

**UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
Buffalo Field Office
Buffalo, Wyoming**

**SURFACE USE
CONDITIONS OF APPROVAL**

POD Name: Hollcroft/Stotts Draw

Operator: Pennaco Energy, Inc.

List of Wells:

	Well Name	Well #	Qtr/Qtr	Sec	TWP	RNG	Lease #
1	HOLLCROFT STOTTS SDU	16-10AW	SESE	10	52N	77W	WYW143158
2	HOLLCROFT STOTTS SDU	12-11AW	NWSW	11	52N	77W	WYW143158
3	HOLLCROFT STOTTS SDU	14-11AW	SESW	11	52N	77W	WYW143158
4	HOLLCROFT STOTTS HOLLCROFT	4-14AW	NWNW	14	52N	77W	WYW159007
5	HOLLCROFT STOTTS HOLLCROFT	6-14AW	SESW	14	52N	77W	WYW159007
6	HOLLCROFT STOTTS (water injection well)	13-11SR	NWSW	11	52N	77W	WYW143158

List of impoundments for the containment of CBNG produced water:

	IMPOUNDMENT	BLM Identifier	Qtr/Qtr	Sec	TWP	RNG	Lease #
	Name / Number						
1	Hollcroft	2-52-77-SESW	SESW	2	52N	77W	FEE
2	Sage	11-52-77-NWNW	NWNW	11	52N	77W	FEE
3	Lindsay#1	10-52-77-NESE	NESE	10	52N	77W	WYW143158
4	Two Fingers	12-52-77-NWNW	NWNW	12	52N	77W	FEE
5	Landslide	11-52-77-SWSE	SWSE	11	52N	77W	WYW143158

I Programmatic mitigation measures identified in the PRB FEIS ROD

Programmatic mitigation measures are those, determined through analysis, which may be appropriate to apply at the time of APD approval if site specific conditions warrant. These mitigation measures are applied as COA's and will be adhered to in addition to stipulations applied at the time of lease issuance and any standard COA.

Groundwater

In order to address the potential impacts from infiltration on shallow ground water, the Wyoming DEQ has developed a guidance document, "Compliance Monitoring for Ground Water Protection Beneath Unlined Coalbed Methane Produced Water Impoundments" (June 14, 2004) which can be accessed on their website. This guidance document became effective August 1, 2004. For WYPDES permits received by DEQ after the August 1st effective date, the BLM will require that operators comply with the latest DEQ standards and monitoring guidance. WDEQ has also

established a task force to evaluate the need for investigation of shallow groundwater aquifers under existing impoundments used for storage and disposal of CBNG produced water.

Surface Water

1. Channel Crossings:
 - a) Minimize channel disturbance as much as possible by limiting pipeline and road crossings.
 - b) Avoid running pipelines and access roads within floodplains or parallel to a stream channel.
 - c) Channel crossings by road and pipelines will be constructed perpendicular to flow. Culverts will be installed at appropriate locations for streams and channels crossed by roads as specified in the BLM Manual 9112-Bridges and Major Culverts and Manual 9113-Roads. Streams will be crossed perpendicular to flow, where possible, and all stream crossing structures will be designed to carry the 25-year discharge event or other capacities as directed by the BLM.
 - d) Channel crossings by pipelines will be constructed so that the pipe is buried at least four feet below the channel bottom.
2. Low water crossings will be constructed at original streambed 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.
3. Concerns regarding the quality of the discharged CBM water on downstream irrigation use may require operators to increase the amount of storage of CBM water during the irrigation months and allow more surface discharge during the non-irrigation months.
4. The operator will be required to provide a reclamation bond for impoundments over federal minerals in the amount specified by a qualified Professional Engineer for the impoundments to be used for the management of CBNG water. The bond amount will be submitted within 90 days after POD approval and will be approved by the BLM prior to commencing construction.
5. The operator will supply a copy of the complete approved SW-4, SW-3, or SW-CBNG permits to BLM as they are issued by WSEO for impoundments.

Soils

1. The Companies, on a case by case basis depending upon water and soil characteristics, will test sediments deposited in impoundments before reclaiming the impoundments. Tests will include the standard suite of cations, ions, and nutrients that will be monitored in surface water testing and any trace metals found in the CBM discharges at concentrations exceeding detectable limits.

Vegetation

1. Temporarily fence reseeded areas, if not already fenced, for at least two complete growing seasons to insure reclamation success on problematic sites (e.g. close to livestock watering source, erosive soils etc.).

Wetland/Riparian

1. Power line corridors will avoid wetlands, to the extent possible, in order to reduce the chance of waterfowl hitting the lines. Where avoidance can't occur, the minimum number of poles

necessary to cross the area will be used.

2. Wetland areas will be disturbed only during dry conditions (that is, during late summer or fall), or when the ground is frozen during the winter.
3. No waste material will be deposited below high water lines in riparian areas, flood plains, or in natural drainage ways.
4. The lower edge of soil or other material stockpiles will be located outside the active floodplain.
5. Disturbed channels will be re-shaped to their approximate original configuration or stable geomorphologic configuration and properly stabilized.
6. Reclamation of disturbed wetland/riparian areas will begin immediately after project activities are complete.

