

STANDARD “CONDITIONS OF APPROVAL” FOR APDS

BLM-BUFFALO FIELD OFFICE

Mitigating measures (i.e., stipulations), in the form of *Conditions of Approval*, are applied to both APD and Sundry Notice Drilling Plans & Surface Use Plans when: 1) they are not specifically addressed in those plans, and; 2) they are needed to mitigate impacts to resource values identified at the onsite inspection or during review of the plans. The first section identifies standard mitigating measures applicable to development involving only coal bed methane. The second section identifies standard mitigating measures that are pertinent to all federal oil & gas lease development. Not all of the mitigating measures in this second section are applicable to coal bed methane development.

It is important to note that site-specific stipulations also are developed by the BLM authorized officer, as needed, on a case-by-case basis at the onsite inspection to address special, unanticipated issues not addressed by a standard mitigating measure (e.g., erosive soils, steep slopes, proximity to existing improvements, etc.) These special mitigating measures obviously cannot be listed here. The following are the standard mitigating measures that are always applied (if not already specifically addressed in the plans).

Section 1 - APPLICABLE TO COAL BED METHANE WELL DEVELOPMENT ONLY

1. The operator is committed to all of the mitigation measures and monitoring contained in the Wyodak Coal Bed Methane Project Environmental Impact Statement (EIS) approved November 17, 1999 and the Wyodak Drainage Environmental Assessment (EA) approved March 26, 2001. The operator is also committed to the **Standard “Conditions of Approval” for APD’s, BLM-Buffalo Field Office.**
2. A pre-construction field meeting shall be conducted prior to beginning any dirt work approved under this POD. The operator shall contact the BLM Authorized Officer (responsible NRS @ 307-684-1100) at least 4-days prior to beginning operations so that the meeting can be scheduled. The operator is responsible for having all contractors present (dirt contractors, drilling contractor, pipeline contractor, project oversight personnel, etc.) including the overall field operations superintendent, and for providing all contractors copies of the approved POD, project map and BLM *Conditions of Approval* pertinent to the work that each will be doing.
3. Pit will be **adequately** fenced during and after drilling operations until pit is reclaimed so as to effectively keep out wildlife and livestock. **Adequate fencing**, in lieu of more stringent requirements by the surface owner, is defined as follows:

-Construction materials will consist of steel or wood posts. Three or four strand wire (smooth or barbed) fence or hog panel (16-foot length by 50-inch height) or plastic snow fence must be used with connectors such as fence staples, quick-connect clips, hog rings, hose clamps, twisted wire, etc. Electric fences will not be allowed.

-Construction standards: Posts shall be firmly set in ground. If wire used must be taut and evenly spaced, from ground level to top wire, to effectively keep out animals. Hog panels must be tied securely into posts and one another using fence staples, clamps, etc. Plastic snow fencing must be taut and sturdy. Fence must be at least 2-feet from edge of pit. 3 sides fenced before beginning drilling, the fourth side fenced immediately upon completion of drilling and prior to rig release. Fence must be left up and maintained in adequate condition until pit is closed

4. Pits will be closed as soon as possible, but no later than 90 days from time of drilling/well completion, unless an extension is given by the BLM Authorized Officer. Squeezing of pit fluids and cuttings is not authorized. Pits must be dry of fluids or they must be removed via vac truck or other environmentally acceptable method prior to backfilling, recontouring and replacement of topsoil. Mud and cuttings left in pit must be buried at least 3-feet below recontoured grade. The operator will be responsible for recontouring any subsidence areas that develop from closing a pit before it is sufficiently dry.
5. The operator shall complete wells as soon as possible, but no later than 30 days after drilling operations, unless an extension is given by the BLM Authorized Officer.
6. Operators must submit a *Surface Use Data Summary Form* (Attachment A) as part of every Master Surface Use Plan.
7. If in the process of air drilling the wells there is a need to utilize mud, all circulating fluids will be contained either in an approved pit or in an aboveground containment tank. The pit or containment tank will be large enough to safely contain the capacity of all expected fluids without danger of overflow. Fluid and cuttings will not be squeezed out of the pit, and the pit will be reclaimed in an expedient manner per the above requirements.
8. Coal Bed Methane Monitoring Well Stipulation (applies on a case-by-case determination).

