
APPENDIX H – FLUID MINERALS

TABLE OF CONTENTS

FLUID MINERALS	197
Procedures in Oil and Gas Recovery and Operations	197
Geophysical Operations	197
Leasing Process	198
Permitting.....	199
Application For Permit To Drill.....	200
Conditions of Approval	200
Construction.....	204
Drilling Operations	205
Environment and Safety.....	206
Production and Development	206
Abandonment	210
Regulations, Laws, And Special Procedures.....	210
Unit and Communitization Agreements	210
Split Estate.....	211
Oil and Gas Stipulations	211
Resource: Grizzly Bear – Recovery Zone	211
Resource: Grizzly Bear -Distribution Zone	211
Resource: Gray Wolf – Former Northwest Montana Recovery Area Endangered Population	212
Resource: Prairie Dog Towns	212
Resource: Sage Grouse Winter/Spring Range	212
Resource: Sage Grouse Strutting Grounds (Leks)	212
Resource: Sage Grouse Breeding Habitat.....	212
Resource: Wildlife Management Areas	213
Resource: Big Game Winter/Spring Range	213
Resource: Elk Calving/Big Game Birthing Areas	213
Resource: Bighorn Sheep Yearlong Range.....	213
Resource: Bighorn Sheep Core Areas.....	214
Resource: Bald Eagle Nest Sites/Breeding Habitat	214
Resource: Bald Eagle Nest Sites/Breeding Habitat	214
Resource: Raptor Breeding Territories (Golden eagle, Prairie falcon, Swainson’s hawk)	214
Resource: Peregrine Falcon Nest Sites/Breeding Habitat	215
Resource: Ferruginous Hawk Breeding Territories	215
Resource: Threatened, Endangered, and Special Status Species	215
Resource: Westslope Cutthroat Trout Habitat (90-99% pure).....	215
Resource: Westslope Cutthroat Trout Habitat (99-100% pure).....	216
Resource: Fluvial and Adfluvial Arctic Grayling Habitat	216
Resource: Bull Trout.....	216
Resource: Yellowstone Cutthroat (90-100% Pure).....	216
Resource: Streams with High Restoration Potential For Native Fish	216
Resource: Class 1 Fisheries	217
Resource: Developed Recreation Sites	217
Resource: Special Recreation Management Areas (SRMAs)	217
Resource: Cultural and Paleontological Resources	217
Resource: National Register of Historic Properties Eligible Properties/Districts	218
Resource: VRM Class II, III & IV Areas	218
Resource: Wetlands, Floodplains, Riparian Areas, and Water Quality	218
Resource: Special Status Plant Habitats	219
Resource: Known or Discovered Special Status Plants or Populations	219

Resource: Municipal Watersheds	219
Resource: Areas or active mass wasting, unstable land areas, Slopes >30% on Non-Boulder Batholith Soils or Slopes >20% on Boulder Batholith Soils.....	219
Resource: Continental Divide National Scenic Trail (Marysville)	220
Resource: Designated National Historic Trails – Lewis and Clark Trail.....	220
Resource: Recreation and Public Purposes Act Leases and Patents, and 2920 Authorizations	220
Resource: Lands Acquired with Land and Water Conservation Funds (LWCF).....	220
Additional Information.....	221
Form 3100-11: Offer to Lease and Lease for Oil and Gas	2202
Form 3109-1: Lease Stipulations, Bureau of Reclamation	220
Form GP-135: Resource: Special Stipulation, Bureau of Reclamation.....	220

FLUID MINERALS

PROCEDURES IN OIL AND GAS RECOVERY AND OPERATIONS

GEOPHYSICAL OPERATIONS

Oil and gas reservoirs are discovered by either direct or indirect exploration methods. Direct methods include mapping of surface geology, observing oil or gas seeps, and gathering information on hydrocarbon shows observed in drilling wells. Indirect methods include various types of geophysical exploration such as seismic, gravity, and magnetic surveys, which use remote data gathering techniques to delineate subsurface structures or lithologic changes that are not directly observable, but that may contain or trap oil and gas. Data is often acquired using equipment mounted on surface vehicles or aircraft. Information from geophysical exploration can lead oil companies or others to request that lands be offered for lease, or assist in the selection of drill sites on existing leases. However, a federal oil and gas lease is not required in order to conduct geophysical operations. Existing road systems are used where available. Roads may be cleared of vegetation and loose rocks to improve access for trucks if the permit allows that action.

Blading and road construction for seismic operations are not usually allowed so that environmental impacts are minimized. In areas with rugged terrain or without access roads, and during certain seasons of the year, seismic work is conducted by helicopter rather than by ground vehicles. Other geophysical operations that do not cause additional surface disturbance include remote sensing, and gravity, and aeromagnetic surveying.

Geophysical Permitting Procedures and Regulations

Geophysical operations on and off an oil and gas lease are reviewed by the Federal Surface Management Agency (SMA), which can include the BLM, Bureau of Reclamation, or U.S. Forest Service (USFS). Close cooperation between the operator and the managing agency during geophysical operations minimizes surface impacts and protects other resources.

Notification Process

Geophysical operations on public lands are reviewed by the BLM. Geophysical exploration on public lands requires review and approval following the procedures in 43 CFR Subparts 3150, 3151, and 3154. In the Butte Field Office, the Field Manager is authorized to approve geophysical operations. The responsibilities of the geophysical operator and the Field Manager during geophysical operations are described below.

Geophysical Operator

The operator is required to file a Notice of Intent to Conduct Oil and Gas Exploration Operations (form 3150-4) for operations on public lands administered by the BLM. Maps (preferably 1:24,000 scale topographic maps) showing the location of the proposed lines, access routes and ancillary facilities must accompany the Notice of Intent. When the Notice of Intent is filed, the authorized officer may request a prework conference or field inspection. Special requirements or procedures that are identified by the authorized officer are included in the Terms and Conditions for Notice of Intent to Conduct Geophysical Exploration (form 3150-4 and a copy of the state requirements). Any changes in the original Notice of Intent must be submitted in writing to the authorized officer. Written approval must be secured before activities proceed.

Bonding of the operator is required. A copy of proof of satisfactory bonding shall accompany the Notice of Intent. Proper bonding may include a \$5,000 individual, \$25,000 statewide, or \$50,000 nationwide geophysical exploration bond. In lieu of an exploration bond, a statewide or nationwide oil and gas bond may be used if it contains a rider for geophysical exploration. The operator is required to comply with applicable federal, state, and local laws such as Federal Land Policy and Management Act of 1976, the National Historic Preservation Act of 1966, and the Endangered Species Act of 1973, as amended. Earth-moving equipment shall not be used without prior approval. Operators may be required to submit an archeological evaluation and the agency provide NEPA documentation for cultural and wildlife resources if dirt work or other surface disturbance is contemplated, or if there is reason to believe that these resources may be adversely affected.

When geophysical operations have been completed including any required reclamation or rehabilitation, the operator is required to file a Notice of Completion (form 3150-5) including certification that all terms and conditions of the approved Notice of Intent have been fulfilled. The operator must also submit a map that shows the actual line location, access route, and other survey details.

BLM Field Manager (authorized officer)

The authorized officer is required to contact the operator within five working days after receiving the Notice of Intent to explain the terms of the notice, including the "Terms and Conditions for Notice of Intent to Conduct Geophysical Exploration," current laws, and BLM-administrative requirements. At the time of the prework conference or field inspection, written instructions or orders are given to the operator. The authorized officer is responsible for the examination of resource values to

determine appropriate surface protection and reclamation measures. Compliance inspections during the operation ensure that stipulations are followed. The authorized officer is required to make a final inspection following filing of the Notice of Completion. Compliance inspections upon completion of work ensure that required reclamation is properly completed. When reclamation is approved, obligation against the operator's bond is released. The BLM has 30 days after receipt of the Notice of Completion to notify the operator whether the reclamation is satisfactory or if additional reclamation work is needed. Bonding liability will automatically terminate within 90 days after receipt of the Notice of Completion unless the authorized officer notifies the operator of the need for additional reclamation work.

State Standards

Geophysical operators register with the state through the County Clerk and Recorder's office. State regulations include requirements for permitting geophysical activities such as shothole locations, drilling techniques, plugging techniques, bonding, and reclamation.

Mitigation

When a geophysical Notice of Intent is received, restrictions may be placed on the application to protect resource values or to mitigate impacts. Many of these requirements may be the same as the oil and gas lease stipulations adopted in the RMP. Other less restrictive measures may be used when impacts to resource values will be less severe. This is due in part to the temporary nature of geophysical exploration. Seasonal restrictions may be imposed to reduce conflicts with wildlife, watershed damage, and hunting activity. The decisions concerning the level of protection required are made on a case-by-case basis when a Notice of Intent is received.

LEASING PROCESS

Federal oil and gas leasing authority is found in the 1920 Mineral Leasing Act, as amended, for public lands and the 1947 Acquired Lands Leasing Act, as amended, for acquired lands. Leasing of federal oil and gas is affected by other acts such as National Environmental Policy Act of 1969, the Wilderness Act of 1964, National Historic Preservation Act of 1966, the Endangered Species Act of 1973, Federal Land Policy and Management Act of 1976, and the Federal Onshore Oil and Gas Leasing Reform Act of 1987. Regulations governing federal oil and gas leasing are contained in 43 CFR Part 3100 with additional requirements and clarification found in Onshore Operating Orders and Washington office manuals, handbooks and instruction memorandums.

The 1920 *Mineral Leasing Act* provides that all public lands are open to oil and gas leasing unless a specific order has been issued to close an area. Leasing procedures for oil, conventional gas, and coal bed natural gas are the same.

The lease grants the right to explore, extract, remove, and dispose of oil and gas deposits that may be found in the leased lands. The lessee may exercise the rights conveyed by the lease subject to the lease terms and attached stipulations, if any.

Lease rights may be subject to lease stipulations and permit approval requirements. Stipulations and permit requirements describe how lease rights are modified. Lease constraints or requirements may also be applied to applications for permit to drill on existing leases provided the constraints or requirements are within the authority reserved by the terms and conditions of the lease. The stipulations and conditions of approval must be in accordance with laws, regulations, and lease terms. The lease stipulations and permit conditions of approval allow for management of federal oil and gas resources in concert with other resources and land uses. The BLM planning process is the mechanism used to evaluate and determine where and how federal oil and gas resources will be made available for leasing. In areas where oil and gas development may conflict with other resources, the areas may be closed to leasing. Areas where oil and gas development could coexist with other land uses or resources will be open to leasing. Leases in these areas will be issued with standard lease terms or with added stipulations based upon decisions in the land use document. Added stipulations are a part of the lease only when environmental and planning records demonstrate the necessity for the stipulations (modifications of the lease).

Currently, leases are issued as either competitive leases or noncompetitive leases with 10-year terms.

Competitive leases will be sold to the highest qualified bidder at oral auctions that are held at least quarterly. Tracts that receive no bid at the sale are available for the filing of noncompetitive offers for two years following the sale. All offers filed the day after the sale (referred to as day-after-the-sale filings) are considered simultaneously filed. This means that if there is more than one offer filed for a specific parcel the day after the sale, a drawing must be held to determine the priority on multiple offers. Noncompetitive offers filed after that time are on a first-come first-served basis. If there are no offers filed for a parcel for the two-year period after the sale, the lands must be nominated again for competitive leasing. Rental payments for these leases will be \$1.50 per acre for the first 5 years and \$2.00 per acre thereafter until production is established. If the lessee establishes hydrocarbon production, the leases can be held for as long as oil or gas is produced. The royalty rate for leases issued following the 1987 Oil and Gas Leasing Reform Act is 12-1/2 percent one-half of which is returned to the State of Montana on public domain lands (not acquired lands). Minimum royalty is the same amount as the rental. Future interest leases are available for entire or fractional mineral estates that have not reverted to federal ownership. These are minerals that are reserved

by the grantor for a specific period of time in warranty deeds to the United States. Any future interest leases may be obtained only through the competitive bidding process and are made effective the date of vesting of the minerals with the United States.

Resource Management Plan Maintenance

New information may lead to changes in existing resource inventories. New use areas and resource locations may be identified or use areas and resource locations that are no longer valid may be identified. These resources usually cover small areas requiring the same protection or mitigation as identified in this plan. Identification of new areas or removal of old areas that no longer have those resource values will result in the use of the same lease stipulation identified in this plan. These areas will be added to the existing data inventory without a plan amendment. In cases where the changes constitute a change in resource allocation outside the scope of this plan, a plan amendment would be required.

Lease Stipulations

Certain resources in the planning area require protection from impacts associated with oil and gas activities. The specific resource and the method of protection are contained in lease stipulations. Lease stipulations are usually no surface occupancy, controlled surface use, or timing limitation. A notice may also be included with a lease to provide guidance regarding resources or land uses. While the actual wording of the stipulations may be adjusted at the time of leasing, the protection standards described will be maintained.

Controlled Surface Use

Use or occupancy is allowed (unless restricted by another stipulation), but identified resource values require special operational constraints that may modify the lease rights. Controlled surface use is used for operating guidance, not as a substitute for the no surface occupancy or timing stipulations.

No Surface Occupancy (NSO)

Use or occupancy of the land surface for fluid mineral exploration or development is prohibited in order to protect identified resource values. The no surface occupancy stipulation includes stipulations which may have been worded as No Surface Use and Occupancy,” “No Surface Disturbance,” “Conditional No Surface Occupancy,” and “Surface Disturbance or Occupancy Restriction (by location).”

Timing Limitation (Seasonal Restriction)

Prohibits surface use during specified times to protect identified resource values. This stipulation does not apply to the operation and maintenance of production facilities unless the findings of analysis demonstrate the

continued need for such mitigation and that less stringent, project-specific mitigation measures would be insufficient.

Waivers, Exceptions, Modifications

Lessees must honor lease stipulations when an Application for Permit to Drill or other surface disturbing operations are proposed to explore and develop a lease, unless the BLM grants a waiver, exception, or modification to a lease stipulation. This RMP establishes the guidelines by which future waivers, exceptions, or modifications are granted within the Butte Field Office. Substantial modification or waiver is subsequent to lease issuance is subject to public review for at least a 30-day period.

Exception: A case-by case exemption from a lease stipulation. The stipulation continues to apply to all other sites within the leasehold to which the restrictive criteria apply.

Modification: Fundamental changes to the provisions of a lease stipulation, either temporarily or for the term of the lease. Therefore, a modification may include an exemption from or alteration to a stipulated requirement. Depending on the specific modification, the stipulation may or may not apply to all other sites within the leasehold to which the restrictive criteria apply.

Waiver: Permanent exemption from a lease stipulation. The stipulation no longer applies anywhere within the leasehold.

PERMITTING

A federal lessee or operator is governed by procedures set forth in the Code of Federal Regulations at 43 CFR Part 3160, Onshore Oil and Gas Order No. 1, “Approval of Operations on Onshore Federal and Indian Oil I and Gas Leases,” issued under 43 Code of Federal Regulations (CFR) 3164 and other orders and notices.

The lessee may conduct lease operations after lease issuance. However, proposed drilling and associated activities must be approved in advance before beginning operations. Therefore, before beginning construction or the drilling of a well, the lessee or operator must file an Application for Permit to Drill (APD) with the BLM Great Falls Oil and Gas Field Station. A copy of the application will be posted in the Field Station and Butte Field Office, and if applicable, in the office of the Surface Management Agency (SMA) for a minimum of 30 days for review by the public. After 30 days, the application can be approved in accordance with (a) lease stipulations, (b) Onshore Oil and Gas Orders, and (c) Onshore Oil and Gas regulations (43 CFR Part 3160) if it is administratively and technically complete.