Wildlife

1. All conservation measures and terms and conditions identified in the Powder River Basin Oil and Gas Project Biological Opinion (WY6633) shall be complied with.
2. For any surface-disturbing activities proposed in sagebrush shrublands, the Companies will conduct clearance surveys for sage grouse breeding activity during the sage grouse's breeding season before initiating the activities. The surveys must encompass all sagebrush shrublands within 0.5 mile of the proposed activities.
3. All stock tanks shall include a ramp to enable trapped small birds and mammals to escape. See Idaho BLM Technical Bulletin 89-4 entitled Wildlife Watering and Escape Ramps on Livestock Water Developments: Suggestions and Recommendations.

Threatened, Endangered, or Sensitive Species

Bald Eagle

1. Surveys for active bald eagle nests and winter roost sites will be conducted within suitable habitat by a BLM approved biologist. Surface disturbing activities will not be permitted within one mile of suitable habitat prior to survey completion.
2. A minimum disturbance-free buffer zone of 0.5 mile (i.e., no surface occupancy) will be established year-round for all bald eagle nest sites. A seasonal minimum disturbance-free buffer zone of one mile will be established for all bald eagle nest sites (February 15 – August 15).
3. A seasonal minimum disturbance-free buffer zone of 1 mile will be established for all bald eagle winter roost sites (November 1 – April 1). These buffer zones and timing may be adjusted based on site-specific information through coordination with, and written approval from, the USFWS.

4. Within ½ mile of bald eagle winter roost sites additional measures such as remote monitoring and restricting maintenance visitation to between 9:00 and 3:00 may be necessary to prevent disturbance (November 1 – April 1).
5. Additional mitigation measures may be necessary if the site-specific project is determined by a BLM biologist to have adverse effects to bald eagles or their habitat.

Ute Ladies'-tresses Orchid

1. Moist soils near wetlands, streams, lakes, or springs in the project area will be promptly revegetated if construction activities impact the vegetation in these areas. Revegetation will be designed to avoid the establishment of noxious weeds.

Air Quality

1. During construction, emissions of particulate matter from well pad and resource road construction will be minimized by application of water, or other dust suppressants, with at least 50 percent control efficiency. Roads and well locations constructed on soils susceptible to wind erosion could be appropriately surfaced or otherwise stabilized to reduce the amount of fugitive dust generated by traffic or other activities, and dust inhibitors (surfacing materials, non-saline dust suppressants, and water) could be used as necessary on unpaved collector, local and resource roads that present a fugitive dust problem. The use of chemical dust suppressants on BLM surface will require prior approval from the BLM authorized officer.

II Site Specific Conditions of Approval

1. The following changes made at the onsite will be followed. They have all been incorporated into the operator’s plan of development.

Changes agreed to at the onsite:

	Well #	TWP	RNG	Sec	QTR	Changes and Comments
WYW141579	8-3A	52N	77W	3	SENE	The well is within the 1/4 mile buffer Zone of a Raptor nest. Moving the well outside the 1/4 mile puts it outside of the quarter section and off of Federal Minerals. The operator withdrew the APD.
WYW143158	16-10AW	52N	77W	10	SESE	The well was moved about 300' west to the edge of the heavy sagebrush, reducing sagebrush loss.
WYW143158	12-11A	52N	77W	11	NWSW	The access was changed by Hollcrofts to come in from the NE following an existing fee corridor.

	Well #	TWP	RNG	Sec	QTR	Changes and Comments
WYW143158	6-13AW	52N	77W	13	SENW	Proposed 2-track access will be upgraded to a template road with culverts & spot upgrades. There are 3 headcuts that the access will run above that require a 30' vegetated buffer. A gate will be added at the fence crossing near the Landslide Reservoir. A cosway will be built at the upper end of the Landslide Res. to accommodate a channel crossing with a 48" culvert and 14' of fill. The fill will be taken from the kettle of the Landslide Reservoir. BLM requires designs for the cosway and the pad as well as a road diagram for the entire access route. The operator agreed to move the well about 500 feet down hill and withdraw the constructed pad for this well as per BLM recommendation.
WYW151170	4-14A	52N	77W	14	NWNW	Two 18 inch culverts and a low water crossing will be added at 3 small drainage crossings along the proposed 2-track access to the well site.
WYW151170	6-14-A	52N	77W	14	SENW	The well was moved down hill to a 6% slope to avoid the 13% slope at the staked location.
Water Injection Wells						
WYW143158	13-11SR	52N	77W	11	NWSW	This well was added to the proposed Water Management Plan. The injection well is located outside the elk yearlong range. The access is an existing improved, power will come from overhead that runs next to the site, water will be draw from the Hollcroft Reservoir, that is 300' below the site. The location is flat, grass land. The facility will be built on skid structures and includes a small building approximately 10'X 16' with two 10' diameter water tanks setting on end.
FEE	6-2 SR	52N	77W	2	SWNE	This well was added to the proposed Water Management Plan. The injection well was staked inside the elk yearlong range but over fee minerals. This well was withdrawn by the operator from the POD when identified as inside elk ranges.

