" watershed (approximately 500 acres). This watershed is to represent an undisturbed condition, and is needed for future comparisons of BMP effectiveness. Surface disturbance in this watershed would limit the utility of the data collected.

APPENDIX E

NORTH LABARGE COMMON AND CALPET COMMON ALLOTMENTS GRAZING SYSTEM/GRAZING TREATMENTS

Grazing System

The grazing system proposal of the CAP applies to the North LaBarge Common and Calpet Common allotments. AMPs for these allotments will not be completed with this CAP because additional considerations are necessary for resources in the western (summer) pastures which are outside the CAP area. These grazing systems and associated grazing treatments are tentative and will be further refined in the forthcoming AMPs.

The present allocated active use and approximate pasture acreage and AUMs for the North LaBarge Common and Calpet Common Allotments is shown in Tables E-1 and E-2 respectively.

North LaBarge Common and Calpet Common allotments are currently used by cattle only. Cow/calf pairs make up a majority of the use with some yearlings being run in conjunction with the cows and calves. Use dates ranging from 5/15 to 10/31 are inconsistent among the eight users. Consistent periods of use will be necessary to achieve workable management systems on these allotments. Coordination between BLM Range Conservationists and LaBarge Roundup Association members will occur during development stages of the AMPs to reach an agreeable period of use. The BLM preferred period of use in areas similar to these allotments is 5/15 to 10/15. These dates need to be flexible, especially the turnout date, during drought conditions and on years of late range readiness.

The emphasis of these grazing systems will be to rotate deferment throughout the entire area so pastures are not being grazed at the same time every year. Additional cattle movement and grazing in common will be necessary to accomplish this goal. Every effort will be made to minimize major cattle drives during pasture changes, some drift movement between pastures will be feasible in years when adjacent pastures are being used consecutively. Livestock grazing deferment will benefit the range and watershed resources.

Four drift fences are proposed to facilitate the deferred grazing system in the Big Mesa pasture. Fences will be 3-wire, designed to accommodate deer movement. Lay down fences may be used where major deer movement areas are identified. Herding livestock with riders will be necessary in those pastures to be used with two treatments (i.e., Calpet, East Chimney, Trail Ridge, and Pine Grove). Riding to obtain maximum distribution of livestock will be important to the success of this grazing system.

The benefits from grazing deferment include: 1) restoring vigor of livestock and wildlife forage plants, 2) allowing plants to produce seed or rhizomes, 3) reducing fall livestock use on valuable deer winter forage, and 4) leaving available forage for winter wildlife use and spring livestock use.

If grazing can be deferred every 2 or 3 years, forage plants have a better opportunity to reproduce. Grazing after seed maturity affects plants less and allows animals to scatter and trample the seeds into the soil, promoting seedling establishment. By allowing important forage plants to grow unhindered during the period most favorable for their growth, they are able to produce a greater quantity of seed.

Continued fall livestock use on winterfat and Gardner's saltbush appears to be lowering the vigor and reproduction capabilities of these plants. Cattle grazing these ranges in the spring appear to prefer grasses and avoid the shrubs. Periodic fall deferment on these crucial deer winter ranges should restore vigor and reproduction capability of winterfat and Gardner's saltbush.

Crucial to the success of these grazing systems will be: uniform livestock grazing utilization, acceptable utilization levels, and proper design and placement of range improvement projects. The need for coordination between the BLM and the grazing association, as well as coordination within the association, cannot be overemphasized.

The need for flexibility in these grazing systems is recognized due to fluctuations in climate, range readiness, pasture condition, effectiveness of the existing and proposed range improvements projects, future project development, and other unforeseen conditions affecting the management of the range resources.

APPENDIX E

Grazing Treatments

Tables E-3 and E-4 list the grazing treatments that are proposed for the Calpet Common and North LaBarge Common allotments. These treatments are dependent on the implementation and success of the proposed range improvements The proposed grazing treatments for those pastures outside of the CAP area are included in Table E-4, Proposed Grazing Treatment Formula. The proposed grazing treatments will be given more careful review by the BLM, with the grazing permittee(s), before they become a formal part of an AMP.

In general, treatments are set up on a 154-day use period (May 15 to October 15), each treatment being 25 or 26 days. The length of time for grazing treatments will be adjusted to more accurately reflect the forage available in each pasture. GIS-generated pasture acreages (Table E-2) will help establish a more accurate forage availability in these pastures. The treatment lengths may change before an AMP is completed, but the concept and rotation should remain intact.

