APPENDIX 3. RECLAMATION AND MONITORING

RECLAMATION GOALS

Reclamation goals are to stabilize disturbed sites by reducing runoff and erosion; reestablish healthy, vigorous ground cover on these areas to its original condition or better by using native plant species; restore wildlife habitat and livestock forage; and restore visual quality to meet established visual resource management objectives on all areas of surface disturbance, reducing visual contrast and enhancing aesthetic values.

RECLAMATION OBJECTIVES

To achieve the above goals, disturbed sites would be reclaimed with perennial native grasses/forbs/shrub species reflecting the species naturally growing on the site before disturbance occurrence. The goal is to achieve 100 percent of predisturbance cover of desired species, with bond release occurring when 80 percent of the predisturbance cover exists and the site is judged to be on its way toward 100 percent. Objectives may be modified as new information is acquired or if needed to conform to Jack Morrow Hills Coordinated Activity Plan (JMH CAP) objectives.

PLANNED ACTIONS AND REQUIREMENTS

Surface disturbing projects would be required to use the best management practices described in Appendix 5.

All surface disturbing and reclamation activities that would occur within the Steamboat Mountain Area of Critical Environmental Concern (ACEC), Greater Sand Dunes ACEC, South Pass Historic Landscape ACEC, or Oregon Buttes ACEC would meet the vegetation and habitat management objectives specific to that ACEC.

Within the ACECs and overlapping crucial elk winter range and parturition areas, revegetation of disturbed areas with big sagebrush and other shrubs would be required to maintain and/or improve big game habitat. Planting of shrubs would be required to the same density that occurred onsite before disturbance.

Before any onsite activity, an Erosion Control, Revegetation, and Restoration Plan (ERRP) (outlined in the Green River Resource Management Plan [RMP] Record of Decision [ROD], Appendix 5-3) may be required. The operator and Bureau of Land Management (BLM) would perform an onsite inventory in critical areas, such as shrub and cushion plant communities, to document plant species composition and cover values. This would establish a baseline standard to use in developing postdisturbance plant composition and cover values, seed mixes, and site information required for the restoration plan. Reseeding would be performed with plant species native to the vegetation communities of the planning area.

RECLAMATION MONITORING

All sites would be monitored by BLM for reclamation success under the standard BLM guidelines. Inspections would be based on the standard practices indicated in Appendix 5.

Monitoring of a reclaimed area is a joint effort between BLM and operators. BLM would inspect the site during the initial seeding and the following growing season for compliance with the reclamation requirements. The operator is responsible for notifying BLM as soon as the site has met the reclamation objectives identified for the sites. If BLM agrees that the site's reclamation objectives have been met, the operator is released from any further reclamation responsibilities. If the reclamation objectives have been met, further treatment may be prescribed. Sensitive areas, such as basin big sagebrush, mountain mahogany, chokecherry, serviceberry, or bitterbrush communities, would be monitored on an annual basis by BLM and the lessee/operator/permittee until shrubs are reestablished onsite. Specific monitoring techniques in critical shrub areas would be developed.

REVEGETATION

Standard native plant seed mixes would be developed for each ecological site type in the planning area; however, more specific seed mixes could be designed as needed as part of the ERRP process. In sensitive areas, plantings of containerized native shrub seedlings may be required.

The revegetation time frames shown below are assumed for reclaimed sites in the respective precipitation zones of the planning area. These time frames represent the minimum amount of time it would likely take to see reestablishment of a native plant community similar in composition to the one existing onsite before disturbance. These rates do not assume that the plant community would be reestablished to the same height and cover value. In some cases, reestablishment of a healthy, vigorous grass stand might provide better forage values than existed before disturbance.

- 7–9" Precipitation Zone
  - Typical establishment of perennial native grasses/forbs in 3 to 5 years
  - Typical establishment of shrub species in 20 to 30 years.
- 10–14" Precipitation Zone
  - Typical establishment of perennial native grasses/forbs in 2 to 3 years
  - Typical establishment of shrub species in 20 to 30 years.