Evidence of bond coverage for lease operations must be submitted with the application. Bond amount must not

be less than a \$10,000.00 lease bond, a \$25,000.00 statewide bond or a \$150,000.00 nationwide bond.

Pre-drill on-site inspections will be conducted for all wells. The inspection makes possible selection of the most feasible well site and access road from environmental, geological, and engineering points of view. The purpose of the field inspection is to evaluate the operator's plan, assess the situation for possible impacts, and to formulate resource protection stipulations. Surface use and reclamation requirements are developed during the on-site inspection that is usually conducted within 15 days after receipt of the Notice of Staking (NOS) or APD. For operations proposed on privately-owned surface, if the operator after a good-faith effort is unable to reach an agreement with the private surface owner, the operator must post a bond to cover loss of crops and damages to tangible improvements prior to approval of the APD.

Normally, site-specific mitigations in the form of conditions of approval are added to the APD for protection of surface and subsurface (including groundwater) resource values in the vicinity of the proposed activity. The BLM is responsible for preparing environmental documentation necessary to satisfy the National Environmental Policy Act (NEPA) requirements and provide any mitigation measures needed to protect the affected resource values.

Conditions of approval implement the lease stipulations and are part of the permit when environmental and field reviews demonstrate the necessity for operating constraints or requirements. A surface restoration plan is part of an approved permit, either an APD or Sundry Notice that includes other surface-disturbing activities. The authorized officer will act on the application in one of two ways:

Within 30 days after the operator has submitted a complete application including incorporating any changes that resulted from the onsite inspection the BLM will:

- (1) approve the application subject to reasonable conditions of approval if the requirements of the National Environmental Policy Act (NEPA), National Historic Preservation Act (NHPA), Endangered Species Act (ESA), or other applicable law have been completed and, if on FS lands, FS has approved the Surface Use Plan of Operations; or
- (2) notify the operator that it is deferring action on the permit. The notice of deferral must specify:
 - (a) any action the operator could take that would enable BLM to issue a final decision on the application, with FS concurrence if appropriate. Actions may include but are not limited to; assistance with data gathering or assistance with preparation of analyses and documents;
 - (b) and if necessary, a list of actions that BLM or the FS, if appropriate, need to take, including completing

requirements of NEPA or other applicable law and a schedule for completing these actions.

The operator has 2 years from the date of the notice of deferral to take the action specified in the notice. If all analyses required by NEPA, NHPA, ESA and other applicable laws have been prepared, BLM and with FS concurrence, if appropriate, shall make a decision on the permit within 10 days of receiving a report from the operator addressing all of the issues or actions specified in the deferral notice and certifying that all required actions have been taken. If the operator has not completed the actions specified in the notice, BLM may deny the permit at any time later than 2 years from the operator's receipt of the deferral notice."

For drilling operations on lands with state or private mineral ownership, the lessee must meet the requirements of the mineral owner and the state regulatory agency. The BLM does not have jurisdiction over nonfederal minerals; however, the BLM has surface management responsibility in situations of BLM surface over nonfederal mineral ownership.

When final approval is given by the BLM, the operator may begin construction and drilling operations. Approval of an APD is valid for one year. If construction does not begin within one year, the permit must be reviewed prior to approving another APD.

A Sundry Notice is used to approve other surface and subsurface lease operations. When a well is no longer useful, the well is plugged and the surface reclaimed. A Sundry Notice is also used to approve well plugging and reclamation operations, although verbal approval for plugging may be given for a well that was drilled but not completed for production.

The period of bond liability is terminated after all wells covered by the bond are properly plugged and the surface reclaimed. The lands may then become available for future leasing.

APPLICATION FOR PERMIT TO DRILL

Applications for Permit to Drill are approved for the Butte Field Office by the supervisor of the Great Falls Oil and Gas Field Station. The approved APD includes Conditions of Approval, and Informational Notices that cite the regulatory requirements from the Code of Federal Regulations, Onshore Operating Orders and other guidance.

CONDITIONS OF APPROVAL

Conditions of approval are mitigation measures that implement restrictions in light of site-specific conditions. General guidance for conditions of approval and surface operating standards is found in the BLM and USFS brochure entitled "Surface Operating Standards for Oil and Gas Exploration and Development" (USDI,

BLM1989c) and BLM Manual 9113 entitled “Roads”. The BLM commonly applies best management practices when approving APDs. The sources of many of these may be found in RMP Appendix D at page 4.

The following mitigation measures may be applied to approved permits to drill as conditions of approval. The listing is not all-inclusive, but presents some possible conditions of approval that may be used in the planning area. The wording of the condition of approval may be modified or additional conditions of approval may be developed to address specific conditions.

In addition to the best management practices identified in Appendix D, the BLM will also develop site-specific practices on a case-by-case basis as needed.

Surface Conditions

- a) The access road on the BLM surface will not be bladed unless prior BLM approval is obtained.
- b) The operator will be responsible for weed control on the access road, well location, and pipeline for the life of the well.
- c) The operator will clean the undercarriage of all rigs prior to entering onto the leasehold to reduce the chances for noxious weed infestations.
- d) Topsoil is to be removed and stockpiled. Operator will be required to cover the topsoil pile to prevent the loss of topsoil to wind erosion. Operator must cover the topsoil with a biodegradable mesh fabric that allows water and air to circulate through the topsoil. Operator cannot cover the topsoil with any type of impermeable fabric. Operator will be responsible for weed control on the topsoil stockpile.
- e) Avoid constructing reserve pits in natural watercourses or areas of shallow groundwater. Water courses include lake beds, gullies, draws, streambeds, washes, arroyos, or channels that are delineated on a 1:24,000 USGS quadrangle map or have a hydrologic connection to streams, rivers, or lakes. The reserve pit should normally be located entirely in cut material. The preferred method of reserve pit construction on steeply sloping sites is to locate the pit on the drill pad next to the high wall. The pits are constructed totally in cut at such locations. If this is not possible, at least 50 percent of the reserve pit should be constructed below original ground level to help prevent failure of the pit dike. Fill dikes should be properly compacted in lifts. The necessary degree of compaction depends on soil texture and moisture content. The pit should be designed to contain all anticipated drilling muds, cuttings, fracture fluids, and precipitation while maintaining at least 2 feet of freeboard. Pits improperly constructed on slopes or poor soil types may leak along the plane between the natural ground level and the fill. There is a significant potential for pit failure in these situations. When

constructing dikes for pits or impoundments with fill embankment, a keyway or core trench should be excavated to a minimum depth of 2 to 3 feet below the original ground level. The core of the embankment can then be constructed with compacted, water-impervious material.

- f) Containment structures sufficiently impervious to prevent a discharge to waters of the US, such as containment dikes, containment walls, drip pans, or equivalent protection actions are to be constructed and maintained around all qualifying bulk oil storage facilities, including tank batteries, consistent with the Environmental Protection Agency’s Spill Prevention, Control, and Countermeasure (SPCC) regulation (40 CFR 112). The containment structure must have sufficient volume to contain, at a minimum, the content of the largest storage tank containing liquid hydrocarbons within the facility/battery and sufficient freeboard to contain precipitation, unless more stringent protective requirements are deemed necessary by the authorized officer. Containment dikes are not to be constructed with topsoil or coarse, insufficiently impervious spoil material. Containment is strongly suggested for produced water tanks. Chemicals should be placed within secondary containment and stored so that the containers are not in contact with soil or standing water and product and hazard labels are not exposed to weathering.
- g) Rehabilitation of upland sites following disturbance would use the plant species listed in **Table 1** for seeding. The species used for rehabilitation would vary depending on the adjacent habitat conditions, site potential, soils, and precipitation. Species not in the following list could be added if site conditions warrant, species availability changes or if there are large acreages are involved.
- h) All permanent structures will be painted the neutral color of Sand Beige (5Y 6/3), Desert Brown (10YR 6/3), Carlsbad Canyon (2.5Y 6/2) or Slate Gray (5Y 6/1) as displayed in the Standard Environmental Color chart (available at the BLM office) or other acceptable color approved by the authorized officer to blend in with the surrounding landscape.
- i) If the well is a dry hole, Operator will be required to fence the entire disturbed area of the location to allow the seedlings and vegetation to re-establish. This fencing must be stock tight and must remain in place until the BLM requests otherwise.
- j) The Operator will be responsible for control of noxious weeds occurring as a result of lease operations. The Surface Management Agency will be responsible for approval of weed control programs.
- k) Prior to the use of herbicides on public land, the applicant will have to obtain from the BLM authorized officer written approval of a plan

Table 1 Rehabilitation Species List			
Common Name	Scientific Name	4 Code	6 Code
12 to 14 inch precipitation zone			
Western Wheatgrass	<i>Pascopyrum smithii</i>	PASM	PASSMI
Bluebunch Wheatgrass	<i>Pseudoroegneria spicata</i>	PSSP6	PSESPI
Thickspike Wheatgrass	<i>Elymus macrourus</i>	ELMA7	ARGDAS
Slender Wheatgrass	<i>Elymus trachycaulus</i>	ELTR7	ELYTRA
Green Needlegrass	<i>Nassella viridula</i>	NAVI4	STIVIR
Needle And Thread	<i>Hesperostipa comata</i>	HECO26	STICOM
Blue Flax	<i>Linum perenne</i>	LIPE2	LINPER
Scarlet Globemallow	<i>Sphaeralcea coccinea</i>	SPCO	SPHCOC
Silky Lupine	<i>Lupinus sericeus</i>	LESE4	LUPSER
Wyoming Big Sage	<i>Artemisia tridentate</i>	ARTRW8	ARTTRIW
Woods' Rose	<i>Rosa woodsii</i>	ROWO	ROSWOO
15 to 19 inch precipitation zone			
Basin Wildrye	<i>Leymus cinereus</i>	LECI4	LEYCIN
Bluebunch Wheatgrass	<i>Pseudoroegneria spicata</i>	PSSP6	PSESPI
Slender Wheatgrass	<i>Elymus trachycaulus</i>	ELTR7	ELYTRA
Idaho Fescue	<i>Festuca idahoensis</i>	FEID	FESIDA
Sheep Fescue	<i>Festuca ovina</i>	FEOV	FESOFI
Sandberg Bluegrass	<i>Poa secunda</i>	POSE	POASEC
Blue Flax	<i>Linum perenne</i>	LIPE2	LINPER
Silky Lupine	<i>Lupinus sericeus</i>	DESE4	LUPSER
Wyoming Big Sage	<i>Artemisia tridentate</i>	ARTRV	ARTTRIV
Woods' Rose	<i>Rosa woodsii</i>	ROWO	ROSWOO

showing the type and quantity of material to be used, weed(s) to be controlled, method of application, location of storage and disposal of containers and any other pertinent information deemed necessary by the authorized officer. Operators must monitor disturbed areas annually from June through August for the presence of noxious weeds. Monitoring must begin prior to disturbance.

- l) Within the Distribution Zone of grizzly bears, food storage regulations will be followed to minimize bear-human conflicts. Proper food storage is essential to successful human-bear management. "Food" includes actual food, trash, recyclables, toiletries, cosmetics, first aid kits, pet food, sunscreen, baby wipes, scented tissue, beverage cans and bottles, canned food, mosquito repellent, tobacco products, and any related items with a scent. All food items, garbage, beverages, coolers, stoves, grills, cooking utensils, food containers, and pet food not in immediate use (day or night) must

stored in Bear Resistant Containers (BRC), stored in a closed vehicle constructed of solid, nonpliable material or be hung from food poles where provided or limbs of trees. Food items must be hung 10 feet clear of the ground at all points and 4 feet horizontally from any supporting tree or pole. Camps and job sites must be clean at all times. No garbage will be burned or buried. All garbage will be removed from the site.

- m) Operator road use activities on BLM lands must conform to existing travel plans.

Downhole Conditions

- a) Surface casing shall have centralizers on each of the bottom three joints and shall be cemented back to surface.
- b) BOP system shall be consistent with Onshore Oil and Gas Order No. 2, 2M system.
- c) The operator shall obtain verbal approval prior to initiating side-tracking operations. At the time of

approval, the operator must identify the proposed azimuth, kick-off point, inclination rate (angle build rate), and the estimated closure or horizontal length to be drilled. All wellbore paths, i.e. different orientations of bottom hole locations, require prior approval.

- d) The operator shall have sufficient weighting materials and loss circulation materials on location in the event of a pressure kick or in the event of loss circulation.

Informational Notice

- a) Approval of this APD does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease, which would entitle the applicant to conduct operations thereon.
- b) The lessee shall comply with applicable laws and regulation; with the lease terms, Onshore Oil and Gas Orders; NTL's; and with other orders and instructions of the authorized officer.
- c) A complete copy of the approved APD must be on the well site and available for reference during the construction and drilling phase.
- d) Any deviation from the terms of this APD requires prior approval.
- e) This drilling permit is valid for either 1 year from the approval date or until lease expiration, whichever occurs first.
- f) Each drilling, producing, or abandoned well shall be identified with the operator's name, the lease serial number, the well number, and the surveyed description of the well (footages or the quarter section, the section, township, and range). All markings must be legible, and in a conspicuous place.

Notification Requirements

- a) Notify this office at least 12 hours before beginning dirt work*.
- b) Notify this office verbally at least 6 hours before the well is spudded.
- c) Notify this office verbally at least 6 hours prior to running/cementing casing.
- d) Notify this office verbally at least 6 hours prior to conducting BOP tests.
- e) Notify this office at least 6 hours prior to plugging for verbal plugging orders.
- f) BLM Representative – Great Falls Field Station Office Telephone No. (406) 791-7700:
- g) After hours and weekend contacts are:
 - i. Petroleum Engineer Technician
 - ii. Petroleum Engineer
 - iii. Environmental Specialist
 - iv. Field Station Supervisor

Plugging Requirements

- a) Prior approval for abandonment must be obtained. Initial approval for abandonment during drilling operations may be verbal but must be followed by written notification on Form 3160-5, in triplicate.
- b) Upon completion of the approved plugging, the operator will cut the casing off four feet below reclaimed ground level and a ¼" x 12" x 12" plate (with a ⅛" weep hole) shall be welded onto a fitting to be screwed into a collar either welded or screwed to the production casing. The standard aboveground dry hole marker is accordance with 43 CFR 3162.6(d) has been waived by the Great Falls Field Station. Pits must be fenced until dry or pumped and then filled in and recontoured unless otherwise approved by the Field Station Supervisor.
- c) The following minimum information shall be permanently placed on the plate: "Fed" or "Ind" as applicable; "Lease Number, Operator, Well Number, and Location by quarter/quarter, Section, Township, and Range."

Reports and Notifications

- a) All submitted information not marked "CONFIDENTIAL INFORMATION" is subject to public disclosure in accordance with 43 CFR 3100.4.
- b) Production Startup Notification is required not later than the 5th business day after any well begins production on which royalty is due anywhere on a lease site or allocated to a lease site, or resumes production in the case of a well which has been off production for more than 90 days, the operator shall notify the authorized officer by letter or sundry notice, Form 3160-5, or orally to be followed by a letter or sundry notice, of the date on which such production has begun or resumed.

Hazardous Materials

- a) Operators and their contractors are to ensure all production, use, storage, transport, and disposal of hazardous materials resulting from the proposed project is in accordance with all applicable Federal, State and local laws, regulations and guidelines, existing or hereafter enacted or promulgated that effect the management of hazardous material, as defined in this paragraph. Hazardous material means any substance, pollutant, or contaminant listed as a hazardous substance under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, as amended, 42 USC 9601 et seq., and its regulations (found at 40 CFR 302). The definition of hazardous substances under CERCLA includes "hazardous waste" defined in the Resource Conservation and Recovery Act (RCRA) of 1976, as amended, 42 USC 6901 et seq., and its

regulations. The term also includes any extremely hazardous substances defined by 40 CFR 355 and any nuclear or byproduct material defined by the Atomic Energy Act of 1954, as amended, 42 USC 2011 ET seq. The term does not include petroleum, including crude oil or any fraction thereof not otherwise listed or designated as a hazardous substance under CERCLA section 101 (14), 42 USC 9601 (14), or natural gas.