TABLE E-1

ALLOCATED ACTIVE USE

Name	N. LaBarge Common	Calpet Common
Flying W Land & Lvst	2,316	0
Harrower, Lillian	0	255
JF Ranch, Inc.	4,434	1,467
Sims, Jack C.	449	0
Milleg, Bill	690	0
C & G Enterprises	566	0
Schaffer, Alice M.	2,636	0
Midway Ranches	1,687	0

TABLE E-2

PASTURE ACRES AND AUMS CALPET COMMON AND NORTH LABARGE COMMON PASTURES

Calpet Common Allotment

	Acres		AUMs					
Pasture	BLM	USFS	State	Deeded	BLM	USFS	State	Deeded
State	586.72	0	1,635	247.91	?	0	?	?
Calpet	13,592.77	0	139.17	1,045.35	?	0	?	?
Jory	273.60	0	0	548.77	50	0	?	?
Middle Sawmill	358.99	0	11.07	653.15	?	0	?	?
Black Canyon	5,065.46	0	0	0	?	0	?	?

TABLE E-2 (Continued)
PASTURE ACRES AND AUMS CALPET COMMON AND NORTH LABARGE COMMON PASTURES

North LaBarge Common Allotment

Pasture	Acres		AUMs					
	BLM	USFS	State	Deeded	BLM	USFS	State	Deeded
Wildcat Canyon	11,565.32	0	392.21	153.40	?	0	?	?
Yose Canyon	13,371.36	0	977.35	793.90	?	0	?	?
Hogsback	6,033.32	0	653.15	61.68	?	0	?	?
Dry Piney	5,348.55	0	132.84	553.51	?	0	?	?
East Chimney	17,030.89	0	17.40	159.72	1,700*	0	?	?
West Chimney	16,564.35	0	618.36	50.61	1,100*	0	?	?
Cretaceous	12,598.03	0	28.473	1.63	1,200*	0	?	?
Trail Ridge	9,794.07	827.11	12.65	61.68	1,400*	?	?	?
Pinegrove	9,085.57	11,415.08	632.59	457.05	1,600*	?	?	?

?Accurate pasture AUMs will be available after pasture adjustments are made in GIS. Accurate acreages will help to establish a more accurate forage availability in these pastures.

*These AUM figures were established during the 1967 AMP revision for the North LaBarge Common allotment. These figures include increases given for sagebrush spraying in the mid-1960s and are questionable according to the 1961-62 range survey.

TABLE E-3
GRAZING TREATMENT PROPOSAL DESCRIPTION FOR THE CALPET COMMON AND NORTH LABARGE ALLOTMENTS

Grazing Treatment Abbreviation	Grazing Treatment Description
Esp	Early spring grazing from 5/15 to 6/09. Turn out on range-ready forage. After 6/09, enough regrowth should occur to permit seed development and dissemination at lower elevations. This treatment should minimize livestock utilization on shrubs.
Lsp	Late spring grazing from 6/10 to 7/05. Best period for livestock weight gain. After 7/05, some regrowth should occur but probably not enough for seed development. However, fall rains may result in good regrowth at lower elevations. Minimal livestock utilization on winterfat and Gardner's saltbush may occur.

APPENDIX E

TABLE E-3 (Continued)

GRAZING TREATMENT PROPOSAL DESCRIPTION

FOR THE CALPET COMMON AND NORTH LABARGE ALLOTMENTS

Grazing Treatment Abbreviation	Grazing Treatment Description
Esu	Early summer grazing from 7/06 to 7/31. Best period for livestock weight gain. On good growing years some of the grasses (Sandberg's bluegrass, Needle-and-thread, and the rhizomatous wheatgrasses) may be in the seed ripe stage and ready for seed dissemination. This treatment will provide partial growing season rest for plants to improve their vigor and store reserves for future growth and maintenance.
Lsu	Late summer grazing from 8/01 to 8/25. Most grass plants at higher elevations should be fully mature and ready for seed dissemination. This treatment will provide total growing season rest and good seed scatter. If these seeds are sufficiently scattered and trampled, they should germinate under proper climatic conditions.
Efa	Early fall grazing from 8/26 to 9/19. This treatment would allow for total plant rest from grazing during the growing season. Ample livestock forage should be available after the grasses have been allowed to grow ungrazed throughout the normal growing season. Seed should already be dispersed, and trampling will be important during this period. Fall regrowth may be occurring at lower elevations during this period.
Lfa	Late fall grazing from 9/20 to 10/15. This treatment would allow for total plant rest from grazing during the growing season. Ample livestock forage should be very available after the grasses have been allowed to grow ungrazed throughout the normal growing season. There should be some fall green-up during this time period but not as prevalent as early fall grazing because heavy frosts will be retarding regrowth. Some livestock use will occur on winterfat and Gardner's saltbush. Late fall grazing will be alternated with early spring grazing on the lower pastures (areas that include crucial deer winter range) to help promote vigor and seed production of winterfat and Gardner's saltbush.