The objective of the monitor well program is to collect data and monitor the effects of coal bed methane development on the groundwater system including the target aquifer(s), overlying and underlying sand zones, and other zones of local importance. Data will be used to characterize and monitor aquifer properties, drawdown, interaquifer communication, leakage, recharge, water quality, and water production / methane production interaction.

As required by the Wyodak EIS/ROD (11/17/99) and in consultation with BLM, the operator will be responsible for drilling, completing, and equipping a set of monitoring wells, as described below. The specific location will be determined in consultation with the BLM, and may only be drilled in a location where the oil and gas mineral estate is owned by the Federal Government. A well set will include wells completed in the production zone(s) and sand aquifer(s), above and/or below the production zone(s). A typical well set would consist of two or more monitor wells depending on the number of production and sand zones. The two or more monitor wells are to be on the same location, situated 20 to 60 feet apart (depending on topography and site specific constraints). In addition to drilling and completing the wells, the CBM operator is responsible for geophysical logging of the wells, obtaining surface access for the drilling and operation of the monitor wells, and all permitting (Wyoming State Engineer's Office, etc.). The operator is also responsible for a portion of the cost of the monitoring equipment and set-up (the BLM will do the actual equipment setup). This cost share has been established for this year (2002) at \$10,000 for a two well set and \$15,000 for each set consisting of more than 2 wells. **The operator must provide cost share dollars before BLM can equip the wells. These monitor wells must be drilled, completed, equipped and operating at least 30 days prior to any water or gas production from the well(s) authorized under this approval.**

WELL COMPLETIONS

COAL WELL (S)

The coal well(s) of the well sets will be completed in a manner similar to a CBM production well. The well(s) will be drilled to the top of the production zone(s) and 5 1/2" (minimum OD) steel casing will be set and cemented from the top of coal to the surface. The coal will then be drilled out, leaving an open whole completion. The well will then be circulated with fresh water to remove any remaining drilling fluids. If the coal doesn't appear to be making water during the clean up of the well bore, under-reaming and/or enhancement may be required. The well must be completed on top with a standard well head, i.e. KVF 'Gillette Special' well head (2x2 or 2x4 with a 2", centered tubing port and threaded auxiliary access port in the mandrel).

SAND WELL

The depth of the sand well(s) will be determined in the field utilizing the geophysical logs from the coal well. On wells less than 500 feet, the hole must be drilled with a minimum of a 8 3/4" bit to accommodate SDR17, 5 inch ID (minimum) PVC casing and allowing for proper placement of gravel pack and bentonite grout. If larger casing is used, a larger hole will have to be drilled. Upon completion of drilling, geophysical logs will be run to determine the exact placement of the well screen. The well casing will include 10 to 20 feet of blank pipe on the bottom (capped), .020 slot well screen open to the selected sand zone, and blank pipe to the surface. The well will then be gravel packed with 10-20

silica sand to cover the well screen (and associated sand zone) and backfilled with bentonite gravel (or pellets) to the surface. The top of the well casing must have threads (slip to thread adapter) and a vented cap.

On wells greater than 500 feet, 5 1/2" (minimum) steel casing will be set through the sand zone, cemented to surface, and perforated, 4 shots per foot, through the sand zone. The well will then be cleaned up by air lifting until all drilling fluids and solids are removed, clear water is produced, and a yield is estimated. Steel cased wells will be completed at the surface utilizing a standard wellhead as described in the coal well completion section above.

The operator shall submit APDs to BLM for the monitor wells. The APDs should include the completed APD cover sheet (Form 3160-3), survey plats, a drilling plan and a surface use plan (including a map). The monitor wells are subject to the same spud notification requirements and completion report requirements as regular federal wells (see General Conditions of Approval). If you have any questions concerning this stipulation and for information on locating and equipping of the wells, please contact Mike Brogan, BLM Hydrologist, at (307) 261-7600.