It is expected that basin big sagebrush, chokecherry, and serviceberry shrubs removed during site disturbance would not likely be reestablished to predisturbance size and cover rates during the life of this plan. Therefore revegetation of the site would not necessarily replace the wildlife forage/browse values that were found on the site predisturbance (e.g., the replacement time of the basin big sagebrush to reach the same height and cover values that existed before disturbance might be as long as 70 years or more). However, it is expected that adherence to reclamation requirements would eventually provide for the return of these areas to shrub communities.

STABILIZED DUNES

Disturbing stabilized dunes would create blowout areas that would be difficult to reclaim. Plant succession in dunes is a very long process, depending on stabilizing the dune and establishing appropriate pioneer species, which then build up nutrients and organic matter in the sand-soil. Phases of dunal succession last for hundreds of years, until reestablishment to predisturbance vegetation occurs. Shrub communities such as basin big sagebrush, mountain mahogany, and bitterbrush are documented to require 100 to 150 years to become reestablished on activated sand dunes (Chadwick 1965). It is unknown how successful artificial revegetation may be on the dunes. For that reason, surface disturbing activities on stabilized, vegetated dunes are not recommended. However, if such activities do take place, it is recommended that at the time of permitting, the site ERRP and the Application for Permit to Drill (APD) reclamation plans include what extra measures would be taken to ensure site stability. These methods could include erosion control matting, soil stabilizers, and/or snow fences.

ACTIVE DUNES

Surface disturbing activities that would require reclamation in the active dune field are not recommended, as the dunes continue to shift and move. Road construction and new access might not be feasible. Even if sand stabilization could be temporarily achieved in the immediate vicinity of the disturbance, the nearby shifting dunes would likely interfere with the activity. In addition, the dunal ponds (flockets) could be affected, and these would be extremely difficult to reclaim and revegetate.

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

To meet the objectives of the JMH CAP and to conform with the Green River RMP, monitoring would be accomplished by BLM and/or required of operators (oil and gas, rancher, right-of-way [ROW] applicants, etc.). Monitoring is provided for in the Code of Federal Regulations (40 CFR 1505.2(c) and 1503.3). The regulation, in its requirements relative to the National Environmental Policy Act (NEPA) and agency decisionmaking, states, “a monitoring and enforcement program shall be adopted and summarized where applicable for any mitigation” (1505.2(c)).

BLM would conduct extensive monitoring inspections of construction, drilling, and rehabilitation operations, through a compliance officer and/or an interdisciplinary team, to ensure acceptable attainment of objectives. The monitoring inspections would be based on the standard practices described in Appendix 5.

Specific activities and resources to be monitored include oil and gas, wildlife, and forage.

Oil and Gas Development

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

- Immediate site stabilization to limit wind and water erosion
- Establishment of vigorous stands of desirable plant species to limit invasion by noxious and invasive weeds
- Implementation of noxious and invasive weed control in cooperation with the county Weed and Pest Control Agent
- Establishment of vegetation consistent with wildlife, livestock, and wild horse needs
- Reduction of visual contrast and enhancement of aesthetic values
- Compliance with site-specific revegetation requirements
- Regenerating and self-supporting vegetation
- Long-term shrub and big game habitat establishment.

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

Data are compared to acceptance criteria as follows: Reclamation vegetative cover is 50 percent of predisturbance vegetative cover at 2 years and at 80 percent of predisturbance vegetative cover at 5 years. Other acceptance criteria may be adopted as a result of a reclamation technical review.

Monitoring would consist of a step-point transect that would record ground and canopy cover in the reclaimed area.

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

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

Roads

As a continuing monitoring effort, all existing access roads would be continually evaluated to determine whether they (1) were still necessary, (2) were safe, and (3) have erosion problems. The roads would be reclaimed or maintained as appropriate. It

would be the responsibility of the authorized users to conduct preventive and corrective road maintenance throughout their operations, on the roads permitted for their use.

OTHER MONITORING EFFORTS

The following subsections identify additional monitoring efforts that will be carried out by BLM and other parties. While not exhaustive, these monitoring efforts will be used to more effectively satisfy the needs of the JMH CAP implementation, monitoring, and evaluation management strategy (Appendix 2). For a comprehensive inventory of the additional monitoring efforts that will be instilled to measure the management indicators, refer to Appendix 2.