- b) Only drilling mud, drilling fluids, cuttings, native soils, cementing materials and/or approved pit solidifying materials will be placed in the reserve or working pits.
- c) Nonexempt wastes will not be mixed with exempt wastes.

Environmental Obligations and Disposal of Produced Water

- a) The Operator is required to take all necessary steps to prevent any death of a migratory bird in pits or open vessels associated with the drilling, testing, completion, or production of this well. The death of any migratory bird found in such a pit or open vessel is a violation of the Migratory Bird Treaty Act and is considered a criminal act. Any deaths of migratory birds attributable to pits or open vessels associated with drilling, testing, completing, or production operations must be reported to this office and the United States Fish and Wildlife Service within 24 hours.
- b) The BLM may require that the pit be designed or the open vessel be covered to deter the entry of birds in any facility associated with drilling, testing, completing, or production of this well. Fencing, screening, and netting of pits may be required as a means to deter bird entry. These conditions would most likely be imposed to prevent the entry of migratory birds if oil is left in pits or open vessels after the cessation of drilling or completion operations, if water disposal pits consistently receive oil, or if pits or open vessels are used repeatedly for emergency situations which result in the accumulation of oil.
- c) Voluntary pit fencing, screening, and netting, or sealing vessels is encouraged thus avoiding potential instances that may result in the death of a migratory bird.
- d) With BLM approval, water produced from newly completed wells may be temporarily disposed of into unlined pits for up to 90 days. During this initial period, application for the permanent disposal method must be made in accordance with Onshore Order No. 7.

Paleontological/Cultural Stipulations

Paleontological and archaeological field checks by BLM personnel or other authorized personnel will occur prior

to disturbance as deemed appropriate by the BLM. A BLM-approved archaeologist or paleontologist will conduct monitoring during surface-disturbing activities. Paleontological or cultural resource sites will be avoided or mitigated as necessary prior to disturbance. Any cultural or paleontological resource discovered by an operator or any person working on his/her behalf will be reported immediately to the BLM, and all operations that may further disturb such resources will be suspended until written authorization to proceed is issued by the BLM authorizing officer. An evaluation of the discovery will be made by the BLM to determine appropriate actions to prevent the loss of significant resources.

CONSTRUCTION

Construction of the access road and the well site is necessary before drilling operations begin. The extent of surface disturbance necessary for construction depends on the terrain, depth of the well, drill rig size, circulating system, and safety standards.

The depth of the drill test determines the size of drill rig needed, and therefore, the size of the work area necessary, the need for all-weather roads, water requirements, and other needs. The terrain influences the construction problems and the amount of surface area to be disturbed. Reserve pit size may vary because of well depth, drill rig size, or circulating system.

Access roads to well sites in the planning area usually consist of running surfaces 14 to 24 feet wide that are ditched on one or both sides. Many of the roads constructed will follow existing roads or trails. New roads might be necessary because existing roads are not at an acceptable standard. For example, a road may be too steep so that realignment is necessary.

Roads can be permanent or temporary, depending on the success of the well. The initial construction can be for a temporary road; however, it is designed so that it can become permanent if the well produces. Not all temporary roads constructed are immediately rehabilitated when the drilling stops. A temporary road is often used as access to other drill sites. The main roads and temporary roads require graveling to be maintained as all-weather roads. This is especially important in the spring. Access roads may be required to cross public lands to a well site located on private or state lands. The portion of the access road on public land would require a BLM right-of-way.

The amount of level surface required for safely assembling and operating a drilling rig varies with the type of rig, but averages 300 feet by 400 feet. Approximately 3-1/2 acres would be impacted by well site construction. The area is cleared of large vegetation, boulders, or debris. Then the topsoil is removed and saved for reclamation. A level area is then constructed for the well site, which includes the reserve pit.

Bulldozers and motor scrapers are typically used to construct the well pad. The well pad is flat (to accommodate the drill rig and support equipment) and large enough to store all the equipment and supplies without restricting safe work areas. The drill rig must be placed on “cut” material rather than on “fill” material to provide a stable foundation for the rig. The degree of cutting and filling depends on terrain; that is, the flatter the site, the less dirt work is required.

Hillside locations are common, and the amount of dirt work varies with the steepness. A typical well pad will require a cut 10 feet deep against the hill and a fill 8 feet high on the outside. It is normal to have more cut than fill to allow for compaction, and any excess material is then stockpiled. Eventually, when the well is plugged and abandoned, excavated material is put back in its original place.

Reserve pits are normally constructed on the well pad. Usually the reserve pit is excavated in “cut” material on the well pad. The reserve pit is designed to hold water, drill cuttings, and used drilling fluids. Generally, reserve pits are rectangular in shape and 8 to 12 feet deep, however, the size and number of pits depends on the depth of the well, circulating system and anticipated down hole problems, such as excess water flows. The reserve pit can be lined with a synthetic liner to contain pit contents and reduce pit seepage. Not all reserve pits are lined; however, BLM can require a synthetic liner based upon factors such as soils, pit locations, ground water, and drilling mud constituents. The operator can elect to line the reserve pit without that requirement. Pits may be divided into compartments separated by berms for the proper management of derived waste (e.g., drill cuttings, mud, water flows).

An adequate supply of water is required for drilling operations and other uses. During drilling operations, water is continually transported to the rig location. Approximately 1,680,000 gallons of water are required to drill an oil or gas well to the depth of 9,000 feet. The sources of water can be a water well at the drill site or remote sources such as streams, ponds, or wells. The water is transported to the site by truck or pipeline. Pipelines are normally small diameter surface lines. The operator must file for and obtain all necessary permits for water from the state of Montana. On public lands, an operator must have the BLM’s permission before surface water can be used.

DRILLING OPERATIONS

Starting to drill is called “spudding in” the well. Initially, drilling proceeds rapidly due to the presence of unconsolidated or shallow, poorly consolidated rock formations. Drilling is accomplished by rotating special bits under pressure at the end of drill pipe (string) extended down the hole as it advances. While drilling, the rig derrick and associated hoisting equipment bear

most of the drill pipe (string) weight. The weight on the bit is generally a small fraction of the total drill string weight. The combination of rotary motion and weight on the bit causes rock to be chipped away at the bottom of the hole.

Drilling fluid or mud is circulated through the drill pipe to the bottom of the hole, through the bit, up the bore of the well, and finally to the surface. When the mud emerges from the hole, it goes through equipment used to screen and remove rock chips and sand-size solids. When the solids have been removed, the mud is placed into holding tanks and from the tanks it is pumped back into the well. The mud is maintained at a specific weight and viscosity to cool the bit, seal off any porous zones (protect aquifers or prevent damage to producing zone productivity), subsurface pressure control, lubrication of the drill string, clean the bottom of the hole, and bring the rock chips to the surface.

There are three common types of drilling fluids: water-based, oil-based, and synthetic. Water-based muds are the most common and are largely made up of water and bentonite, clay that has special properties used to maintain proper viscosity and other properties over a wide range of drilling conditions. Oil-based mud is used for subsurface conditions where water may react with shale and cause caving and sloughing of the sides of the well bore. Synthetic drilling fluids are used for special conditions and have become more common in recent years. They are composed of organic polymers or other chemicals and are often designed to be environmentally benign. Additives are used to maintain the drilling mud properties for specific conditions that may be encountered during drilling.

As drilling progresses for a vertical well, pipe or casing is placed as a liner in the hole. Casing consists of steel pipe that is placed into the hole to prevent the collapse of the hole, to protect aquifers, and to isolate producing zones from other formations. Several strings of casing, that have different purposes, may be placed into the well. The first string of pipe is the conductor pipe, which stabilizes the hole near the surface. The second string of pipe placed in the hole is for surface casing, which is set deep enough to reach a competent rock below the deepest usable freshwater aquifer.

The surface casing is set and cemented in the hole by pumping cement between the casing and the well bore wall. Surface casing acts as a safety device to protect freshwater zones from drilling fluid contamination. To prevent the well from “blowing-out” in the event the drill bit hits a high-pressure zone, blowout preventers are mounted on top of the surface casing. If high-pressure zones are encountered that cannot be controlled with weighting using mud additives (drilling fluids are the first line of defense against a blowout), the blowout preventers can be closed through a system of hydraulically activated valves and manifolds to

effectively seal the well and prevent the uncontrolled flow of fluids.

After the surface casing is set, a smaller drill bit that fits inside the surface casing is installed and drilling resumes. Depending on well conditions, additional strings of casing called intermediate casing may be installed and cemented into place. Conditions resulting in the need for intermediate casing include freshwater zones and sloughing formation zones. Casing prevents the flow of freshwater into the wellbore, and conversely prevents drilling fluids from infiltrating porous formations with low internal pressures. Casing also prevents mixing of waters from different formations (interformational mixing) where water within the formations is of differing quality.

All cementing operation plans are reviewed to assure cement is placed at the appropriate depths and a sufficient quantity is utilized to effectively seal all freshwater-bearing formations from contamination by interformational mixing or migration of fluids.

Drilling operations are continuous, 24 hours a day, 7 days a week. There are three 8-hour or two 12-hour shifts a day. Pickups or cars are used for workers' transportation to and from the location.

If no oil or gas is encountered, the well is called a "dry hole" and it is plugged with cement and abandoned in accordance with state and federal requirements. The drill site and access roads are rehabilitated according to stipulations and conditions attached to the approved APD and the drilling equipment is moved to another location.

If the well is a producer, casing is set and cemented in place.

Directional drilling may be used where the drill site cannot be located directly over the drilling target. There are limits to both the degree that the well bore can be deviated from the vertical and the horizontal distance the well can be drilled away from the well site.

Horizontal wells are drilled similarly to directional wells, except that the bottomhole location of the well is not a single point, but rather a lateral horizontal section. They are drilled to increase the recovery oil and gas reserves from vertically fractured reservoirs, or reservoirs with directional permeability.

ENVIRONMENT AND SAFETY

During drilling and production operations for any well the BLM will enforce the provisions of the regulations, Onshore Oil and Gas Operating Orders, and Notice to Lessees NTL-MSO-1-92, Report of Undesirable Events, to ensure operations are carried in a manner that protects the mineral resources, other natural resources, and environmental quality. Regulations at 43 CFR § 3162.5 require that the operator exercise due care and diligence

to assure that leasehold operations do not result in undue damage to surface or subsurface resources or surface improvements. All produced water must be disposed of by methods approved by the BLM. Upon completion of operations the operator shall reclaim the surface in a manner approved of by the BLM. All spills or leakages of oil, gas, produced water, toxic liquids, blowouts, fires, personal injuries, and fatalities must be reported by the operator. The operator is required to exercise care in taking measures approved by the BLM to control and remove pollutants and extinguish fires. An operator's compliance with the regulations at 43 CFR § 3162.5 does not relieve him of the obligation to comply with any other law or regulations. Finally, the regulations authorize the BLM to require an operator to file a contingency plan describing procedures to be implemented to protect life, property, and the environment.

PRODUCTION AND DEVELOPMENT

Production

Production begins when a well yields oil or gas in commercial quantities. If formation pressure is sufficient to raise oil to the surface, the well is completed as a flowing well. A pumping unit is installed if the formation pressure is not sufficient to bring the oil to the surface.

When the well is completed as a free-flowing well, an assembly of valves and special connections known as a "Christmas tree" (so called because of its many branch-like fittings) is installed on top of the casing to regulate the flow of the well. Later, when the natural pressure declines, the Christmas tree can give way to a simple wellhead arrangement of valves and a pumping unit to lift the oil artificially. Many pumping units are "beam" style pumps that are powered by electric motors or gasoline engines. Most gas wells produce by natural flow and do not require pumping. Surface facilities at a flowing well are usually in a small area containing a gas well Christmas tree, a dehydrator, a produced water pit, and a meter house. Separators, condensate tanks, and compressors may be included. Some gas wells require continuous water pumping as water entering the well chokes off the gas flow.

Development

New field development may be analyzed under NEPA by means of an environmental assessment (EA) or environmental impact statement (EIS) usually after the second or third confirmation well is drilled. The operator should then have an idea of the extent of drilling and disturbance required to extract and produce the oil and gas. When an oil or gas discovery is made, a well spacing pattern must be established before development drilling begins.

Development can take years and include from one or two wells to more than a hundred wells per field. However, the reasonably foreseeable development scenario for this planning document should only forecasts two additional wells per field. Roads to producing wells are upgraded to all-weather roads as necessary. Pipelines, electrical transmission lines, separators, dehydrators, sump pits, and compressor stations soon follow. Sometimes oil and gas processing facilities are built in or adjacent to the field.

Further Seismic Testing

More detailed seismic work can be done to achieve better definition of the petroleum reservoir. Diagonal seismic lines can be required to tie the previous seismic work to the discovery well. The discovery well can be used to conduct studies to correct the previous seismic work and provide more accurate subsurface data.

Spacing Requirements

A well spacing pattern must be established before development drilling begins. Information considered in establishment of a spacing pattern includes data from the discovery well on porosity, permeability, pressure, composition, and depth of formations in the reservoir; well production rates and type (predominantly oil or gas); and the economic effect of the proposed spacing on recovery. The state of Montana establishes well spacing patterns for both exploratory and development wells which the BLM generally adopts. The state specifies the minimum distance from lease lines or government survey lines for the bottom hole location of the well bore depending upon depth of the well. The spacing regulations determine the acres assigned to each well. Spacing unit size is established to provide for the most efficient and economic recovery of oil or gas from a reservoir. Normal well spacing ranges from 40 acres to 640 acres (**Figures A-1 and A-2**). Wells deeper than 11,000 feet can be no closer than 1,650 feet to other producing wells below 11,000 feet. Only one producing well per formation is allowed in each 40, 80, 160, 320, and 640-acre unit.

Drilling of Development Wells

The procedures used in drilling development wells are the same as those used for wildcat wells, but usually

with less subsurface sampling, testing, and evaluation. The rate at which development wells are drilled in a field depends on factors such as whether the field is developed on a lease basis or unitized basis, the probability of profitable production, the availability of drilling equipment, lease requirements, and the degree to which limits of the field are known. Some fields go through several development phases, the first resulting from the original discovery and others from later discovery. A field can be considered fully developed and produce for several years, and then a well may be drilled to a deeper or shallower pay zone. Discovery of a new pay zone in an existing field is a “pool” discovery (as distinguished from a new field discovery). A pool discovery may lead to the drilling of additional wells, often from the same drilling pad as existing wells.

Inspections

Geophysical operations and lease operations are inspected to determine compliance with approved permits, to resolve conflicts or correct problems and to determine effectiveness and need of lease stipulations. All inspections are documented. Operators are required to correct problems or violations.