Requirements for exploratory and permanent water management plans are listed separately below:

Exploratory Water Management Plan

Items to be addressed in the Exploratory Water Management plan include the following:

- Must include a USGS topographic map (1:24000) (or legible copy) showing the actual discharge points, well locations, access routes, pipeline routes, erosion control and stabilization measures, impoundments (reservoirs), etc.
- Discharge points must be not be located on hill tops or upland areas. They must be located in existing low gradient channels (below any active or potentially active head cuts). Discharge can be to to existing impoundments of adequate size to store all the test water or designed to pass the discharge water (through outlet pipes or reinforced spillways).
- Water energy dissipation measures must be designed and constructed at discharge points and at any unstable downstream sections (minor head cuts, eroding channel sections, etc.).
- Before any water is discharged (including exploratory discharge), all applicable permits and authorizations from such agencies as the Wyoming Dept. of Environmental Quality (WDEQ), Wyoming State Engineers Office (WSEO) and Army Corp of Engineers (COE) must be obtained.

- Exploratory discharge will be allowed only until the wells have been properly tested to prove production. Only surface piping will be authorized for exploratory discharge, no trenching will be allowed.
- Before any water is discharged a standard quality analysis as required by DEQ-DPDES (barium, iron, manganese, radium-226, chlorides, sulfates, pH, TDS, and TPH) from each well or from representative wells (from each zone of production) must be submitted to BLM.
- Upon completion of the exploration/research project, an updated standard water quality analysis for each coal zone will be submitted to BLM.
- The lessee/operator shall provide a comprehensive *water management plan* as part of the APD that addresses how produced water will be handled during the testing and production of well(s). Adequate information should be available to develop this plan before wells are drilled.
- For exploratory wells in areas of unknown, untested production potential, the operator will need a temporary (drilling and testing) water management plan. If the well(s) prove to be productive, the operator will then need to submit a permanent water management plan via a Sundry Notice for BLM approval prior to producing the well(s).

Permanent Water Management Plan

Items to be addressed include the following:

- A USGS topographic map (1:24000) (or legible copy) showing location of the actual discharge points, wells, access routes, pipeline routes, erosion control and stabilization measures, and impoundments (reservoirs).
- Discharge points must not be located on hill tops or upland areas. They must be located in low gradient existing channels (below any active or potentially active head cuts). Cumulative discharge must not exceed the naturally occurring, mean annual peak flow of the receiving channel. Discharges can be to existing impoundments that are designed (outlet pipes or reinforced spillways) to pass the proposed discharge water, the naturally occurring mean annual flow, and any existing discharge water.
- Before any water is discharged a standard quality analysis as required by DEQ-DPDES (barium, iron, manganese, radium-226, chlorides, sulfates, pH, TDS, and TPH) from each well or from representative wells (from each zone of production)

must be submitted to BLM.

- Upon completion of the drilling operations, an updated standard water quality analysis for each coal zone will be submitted to BLM.
- Plans for, and/or designs of, erosion control and stabilization measures must be provided. Any in-channel measures must be designed to accommodate existing and proposed discharges in addition to naturally occurring flow. Head cuts ≥ 6 feet will require an engineered design. This design will be reviewed by a BLM civil engineer prior to approval.
- Any new impoundments or modifications of existing structures must be properly permitted with the Wyoming State Engineers Office (WSEO) and/or the Army Corps of Engineers (COE) and designed with outlet works to pass all existing, planned, and potential discharge^{**} water in addition to naturally occurring mean annual flow. Operators are cautioned that the outlet works must be designed in such a manner as not to affect any existing downstream Water Rights. In addition, the combination of flood storage (the volume of storage above the outlet works and below the spillway) and spillway capacity must be adequate to accommodate a specific design flood as required by the Wyoming State Engineers Office (WSEO). The required design depends on the size of the impoundment (25-year, 6-hour storm event, or 100 year, 24-hour storm event). Flood storage alone must be adequate to contain lesser events. If passage of water through the spillway is to be frequent, the spillway must be reinforced and designed for continual flow (no regular flows on earthen spillways).

^{**} The existing, planned and potential discharge[@] can be roughly calculated by determining the watershed area, dividing by the minimum well spacing (currently 80 acres), and multiplying this by the average discharge rate. As is obvious, it is undesirable to put impoundments on the main stem of a large drainage area.

For reservoirs on BLM surface lands that are proposed as part of the water management plan (WMP), the operator must provide the following information:

- For each reservoir smaller than 20 acre-feet capacity and with a dam height of less than 20' (20/20), the operator must include in the WMP the information that would normally be required by the Wyoming State Engineer's Office (WSEO) for a stock water reservoir permit. This information would need to clearly show that each reservoir is being constructed using BLM specifications for earthwork placement and principle spillway configuration. After a case-by-case consideration of the factors below (A. and B.), BLM would either approve or disapprove each reservoir. Upon approval by the BLM, the operator would then need to have each reservoir permitted by the WSEO.