Wildlife

The scheduling of wildlife monitoring activities depends on the implementation of habitat improvement treatments. Specific monitoring practices would be as follows:

- Big game distribution within the planning area would continue to be monitored annually. Monitoring would occur at a level adequate to obtain estimates of mule deer densities year-round and particularly during midwinter. Big game classification information would be provided by the Wyoming Game and Fish Department (WGFD).
- At least one permanent-line intercept transect with a belt transect and permanent photo points would be established within each treatment area before disturbance and after reclamation treatment implementation. From these permanent transects, post-treatment estimates of browse species canopy cover, browse species density by age class, and browse species hedging classes within each treatment area would be obtained. Monitoring intensity would be at least once every 3 years. Coordination with WGFD would occur.
- Two permanent exclosures (one livestock exclosure and one livestock and big game exclosure, actual size to be determined) would be established within the sagebrush-grassland, sagebrush-salt desert shrub, and mountain shrub-sagebrush types within the planning area. Within these exclosures, all the vegetative characteristics outlined in the bullet line above would be monitored, as appropriate, at least once every 5 years. Construction and monitoring responsibilities would be coordinated with WGFD.
- Utilization levels within and adjacent to treated areas (key areas) would be monitored by BLM using currently accepted BLM methods.

An evaluation to assess fluid mineral exploration and development activity and its effects on elk and their movement patterns, on elk use of habitat (potential fragmentation), on other wildlife species and habitats, and on other sensitive resources would be conducted.

The evaluation would incorporate information from the elk studies conducted within the JMH CAP planning area (section 3.1.6.1.3 and below); application of the Standards for Healthy Rangelands; proper functioning condition (PFC) determinations; and other activities and uses. Appropriate mitigation would be applied to all activities to meet planning area management objectives. If the

evaluation concludes that planning area management objectives are not being met, management will be adapted to address the situation. Adjustments could be made to ensure that further activity does not cause fragmentation and abandonment of habitat and still meet management objectives. Consideration would be given to such actions as identifying new and innovative mitigation measures, or identifying areas that either would not be leased or would be leased with a no surface occupancy (NSO) stipulation. Should management objectives change, it may become necessary to modify, amend, or revise the CAP.

Jack Morrow Hills GPS Elk Monitoring Study

BLM, in a cooperative effort with WGFD and the University of Wyoming Cooperative Wildlife Research Unit, has equipped 29 female elk with global positioning system (GPS) collars to monitor a representative sample of the Steamboat elk herd to determine the effects of development and various types of human disturbance. This effort will facilitate the implementation, monitoring, and evaluation management strategy (Appendix 2) recommended in the Proposed JMH CAP.

Greater Sage-Grouse Population Monitoring and Assessment[1]

One of the primary components of an effective greater sage-grouse conservation strategy will be the continued development and utilization of a standardized population monitoring program capable of producing meaningful, rigorous status and trend information. These data should also be suitable for aggregate analysis at the statewide level and comparison to similar data sets from other states. WGFD has recently developed such a database. The database incorporates lek survey and count data, as well as harvest data, including determination of the age and sex from wings deposited in hunter collection barrels. As this database comes into use, it should provide the basis for both local and statewide analysis of greater sage-grouse population status and trend. The information collected in the JMH planning area is intended to be compatible with the statewide database.

Breeding Populations

Greater sage-grouse gather on traditional display areas (leks) each spring, affording the opportunity to track breeding populations. Possible methods of monitoring breeding populations include lek censuses (annually counting the number of male greater sage-grouse attending leks in a given area), lek complex routes (annually counting the number of male greater sage-grouse on a group [complex] of leks that are relatively close and represent part or all of a single breeding population), and lek surveys (annually counting the number of active leks in a given area). All monitoring procedures are conducted during early morning (1/2-hour before to 1 hour after sunrise), in reasonably good weather (light or no wind, partly cloudy to clear) from early March to early May. Timing is dependent on elevation of leks and persistence of winter conditions. Greater sage-grouse will begin displaying in late February at lower

1 Based on “Sage Grouse Methodology Committee Report on Sage Grouse Management Practices” to the 1996 Western States Sage Grouse Workshop, Gillette, Wyoming, and “Monitoring of Sage Grouse Habitats and Populations,” Draft by J.W. Connelly, K.P. Reese, and M.A. Schroeder, January 2002. Metric measures have been converted and rounded to English units for this appendix.

elevations with milder climates and in years with mild winter weather. Lek attendance will persist into early or mid-May at higher elevations.