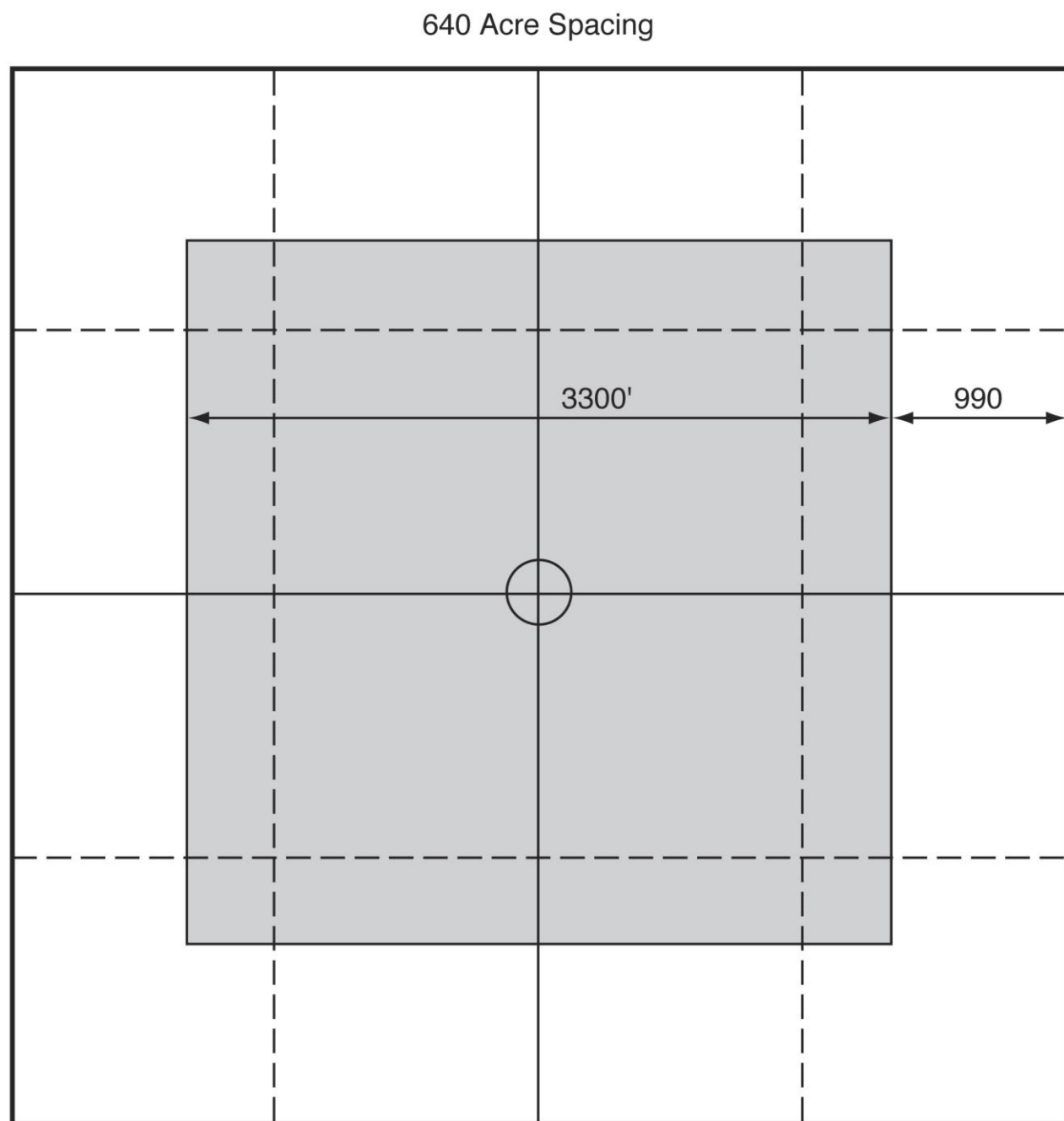
Surface Requirements

Field development activities that cause surface disturbance include access roads, well sites, production facility sites, flow line and utility line routes and waste disposal sites. Surface uses in a gas field will be less than in an oil field, because gas wells are usually drilled on larger spacing units. The spacing pattern of 640 acres per well, which is common in gas fields, will require only one well per section and might require only 1/2 mile of access roads and pipelines. Production facilities include separation and storage equipment. Separation equipment is required when production includes a combination of oil, gas, or water and storage equipment is required for holding liquids prior to sales.

Flow Lines

Oil and gas are transferred from the well to storage facilities through small diameter (<6 inches) flow lines. Flow lines can be on the surface, buried or elevated. Produced water, gas, or polymerized liquid is transferred from storage facilities to injection wells for secondary recovery.

Figure A-1. Gas Well Spacing



SOURCE: Montana Oil & Gas Commission



Area in which well should be drilled

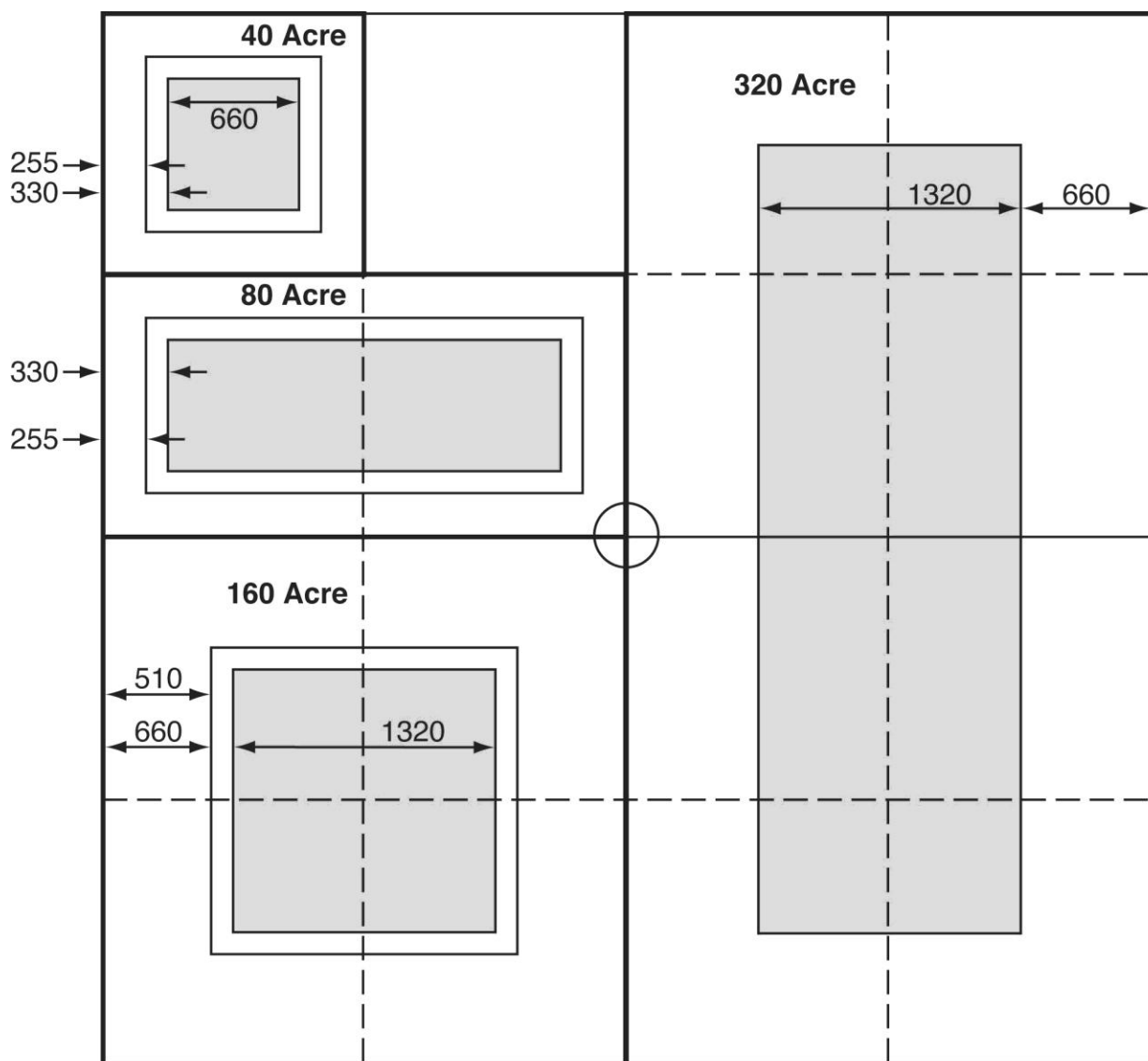
Well
Depth
(feet)

0>

Minimum Well
Distance
(feet)

990

Figure A-2. Oil Well Spacing



SOURCE: Montana Oil & Gas Commission

Area in which well should be drilled

Well Depth (feet)	Spacing (acre)	Nearest Boundary (feet)	Topographic Tolerance (feet)	Minimum Well Distance (feet)
0-6,000	40 & 80	330	75	255
6,000 - 11,000	160	660	150	510
11,001 - >	320	660	none	none

For the 320 acre spacing (1,650 well tolerance) and the 80 acre spacing the drilling unit will be delineated either N-S or E-W

Separation, Treatment, and Storage

Any water or gas associated with produced oil is separated from the oil before it is placed in storage tanks. The treating facilities are located at a storage tank battery. Low-pressure petroleum that must be pumped from the well is treated in a single separation. High-pressure, flowing petroleum can require several stages or separation, with a pressure reduction accompanying each stage.

Produced gas is sold when there is sufficient volume, necessary transportation, a market, and it is economical. Generally, if the volume of produced gas is too low for sales, it is used as fuel for well pump engines and heating fuel for the treaters. If the volume of produced gas exceeds fuel requirements on the lease but gas sales are not possible, the gas can be flared or vented into the atmosphere when authorized by permit in accordance with state and federal regulations. When water is produced with the hydrocarbons, it is separated before the gas is removed. In primary operations, where natural pressures or gravity causes the petroleum in the reservoir to flow to the wellbores, the degree of mixing is high enough to require chemical and heat treatment to separate the oil and water. In secondary production, where water injection or other methods are used to force additional petroleum to the wellbore, the oil and water often are not highly emulsified. In this case, the oil and water can be separated by gravity in a tall settling tank. Produced water can be disposed of by injection into the subsurface, surface evaporation or beneficial purposes such as water for livestock or irrigation.

Produced water from oil and gas operations is normally disposed of by subsurface injection or in surface pits. Regardless of the method of disposal, it must be acceptable to the BLM, in accordance with the requirements of Onshore Oil and Gas Order No. 7, titled "Disposal of Produced Water." Disposal of produced water by injection wells requires permits from the Montana Board of Oil and Gas Conservation. When produced water is disposed underground, it is introduced or injected under pressure into a subsurface horizon containing water of equal or poorer quality. Produced water may be injected into the producing zone from which it originated to stimulate oil production. Dry holes or depleted wells are commonly converted for saltwater disposal and occasionally new wells are drilled for this purpose. The law and regulations require that all injection wells be permitted under the Underground Injection Control program.

Under the Underground Injection Control approval process, the disposal well must be pressure tested to ensure the integrity of the casing. The disposal zone must also be isolated by use of tubing and mechanical plug called a packer. The packer seals off the inside of the casing and only allows the injected water to enter the disposal zone. The tubing and packer are also pressure tested to ensure their integrity. These pressure tests

confirm isolation of the disposal zone from possible usable water zones. The oil is transported to storage tanks through flow lines after separation from any water or gas. Storage tanks are usually located on the lease either at the producing well or at a central production facility. The number and size of tanks are dependent upon the type and amount of production on the lease.

ABANDONMENT

When drilling wells are unsuccessful or production wells are no longer useful, the well is plugged, equipment is removed from the well site or production facility site, and the site is abandoned. The well bore is secured by placing cement plugs to isolate hydrocarbon-producing formations from contaminating other mineral or water bearing formations. The site and roads are then restored as near as possible to original contours. Topsoil is replaced and the recontoured areas are seeded. Reclamation of access roads and well sites on privately owned surface is completed according to the surface owner's requirements.

Rehabilitation requirements generally are made a part of the Application for Permit to Drill. Upon completion of abandonment and rehabilitation operations, the lessee or operator notifies the Great Falls Oil and Gas Field Station that the location is ready for inspection. Final abandonment will not be approved until the required surface reclamation work has been completed to the satisfaction of the BLM or surface owner. The period of bond liability for the well site is terminated after approval of final abandonment. Reclamation of the reserve pit is part of the well site reclamation process. Reserve pit reclamation includes removal of fluids to a disposal well or commercial pit and burial of solids in the pit. Solids should not be buried until dry and then covered with a minimum of 6 feet of native soil. Any pit liner may be buried in place. Methods such as solidification or dewatering may be used to help dry the solids.

REGULATIONS, LAWS, AND SPECIAL PROCEDURES

UNIT AND COMMUNITIZATION AGREEMENTS

Unit and communitization agreements can be formed in the interest of conservation and to allow for the orderly development of oil and gas reserves. A unit agreement provides for the recovery of oil and gas from the lands as a single consolidated entity without regard to separate lease ownerships. An exploratory unit is used for the discovery and development of the field in an orderly and efficient manner. Paying and nonpaying well determinations are made for each well drilled. If the well is nonpaying as defined by the agreement, the production is allocated on a lease basis. If the well is a paying unit well, a participating area is formed and the

production is allocated to all interest owners in the participating area based on surface area. A secondary unit is formed after the field has been defined and enhanced recovery techniques are being utilized. Secondary recovery techniques include water injection, natural gas injection, or carbon dioxide injection. Injection is initiated to maintain the reservoir pressure to maintain oil production. The agreement provides for the allocation of production among all the interest owners.

A communitization agreement combines two or more leases (federal, state, or fee) that otherwise could not be independently developed in conformity with established well spacing patterns. The leases within the spacing unit share in the costs and benefits of the well drilled in the spacing unit. Therefore, unit and communitization agreements can lessen the amount of damage to the environment and save dollars by eliminating unnecessary wells, roads, pipelines, and lease equipment.

SPLIT ESTATE

Part of the area included in the planning area contains lands known as split estate lands. These are lands where the surface ownership is different from the mineral ownership. Management of federal oil and gas resources on these lands is somewhat different from management on lands where both surface and mineral ownership is federal. On split estate lands where the surface ownership is private, the BLM places necessary restrictions and requirements on its leases and permit approvals and works in cooperation with the surface owner. BLM has established policies for the management of federal oil and gas resources in accordance with federal laws and regulations.

The BLM does not have the legal authority to regulate how private surface is managed. BLM does have the statutory authority to require measures by lessees to avoid or minimize adverse impacts that may result from federally authorized mineral lease activities. These measures, in the form of lease stipulations or permit conditions of approval, are intended to protect or preserve the privately owned resources and prevent adverse impacts to adjoining lands, not to dictate management to the surface owner. The term split estate can also refer to lands where the surface ownership is federal and the mineral ownership is private. In this situation, BLM is the surface owner, and works in cooperation with the proponent and the state regulatory agency that approves private mineral applications. BLM has responsibilities in this situation under the previously mentioned statutes; however, BLM does not have the authority to approve or disapprove the mineral owner's actions. The mineral estate owner usually has the right to enter the land and use the surface that is necessary and reasonable for mineral development through either a reserved or an outstanding right contained in the deed.

OIL AND GAS STIPULATIONS

RESOURCE: GRIZZLY BEAR – RECOVERY ZONE

Stipulation: No Surface Occupancy. Activity is prohibited within the boundary of the Recovery Zone for Grizzly Bears.

Objective: To preclude surface disturbing activities in the Grizzly Bear Recovery Zone.

Exception: An exception will not be granted while the area is important to grizzly bear recovery or to its conservation following a change in legal status under the Endangered Species Act. Conditions for Exception require that the area is no longer classified as necessary for the recovery of the species.

Modification: This stipulation may be modified if a portion of the area is no longer important to grizzly bear recovery or to its conservation following a change in legal status under the Endangered Species Act. Conditions for Modification require that a portion of the area is no longer classified as necessary for the recovery of the species and is not considered important to its conservation.

Waiver: This stipulation will not be waived while the area is important to grizzly bear recovery or to its conservation following a change in legal status under the Endangered Species Act. Conditions for Waiver require that the area is no longer classified as necessary for the recovery or conservation of the species.