- For reservoirs greater than 20/20, the permit application must be submitted to the BLM as part of the WMP with the information that would be normally required for permitting by the WSEO. If approved by the BLM State Engineer at the Wyoming State BLM office, the operator would then be required to submit an application to the WSEO for approval under the Safety of Dams program.

Reservoirs on BLM surface will be approved or disapproved on a case-by-case basis after considering the following factors:

- A. Proper siting and design.
- B. Existing resource uses/needs and multiple-use management principles.

Please be advised that BLM will apply special *Conditions-of-Approval* to authorized reservoirs depending upon case-by-case consideration of the above-factors. Construction monitoring by BLM Authorized Officers would also be required on a case-by-case basis.

- Water production rates (for each discharge point) must be disclosed including discharge schedule (initial, intermediate, and final rates and duration) and maximum, mean, and minimum anticipated rates.
- Before any water is discharged a standard quality analysis as required by DEQ-DPDES (barium, iron, manganese, radium-226, chlorides, sulfates, pH, TDS, and TPH) from each well or from representative wells (from each zone of production) must be submitted to BLM.
- Upon completion of the drilling operations, an updated standard water quality analysis for each coal zone will be submitted to BLM.
- A hydrologic watershed analysis, based on field reconnaissance, must be done and must include the following:
 - A. Watershed area
 - B. Average watershed slope
 - C. Existing channel (average slope, width, depth, condition, etc.) calculation of mean annual runoff
 - D. Peak flow analysis (2-, 10-, and 25-year return interval at a minimum)
 - E. Destination (i.e., tributary to the Belle Fourche River)
 - F. Description of the existing watershed including:
 - i) existing wells (location, depth, water level, use, condition)
 - ii) existing impoundments (location, size, volume, use, condition, description of outlet works and spillway)

- iii) road crossings (crossing type - culvert size (BLM minimum is 18-inch diameter), low water crossing, bridge, etc. and condition)
- iv) water related uses (flood irrigated/subirrigated crops, livestock, etc.)
- v) potential down stream concerns (on channel impoundments, hay meadows, coal mine reclamation and sediment structures, unimproved channel crossings, etc.) and plans to mitigate impacts.

NOTE: Operators must submit a *Hydrologic Watershed Field Analysis Summary Form* (Attachment B) as part of all water management plans. If the water management plan includes more than one drainage area, additional summary sheets will be required.

- Monitoring Plans, which must include as a minimum:
 - A. Discharge point(s) will be monitored on a monthly basis for the first year of operation. Inspectors will note the condition of each discharge point, check for evidence of erosion, and schedule any remedial work if required.
 - B. Dam outlets (spillways and pipes) and culvert outlets will be checked quarterly, or after major storm events for the first year of operation. Inspectors will note the condition of the discharge point, check for evidence of erosion, and schedule any remedial work if required.
 - C. Erosion stabilization measures (head cuts, etc.) will be inspected for signs of erosion or structure failure. Inspectors will note condition and schedule any remedial work if required.
 - D. Downstream channel (below the well(s)/project) will be inspected for signs of accelerated erosion due and/or vegetation changes to the continuous flow of produced water.

After the first year of operation, inspections will occur annually unless specific sites have required remedial action.

NOTE:

General Guidance for Land Application of CBM Produced Water

Land application of produced water has the potential to produce negative, long term impacts to soil physical and chemical properties if not properly managed. Proposals to land apply CBM produced water on federal projects must include the following information as part of the exploratory and/or permanent water management plans:

1. Site characterization. The site characterization must include field investigations of soils and vegetation. The site should be described in detail, and soil samples should be collected and

analyzed to determine important soil chemical and physical properties. Site descriptions should include maps, vegetation descriptions, soils descriptions, laboratory analysis and location of proposed application sites. Photo documentation of the site should be included. Laboratory analysis of produced water should also be included with the site characterization study.

2. Project description. The project description must include the proposed method(s) of water application, application rates and schedules and physical layout of application areas. Complete maps of the application infrastructure should be included. Detail any soil or water amendments which will be utilized, or physical soil manipulations which are planned. Project descriptions should demonstrate that land application is feasible given the results of the site characterization.