All lek data should be collected and reported as defined below.

Lek. A traditional courtship display area attended by male greater sage-grouse in or adjacent to sagebrush-dominated habitat. Designation of the site as a lek requires observation of two or more male greater sage-grouse engaged in courtship displays. New leks would be confirmed by a survey conducted during the appropriate time of day and during the strutting season.

Lek Complex. A group of leks in close proximity between which male greater sage-grouse may be expected to interchange from one day to the next. A specific distance criterion does not yet exist.

Lek Count. A census technique that documents the actual number of male greater sage-grouse observed on a particular lek or complex of leks using the methods described below.

Lek Survey. A monitoring technique designed primarily to determine whether leks are active or inactive; obtaining accurate counts of the numbers of males attending is secondary.

Annual Status

Each year a lek will be determined to be in one of the following status categories:

Active. Any lek that has been attended by male greater sage-grouse during the strutting season. Presence can be documented by observation of birds using the site or by signs of strutting activity.

Inactive. Leks where it is known that there was no strutting activity through the course of a strutting season. A single visit, or even several visits, without strutting grouse being seen is not adequate documentation to designate a lek as inactive. This designation requires either an absence of birds on the lek during multiple ground visits under ideal conditions throughout the strutting season or a ground check of the exact lek site late in the strutting season that fails to find any sign (droppings/feathers) of strutting activity.

Unknown. Leks that have not been documented either active or inactive during the course of a strutting season.

Classification of leks will be defined based on the WGFD criteria.

Locating Leks

Leks can be located by searching from the ground or air from early March to early May.

Helicopters or fixed-wing airplanes would be used for air searches where appropriate.

Transects should be flown at 300 (or less) feet above ground level.

Lek searches would also be conducted from the ground by driving along roads in suspected or known breeding habitat and stopping every 1/2-mile to listen for sounds of breeding grouse. In less accessible areas, searches can be made from a mountain bike, trail motorcycle, four-wheel all-terrain vehicle, horseback, or on foot. On a calm morning, breeding greater sage-grouse may be heard at a distance of almost 1 mile. All openings or areas of less dense sagebrush should be searched for breeding birds with binoculars or a spotting scope.

Lek Counts. Lek counts are a common means of monitoring greater sage-grouse populations. Lek counts document the actual number of male greater sage-grouse observed on a particular lek or complex of leks. A lek complex is a group of leks in close proximity between which male greater sage-grouse may be expected to interchange. At this time we are not proposing to participate in the lek counts. However, participation is being considered as an option for future monitoring. If lek counts are conducted, BLM will use the WGFD protocol.

Lek Surveys. Ideally, all greater sage-grouse leks would be "count leks." However, some greater sage-grouse breeding habitat is inaccessible during spring because of mud and snow or are so remote that leks cannot be routinely counted. Other leks may be situated in topography or vegetation that does not allow an accurate count of males from any vantage point. In addition, time and budget constraints limit the number of leks that can be visited. In these cases lek surveys are the only reliable means of monitoring populations. Lek surveys are designed primarily to determine whether leks are active or inactive. Only one visit to the lek is required, and obtaining accurate counts of the numbers of males attending is secondary. Surveys require less manpower and time than lek counts. They can also be conducted from fixed-wing aircraft or helicopter. Because obtaining a peak male count is not a priority, surveys of leks not on count routes can begin with initiation of strutting in early March and extend into early-to-mid May, depending on the site and spring weather.

Where practicable, lek surveys would be conducted in the same manner and during the same time period each year. In other words, they should not be conducted from a fixed-wing aircraft one year and a helicopter the next year, or in early March one year and May the next. The date and time should be recorded for each survey. Coordinates (currently UTM) for each lek encountered would be noted, as well as any other information that observers might consider important.

Activity status of located leks would be checked by looking for signs of strutting activity. This can be conducted at any time of the day and for a short period after the strutting season.