RESOURCE: GRIZZLY BEAR - DISTRIBUTION ZONE

Stipulation: Timing Limitation. Activity is prohibited from April 1 to June 30 and from September 15 – October 15 in the Grizzly Bear Distribution Zone.

Objective: To preclude surface disturbing activities in grizzly bear denning areas which could cause increased stress and/or displacement of animals during critical time periods (April 1 - June 30 and September 15 – October 15).

Exception: An exception may be granted if it is determined that the animals have moved out of and are not using the general area during the particular year.

Modification: A modification of the stipulation may be granted if new habitat studies show that a portion of the area is not used by grizzly bear for denning.

Waiver: A waiver may be granted if new habitat studies in coordination with the Fish and Wildlife Service conclude that the area affected by this stipulation is not critical for grizzly bear denning.

RESOURCE: GRAY WOLF – FORMER NORTHWEST MONTANA RECOVERY AREA ENDANGERED POPULATION

Stipulation: Timing Limitation. Activity is prohibited within a 1 mile buffer around wolf dens or rendezvous sites from April 15 to June 30 in the Northwest Montana Recovery Area. This stipulation would be applied to the Northwest Montana Recovery Area (94,700 acres) but there are no known den or rendezvous sites currently mapped in this area.

Objective: To preclude surface disturbing activities in wolf denning or rendezvous areas in the former Northwest Montana Recovery Area which could cause increased stress and/or displacement of animals during the critical time period (April 15 - June 30).

Exception: An exception may be granted if it is determined that the animals have moved out of and are not using the general area during the particular year.

Modification: A modification of the stipulation may be granted if new habitat studies show that a portion of the area is not used by wolves for denning or for rendezvous sites.

Waiver: A waiver may be granted if new habitat studies in coordination with the Fish and Wildlife Service conclude that the area affected by this stipulation is not critical for wolf denning or for rendezvous sites.

RESOURCE: PRAIRIE DOG TOWNS

Stipulation: No Surface Occupancy. Activity is prohibited within the boundary of any prairie dog town.

Objective: To protect habitat for prairie dog towns.

Exception: An exception to this stipulation may be granted by the authorized officer if the operator submits a plan which demonstrates that impacts from the proposed action are minimal or can be adequately mitigated.

Modification: The boundaries of the stipulated area may be modified if the authorized officer determines that portions of the area can be occupied without adversely affecting prairie dogs.

Waiver: This stipulation may be waived if the authorized officer, in consultation with MFWP and USFWS, determines that the entire leasehold no longer contains prairie dogs.

RESOURCE: SAGE GROUSE WINTER/SPRING RANGE

Stipulation: Timing Limitation. No activity from December 1 through May 15 within winter and spring range for sage grouse. This stipulation does not apply to the operation and maintenance of production facilities unless the findings of analysis demonstrate the continued

need for such mitigation and that less stringent, project-specific mitigation measures would be insufficient.

Objective: To protect sage grouse winter range from disturbance during the winter/spring season, and to facilitate long-term maintenance of wildlife populations.

Exception: An exception to this stipulation may be granted by the authorized officer in consultation with MFWP and the USFWS, if the operator submits a plan that demonstrates that impacts from the proposed action are minimal or can be adequately mitigated.

Modification: The boundaries of the stipulated area may be modified if the authorized officer determines that portions of the area no longer contain sage grouse winter/spring range. The dates for the timing restriction may be modified if new information indicates that the December 1 through May 15 dates are not valid for the leasehold.

Waiver: This stipulation may be waived if the authorized officer determines that the entire leasehold no longer contains sage grouse winter/spring range, or if in coordination with MFWP and the USFWS, determines that the area is not critical for sage grouse.

RESOURCE: SAGE GROUSE STRUTTING GROUNDS (LEKS)

Stipulation: No Surface Occupancy. Activity is prohibited within 1/4 mile of sage grouse leks.

Objective: To protect sage grouse strutting grounds and leks to maintain regional sage grouse populations.

Exception: An exception to this stipulated area may be modified if the authorized officer determines that portions of the area can be occupied without adversely affecting sage grouse leks.

Modification: The boundaries of the stipulated area may be modified if the authorized officer determines that portions of the area can be occupied without adversely affecting sage grouse leks.

Waiver: The stipulation may be waived if the authorized officer, in consultation with MFWP, determines that the entire leasehold can be occupied without adversely affecting sage grouse leks.

RESOURCE: SAGE GROUSE BREEDING HABITAT

Stipulation: Timing Limitation. Activity is restricted from March 1 through June 30 in nesting and early brood rearing habitat (defined as within three miles of leks). This stipulation does not apply to the operation and maintenance of production facilities unless the findings of analysis demonstrate the continued need for such mitigation and that less stringent, project-specific mitigation measures would be insufficient.

Objective: To protect sage grouse leks and breeding habitat necessary for long-term maintenance of regional sage grouse populations.

Exception: An exception to this stipulation may be granted by the authorized officer if the operator submits a plan that demonstrates that impacts from the proposed action are minimal or can be adequately mitigated.

Modification: The boundaries of the stipulated area may be modified if the authorized officer determines that portions of the area can be occupied without adversely affecting sage grouse leks.

Waiver: This stipulation may be waived if the authorized officer, in consultation with MFWP and the USFWS, determines that the entire leasehold can be occupied without adversely affecting sage grouse leks or the surrounding breeding habitat.

RESOURCE: WILDLIFE MANAGEMENT AREAS

Stipulation: No Surface Occupancy. Activity is prohibited within the boundary of Wildlife Management Areas administered by Montana Department of Fish, Wildlife, and Parks (MFWP).

Objective: To protect MFWP elk winter range necessary for long-term maintenance of regional elk populations and other wildlife values.

Exception: None.

Modification: None.

Waiver: None.

RESOURCE: BIG GAME WINTER/SPRING RANGE

Stipulation: Timing Limitation. No activity from December 1 through May 15 within winter range for wildlife. This stipulation does not apply to the operation and maintenance of production facilities unless the findings of analysis demonstrate the continued need for such mitigation and that less stringent, project-specific mitigation measures would be insufficient.

Objective: To protect mule deer, elk, antelope, and moose winter/spring range from disturbance during the winter/spring season, and to facilitate long-term maintenance of wildlife populations.

Exception: An exception to this stipulation may be granted by the authorized officer in consultation with MFWP, if the operator submits a plan that demonstrates that impacts from the proposed action are minimal or can be adequately mitigated.

Modification: The boundaries of the stipulated area may be modified if the authorized officer, in consultation with MFWP, determines that portions of the area no longer contain wildlife winter/spring range. The

dates for the timing restriction may be modified if new wildlife use information indicates that the December 1 through May 15 dates are not valid for the leasehold.

Waiver: This stipulation may be waived if the authorized officer, in consultation with MFWP, determines that the entire leasehold no longer contains winter/spring range for wildlife.

RESOURCE: ELK CALVING/BIG GAME BIRTHING AREAS

Stipulation: Timing Limitation. Activity is prohibited from April 1 through June 30 in big game birthing areas. This stipulation does not apply to the operation and maintenance of production facilities unless the findings of analysis demonstrate the continued need for such mitigation and that less stringent, project-specific mitigation measures would be insufficient.

Objective: To protect mule deer, elk, antelope, and moose birthing areas from disturbance and facilitate long-term maintenance of wildlife populations.

Exception: An exception to this stipulation may be granted by the authorized officer if the operator submits a plan that demonstrates that impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: The boundaries of the stipulated area may be modified if the authorized officer determines that portions of the area no longer contain birthing habitat for big game species. The dates for the timing restriction may be modified if new wildlife use information indicates that the dates are not valid for the leasehold.

Waiver: This stipulation may be waived if the authorized officer, in consultation with MFWP, determines that the entire leasehold no longer contains big game birthing areas.

RESOURCE: BIGHORN SHEEP YEARLONG RANGE

Stipulation: Timing Limitation. Activity is prohibited from November 1 through June 30 in bighorn rutting, winter and lambing habitat. This stipulation does not apply to the operation and maintenance of production facilities unless the findings of analysis demonstrate the continued need for such mitigation and that less stringent, project-specific mitigation measures would be insufficient.

Objective: To protect bighorn rutting, winter and lambing habitat from disturbance and facilitate long-term maintenance of bighorn sheep populations.

Exception: An exception to this stipulation may be granted by the authorized officer if the operator submits a plan that demonstrates that impacts from the proposed action are minimal or can be adequately mitigated.

Modification: The boundaries of the stipulated area may be modified if the authorized officer determines that portions of the area no longer contain rutting, winter, and lambing habitat for bighorn sheep. The dates for the timing restriction may be modified if new wildlife use information indicates that the dates are not valid for the leasehold.

Waiver: This stipulation may be waived if the authorized officer, in consultation with MFWP, determines that the entire leasehold no longer contains bighorn sheep rutting, winter or lambing areas.

RESOURCE: BIGHORN SHEEP CORE AREAS

Stipulation: No Surface Occupancy. Activity is prohibited within the bighorn sheep core areas.

Objective: To protect bighorn sheep yearlong habitat necessary for long-term maintenance of bighorn sheep populations.

Exception: An exception to this stipulation may be granted by the authorized officer, in consultation with MFWP, if the operator submits a plan which demonstrates that impacts from the proposed action are minimal or can be adequately mitigated.

Modification: The boundaries of the stipulated area may be modified if the authorized officer, in consultation with MFWP, determines that portions of the bighorn sheep core areas can be occupied without adversely affecting bighorn sheep use.

Waiver: This stipulation may be waived if the authorized officer, in consultation with MFWP, determines that the entire leasehold can be occupied without adversely affecting bighorn sheep core areas.

RESOURCE: BALD EAGLE NEST SITES/BREEDING HABITAT

Stipulation: No Surface Occupancy. Activity is prohibited within 1/2 mile of bald eagle nest sites and within bald eagle nesting habitat in riparian areas.

Objective: To protect bald eagle nesting sites and/or breeding habitat in accordance with the Montana Bald Eagle Management Plan.

Exception: An exception may be granted by the authorized officer if the operator submits a plan which demonstrates that the proposed action will not affect the bald eagle or its habitat. If the authorized officer determines that the action may have an adverse affect, the operator may submit a plan demonstrating that the impacts can be adequately mitigated. This plan must be approved by BLM in consultation with the USFWS.

Modification: The boundaries of the stipulated area may be modified if the authorized officer, in consultation with USFWS, determines that the area can

be occupied without adversely affecting bald eagle nest sites or nesting habitats.

Waiver: This stipulation may be waived if the authorized officer, in consultation with USFWS, determines that the entire leasehold can be occupied without adversely affecting bald eagle nest sites or nesting habitat.

RESOURCE: BALD EAGLE NEST SITES/BREEDING HABITAT

Stipulation: Timing Limitation. No activity is allowed from February 1 through August 31 in a one mile radius around bald eagle nest sites. This stipulation does not apply to the operation and maintenance of production facilities unless the findings of analysis demonstrate the continued need for such mitigation and that less stringent, project-specific mitigation measures would be insufficient.

Objective: To protect bald eagle nesting site and/or breeding habitat in accordance with the Montana Bald Eagle Management Plan.

Exception: An exception may be granted by the authorized officer if the operator submits a plan which demonstrates that the proposed action will not affect the bald eagle or its habitat. If the authorized officer determines that the action may have an adverse affect, the operator may submit a plan demonstrating that the impacts can be adequately mitigated. This plan must be approved by BLM in consultation with the USFWS.

Modification: A modification may be granted if new habitat studies show that a portion of the area is not used by eagles.

Waiver: This stipulation may be waived if the authorized officer, in consultation with USFWS, determines that the entire leasehold can be occupied without adversely affecting bald eagle nest sites or nesting habitat.

RESOURCE: RAPTOR BREEDING TERRITORIES (GOLDEN EAGLE, PRAIRIE FALCON, SWAINSON'S HAWK)

Stipulation: Timing Limitation. No activity from March 1 through July 31, within 1/2 mile of raptor nest sites which have been active within the past five years. This stipulation does not apply to the operation and maintenance of production facilities unless the findings of analysis demonstrate the continued need for such mitigation and that less stringent, project-specific mitigation measures would be insufficient.

Objective: To protect reproductive potential of breeding habitat for special status raptors.

Exception: An exception to this stipulation may be granted by the authorized officer if the operator submits

a plan that demonstrates the impacts from the proposed action are minimal or can be adequately mitigated.

Modification: The boundaries of the stipulated area may be modified if the authorized officer determines that portions of the area no longer are within 1/2 mile of raptor nest sites. The dates for the timing restriction may be modified if new information indicates that the dates are not valid for the leasehold.

Waiver: This stipulation may be waived if the authorized officer determines that the entire leasehold no longer is within 1/2 mile of nest sites.

RESOURCE: PEREGRINE FALCON NEST SITES/BREEDING HABITAT

Stipulation: No Surface Occupancy. Activity is prohibited within one mile of peregrine falcon nest sites.

Objective: To protect peregrine falcon nesting sites and/or breeding habitat.

Exception: An exception may be granted by the authorized officer if the operator submits a plan that demonstrates that the proposed action will not affect the peregrine falcon or its habitat. If the authorized officer determines that the action may have an adverse affect, the operator may submit a plan demonstrating that the impacts can be adequately mitigated. This plan must be approved by BLM in consultation with USFWS.

Modification: The boundaries of the stipulated area may be modified if the authorized officer, in consultation with USFWS, determines that portions of the area can be occupied without adversely affecting peregrine falcon nest sites or breeding habitat.

Waiver: This stipulation may be waived if the authorized officer, in consultation with USFWS, determines that the entire leasehold can be occupied without adversely affecting peregrine falcon nest sites or breeding habitat.

RESOURCE: FERRUGINOUS HAWK BREEDING TERRITORIES

Stipulation: No Surface Occupancy. Activity is prohibited within 1/2 mile of ferruginous hawk nest sites that have been active within the past 5 years.

Objective: To maintain the reproductive potential of ferruginous hawk nest sites.

Exception: An exception to this stipulation may be granted by the authorized officer if the operator submits a plan that demonstrated that the impacts from the proposed action are minimal or can be adequately mitigated.

Modification: The boundaries of the stipulated area may be modified if the authorized officer determines that portions of the area can be occupied without

adversely affecting the production potential of ferruginous hawk nest sites.

Waiver: This stipulation may be waived if the authorized officer determines that the entire leasehold can be occupied without adversely affecting the production potential of ferruginous hawk nest sites.

RESOURCE: THREATENED, ENDANGERED, AND SPECIAL STATUS SPECIES

Stipulation: Controlled Surface Use. The lease area may now or hereafter contain plants, animals, or their habitats determined to be threatened, endangered, or other special status species. BLM may recommend modifications to exploration and development proposals to further its conservation and management objective to avoid BLM-approved activity that will contribute to a need to list such a species or their habitat. BLM may require modifications to or disapprove proposed activity that is likely to result in jeopardy to the continued existence of a proposed or listed threatened or endangered species or result in the destruction or adverse modification of a designated or proposed critical habitat. BLM will not approve any ground-disturbing activity that may affect any such species or requirements of the Endangered Species Act as amended, 16 U.S.C. § 1531 et seq., including completion of any required procedure for conference or consultation.

Objective: Avoid BLM-approved activity that will contribute to a need to list a species or their habitat as threatened or endangered.

Exception: None.

Modification: None.

Waiver: None.

RESOURCE: WESTSLOPE CUTTHROAT TROUT HABITAT (90-99% PURE)

Stipulation: No Surface Occupancy. No activity allowed within 1/2 mile from centerline of stream containing known populations of 90-99% genetically pure westslope cutthroat trout.