APPENDIX E

TABLE E-4

GRAZING TREATMENT FORMULA FOR CALPET COMMON AND NORTH LABARGE COMMON ALLOTMENTS

Calpet Common Allotment

Treatment Years	Pastures					
		Calpet				
	State*	South	North	Jory*	Middle Sawmill*	Black Canyon
1 & 2	Esp	Lfa	Efa	Lsp	Esu	Lsu
3 & 4	Lfa	Esp	Lsp	Esu	Lsu	Efa

*These pasture treatments are set up for AUMs controlled by the JF Ranch. These pastures are made up primarily of private or State land owned or leased by JF Ranch. The 255 AUMs (50 cattle for 154 days) controlled by Lillian Harrower will be scheduled within the Calpet and Black Canyon pastures.

North LaBarge Common Allotment

Treatment Years	Southern Pastures*					
					Pine Grove	
	Bird Draw	Yose Canyon	Dry Piney	Hogsback	West	East
1	Esp	Lfa	Esu	Lsp	Efa	Lsu
2	Esp	Lfa	Esu	Lsp	Lsu	Efa
3	Lfa	Esp	Lsp	Efa	Lsu	Esu
4	Lfa	Esp	Lsp	Efa	Esu	Lsu

*Primary users in southern pastures are Alice Schaffer (2,636 AUMs), Midway Ranches (1,687 AUMs), and Jack Sims (449 AUMs) (a total of 4,772 AUMs).

Treatment Years	Northern Pastures*					
	East Chimney				Trail Ridge	
	North	South	West Chimney	Cretaceous	West	East
1	Esp	Lfa	Lsp	Esu	Efa	Lsu
2	Esp	Lfa	Lsp	Esu	Lsu	Efa
3	Lfa	Esp	Efa	Lsp	Lsu	Esu
4	Lfa	Esp	Efa	Lsp	Esu	Lsu

*Primary users in northern pastures are JF Ranch, Inc. (4,434 AUMs), Flying W Land & Livestock (2,316 AUMs), Bill Milleg (690 AUMs), and C&G Enterprises (566 AUMs) (a total of 8,006 AUMs).

APPENDIX F

METHODS OF PROTECTION OF GROUNDWATER DURING DRILLING AND ABANDONMENT OPERATIONS

Drilling

When processing an Application for Permit to Drill (APD), the BLM geologist must identify the maximum depth of usable water as defined in Onshore Oil and Gas Order #2. Usable water is water containing 10,000 parts per million or less of total dissolved solids. Water of this quality is to be protected by casing cemented in place over the water zone or by circulating cement up over the top of the water zone.

Determining the depth to fresh water requires specific water quality data in the proposed well vicinity or the use of electric logs from nearby wells. If water quality data or logs from nearby wells are not available, the area within a 2-mile radius of the proposed well is checked for water wells. If usable water is identified, surface casing is required to be set below the deepest fresh water zones found. In some cases, if the usable water is found at a depth that is too deep to set surface casing, the operator is required to circulate cement behind the production casing to a point high enough to isolate and protect the water zone.

Plugging and Abandonment of Wells

The purposes of plugging and abandoning (P&A) a well are (1) to prevent fluid migration between zones, (2) to protect minerals from damage, and (3) to restore the surface area. Each well must be handled individually due to a combination of factors, including geology, well design limitations, and specific rehabilitation concerns. Therefore, only minimum requirements can be established initially. These would be modified for the individual well.

The first step in the P&A process is filing the Notice of Intent to Abandon (NIA). The NIA must be filed and approved before plugging a well. Verbal plugging instructions can be given for plugging current drilling operations, but a Subsequent Report of Abandonment (SRA) must be filed after the work is completed. If usable fresh water is encountered while a well is being drilled, the BLM may assume responsibility for the well and the operator will be reimbursed for the attendant costs.