3. Monitoring Plan. Periodic monitoring of soils and vegetation will be required to assure that negative impacts are not occurring, or are being remediated. Monitoring must include soil sampling and laboratory analysis.

4. Winter operations. Detail practices which will be used to prevent the buildup of ice on the soil surface during sub freezing temperatures.

5. Mitigation Plan. A plan must be developed which outlines mitigation measures which will be implemented in the event negative soils or vegetation impacts are detected during routine monitoring. Potential mitigation measures might include soil or water amendments, physical manipulation or vegetative treatments.

These criteria are general in nature, and must be adjusted to site-specific conditions. Detailed soil sampling criteria have not yet been developed, so project proposals will be evaluated on a case-by-case basis during the interim. More specific guidance/requirements may be forthcoming as the result on ongoing research and coordination.

All water management plans (exploratory and permanent) submitted subsequent to receipt of a POD or APD(s) must include a Lessee's or Operator's Representative and Certification as follows:

I hereby certify that I, or persons under my direct supervision, have inspected the watershed area(s) affected by our coal bed methane drilling and production plans; that I am familiar with the conditions which currently exist; that the statements made in this plan are, to the best of my knowledge, true and correct; and that the work associated with operations proposed herein will be performed by _____ and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provisions of 18 U.S.C. 1001 for the filing of a false statement.

Date _____

Name and Title _____

If the water management plan is included as part of the POD Master Surface Use Plan or APD Surface Use Plan, then the Certification Statement already required under APD Item 13. of the Surface Use Plan will suffice.

Section 2 - PERTINENT TO ALL OIL & GAS WELL DEVELOPMENT

A. CONSTRUCTION

1. Remove all available topsoil (depths vary from 4” on ridges to 12+ in bottoms) from the location including areas of cut, fill, and/or spoil storage areas and stockpile at the site. Topsoil will also be salvaged for use in reclamation on all other areas of surface disturbance (roads, pipelines, etc.). Clearly segregate topsoil from excess spoil material. Any topsoil stockpiled for one year or longer will be signed and stabilized with vegetation. Seed with annual ryegrass or other suitable cover crop.
2. The operator will not push soil material and overburden over side slopes or into drainages. All soil material disturbed will be placed in an area where it can be retrieved without creating additional undue surface disturbance and where it doesn't impede watershed and drainage flows.
3. Construct the backslope no steeper than ½:1. and construct the foreslope no steeper than 2:1, unless otherwise directed by the BLM authorized officer.
4. Maintain a minimum 20' undisturbed vegetative border between toe-of-fill of pad and/or pit areas and the edge of adjacent drainages, unless otherwise directed by the BLM Authorized Officer.
5. With the overall objective of minimizing surface disturbance and retaining land stability & productivity, the operator shall utilize equipment that is appropriate to the scope and scale of work being done for roads and well pads (utilize equipment no larger than needed for the job.)
6. All overhead power lines will be built to protect raptors from accidental electrocution.
7. The operator shall utilize wheel trenchers or ditch witches to construct all pipeline trenches, except where extreme topography or other environmental factors preclude their use.
8. A flare pit will be constructed on the well pad for use during drilling operations. It will be located at least 125-feet from the well head and will be located down-wind from the prevailing winds.
9. Pit will be **adequately** fenced during and after drilling operations until pit is reclaimed so as to effectively keep out wildlife and livestock. This requires that it be fenced on the

three nonworking sides prior to drilling and on the remaining side **immediately** following rig release. Fencing will be constructed in accordance with BLM specifications.