Objective: To ensure healthy aquatic habitat exists in drainages important to the viability of Upper Missouri River and Columbia River Basins Westslope Cutthroat Trout.

Exception: An exception may be granted after a site assessment is conducted and if the operator can demonstrate in a surface use plan of operations that adverse effects can be eliminated and activities would not affect sensitive trout populations. Apply the following mitigation measures:

- a) No net increase in sediment over existing condition.

b) No adverse effects on water quality and quantity.

Modification: None.

Waiver: A waiver may be granted if the MFWP determines the stream is no longer considered important to the viability of the species.

RESOURCE: WESTSLOPE CUTTHROAT TROUT HABITAT (99-100% PURE)

Stipulation: No Surface Occupancy. No activity allowed within 1/2 mile from centerline of stream containing known populations of 99-100% genetically pure westslope cutthroat trout.

Objective: To prevent sensitive aquatic habitat and trout populations from being impacted.

Exception: An exemption may be granted after a site assessment is conducted and if the operator can demonstrate in a surface use plan of operations that adverse effects can be eliminated and activities would not affect sensitive trout populations. Apply the following mitigation measures:

- a) No net increase in sediment over existing condition.
- b) No adverse effects on water quality and quantity.

Modifications: None

Waiver: A waiver may be granted if the MFWP determines the stream is no longer considered important to the viability of the species.

RESOURCE: FLUVIAL AND ADFLUVIAL ARCTIC GRAYLING HABITAT

Stipulation: No Surface Occupancy. No activity allowed within 1/2 mile from centerline of stream containing known populations of Arctic grayling.

Objective: To ensure healthy aquatic habitat exists along rivers and tributaries important to the viability of fluvial and adfluvial Arctic grayling.

Exception: An exception may be granted after a site assessment is conducted and if the operator can demonstrate in a surface use plan of operations that adverse effects can be eliminated and activities would not affect sensitive Arctic grayling populations. The following mitigation measures would apply:

- a) No net increase in sediment over existing condition.
- b) No adverse effects on water quality or quantity.

Modification: None.

Waiver: A waiver may be granted if the MFWP and the USFWS determines the stream is no longer considered important to the viability of the species.

RESOURCE: BULL TROUT

Stipulation: No Surface Occupancy. No activity allowed within 1/2 mile from centerline of streams containing known populations of bull trout.

Objective: To ensure healthy aquatic habitat exists in drainages important to the viability of bull trout.

Exception: An exception may be granted after a site assessment is conducted and if the operator can demonstrate in a surface use plan of operations that adverse effects can be eliminated and activities would not affect sensitive trout populations. Apply the following mitigation measures:

- a) No net increase in sediment over existing condition.
- b) No adverse effects on water quality and quantity.

Modification: None.

Waiver: A waiver may be granted if the MFWP and the USFWS determines the stream is no longer considered important to the viability of the species.

RESOURCE: YELLOWSTONE CUTTHROAT (90-100% PURE)

Stipulation: No Surface Occupancy. No activity allowed within 1/2 mile from centerline of streams containing known populations of 90-100% genetically pure Yellowstone cutthroat trout.

Objective: To ensure healthy aquatic habitat exists in drainages important to the viability of Yellowstone Cutthroat.

Exception: An exception may be granted after a site assessment is conducted and if the operator can demonstrate in a surface use plan of operations that adverse effects can be eliminated and activities would not affect sensitive trout populations. The following mitigation measures would apply:

- a) No net increase in sediment over existing condition.
- b) No adverse effects on water quality and quantity.

Modification: None

Waiver: A waiver may be granted if the MFWP and the USFWS determines the stream is no longer considered important to the viability of the species.

RESOURCE: STREAMS WITH HIGH RESTORATION POTENTIAL FOR NATIVE FISH

Stipulation: No Surface Occupancy. No activity allowed within 1/2 mile from centerline of streams that are identified by the BLM as having high restoration potential for westslope cutthroat trout, Yellowstone cutthroat trout, Arctic grayling and/or bull trout.

Objective: To ensure healthy aquatic and riparian habitats are maintained in and along streams with the potential for native fish re-introductions and restoration.

Exception: An exception may be granted after a site assessment is conducted and if the operator can demonstrate in a surface use plan of operations that adverse effects can be eliminated and activities would not affect potential habitat for native fish populations or degrade suitable habitat for native fish restoration/re-introduction. The following mitigation measures would apply:

- a) No net increase in sediment over existing condition.
- b) No adverse effects on water quality and quantity.

Modification: None.

Waiver: None.

RESOURCE: CLASS 1 FISHERIES

Stipulation: No Surface Occupancy. No activity allowed within ½ mile from centerline of Class 1 fishery streams (Blue Ribbon trout streams).

Objective: To ensure healthy aquatic habitat are maintained along Class 1 fisheries.

Exception: An exception may be granted if MFWP modifies the Class 1 fisheries rating. Application of the following mitigation measures apply:

- a) No net increase in sediment over existing condition.
- b) No adverse effects on water quality and quantity.

Modification: None.

Waiver: None.

RESOURCE: DEVELOPED RECREATION SITES

Stipulation: No Surface Occupancy. Surface occupancy and use is prohibited within ¼ mile of developed recreation sites, regardless of administering agency. Currently there are 49 developed BLM recreation sites: Beartooth Landing Rec Site, Bryant Creek Rec Site, Buffalo Hump Rec Site, Carbella Rec Site, Clark's Bay Rec Site, Crimson Bluff Rec Site, Crow Creek Rec Site, Departure Point Rec Site, Devil's Elbow Rec Site, Dickie Bridge Rec Site, Divide Bridge Campground, Divide Bridge Day Use, East Bank Rec Site, Four Corners OHV Trailhead, French Bar Rec Site, Galena Gulch Rec Site, Headlane Trailhead, Holter Lake Dam Rec Site, Holter Lake Rec Site, Jerry Creek Br Fishing Access, John G Mine Trailhead, Log Gulch Rec Site, Lombard Historical, Lower Toston Rec Site, Maiden Rock East, McMaster Hill East Trailhead, McMaster Hill West Trailhead, Moose Creek Trailhead, Ohio Gulch OHV Trailhead, Pintlar Creek Rec Site, Pipestone OHV Rec Site, Radersburg OHV Trailhead, Ringing Rocks Rec Site, Sawlog Creek Rec Site,

Sawmill Gulch Trailhead, Sheep Camp Rec Site, Sheep Mountain Trailhead, Sleeping Giant Trailhead, Spokane Bay Rec Site, Spokane Bay Trailhead, Spokane Hills South, Titan Gulch Rec Site, Toston Dam Rec Site, Tumbleweed Lane Trailhead, Two Camps Vista, Ward Ranch Historical Site, Whiskey Gulch Trailhead, White Sandy Campground, Woodsiding Trailhead

Objective: To recognize and protect the public's opportunity for quality recreation experiences at those sites developed for that purpose. Since BLM recreation sites are generally developed to support the use of the surrounding lands, the ¼ mile buffer offers some protection for perpetuating those opportunities for which the site was developed, as well as protecting capital investments at the site.

Exception: An exception may be granted if a site is moved or eliminated.

Modification: The list of developed recreation sites may be modified if development is removed, or if a currently undeveloped site is developed in the future.

Waiver: A waiver may be granted if a site is moved or eliminated.

RESOURCE: SPECIAL RECREATION MANAGEMENT AREAS (SRMAS)

Stipulation: Controlled Surface Use. Operations within SRMAs must be conducted within a manner that minimizes encounters and conflicts with recreation users. Proposed activities may not alter or depreciate important recreational values located within the SRMA boundary. This would apply to the following Special Recreation Management Areas for this alternative: Holter Lake/Missouri River, Sleeping Giant, Hauser Lake/Lower Missouri River, Toston Reservoir/Missouri River, Scratchgravel Hills, Sheep Mountain, Pipestone, Upper Big Hole River, and Humbug Spires.

Objective: To prevent user conflicts and incompatible uses in areas with high recreational values and significant amounts of recreational activity.

Exception: An exception to this stipulation may be granted by the authorized officer if the operator submits a plan demonstrating the impacts to recreation values and recreation users are acceptable or can be adequately mitigated.

Modification: The area affected by this stipulation may be modified by the authorized officer if the boundaries of the SRMA are changed.

Waiver: None.

RESOURCE: CULTURAL AND PALEONTOLOGICAL RESOURCES

Stipulation: Controlled Surface Use. An inventory of the leased lands may be required prior to surface

disturbance to determine if cultural resources or paleontological localities are present and to identify needed mitigation measures. Prior to undertaking any surface-disturbing activities on the lands covered by this lease, the lessee or operator shall:

- 1) Contact the Surface Management Agency (SMA) to determine if a cultural or paleontological resource inventory is required. If an inventory is required, then:
- 2) The SMA will complete the required inventory; or the lessee or operator, at their option, may engage the services of a cultural resource consultant acceptable to the SMA to conduct an inventory of the area of proposed surface disturbance. The operator may elect to inventory an area larger than the planned disturbance to cover possible site relocation, or for planning purposes.
- 3) Implement mitigation measures required by the SMA. Mitigation may include relocation of proposed lease-related activities or other protective measures such as data recovery and/or extensive recordation.
- 4) The SMA will consult with Native American tribes as per IM 2005 – 003.

The lessee or operator is required to bring to the attention of the field office manager any cultural resources or other objects of scientific interest discovered as a result of approved operations under the lease, and shall leave all discoveries intact and undisturbed until directed to proceed by the field office manager (16 U.S.C. 470).

Objective: Compliance with Section 106 of the National Historic Preservation Act is required for all actions which may affect cultural resources eligible for nomination to the National Register of Historic Places. Section 6 of the Oil and Gas Lease Terms (Form 3100-11) requires that operations be conducted in a manner that minimizes adverse impacts to cultural and other resources.

Exception: None.

Modification: None.

Waiver: None.

RESOURCE: NATIONAL REGISTER OF HISTORIC PROPERTIES ELIGIBLE PROPERTIES/DISTRICTS

Stipulation: No Surface Occupancy: Activity is prohibited within 300 ft. of site boundaries and/or districts eligible for, or listed on the National Register of Historic Places. There is one known district, the Indian Creek Historic Mining District (134 acres).

Objective: To avoid disturbance to and protect, significant properties, districts, and their setting.

Exception: An exception to this stipulation may be granted by the authorized officer if the lessee or operator submits a plan which demonstrates that the adverse impacts to cultural properties can be mitigated through data recovery and/or extensive recordation. Where impacts to cultural resources cannot be mitigated to the satisfaction of the Surface Management Agency, surface occupancy in that area must be prohibited.

Modification: No modification will be granted.

Waiver: No waiver will be granted.

RESOURCE: TRADITIONAL CULTURAL PROPERTIES

Stipulation: No Surface Occupancy: Activity is prohibited within ½ mile, or line-of-site of the identified Traditional Cultural Property (TCP), whichever criterion protects the viewshed of that property.

Objective: To avoid disturbance and protect cultural properties determined to be of particular importance to Native American Groups, determined to be Traditional Cultural Properties, and/or designated to be for traditional use.

Exception: An exception to this stipulation may be granted by the authorized officer if the Indian community no longer attaches those traditional values to the lease area.

Modification: No modification will be granted.

Waiver: No waiver will be granted.

RESOURCE: VRM CLASS II, III & IV AREAS

Stipulation: Controlled Surface Use. All surface disturbing activities and construction of semi-permanent and permanent facilities may require special design including location, painting, and camouflage to blend with the natural surroundings and meet the visual quality objectives for each respective class.

Objective: To control the visual impacts of activities and facilities within acceptable levels.

Exception: None.

Modification: None.

Waiver: None.

RESOURCE: WETLANDS, FLOODPLAINS, RIPARIAN AREAS, AND WATER QUALITY

Stipulation: No Surface Occupancy. Activity is prohibited within wetlands, floodplains, and riparian areas.

Objective: To maintain riparian/wetland functions and water quality.

Exception: An exception to this stipulation may be granted by the authorized officer if the operator submits a plan that demonstrates that impacts from the proposed action are minimal or can be adequately mitigated.

Modification: None.

Waiver: None.

RESOURCE: SPECIAL STATUS PLANT HABITATS

Stipulation: Controlled Surface Use. A field inspection will be conducted for special status plant species by the lessee prior to any surface disturbance. A list of special status plant species will be provided to the lessee at the time of the lease. Plant Species on the list are subject to change over time as new information becomes available. Plant inventories must be conducted at a time of year when the target species are identifiable. A report must be provided to the BLM documenting the presence or absence of special status plants in the area proposed for surface disturbance. The findings of this report may result in restrictions to the operator's plans or may preclude use and occupancy.

Objective: Protect and conserve rare plants, associated plant communities and the habitat that supports them.

Exception: An exception may be granted if BLM determines that the portion of the lease identified for surface disturbing activities does not support special status plant species or provide potential habitat for these species.

Modification: The boundaries of the area to be inventoried for special status plants may be modified if BLM determines that a large portion of the lease identified for surface disturbing activities doesn't support special status plant species or provide potential habitat for these species.

Waiver: The field inspection and plant inventory may be waived by the authorized if he/she determines that the subject lease occurs in an area with no known populations of special status plant species and that the area doesn't provide habitat for those species.

RESOURCE: KNOWN OR DISCOVERED SPECIAL STATUS PLANTS OR POPULATIONS

Stipulation: No Surface Occupancy. Surface occupancy and use is prohibited within 1/4 mile of special status plant species.

Objective: Protect and conserve rare plants, associated plant communities and the habitat that supports them.

Exception: None.

Modification: The boundaries of the no surface occupancy area may be modified if BLM determines

that land within 1/4 mile of the special status plant population does not provide potential habitat for these species.

Waiver: None.

RESOURCE: MUNICIPAL WATERSHEDS

Stipulation: No Surface Occupancy. Surface occupancy would be prohibited in the following municipal watersheds: Missouri River Siphon, Tenmile Creek Drainage, Big Hole River Intake, and Moulton Reservoir.

Objective: To protect drinking water for Municipalities within the Butte Field Office.

Exception: If the lessee can demonstrate that operations can occur on the lease without causing negative impacts to water quality at the intakes, an exception may be granted, if approved in writing by the authorized officer in consultation with the Field Office watershed specialist and the communities of Butte and Helena.

Modification: The boundaries of the stipulated area may be modified if the authorized officer determines that portions of the area can be occupied and operations will not cause water quality at intakes to fail to meet drinking water standards established by Montana Department of Environmental Quality (MDEQ).

Waiver: None

RESOURCE: AREAS OR ACTIVE MASS WASTING, UNSTABLE LAND AREAS, SLOPES >30% ON NON-BOULDER BATHOLITH SOILS OR SLOPES >20% ON BOULDER BATHOLITH SOILS

Stipulation: Controlled Surface Use. Prior to surface disturbance on areas of active mass wasting, unstable land areas, or slopes greater than 30 on non-Boulder Batholith soils or 20 percent on Boulder Batholith soils, an engineering/reclamation plan must be approved by the authorized officer. Such plan must demonstrate how the following will be accomplished:

- Site productivity will be restored.
- Surface runoff will be adequately controlled.
- Off-site areas will be protected from accelerated soil erosion.
- Surface disturbing activities will not conducted during wet periods.

Objective: To maintain soil productivity and provide necessary protection to prevent excessive soil erosion on steep slopes.

Exceptions: An exception may be granted if the operator can demonstrate in a plan of operations that

adverse effects can be minimized and activities safely conducted.

Modifications: The area affected by this stipulation may be modified by the authorized officer if it is determined that portions of area do not include slopes over 30 percent on non-Boulder Batholith soils or 20 percent on Boulder Batholith, or the operator can demonstrate in a plan of operations that adverse effects can be minimized.