The frequency with which known leks are surveyed would be based on manpower, budgets, and rates of habitat alteration or development. Remote leks would be surveyed at least once every 3 years, others more frequently. Working with cooperators and interested publics can provide the opportunity to use volunteers to survey or count leks and thus increase data collection efforts. The Wyoming Wildlife Federation "Adopt-a-Lek" program has been shown to provide a pool of reliable volunteers. Volunteers should be properly trained in monitoring techniques to ensure quality data and prevent disruption of breeding activity.

Winter Populations

Unlike breeding populations and production, no widely accepted methods for assessing winter populations exist. In part this is because birds may be spread out over large areas during mild winters but concentrated in a relatively small proportion of the area in severe winters.

Probable winter use areas can be searched by four-wheel drive vehicle, snowmobile, or on foot to document greater sage-grouse winter habitat. Aerial surveys using either a fixed-wing aircraft or helicopter may also be effective in identifying greater sage-grouse winter habitat. Data collected should include, at least, approximate flock size and location. In addition, cover type (including sagebrush species present), topography, and snow depth data also are valuable but may not be possible to obtain from the aerial observations. Data should be acquired over a series of years with different snow conditions to give a more complete picture of winter grouse distribution.

Data Analysis. As part of the implementation, monitoring, and evaluation management strategy for the JMH CAP planning area, BLM initially will concentrate efforts in identifying leks and locations of wintering birds. Funding would be pursued for a radio telemetry and/or GPS collar study to precisely monitor the birds' movements and habitat use.

The development of the Wyoming greater sage-grouse database has facilitated data storage, retrieval, analysis, and reporting on both regional and statewide levels. All current and historical data will be submitted to the state to be entered into the database.

Rangeland

Monitoring in conformance with the application of the Standards for Healthy Rangelands would be accomplished. Monitoring plans would be developed as part of allotment management plans (AMPs), grazing plans, and permit terms and conditions as appropriate. Monitoring plans would be developed to assess progress toward meeting, and in accordance with, JMH CAP objectives. All rangeland monitoring activities would use approved BLM methodologies and could include actual use, utilization, climate, trend, and use supervision.

Additional key areas would be identified on a case-by-case basis, and monitoring studies could be changed as needed.

Groundwater

Plans for groundwater data collection in this area could be initiated in conjunction with additional development or where groundwater monitoring is needed.

BLM currently requires surface casing and cement through the Wasatch Formation, or isolation of other zones from the Wasatch, in an effort to protect the water-bearing zones in that formation. The Wasatch is the chief source for groundwater in the area.

Groundwater data collection would aid in understanding the area's aquifer systems. The Wasatch aquifer system includes many discrete water-bearing sandstone lenses separated by relatively impermeable beds. The extent of the groundwater flow between

these permeable sandstones is not known. Little is known about deeper aquifers of Mesozoic and Paleozoic age; this includes sandstones of Cretaceous and Jurassic periods and carbonates of Paleozoic age. Existing and abandoned oil and gas wells have penetrated and/or been completed in those various sandstone and carbonate intervals. Data from these wells (wireline logs and drill stem tests) can help to understand the hydrogeology of these deeper rocks.

Interformational groundwater flow may exist because of the number of wells penetrating sandstones and carbonates containing groundwaters of different qualities or containing hydrocarbons. Several fields in the area produce hydrocarbons and some water from formations below potential aquifers containing better quality groundwater (lower total dissolved solids). For example, the Fort Union Formation and Mesaverde Group are below the Wasatch Formation. Hydrostatic pressure differences can cause interformational groundwater flow. Improper oil and gas well completion and abandonment procedures can exacerbate interformational groundwater flow.

BLM policies comply with state requirements concerning the use and protection of groundwater. Federal laws and regulations (including the Federal Land Policy and Management Act [FLPMA] and executive orders) define BLM's responsibility relative to groundwater. BLM has authority and responsibility to monitor activities to protect and enhance the quality of the environment. Development of oil and gas leases have the potential for environmental quality problems, such as groundwater contamination.

Owners/operators of coalbed natural gas (CBNG) wells or other developments that require the extraction or discharge of water may need to sample nearby water wells on a periodic basis, depending on the individual project and state regulations. This data will be provided to all appropriate agencies in a timely manner.