In open hole situations, cement plugs must extend at least 50 feet above and below zones (1) with fluid (oil, gas, water) which may migrate, (2) of lost circulation (this type of zone may require an alternate method to isolate), and (3) of potentially valuable minerals. Thick zones may be isolated using 100-foot plugs across the top and bottom of the zone. In the absence of productive zones and minerals, long sections of open hole may be plugged with 150-foot plugs placed every 2,500 feet. In cased holes, cement plugs must be placed opposite perforations and extending 50 feet above and below except where limited by plug back depth. It is also acceptable in cased holes to cement squeeze the perforations through a cement retainer placed above the perforations and leave approximately fifty feet of cement on top of the retainer.

APPENDIX G

BIG PINEY LABARGE CAP AREA SOILS TECHNICAL REPORT

SOILS TECHNICAL REPORT

Soils information, gathered for the CAP area, is included in a report available at the BLM Pinedale Resource Area and Rock Springs District Offices. The soils information for the report is derived from three previous soil surveys within the CAP. The Big Piney - LaBarge survey (1984) covers the eastern half of the CAP area while two Riley Ridge Project surveys, Bio/West (1982) and ERT (1982), cover the western half. The CAP includes about 20 percent of the Riley Ridge study area. Extensive use was made of the Soil/Vegetation/Reclamation Technical Report (May 1983) from this project.

Because these three surveys were mapped by different contractors, there are discrepancies in quality and correlation of mapping units where the surveys join. The Riley Ridge Technical Report correlates Bio/West to ERT mapping units as well as possible. (See these correlations at the beginning of the Soils Characteristics Table.) As in all Order 3 soil surveys, the soils lines and components are variable and are designed for large scale planning purposes such as a CAP. Site specific investigation is prescribed for more detailed information, especially in the Bio/West surveyed area.

The CAP soils report identifies 100 separate soil series, correlates them to a soils map, and describes the soil characteristics. Characteristics described for each soils series include range site, depth, texture, pH, salinity, and susceptibility to wind and water erosion. The report also describes suitability to various uses (e.g., roadfill, reservoir, shallow excavations, etc.) and management considerations (suitability to reclamation, susceptibility to erosion, etc.). This information was key in developing the erosive soils map (Map 4). A second map, Map 5, entitled Special Management Areas Due To Slope, has been prepared. This map shows those soils which are highly erosive and occurring on slopes equal/greater than 10 percent. The map also shows the location of all slopes equal/greater than 25 percent. This soils and slope information will be used as a tool in planning access routes and well pads, building stock reservoirs, developing reclamation prescriptions, and designing vegetation treatments within the CAP area. Due to the length and technical nature of the report, it is not included as part of this document.

Refer to the Big Piney-LaBarge CAP Technical Soils Report for soils interpretations. Also refer to the three soil survey reports contained in the Riley Ridge EIS Soils/Vegetation/Reclamation Technical Report from which this information is derived.

The Big Piney-LaBarge CAP Soils Technical Report includes the following information for soils interpretations:

- Criteria Used To Establish Suitability For Roadfill
- Criteria To Establish Suitability Of Topsoil For Drastically Disturbed Lands
- Criteria Used To Establish Suitability For Pond Reservoir Area
- Criteria Used To Establish Suitability For Shallow Excavations
- Soil Use And Management Considerations
- Pinedale CAP Soils Identification Legend
- Pinedale CAP Series Correlation - Map Unit
- Glossary And Explanation Of Terms
- Pinedale CAP Soils Characteristics
- Pinedale CAP Soils Use Ratings And Limitations
- Maps, 1:24,000 scale, of soils mapping units (separate from document)

APPENDIX H

SURFACE DISTURBANCE AND RECLAMATION CALCULATIONS

Number of Active Wells	-	1,080
Number of Abandoned Locations Being Reclaimed	-	125
Miles of Paved Road	-	52
Miles of Improved Road	-	540
Miles of Unimproved Road	-	30
Miles of Unnecessary Road To Be Reclaimed	-	110

PERMANENT DISTURBANCE AND OTHER RELEVANT CALCULATIONS

Linear Disturbances:

Paved Roads using a 40-foot estimated width of disturbance

52 miles x 4.85 acres/mile x 0.67 BLM = 252 acres

Improved Roads using a 24-foot estimated width of disturbance

540 miles x 2.91 acres/mile x = 1,571 acres

Unimproved Roads using an 8-foot. estimated width of disturbance

30 miles x 0.97 acres/mile = 29 acres

Unnecessary Roads using an 16-foot average estimated width of disturbance

110 miles x 1.91 acres/mile = 210 acres

SUB TOTAL FOR LINEAR DISTURBANCE = 2,062 acres

Polygon Shaped Disturbances

1,080 Active Wells using a 1.25 acre of permanent disturbance per well pad

1,080 wells x 1.25 acres/well = 1,350 acres

TOTAL PERMANENT DISTURBANCE = 1,350 acres + 2,062 acres

SUB TOTAL PERMANENT DISTURBANCE = 3,412 acres

AVERAGE PERMANENT DISTURBANCE PER ACTIVE WELL

3,412 acres of permanent disturbance

1,080 active wells on BLM-administered lands (as of 1990)

APPENDIX H

AVERAGE PERMANENT DISTURBANCE PER ACTIVE WELL = 3 acres

RECLAMATION OPPORTUNITIES

Potential to reclaim roads using a 16-foot estimated width of disturbance:

110 miles x 1.9 acres/mile = 210 acres

TOTAL ACRES HABITAT TO BE LOST TO ENERGY DEVELOPMENT OVER THE NEXT 10 YEARS WITHIN THE CAP AREA BY ALTERNATIVE

ALTERNATIVE A:

300 wells drilled x 3 acres/well	= 900 acres lost
200 wells abandoned x 3 acres/well	= 600 acres gained
110 miles of road reclaimed x 1.9 acres/mile	= 210 acres gained

Net loss/gain habitat for ten year period = - 90

ALTERNATIVE B AND C:

600 wells drilled x 3 acres/well	= 1,800 acres lost
200 wells abandoned x 3 acres/well	= 600 acres gained
110 miles of road reclaimed x 1.9 acres/mile	= 210 acres gained

Net loss/gain habitat for ten year period = - 990

ALTERNATIVE D AND E:

900 wells drilled x 3 acres/well	= 2,700 acres lost
200 wells abandoned x 3 acres/well	= 600 acres gained
110 miles of road reclaimed x 1.9 acres/mile	= 210 acres gained

Net loss/gain habitat for ten year period = - 1890

ALTERNATIVE F:

200 wells drilled x 3 acres/well	= 600 acres lost
200 wells abandoned x 3 acres/well	= 600 acres gained
110 miles of road reclaimed x 1.9 acres/mile	= 210 acres gained

Net loss/gain habitat for ten year period = + 210

APPENDIX I

CULTURAL RESOURCES PROCESS

CULTURAL RESOURCE SIGNIFICANCE GUIDELINE

Significance/Significant: The term significant is commonly used interchangeably with "eligible for National Register of Historic Places inclusion". Significance is determined by BLM in consultation with the Wyoming State Historic Preservation Office (SHPO). Significance criteria are established at 36CFR60.4 and include (a) sites associated with significant events; (b) sites associated with important persons; (c) properties of a distinctive architectural style, works of a master, and high artistic values and (d) sites that possess information important in prehistory or history. Historic period sites are frequently eligible for National Register inclusion (are judged "significant") under criteria a, b or c while prehistoric sites are usually eligible under criterion d. Significant sites, i.e. National Register eligible historic properties, require some form of mitigation if adversely affected by a project.

With reference to prehistoric sites, the question "what constitutes significant?" directly relates to a site's ability to provide "information important in Prehistory". The importance of, or information contained in a given site is judged according to what is known about other, similar sites in the immediate and surrounding areas. Thus, a key to establishing "significance" is the state of prehistoric knowledge in a given study area. The more advanced knowledge is of the prehistory in a given area, the more refined our idea of "significant" becomes in that area. Conversely, if an area is poorly known archaeologically, more sites are judged as significant because the database is lacking in depth. In other words, lacking good information, more sites can add to a meager information base.

In the CAP area, only one site (48SU867, the Harrower site) has been subject to mitigative block excavations. Archaeologists know a lot about the Harrower site, but not about the myriad of other sites in the CAP. This situation is obtained because past policy and procedure has stressed avoidance of prehistoric sites to save the expense of conducting mitigative excavations. Subsurface investigations have been limited to minimal evaluative testing for purposes of establishing National Register eligibility, so no in depth knowledge is produced. Until a number of disparate site types spanning different time periods are excavated, analyzed and interpreted, the "significance" (or lack thereof) of many sites will be difficult to refine.