Waiver: This stipulation may be waived by the authorized officer if it is determined that none of the leasehold contains slopes greater than 30 percent on non-Boulder Batholith soils or 20 percent on Boulder Batholith soils.

RESOURCE: CONTINENTAL DIVIDE NATIONAL SCENIC TRAIL (MARYSVILLE)

Stipulation: No Surface Occupancy. Surface occupancy and use is prohibited within 1/2 mile of the Continental Divide National Scenic Trail.

Objective: To preserve and protect the existing scenic character of the landscape along the trail.

Exception: May be granted if this portion of the trail is relocated or if operator submits a plan that demonstrates that impacts to the area and the user experiences can be mitigated.

Modification: Modification may be granted should the trail be relocated or impacts of the action will not be noticed by users of the trail.

Waiver: May be granted if trail is moved from current location.

RESOURCE: DESIGNATED NATIONAL HISTORIC TRAILS – LEWIS AND CLARK TRAIL

Stipulation: No Surface Occupancy. Surface occupancy and use is prohibited within 1/2 mile of designated National Historic Trail.

Objective: To preserve and protect designated National Historic Trails and the natural setting in which they occur.

Exception: No exceptions will be granted unless the operator demonstrates through a submitted plan that impacts to the area and its users can be mitigated.

Modification: No modifications will be granted unless impacts of the action will not be apparent to user along the trail.

Waiver: May be granted if impacts can be mitigated so that area values and user experiences are not negatively affected.

RESOURCE: RIVERS SUITABLE FOR WILD AND SCENIC RIVER DESIGNATION

Stipulation: No Surface Occupancy. Surface occupancy would be prohibited within ½ mile either side of the active river channel. This would apply to the following river segment lengths: 3.1 miles of the upper Missouri River and 2.6 miles of Muskrat Creek.

Objective: To protect river corridors and their Outstandingly Remarkable Values considered suitable for inclusion in the National Wild and Scenic Rivers system and the associated outstandingly remarkable values.

Exception: None.

Modification: None.

Waiver: None.

RESOURCE: RECREATION AND PUBLIC PURPOSES ACT LEASES AND PATENTS, AND 2920 AUTHORIZATIONS

Stipulation: No Surface Occupancy (NSO). Surface Occupancy and use is prohibited on Recreation & Public Purposes leases and patents and on leases and permits authorized under regulations found at 43 CFR 2920.

Objective: To protect developed facilities and commercial, recreational, and public uses and prevent incompatible uses on existing authorized areas.

Exception: An exception to this stipulation may be granted by the authorized officer if the operator submits a plan demonstrating that impacts from the proposed action are acceptable or can be adequately mitigated in coordination with the holder of the land use authorization.

Modification: The area affected by this stipulation may be modified by the authorized officer if land use authorization boundaries are modified.

Waiver: This stipulation may be waived by the authorized officer if land use authorization boundaries are modified.

RESOURCE: LANDS ACQUIRED WITH LAND AND WATER CONSERVATION FUNDS (LWCF)

Stipulation: No Surface Occupancy. Surface occupancy would be prohibited on lands acquired with Land and Water Conservation Funds (approximately 7,677 acres as of the approval date of this RMP).

Objective: To protect surface values on lands acquired with LWCF funds. These lands are traditionally acquired

for the purpose of protecting and managing for wildlife habitat or watershed values.

Exception: None.

Modification: None.

Waiver: None.

- Form 3100-11: Offer to Lease and Lease for Oil and Gas
- Form 3109-1: Lease Stipulations, Bureau of Reclamation
- Form GP-135: Special Stipulation, Bureau of Reclamation

ADDITIONAL INFORMATION

The following forms are enclosed below.

Form 3100-11
(July 2006)UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Serial Number _____

OFFER TO LEASE AND LEASE FOR OIL AND GAS

The undersigned (page 2) offers to lease all or any of the lands in Item 2 that are available for lease pursuant to the Mineral Lands Leasing Act of 1920, as amended and supplemented (30 U.S.C. 181 et seq.), the Mineral Leasing Act for Acquired Lands of 1947, as amended (30 U.S.C. 351-359), or _____ (other).

READ INSTRUCTIONS BEFORE COMPLETING

1. Name

Street

City, State, Zip Code

2. This application/offer/lease is for: (Check Only One) ☐ PUBLIC DOMAIN LANDS ☐ ACQUIRED LANDS (percent U.S. interest _____)

Surface managing agency if other than Bureau of Land Management (BLM): _____ Unit/Project _____

Legal description of land requested: *Parcel No.: _____ *Sale Date (mm/dd/yyyy): _____

***See Item 2 in Instructions below prior to completing Parcel Number and Sale Date.**

T. _____ R. _____ Meridian _____ State _____ County _____

Amount remitted: Filing fee \$ _____ Rental fee \$ _____ Total acres applied for _____
Total \$ _____

DO NOT WRITE BELOW THIS LINE

3. Land included in lease:

T. _____ R. _____ Meridian _____ State _____ County _____

Total acres in lease _____

Rental retained \$ _____

This lease is issued granting the exclusive right to drill for, mine, extract, remove and dispose of all the oil and gas (except helium) in the lands described in Item 3 together with the right to build and maintain necessary improvements thereupon for the term indicated below, subject to renewal or extension in accordance with the appropriate leasing authority. Rights granted are subject to applicable laws, the terms, conditions, and attached stipulations of this lease, the Secretary of the Interior's regulations and formal orders in effect as of lease issuance, and to regulations and formal orders hereafter promulgated when not inconsistent with lease rights granted or specific provisions of this lease.

NOTE: This lease is issued to the high bidder pursuant to his/her duly executed bid or nomination form submitted under 43 CFR 3120 and is subject to the provisions of that bid or nomination and those specified on this form.

Type and primary term:

THE UNITED STATES OF AMERICA

☐ Noncompetitive lease (ten years)by _____
(BLM)☐ Competitive lease (ten years)

(Title)

(Date)

☐ Other _____ EFFECTIVE DATE OF LEASE _____

(Continued on page 2)

4. (a) Undersigned certifies that (1) offeror is a citizen of the United States; an association of such citizens; a municipality; or a corporation organized under the laws of the United States or of any State or Territory thereof, (2) all parties holding an interest in the offer are in compliance with 43 CFR 3100 and the leasing authorities; (3) offeror's chargeable interests, direct and indirect, in each public domain and acquired lands separately in the same State, do not exceed 246,080 acres in oil and gas leases (of which up to 200,000 acres may be in oil and gas options or 300,000 acres in leases in each leasing District in Alaska of which up to 200,000 acres may be in options, (4) offeror is not considered a minor under the laws of the State in which the lands covered by this offer are located; (5) offeror is in compliance with qualifications concerning Federal coal lease holdings provided in sec. 2(a)(2)(A) of the Mineral Leasing Act; (6) offeror is in compliance with reclamation requirements for all Federal oil and gas lease holdings as required by sec. 17(g) of the Mineral Leasing Act; and (7) offeror is not in violation of sec. 41 of the Act. (b) Undersigned agrees that signature to this offer constitutes acceptance of this lease, including all terms conditions, and stipulations of which offeror has been given notice, and any amendment or separate lease that may include any land described in this offer open to leasing at the time this offer was filed but omitted for any reason from this lease. The offeror further agrees that this offer cannot be withdrawn, either in whole or in part unless the withdrawal is received by the proper BLM State Office before this lease, an amendment to this lease, or a separate lease, whichever covers the land described in the withdrawal, has been signed on behalf of the United States.

This offer will be rejected and will afford offeror no priority if it is not properly completed and executed in accordance with the regulations, or if it is not accompanied by the required payments.

Duly executed this _____ day of _____, 20 _____
(Signature of Lessee or Attorney-in-fact)

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212 make it a crime for any person knowingly and willfully to make to any department or Agency of the United States any false, fictitious, or fraudulent statements or representations as to any matter within its jurisdiction.

LEASE TERMS

Sec. 1. Rentals--Rentals must be paid to proper office of lessor in advance of each lease year. Annual rental rates per acre or fraction thereof are:

- (a) Noncompetitive lease, \$1.50 for the first 5 years; thereafter \$2.00;
- (b) Competitive lease, \$1.50; for the first 5 years; thereafter \$2.00;
- (c) Other, see attachment, or

as specified in regulations at the time this lease is issued.

If this lease or a portion thereof is committed to an approved cooperative or unit plan which includes a well capable of producing leased resources, and the plan contains a provision for allocation of production, royalties must be paid on the production allocated to this lease. However, annual rentals must continue to be due at the rate specified in (a), (b), or (c) rentals for those lands not within a participating area.

Failure to pay annual rental, if due, on or before the anniversary date of this lease (or next official working day if office is closed) must automatically terminate this lease by operation of law. Rentals may be waived, reduced, or suspended by the Secretary upon a sufficient showing by lessee.

Sec. 2. Royalties--Royalties must be paid to proper office of lessor. Royalties must be computed in accordance with regulations on production removed or sold. Royalty rates are:

- (a) Noncompetitive lease, 12 1/2%;
- (b) Competitive lease, 12 1/2 %;
- (c) Other, see attachment; or

as specified in regulations at the time this lease is issued.

Lessor reserves the right to specify whether royalty is to be paid in value or in kind, and the right to establish reasonable minimum values on products after giving lessee notice and an opportunity to be heard. When paid in value, royalties must be due and payable on the last day of the month following the month in which production occurred. When paid in kind, production must be delivered, unless otherwise agreed to by lessor, in merchantable condition on the premises where produced without cost to lessor. Lessee must not be required to hold such production in storage beyond the last day of the month following the month in which production occurred, nor must lessee be held liable for loss or destruction of royalty oil or other products in storage from causes beyond the reasonable control of lessee.

Minimum royalty in lieu of rental of not less than the rental which otherwise would be required for that lease year must be payable at the end of each lease year beginning on or after a discovery in paying quantities. This minimum royalty may be waived, suspended, or reduced, and the above royalty rates may be reduced, for all or portions of this lease if the Secretary determines that such action is necessary to encourage the greatest ultimate recovery of the leased resources, or is otherwise justified.

An interest charge will be assessed on late royalty payments or underpayments in accordance with the Federal Oil and Gas Royalty Management Act of 1982 (FOGRMA) (30 U.S.C. 1701). Lessee must be liable for royalty payments on oil and gas lost or wasted from a lease site when such loss or waste is due to negligence on the part of the operator, or due to the failure to comply with any rule, regulation, order, or citation issued under FOGRMA or the leasing authority.

(Continued on page 3)

(Form 3100-11, page 2)

Sec. 3. Bonds - A bond must be filed and maintained for lease operations as required under regulations.

Sec. 4. Diligence, rate of development, unitization, and drainage - Lessee must exercise reasonable diligence in developing and producing, and must prevent unnecessary damage to, loss of, or waste of leased resources. Lessor reserves right to specify rates of development and production in the public interest and to require lessee to subscribe to a cooperative or unit plan, within 30 days of notice, if deemed necessary for proper development and operation of area, field, or pool embracing these leased lands. Lessee must drill and produce wells necessary to protect leased lands from drainage or pay compensatory royalty for drainage in amount determined by lessor.

Sec. 5. Documents, evidence, and inspection - Lessee must file with proper office of lessor, not later than 30 days after effective date thereof, any contract or evidence of other arrangement for sale or disposal of production. At such times and in such form as lessor may prescribe, lessee must furnish detailed statements showing amounts and quality of all products removed and sold, proceeds therefrom, and amount used for production purposes or unavoidably lost. Lessee may be required to provide plats and schematic diagrams showing development work and improvements, and reports with respect to parties in interest, expenditures, and depreciation costs. In the form prescribed by lessor, lessee must keep a daily drilling record, a log, information on well surveys and tests, and a record of subsurface investigations and furnish copies to lessor when required. Lessee must keep open at all reasonable times for inspection by any representative of lessor, the leased premises and all wells, improvements, machinery, and fixtures thereon, and all books, accounts, maps, and records relative to operations, surveys, or investigations on or in the leased lands. Lessee must maintain copies of all contracts, sales agreements, accounting records, and documentation such as billings, invoices, or similar documentation that supports costs claimed as manufacturing, preparation, and/or transportation costs. All such records must be maintained in lessee's accounting offices for future audit by lessor. Lessee must maintain required records for 6 years after they are generated or, if an audit or investigation is underway, until released of the obligation to maintain such records by lessor.

During existence of this lease, information obtained under this section will be closed to inspection by the public in accordance with the Freedom of Information Act (5 U.S.C. 552).

Sec. 6. Conduct of operations - Lessee must conduct operations in a manner that minimizes adverse impacts to the land, air, and water, to cultural, biological, visual, and other resources, and to other land uses or users. Lessee must take reasonable measures deemed necessary by lessor to accomplish the intent of this section. To the extent consistent with lease rights granted, such measures may include, but are not limited to, modification to siting or design of facilities, timing of operations, and specification of interim and final reclamation measures. Lessor reserves the right to continue existing uses and to authorize future uses upon or in the leased lands, including the approval of easements or rights-of-way. Such uses must be conditioned so as to prevent unnecessary or unreasonable interference with rights of lessee.

Prior to disturbing the surface of the leased lands, lessee must contact lessor to be apprised of procedures to be followed and modifications or reclamation measures that may be necessary. Areas to be disturbed may require inventories or special studies to determine the extent of impacts to other resources. Lessee may be required to complete minor inventories or short term special studies under guidelines provided by lessor. If in the conduct of operations, threatened or endangered species, objects of historic or scientific interest, or substantial unanticipated environmental effects are observed, lessee must immediately contact lessor. Lessee must cease any operations that would result in the destruction of such species or objects.

Sec. 7. Mining operations - To the extent that impacts from mining operations would be substantially different or greater than those associated with normal drilling operations, lessor reserves the right to deny approval of such operations.

Sec. 8. Extraction of helium - Lessor reserves the option of extracting or having extracted helium from gas production in a manner specified and by means provided by lessor at no expense or loss to lessee or owner of the gas. Lessee must include in any contract of sale of gas the provisions of this section.

Sec. 9. Damages to property - Lessee must pay lessor for damage to lessor's improvements, and must save and hold lessor harmless from all claims for damage or harm to persons or property as a result of lease operations.

Sec. 10. Protection of diverse interests and equal opportunity - Lessee must pay, when due, all taxes legally assessed and levied under laws of the State or the United States; accord all employees complete freedom of purchase; pay all wages at least twice each month in lawful money of the United States; maintain a safe working environment in accordance with standard industry practices; and take measures necessary to protect the health and safety of the public.

Lessor reserves the right to ensure that production is sold at reasonable prices and to prevent monopoly. If lessee operates a pipeline, or owns controlling interest in a pipeline or a company operating a pipeline, which may be operated accessible to oil derived from these leased lands, lessee must comply with section 28 of the Mineral Leasing Act of 1920.

Lessee must comply with Executive Order No. 11246 of September 24, 1965, as amended, and regulations and relevant orders of the Secretary of Labor issued pursuant thereto. Neither lessee nor lessee's subcontractors must maintain segregated facilities.

Sec. 11. Transfer of lease interests and relinquishment of lease - As required by regulations, lessee must file with lessor any assignment or other transfer of an interest in this lease. Lessee may relinquish this lease or any legal subdivision by filing in the proper office a written relinquishment, which will be effective as of the date of filing, subject to the continued obligation of the lessee and surety to pay all accrued rentals and royalties.

Sec. 12. Delivery of premises - At such time as all or portions of this lease are returned to lessor, lessee must place affected wells in condition for suspension or abandonment, reclaim the land as specified by lessor and, within a reasonable period of time, remove equipment and improvements not deemed necessary by lessor for preservation of producible wells.