10. The reserve pit will be oriented to prevent collection of surface runoff. After the drilling rig is removed, the operator may need to construct a trench on the uphill side of the reserve pit to divert surface drainage around it. If constructed, the trench will be left intact until the pit is closed.
11. The reserve pit will be lined with an impermeable liner if permeable subsurface material is encountered. An impermeable liner is any liner having a permeability less than 10^{-7} cm/sec. The liner will be installed so that it will not leak and will be chemically compatible with all substances which may be put in the pit. Liners made of any man-made synthetic material will be of sufficient strength and thickness to withstand normal installation and pit use.
12. The reserve pit will be constructed so that half of its total volume is in solid cut material (below natural ground level).
13. If any cultural values (sites, artifacts, remains) are observed during operation of this lease/permit/right-of-way, they will be left intact and the Buffalo Area Manager notified. The authorized officer will conduct an evaluation of the cultural values to establish appropriate mitigation, salvage or treatment.
14. If paleontological resources, either large and conspicuous, and/or a significant scientific value are discovered during construction, the find will be reported to the Authorized Officer immediately. Construction will be suspended within 250 feet of said find. An evaluation of the paleontological discovery will be made by a BLM approved professional paleontologist within five (5) working days, weather permitting, to determine the appropriate action(s) to prevent the potential loss of any significant paleontological values. Operations within 250 feet of such a discovery will not be resumed until written authorization to proceed is issued by the Authorized Officer. The applicant will bear the cost of any required paleontological appraisals, surface collection of fossils, or salvage of any large conspicuous fossils of significant scientific interest discovered during the operation.
15. Culverts will be placed on channel bottoms on firm, uniform beds which have been shaped to accept them and aligned parallel to the channel to minimize erosion. Backfill will be thoroughly compacted.
16. The minimum diameter for culverts will be 18 inches.
17. Low water crossings will be constructed at original stream bed elevation in a manner that will prevent any blockage or restriction of the existing channel. Material removed will be stockpiled for use in reclamation of the crossings.

18. Construction-related traffic will be restricted to approved routes. Cross-country vehicle travel will not be allowed.
19. Construction activity will not be conducted using frozen or saturated soil material or during periods when watershed damage is likely to occur.
20. Any pipelines/flowlines off of the disturbed well pad that are not specifically addressed in the APD, must be authorized by the BLM via a Sundry Notice prior to construction.
21. Pipeline construction shall not block nor change the natural course of any drainage. Suspended pipelines shall provide adequate clearance for maximum runoff.
22. Pipeline trenches shall be compacted during backfilling. Pipeline trenches shall be maintained in order to correct settlement and erosion.

B. OPERATIONS/MAINTENANCE

1. Confine all equipment and vehicles to the access road, pad, and area specified in the APD or POD.
2. All waste, other than human waste and drilling fluids, will be contained in a portable trash cage. This waste will be transported to a State approved waste disposal site immediately upon completion of drilling operations. No trash or empty barrels will be placed in the reserve pit or buried on location. All state and local laws and regulations pertaining to disposal of human and solid waste will be complied with.
3. Rat and mouse holes shall be filled and compacted from the bottom to the top immediately upon release of the drilling rig from the location.
4. The operator will be responsible for control of noxious weeds on all areas of surface disturbance associated with this project (well locations, roads, water management facilities, etc.) Use of pesticides shall comply with the applicable Federal and State laws. Pesticides shall be used only in accordance with their registered uses and within limitations imposed by the Secretary of Interior. Prior to the use of pesticides on public land, the holder shall obtain from the BLM authorized officer written approval of a plan showing the type and quantity of material to be used, pest(s) to be controlled, method of application, location of storage and disposal of containers, and any other information deemed necessary by the authorized officer to such use.
5. All permanent above-ground structures (specify type of structures, e.g. , production equipment, tanks, transformers, insulators, etc.) not subject to safety requirements will be painted to blend with the natural color of the landscape. The paint used will be a color which simulates "Standard Environmental Colors." The color selected for this (site,

project), is (name and Munsell Soil Color Number).