Policy Statement

When a proposed discretionary land use has potential for affecting the characteristics which qualify a cultural property for the National Register of Historic Places, procedures specified in 36 CFR 800 will be used, in consultation with the Wyoming State Historic Preservation Officer (SHPO) and, if necessary, the Advisory Council on Historic Preservation (ACHP). In most cases, an on-the-ground Class III survey will need to be conducted in order to determine if any National Register quality cultural properties exist in the area of potential effect.

Guidance

Avoidance is the preferred strategy for eliminating potential adverse effects to cultural properties. If avoidance involves project relocation, the new project area may also require cultural resource inventory. If avoidance is imprudent or unfeasible, appropriate mitigation may include excavation (data recovery), stabilization, monitoring, installation of protective barriers or signs, or other physical and administrative measures.

Reports documenting results of cultural resource inventory and evaluations, and establishing mitigation alternatives (if necessary) shall be written according to standards contained in BLM Manuals, the cultural resource permit stipulations, and in other policy issued by the BLM. These reports must provide sufficient information for Section 106 consultation. Reports shall be reviewed for adequacy by the BLM archaeologist. If cultural properties on, or eligible for, the National Register are within the area of potential effect and cannot be avoided, the Authorized Officer (AO) shall begin the Section 106 consultation process in accordance with the procedures in 36 CFR 800.

Mitigation, if required, shall be implemented according to a mitigation plan approved by the AO. Such plans are usually prepared by the applicant's contract archaeologist according to BLM specifications. Mitigation plans will be reviewed as part of Section 106 consultation for National Register eligible or listed properties. The extent and nature of recommended mitigation shall be commensurate with the significance of the cultural

resource and the anticipated extent of damage. Costs for mitigation of sites that cannot be avoided will be borne by the applicant.

If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. The operator will be responsible for all mitigation costs if he chooses not to relocate the project. The AO will provide technical and procedural guidelines for the conduct of the mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction.

Mitigation must be cost effective and realistic. It must consider project requirements and limitations, cultural resources impacted, input from concerned parties, and be approved or formulated by BLM.

Mitigation of paleontological and natural history sites will be treated on a case-by-case basis. Factors such as site significance, economics, safety, and project urgency must be taken into account when making a decision to mitigate. Authority to protect (through mitigation) such values is provided for in FLPMA, Section 102(8).

CULTURAL RESOURCES PROCESS

Introduction

A preliminary step in the cultural resource process is to determine if the proposed activity constitutes an "undertaking". Undertakings are federal permits, licenses, projects or authorizations which, when implemented, could result in changes or effects to National Register eligible cultural resources. Most surface disturbing activity constitutes an undertaking that requires a cultural resources survey. If the proposed activity is judged not to be an "undertaking", cultural resource clearance is granted by BLM and the following process is not initiated.

The following narrative and the attached flow chart details the Cultural Resources Process.

1. The BLM may require a cultural survey of a proposed project area. The survey is conducted by either BLM personnel or a contracting archaeologist permitted by BLM. A report is produced and reviewed by BLM and SHPO. The BLM uses the report to determine if additional cultural resource efforts are needed.

2. The BLM or contract archaeologist plans the survey, conducts background research of the project area (literature search/Class I inventory), reviews regional overviews and other documents for pertinent information. Before beginning fieldwork, the specialist conducts a files search at the SHPO Records office, and if necessary at the local BLM office.

2A. If the files search reveals that the project area has been adequately inventoried, or if the project area has no site potential, an on-the-ground survey (Class III inventory) may not be necessary. The responsibility for determining the need for a Class III inventory rests with the BLM specialist, in consultation with the SHPO.

2B. The results of the literature search are documented in a report that contains complete bibliographic references of previous surveys and summaries of previous sites located.

3. The BLM or contract archaeologist conducts the Class III inventory of the project area. Inventory methods, procedures, aerial extent and results are documented. Inventory techniques and requirements have been standardized by BLM, and exist as written policy and as stipulations attached to the contract archaeologist's cultural resource permit.

3A. If no sites are discovered during the Class III inventory, and the probability of the project area to contain buried sites lacking surface manifestation is judged low, the negative results of the survey are documented in the Class III report. Cultural resource clearance is obtained and the project proceeds, subject to other resource considerations.