Sec. 13. Proceedings in case of default - If lessee fails to comply with any provisions of this lease, and the noncompliance continues for 30 days after written notice thereof, this lease will be subject to cancellation unless or until the leasehold contains a well capable of production of oil or gas in paying quantities, or the lease is committed to an approved cooperative or unit plan or communitization agreement which contains a well capable of production of unitized substances in paying quantities. This provision will not be construed to prevent the exercise by lessor of any other legal and equitable remedy, including waiver of the default. Any such remedy or waiver will not prevent later cancellation for the same default occurring at any other time. Lessee will be subject to applicable provisions and penalties of FOGPMA (30 U.S.C. 1701).

Sec. 14. Heirs and successors-in-interest - Each obligation of this lease will extend to and be binding upon, and every benefit hereof will inure to the heirs, executors, administrators, successors, beneficiaries, or assignees of the respective parties hereto.

(Continued on page 4)

(Form 3100-11, page 3)

A. General:

1. Page 1 of this form is to be completed only by parties filing for a noncompetitive lease. The BLM will complete page 1 of the form for all other types of leases.
2. Entries must be typed or printed plainly in ink. Offeror must sign Item 4 in ink.
3. An original and two copies of this offer must be prepared and filed in the proper BLM State Office. See regulations at 43 CFR 1821.2-1 for office locations.
4. If more space is needed, additional sheets must be attached to each copy of the form submitted.

B. Special:

Item 1 - Enter offeror's name and billing address.

Item 2 - Identify the mineral status and, if acquired lands, percentage of Federal ownership of applied for minerals. Indicate the agency controlling the surface of the land and the name of the unit or project which the land is a part. The same offer may not include both Public

Domain and Acquired lands. Offeror also may provide other information that will assist in establishing title for minerals. The description of land must conform to 43 CFR 3110. A single parcel number and Sale Date will be the only acceptable description during the period from the first day following the end of a competitive process until the end of that same month, using the parcel number on the List of Lands Available for Competitive Nominations or the Notice of Competitive Lease Sale, whichever is appropriate.

Payments: The amount remitted must include the filing fee and the first year's rental at the rate of \$1.50 per acre or fraction thereof. The full rental based on the total acreage applied for must accompany an offer even if the mineral interest of the United States is less than 100 percent. The filing fee will be retained as a service charge even if the offer is completely rejected or withdrawn. To protect priority, it is important that the rental submitted be sufficient to cover all the land requested. If the land requested includes lots or irregular quarter-quarter sections, the exact area of which is not known to the offeror, rental should be submitted on the basis of each such lot or quarter-quarter section containing 40 acres. If the offer is withdrawn or rejected in whole or in part before a lease issues, the rental remitted for the parts withdrawn or rejected will be returned.

Item 3 - This space will be completed by the United States.

NOTICES

The Privacy Act of 1974 and the regulations in 43 CFR 2.48(d) provide that you be furnished with the following information in connection with information required by this oil and gas lease offer.

AUTHORITY: 30 U.S.C. 181 et seq.; 30 U.S.C 351-359.

PRINCIPAL PURPOSE: The information is to be used to process oil and gas offers and leases.

ROUTINE USES: (1) The adjudication of the lessee's rights to the land or resources. (2) Documentation for public information in support of notations made on land status records for the management, disposal, and use of public lands and resources. (3) Transfer to appropriate Federal agencies when consent or concurrence is required prior to granting a right in public lands or resources. (4)(5) Information from the record and/or the record will be transferred to appropriate Federal, State, local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecutions.

EFFECT OF NOT PROVIDING INFORMATION: If all the information is not provided, the offer may be rejected. See regulations at 43 CFR 3100.

The Paperwork Reduction Act of 1995 requires us to inform you that:

This information is being collected pursuant to the law.

This information will be used to create and maintain a record of oil and gas lease activity.

Response to this request is required to obtain a benefit.

BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

BURDEN HOURS STATEMENT: Public reporting burden for this form is estimated to average 1 hour per response including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0185), Bureau Information Collection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop, 401LS, Washington, D.C. 20240.

Form 3109-1
(December 1972)
(formerly 3103-1)

LEASE STIPULATIONS
BUREAU OF RECLAMATION

The lessee agrees to maintain, if required by the lessor during the period of this lease, including any extension thereof, an additional bond with qualified sureties in such sum as the lessor, if it considers that the bond required under Section 2(a) is insufficient, may at any time require:

(a) to pay for damages sustained by any reclamation homestead entryman to his crops or improvements caused by drilling or other operations of the lessee, such damages to include the reimbursement of the entryman by the lessee, when he uses or occupies the land of any homestead entryman, for all construction and operation and maintenance charges becoming due during such use or occupation upon any portion of the land so used and occupied;

(b) to pay any damage caused to any reclamation project or water supply thereof by the lessee's failure to comply fully with the requirements of this lease; and

(c) to recompense any nonmineral applicant, entryman, purchaser under the Act of May 16, 1930 (46 Stat. 367), or patentee for all damages to crops or to tangible improvements caused by drilling or other prospecting operation, where any of the lands covered by this lease are embraced in any nonmineral application, entry, or patent under rights initiated prior to the date of this lease, with a reservation of the oil deposits, to the United States pursuant to the Act of July 17, 1914 (38 Stat. 509).

As to any lands covered by this lease within the area of any Government reclamation project, or in proximity thereto, the lessee shall take such precautions as required by the irrigation under such project or to the water supply thereof; *provided* that drilling is prohibited on any constructed works or right-of-way of the Bureau of Reclamation, and *provided, further*, that there is reserved to the lessor, its successors and assigns, the superior and prior right at all times to construct, operate, and maintain dams, dikes, reservoirs, canals, wasteways, laterals, ditches, telephone and telegraph lines, electric transmission lines, roadways, appurtenant irrigation structures, and reclamation works, in which construction, operation, and maintenance, the lessor, its successors and assigns, shall have the right to use any or all of the lands herein described without making compensation therefore, and shall not be responsible for any damage from the presence of water thereon or on account of ordinary, extraordinary, unexpected, or unprecedented floods. That nothing shall be done under this lease to increase the cost of, or interfere in any manner with, the construction, operation, and maintenance of such works. It is agreed by the lessee that, if the construction of any or all of said dams, dikes, reservoirs, canals, wasteways, laterals, ditches, telephone or telegraph lines, electric transmission lines, roadways, appurtenant irrigation structures or reclamation works across, over, or upon said lands should be made more expensive by reason of the existence of the improvements and workings of the lessee thereon, said additional expense is to be estimated by the Secretary of the Interior, whose estimate is to be final and binding upon the parties hereto, and that within thirty (30) days after demand

is made upon the lessee for payment of any such sums, the lessee will make payment thereof to the United States, or its successors, constructing such dams, dikes, reservoirs, canals, wasteways, laterals, ditches, telephone and telegraph lines, electric transmission lines, roadways, appurtenant irrigation structures, or reclamation works, across, over, or upon said lands; *provided, however*, that subject to advance written approval by the United States, the location and course of any improvements or works and appurtenances may be changed by the lessee; *provided, further*, that the reservations, agreements, and conditions contained in the within lease shall be and remain applicable notwithstanding any change in the location or course of said improvements or works of lessee. The lessee further agrees that the United States, its officers, agents, and employees, and its successors and assigns shall not be held liable for any damage to the improvements or workings of the lessee resulting from the construction, operation, and maintenance of any of the works hereinabove enumerated. Nothing in this paragraph shall be construed as in any manner limiting other reservations in favor of the United States contained in this lease.

THE LESSEE FURTHER AGREES That there is reserved to the lessor, its successors and assigns, the prior right to use any of the lands herein leased, to construct, operate, and maintain dams, dikes, reservoirs, canals, wasteways, laterals, ditches, telephone and telegraph lines, electric transmission lines, roadways, or appurtenant irrigation structures, and also the right to remove construction materials therefrom, without any payment made by the lessor or its successors for such right, with the agreement on the part of the lessee that if the construction of any or all of such dams, dikes, reservoirs, canals, wasteways, laterals, ditches, telephone and telegraph lines, electric transmission lines, roadways, or appurtenant irrigation structures across, over, or upon said lands or the removal of construction materials therefrom, should be made more expensive by reason of the existence of improvements or workings of the lessee thereon, such additional expense is to be estimated by the Secretary of the Interior, whose estimate is to be final and binding upon the parties hereto, and that within thirty (30) days after demand is made upon the lessee for payment of any such sums, the lessee will make payment thereof to the United States or its successors constructing such dams, dikes, reservoirs, canals, wasteways, laterals, ditches, telephone and telegraph lines, electric transmission lines, roadways, or appurtenant irrigation structures across, over, or upon said lands or removing construction materials therefrom. The lessee further agrees that the lessor, its officers, agents, and employees and its successors and assigns shall not be held liable for any damage to the improvements or workings of the lessee resulting from the construction, operation, and maintenance of any of the works herein above enumerated. Nothing contained in this paragraph shall be construed as in any manner limiting other reservations in favor of the lessor contained in this lease.

To insure against the contamination of the waters of the _____ Reservoir,

_____ Project, State of _____, the lessee agrees that the following further conditions shall apply to all drilling and operations on lands covered by this lease, which lie within the flowage or drainage area of the Reservoir, as such area is defined by the Bureau of Reclamation:

1. The drilling sites for any and all wells shall be approved by the Superintendent, Bureau of Reclamation, _____ Project, before drilling begins. Sites for the construction of pipe-line rights-of-way or other authorized facilities shall also be approved by the Superintendent before construction begins.

2. All drilling or operation methods or equipment shall, before their employment, be inspected and approved by the Superintendent of the _____ Project, _____, and by the supervisor of the U.S. Geological Survey having jurisdiction over the area.

GPO 854-703

GP-135

(02/03)

SPECIAL STIPULATION - BUREAU OF RECLAMATION

To avoid interference with recreation development and/or impacts to fish and wildlife habitat and to assist in preventing damage to any Bureau of Reclamation dams, reservoirs, canals, ditches, laterals, tunnels, and related facilities, and contamination of the water supply therein, the lessee agrees that the following conditions shall apply to all exploration and developmental activities and other operation of the works thereafter on lands covered by this lease:

1. Prior to commencement of any surface-disturbing work including drilling, access road work, and well location construction, a surface use and operations plan will be filed with the appropriate officials. A copy of this plan will be furnished to the Regional Director, Great Plains Region, Bureau of Reclamation, P.O. Box 36900, Billings, MT 59107-6900, for review and consent prior to approval of the plan. Such approval will be conditioned on reasonable requirements needed to prevent soil erosion, water pollution, and unnecessary damages to the surface vegetation and other resources, including cultural resources, of the United States, its lessees, permittees, or licensees, and to provide for the restoration of the land surface and vegetation. The plan shall contain provisions as the Bureau of Reclamation may deem necessary to maintain proper management of the water, recreation, lands structures, and resources, including cultural resources, within the prospecting, drilling, or construction area.

Drilling sites for all wells and associated investigations such as seismograph work shall be included in the above-mentioned surface use and operation plan.

If later explorations require departure from or additions to the approved plan, these revisions or amendments, together with a justification statement for proposed revisions, will be submitted for approval to the Regional Director, Great Plains Region, Bureau of Reclamation, or his authorized representative.

Any operations conducted in advance of approval of an original, revised, or amended prospecting plan, or which are not in accordance with an approved plan constitute a violation of the terms of this lease. The Bureau of Reclamation reserves the right to close down operations until such corrective action, as is deemed necessary, is taken by the lessee.

2. No occupancy of the surface of the following excluded areas is authorized by this lease. It is understood and agreed that the use of these areas for Bureau of Reclamation purposes is superior to any other use. The following restrictions apply only to mineral tracts located within the boundary of a Bureau of Reclamation project where the United States owns 100 percent of the fee mineral interest.

- a. Within 500 feet on either side of the centerline of any and all roads or highways within the leased area.
- b. Within 200 feet on either side of the centerline of any and all trails within the leased area.
- c. Within 500 feet of the normal high-water line of any and all live streams in the leased area.
- d. Within 400 feet of any and all recreation developments within the leased area.
- e. Within 400 feet of any improvements either owned, permitted, leased, or otherwise authorized by the Bureau of Reclamation within the leased area.
- f. Within 200 feet of established crop fields, food plots, and tree/shrub plantings within the leased area.
- g. Within 200 feet of slopes steeper than a 2:1 gradient within the leased area.
- h. Within established rights-of-way of canals, laterals, and drainage ditches within the leased area.
- i. Within a minimum of 500 feet horizontal from the centerline of the facility or 50 feet from the outside toe of the canal, lateral, or drain embankment, whichever distance is greater, for irrigation facilities without clearly marked rights-of-way within the leased area.
- j. Providing that appropriate environmental compliance measures can be ensured, and providing further that Reclamation project works and other public interests can be protected, Reclamation may consider, on a case-by-case basis, waiving the requirement specified in Section 2 hereof. **HOWEVER, LESSEES ARE ADVISED THAT OBTAINING SUCH A WAIVER CAN BE A DIFFICULT, TIME CONSUMING, AND COSTLY PROCESS WITH NO GUARANTEE THAT RECLAMATION WILL GRANT THE REQUESTED WAIVER.**

3. No occupancy of the surface or surface drilling will be allowed in the following areas. In addition, no directional drilling will be allowed that would intersect the subsurface zones delineated by a vertical plane in these areas. The following restrictions apply only to mineral tracts located within the boundary of a Bureau of Reclamation project, where the United States owns 100 percent of the fee mineral interest in said tract, or tracts.

a. Within 1,000 feet of the maximum water surface, as defined in the Standard Operating Procedures (SOP), of any reservoirs and related facilities located within the leased area.

b. Within 2,000 feet of dam embankments and appurtenance structures such as spillway structures, outlet works, etc.

c. Within one-half (1/2) mile horizontal from the centerline of any tunnel within the leased area.

d. Providing that appropriate environmental compliance measures can be ensured, and providing further that Reclamation project works and other public interests can be protected. Reclamation may consider, on a case-by-case basis, waiving the requirements specifies in Section 3 hereof. **HOWEVER, LESSEES ARE ADVISED THAT OBTAINING SUCH A WAIVER CAN BE A DIFFICULT, TIME CONSUMING, AND COSTLY PROCESS WITH NO GUARANTEE THAT RECLAMATION WILL GRANT THE REQUESTED WAIVER.**

4. The distances stated in items 2 and 3 above are intended to be general indicators only. The Bureau of Reclamation reserves the right to revise these distances as needed to protect Bureau of Reclamation facilities.

5. The use of explosives in any manner shall be so controlled that the works and facilities of the United States, its successors and assigns, will in no way be endangered or damaged. In this connection, an explosives use plan shall be submitted to and approved by the Regional Director, Great Plains Region, Bureau of Reclamation, or his/her authorized representative.

6. The lessee shall be liable for all damage to the property of the United States, its successors or assigns, resulting from the exploration, development, or operation of the works contemplated by this lease, and shall further hold the United States, its successors or assigns, and its officers, agents, and employees, harmless from all claims of third parties for injury or damage sustained or in any way resulting from the exercise of the rights and privileges conferred by the lease.

7. The lessee shall be liable for all damages to crops or improvements of any entryman, nonmineral applicant, or patentee, their successors or assigns, caused by or resulting from the drilling or other operations of the lessee, including reimbursement of any entryman or patentee, their successors or assigns, for all construction, operation, and maintenance charges becoming due on any portion of their said lands damaged as a result of the drilling or other operation of the lessee.

8. In addition to any other bond required under the provisions of this lease, the lessee shall provide such bond as the United States may at any time require for damages which may arise under the liability provisions of Section six (6) and seven (7) above.