6. Sewage shall be placed in a self-contained, chemically treated porta-potty on location.
7. The operator and their contractors shall ensure that all use, production, storage, transport and disposal of hazardous and extremely hazardous materials associated with the drilling, completion and production of this well will be in accordance with all applicable existing or hereafter promulgated federal, state and local government rules, regulations and guidelines. All project-related activities involving hazardous materials will be conducted in a manner to minimize potential environmental impacts. A file will be maintained onsite containing current Material Safety Data Sheets (MSDS) for all chemicals, compounds and/or substances which are used in the course of construction, drilling, completion and production operations.
8. Produced fluids shall be put in test tanks on location during completion work. Produced water will be put in the reserve pit during completion work per Onshore Order #7.
9. The only fluids/waste materials which are authorized to go into the reserve pit are RCRA exempt exploration and production wastes. These include:
 - drilling muds & cuttings
 - rigwash
 - excess cement and certain completion & stimulation fluids defined by EPA as exemptIt does not include drilling rig waste, such as:
 - spent hydraulic fluids
 - used engine oil
 - used oil filter
 - empty cement, drilling mud, or other product sacks
 - empty paint, pipe dope, chemical or other product containers
 - excess chemicals or chemical rinsateAny evidence of non-exempt wastes being put into the reserve pit may result in the BLM Authorized Officer requiring specific testing and closure requirements.
11. Operators are advised that prior to installation of any oil and gas well production equipment which has the potential to emit air contaminants, the owner or operator of the equipment must notify the Wyoming Department of Environmental Quality, Air Quality Division (phone 307-777-7391) to determine permit requirements. Examples of pertinent well production equipment include fuel-fired equipment (e.g., diesel generators), separators, storage tanks, engines and dehydrators.

C. DRY HOLE/RECLAMATION

1. All disturbed lands associated with this project, including the pipelines, access roads,

water management facilities, etc will be expediently reclaimed and reseeded in accordance with the surface use plan.

- 2 Disturbed lands will be recontoured back to conform with existing undisturbed topography. No depressions will be left that trap water or form ponds.
- 3 The fluids and mud must be dry in the reserve pit before recontouring pit area. The operator will be responsible for recontouring of any subsidence areas that develop from closing a pit before it is completely dry. The plastic pit liner will be cut off below grade and properly disposed of at a state authorized landfill before beginning to recontour the site.
- 4 Before the location has been reshaped and prior to redistributing the topsoil, the operator will rip or scarify the drilling platform and access road on the contour, to a depth of at least 12 inches. The rippers are to be no farther than 24 inches apart .
- 5 Distribute the topsoil evenly over the entire location and other disturbed areas. Prepare the seedbed by disking to a depth of 4-to-6 inches following the contour .
- 6 Waterbars are to be constructed at least one (1) foot deep, on the contour with approximately two (2) feet of drop per 100 feet of waterbar to ensure drainage, and extended into established vegetation. All waterbars are to be constructed with the berm on the downhill side to prevent the soft material from silting in the trench. The initial waterbar should be constructed at the top of the backslope. Subsequent waterbars should follow the following general spacing guidelines:

<u>% SLOPE</u>	<u>SPACING INTERVAL (feet)</u>
2 or <	200
2 – 4	100
4 – 5	75
5 or >	50

7. The operator will drill seed on the contour to a depth of .5 inch, followed by cultipaction to compact the seedbed, preventing soil and seed losses. To maintain quality and purity, the current years tested, certified seed with a minimum germination rate of 80% and a minimum purity of 90% will be used. On BLM surface or in lieu of a different specific mix desired by the surface owner, use the following:

SPECIES-CULTIVAR **LBS PLS/ACRE**
determined at the site-specific onsite inspection)

8. Slopes too steep for machinery may be hand broadcast and raked with twice the specified amount of seed.
9. Complete fall seeding after September 15 and prior to ground frost. To be effective,

complete spring seeding after the frost has left the ground and prior to May 15.

10. The operator will reshape abandoned access roads by pushing the fill material back into the cuts. On roads to be permanently closed, waterbars are to be constructed near the contour across the shaped road, utilizing the spacing guidelines contained in No. 5 above.
11. Disk and seed the access road per number 6 above.
12. All rehabilitation work, including seeding, will be completed as soon as feasible following plugging.
13. Following reseeding, the location will be temporarily fenced off (**if not already fenced**) for at least two complete growing seasons to ensure long-term reclamation success, unless otherwise requested by the surface owner.
14. BLM will not release the performance bond until the area has been successfully revegetated (evaluation will be made after the second complete growing season) and has met all other reclamation goals of the surface owner and surface management agency.
15. A Notice of Intent to Abandon and a Subsequent Report of Abandonment must be submitted for abandonment approval.
16. For performance bond release approval, a Final Abandonment Notice with a surface owner release must be submitted prior to a final abandonment evaluation by BLM.