3B. If sites are discovered during the survey, or if previously recorded sites are located in the project area, Steps 4 through 9 are followed.

4. Each site is recorded on an Intermountain Antiquities Computer System (IMACS) site form.

5. Each site in the area of effect is evaluated for National Register eligibility. Limited evaluative testing should be conducted as necessary. Sites that are recorded during the survey, but not in the area of potential effect may be listed as unevaluated for National Register eligibility.

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6 & 6A. If a site is not eligible for National Register inclusion, no further work is usually required. If the site contains information important enough to warrant further work, the site should be evaluated as eligible (see step 7). The recommendations of noneligibility and no further work are justified in the Class III report.

7 & 7A. If a site is recommended as eligible for National Register inclusion, the reasons for eligibility must be documented, with particular reference to the Criteria of Eligibility (36 CFR 60.4). If the site is eligible for its information content (36 CFR 60.4.d), the report should present this information in terms of pertinent research questions which further site investigations could address.

8. The effect of the project on each eligible site is evaluated and documented. "Effect" is determined by applying the criteria at 36 CFR 800.5.

8A1&A2. If there will be no effect, no further work at the site will be needed. This is documented in the Class III report (see Step 9).

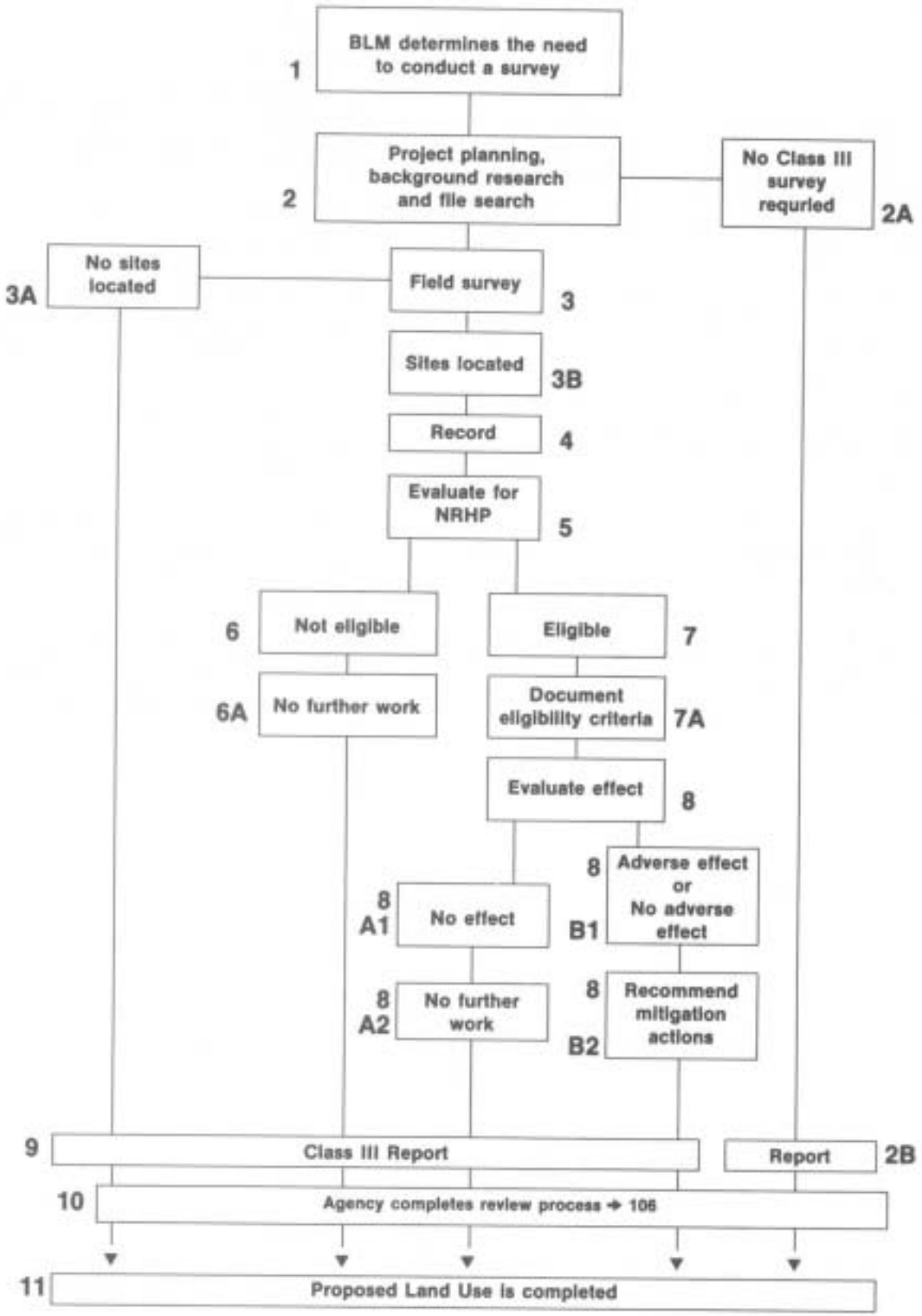
8B1. If the proposed impacts to the site will result in adverse effects, or if proposed mitigative efforts are such that no adverse effect will occur, this is documented in the Class III report (See step 9).