Requirements for Green River Basin Coalbed Natural Gas Units

Operators of CBNG projects may be required to obtain site-specific groundwater data. These data may include, but are not limited to, obtaining initial, aquifer-specific pressure (water level) data, obtaining aquifer-specific water samples for chemical analyses, and monitoring aquifer-specific pressure and water quality data by obtaining periodic pressure measurements and water samples.

The general groundwater and water quality requirements are as follows:

1. Groundwater pressure and water quality data shall be collected from the first sandstone aquifer underlying the deepest coalbed that will be developed in the area.

2. Groundwater pressure and water quality data shall be collected from the deepest coalbed(s), or from other coalbeds, if deemed necessary by the Authorized Officer (AO), that will be developed in the area.

3. Groundwater pressure and water quality data shall be collected from the first sandstone aquifer above the shallowest coalbed that will be developed in the area.

The target sandstone aquifers and coalbeds will be identified by the AO from open-hole wireline logs obtained from the CBNG well that is being tested, or from a dedicated groundwater monitoring well. The minimum acceptable wireline log suite for this purpose shall consist of gamma ray, caliper, spontaneous potential, and deep and shallow resistivity curves.

Intermittent groundwater monitoring and sampling may be required for the sandstones and coalbeds described above, if deemed necessary by the AO. Groundwater monitoring and sampling shall be made in dedicated groundwater monitoring wells. To minimize surface disturbance, the AO may authorize completion of as many as three separate zones in a single monitoring well. In addition the AO may require continuous groundwater monitoring in at least one of the sandstone aquifers and one potentially productive coalbed. To facilitate this continuous monitoring and sampling, the well should be equipped with packer and tubing configurations that will allow access to the sandstone aquifer below the producing coalbeds and the sandstone aquifer above the potentially productive coalbeds. Intermittent or continuous monitoring of groundwater pressure and water quality data shall not be required for specific horizons if—

1. The sandstone aquifer is more than 100 feet stratigraphically above or below the nearest potentially productive coalbed(s).
2. The nearest public supply, domestic, or agricultural water well with a valid groundwater right from the Wyoming State Engineer from that specific horizon is more than 2 miles from the CBNG project.
3. A specific horizon contains Class III groundwater—water containing more than 5,000 milligrams per liter of total dissolved solids.

An operator developing a CBNG project shall obtain a suite of open-hole wireline logs from at least one well per township. The wells from which the wireline logs are obtained shall be at least 4 miles apart. The wireline logs shall be run from the surface to a depth of 100 feet below the base of the deepest coalbed that the operator plans to develop for CBNG production. The wireline logs shall be calibrated and properly scaled according to industry standards and shall include, at a minimum, a high-resolution resistivity with spontaneous potential and gamma ray curves and a high-resolution neutron density with photoelectric, caliper, and gamma ray curves. The density curve logging speed through the coals shall be no greater than 30 feet/per minute. Paper copies of the logs shall be submitted to the Rock Springs Field Office, and digital (las format) and paper copies shall be submitted to the Wyoming State Office Reservoir Management Group.

The operator developing a CBNG project may be required to obtain one whole-seam core from the major coalbed that is expected to produce CBNG. The cores will be properly collected for desorption, adsorption, and other standard CBNG analyses, such as proximate analysis, coal rank, cleat orientation, initial saturations, and coal permeability. Coal density/specific gravity measurements will be provided for all core samples to calibrate log densities and for correlation with gas content measurements. All data and analyses should be submitted to the Rock Springs Field Office and the Wyoming State Office Reservoir Management Group as soon as they are available.

The operator developing a CBNG project may be required to obtain initial reservoir pressure measurements of the primary coalbed from the initial CBNG well drilled and every tenth well drilled thereafter. The pressure measurements shall be made using a

bottom-hole pressure device, and pressure measurements in the initial CBNG well will be made prior to commencing production from any CBNG well drilled in the project area. These reservoir pressure measurements, and any other reservoir pressure measurements, obtained by the operator shall be submitted to the Rock Springs Field Office and the Wyoming State Office Reservoir Management Group.

Watershed

Plans for watershed monitoring would be initiated in the area when necessary. Watershed monitoring needs would be included in all appropriate resource monitoring plans.