D. PRODUCING WELL

1. The entire location will be fenced off with a 4-strand barbed wire fence (or sheep fence based on site-specific conditions), with H-braces on the corners and a cattleguard, far enough outside of disturbed areas and soil stockpiles to allow for perimeter rehab within the fenced location.
2. Landscape those areas not required for production to the surrounding topography as soon as possible. The fluids and mud must be dry in the reserve pit before recontouring pit area. The operator will be responsible for recontouring and reseeding of any subsidence areas that develop from closing a pit before it is completely dry.
3. Reduce the backslope to 2:1 and the foreslope to 3:1, unless otherwise directed by the BLM Authorized Officer. Reduce slopes by pulling fill material up from foreslope into the toe of cut slopes.
4. Production facilities (including dikes) must be placed on the cut portion of the location and a minimum of 15 feet from the toe of the back cut.

5. A dike will be constructed completely around the production facilities (i.e. production tanks, water tanks, and heater-treater). The dikes for the production facilities must be constructed of **impermeable** soil, hold 110% of the capacity of the largest tank plus 1-foot of freeboard, and be independent of the back cut.
6. Any chemicals used in treating the wells (e.g., corrosion inhibitor, emulsion breaker, etc.) will be in a secure, fenced-in area that has an appropriate secondary containment structure (dikes, catchment pan, etc.)
7. The load out line coming from the oil/condensate tank(s) will have a suitable containment structure to capture and recycle any oil spillage that might occur.
8. Individual production facilities (tanks, treaters, etc.) will be adequately fenced off (**if entire facility not already fenced off**).
9. Distribute stockpiled topsoil evenly over those areas not required for production and reseed as recommended. ****Due to fragile soils, the entire well location may need to be fenced off to ensure revegetation and stability of the reclaimed location perimeter throughout the producing life of the well, subject to the discretion of the BLM Authorized Officer.**
10. Upgrade and maintain access roads and drainage control (e.g., culverts, drainage ditches, ditching, crowning, surfacing, etc.) as necessary and as directed by the BLM Authorized Officer to prevent soil erosion and accommodate safe, year-round traffic.
12. Prior to construction of production facilities not specifically addressed in the APD, the operator shall submit a Sundry Notice to the BLM Authorized Officer for approval.
13. If not already required prior to constructing and drilling the well location, the operator shall immediately upgrade the entire access road to BLM standards (including topsoiling, crowning, ditching, drainage culverts, surfacing, etc.) to ensure safe, environmentally-sound, year-round access.
14. Waterbars shall be installed on all reclaimed pipeline corridors per the guidelines in C.5.

F. GENERAL INFORMATION

1. Please contact (pertinent NRS), Natural Resource Specialist, @ (307) 684-11xx, Bureau of Land Management, Buffalo, if there are any questions concerning the above surface use stipulations.

ATTACHMENT A

CBM PROJECT SURFACE USE DATA SUMMARY FORM

Company Name:				Date:		
Project Name:				County:		
Number of Wells:		Leases				
Involved:						
Township (s) Involved:		T	N	R	W	Sections:
		T	N	R	W	Sections:
Number of Proposed Central Gathering/Metering Facilities:						
Miles of Proposed Improved Roads (including spot upgrade areas):						
Miles of Existing and Proposed 2-Track Roads:						
Miles of Corridor (define utilities):						
Miles of Gas Pipeline Not w/in a Corridor:						
Water Pipeline Not w/in a Corridor:						
Miles of Buried Power Cable Not w/in a Corridor:						
Watershed(s) Involved:						
Number of Proposed Discharge Points:						
Additional Comments:						
Prepared By:				Telephone:		

Attachment B

Hydrologic Watershed Field Analysis Summary Sheet

POD Name:	
Company:	
Watershed(s) involved:	
Watershed Area :	
Average Watershed Slope:.	
<u>Existing Channel information</u>	
Average Bank Full Width	ft.
Average Channel Slope .	feet/Foot
Average Channel Width	ft. and Depth ft..
General Channel Condition: Stable/Unstable (potential erosion areas of concern)	

Channel Vegetative Cover/ Dominant Species:

Calculation of Mean Annual Flow(Loham): ac.ft. and/or cfs.
(Show calculations used in BLM and Industry accepted procedures.)

Peak Flow Analysis

Recurrence Interval (Years)	Exceedence Probability(%)	Peak Flow (CFS / Mi.²)	Peak Flow for Complete Basin (CFS)
2	.50		
5	.20		
10	.10		
25	.04		
50	.02		
100	.01		