8B2. Recommendations to mitigate adverse effects should be directed at reducing or eliminating impacts to those qualities which make the site eligible for the National Register. Avoidance or in-situ preservation are the preferred options. Data recovery is appropriate if avoidance proves not feasible or is not cost effective.

9. A report is prepared documenting the results of project investigations with copies submitted to BLM and the SHPO.

10. The BLM, in consultation with SHPO and the Advisory Council on Historic Preservation (if necessary) use the information contained in the report to carry the "Section 106" process to completion.

11. Once the Section 106 compliance process is completed, the proposed land use may be permitted with appropriate resource stipulations.



CULTURAL RESOURCES PROCESS

APPENDIX J

LANDS SUITABLE FOR CONSIDERATION FOR DISPOSAL, EXCHANGE, AND ACQUISITION

LANDS DISPOSAL CRITERIA

Lands to be considered for disposal, as a minimum, must meet the following criteria: they are difficult and uneconomical to manage, or their disposal would meet important public objectives such as community expansion or economic development. In addition, site specific analysis prior to disposal must determine that these lands must have the following characteristics:

They contain no significant wildlife, recreation, or other resource values; have no overriding public values; and represent no substantial public investments;

They are suitable for agricultural, industrial, commercial, or residential development;

Their disposal would best serve the public interest; and

Lands identified for disposal would be considered for exchange with federal, state, or local government or other entities.

Generally, areas within two miles of communities would be considered for community expansion.

LANDS SUITABLE FOR CONSIDERATION FOR DISPOSAL, EXCHANGE, AND ACQUISITION

	Legal Description	Acres
Disposal Parcels (for sale or exchange)		
1.	T. 26 N., R. 112 W. sec. 7, Lot 5	19.57
2.	T. 26 N., R. 113 W. sec. 14, Lot 4, SW1/4SE1/4	71.15
3.	T. 29 N., R. 114 W. sec. 25, SE1/4SW1/4	40.00
4.	T. 29 N., R. 113 W. sec. 13, SW1/4NE1/4	40.00
5.	T. 29 N., R. 112 W. sec. 9, SE1/4SW1/4, N1/2SW1/4SE1/4	60.00
6.	T. 30 N., R. 112 W. sec. 7, Lots 2, 3	30.90
7.	T. 31 N., R. 113 W. sec. 19, Lot 3	42.51
8.	T. 26 N., R. 113 W. sec. 7, N1/2NE1/4NW1/4SE1/4	5.00
	TOTAL	**309.13**

APPENDIX J

LANDS SUITABLE FOR CONSIDERATION FOR DISPOSAL, EXCHANGE, AND ACQUISITION (Continued)

Legal Description	Acres
Community Expansion Areas	
1. T. 26 N., R. 112 W. sec. 6, Lots 3, 4, 5, 9, 12-29, SE1/4NW1/4	
T. 27 N., R. 112 W. sec. 31, Lots 3, 4, 9-11, W1/2NE1/4, E1/2NW1/4, E1/2SW1/4, W1/2SE1/4	
TOTAL	**602.02**
Exchange Parcels (exchange only)	
1. T. 30 N., R. 112 W.	
sec. 7, S1/2NE1/4, N1/2SE1/4	160.00
sec. 8, SW1/4NE1/4, S1/2NW1/4, N1/2SW1/4, SW1/4SE1/4	240.00
sec. 17, NW1/4NE1/4	40.00
TOTAL	**440.00**

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