Note: The operator was made aware of the following at the onsite inspection.

*Kathleen Hollcroft stated that they prefer that the seed mix used for reclamation be the BLM's recommended seed mix.

*All the wells fall under Bald Eagle timing limitation stipulations.

2. All permanent above-ground structures (e.g., production equipment, tanks, 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 the Hollcrto/Stotts Draw POD is Covert Green, (18-0617 TPX).
3. The operator will drill seed on the contour to a depth of 0.5 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:

Seed Mix - 10-14” Precipitation Zone for a Shallow Loamy Ecological Site

Species	% in Mix	Lbs PLS*
<i>Western Wheatgrass</i> (Pascopyrum smithii)	50	4.2
<i>Bluebunch wheatgrass</i> (Pseudoroegneria spicata ssp. Spicata)	35	6
<i>Prairie coneflower</i> (Ratibida columnifera)	5	0.6
<i>White or purple prairie clover</i> (Dalea candidum, purpureum)	5	0.6
<i>Rocky Mountain beeplant</i> (Cleome serrulata) /or <i>American vetch</i> (Vicia americana)	5	0.6
Totals	100%	12 lbs/acre

This is a recommended seed mix based on the native plant species listed in the NRCS Ecological Site descriptions, U.W. College of Ag. and seed market availability.

4. The operator will maintain drilling operations with in a 150 foot by 150 foot work area for those locations where a constructed pad is not approved as designed including the following well locations: 16-10 AW, 12-11 AW, 14-11 AW, 4-14 AW and 6-14 AW
5. Top soil will be clearly segregated for all excavation including the entire disturbance area for excavated areas for minor rig leveling, reserve pits, spot upgrades and utility trenches. Segregation will not be required while trenching with wheel trenchers.
6. The operator will follow the guidance provided in the Wyoming Policy on Reclamation (IM WY-90-231) specifically the following:
 - Reclamation Standards:
 - C.3 The reclaimed area shall be stable and exhibit none of the following characteristics:
 - a. Large rills or gullies.
 - b. Perceptible soil movement or head cutting in drainages.
 - c. Slope instability on, or adjacent to, the reclaimed area in question.
 - C.4. The soil surface must be stable and have adequate surface roughness to reduce runoff and capture rainfall and snow melt. Additional short-term measures, such

as the application of mulch, shall be used to reduce surface soil movement.

- C.5. Vegetation canopy cover (on unforested sites), production and species diversity (including shrubs) shall approximate the surrounding undisturbed area. The vegetation shall stabilize the site and support the planned post disturbance land use, provide for natural plant community succession and development, and be capable of renewing itself. This shall be demonstrated by:
 - a. Successful onsite establishment of species included in the planting mixture or other desirable species.
 - b. Evidence of vegetation reproduction, either spreading by rhizomatous species or seed production.
- C.6. The reclaimed landscape shall have characteristics that approximate the visual quality of the adjacent area with regard to location, scale, shape, color and orientation of major landscape features and meet the needs of the planned post disturbance land use.

- 7. Provide 4" of aggregate where grades exceed 8%.
- 8. The operator is responsible for having the licensed professional engineer(s) certify that the actual construction of the road meets the design criteria and is constructed to Bureau standards.
- 9. All Pennaco Energy representatives and contractors will have a copy of the approved pod map and conditions of approval with them at all times while conducting activities within the Hollcroft/Stotts Draw project area.
- 10. The culvert locations will be staked prior to construction. The culvert invert grade and finished road grade will be clearly indicated on the stakes. Culverts will be installed on natural ground, or on a designed flow line of a ditch. The minimum cover over culverts will be 12" or one-half the diameter whichever is greater. Drainage laterals in the form of culverts or waterbars shall be placed according to the following spacing:

Grade	Drainage Spacing
2-4%	310 ft
5-8%	260 ft
9-12%	200 ft
12-16%	150 ft

- 11. The Record of Decision for the Powder River Basin EIS includes a programmatic mitigation measure that states, "The companies will conduct clearance surveys for threatened and endangered or other special-concern species at the optimum time" (M32). The measure requires companies to coordinate with the BLM before November 1 annually to review the potential for disturbance and to agree on inventory parameters. Should this project not be completed by November 1, Pennaco will coordinate with the BLM to determine if additional resurvey will be required.
- 12. The contract biologist shall contact the BLM prior to initiating any wildlife surveys.
- 13. No surface disturbing activity shall occur within one mile of bald eagle habitat (Powder River) annually from November 1 through April 1 (CM9), prior to a winter roost survey or from February 1 through August 15 (CM8) prior to a nesting survey. This affects the following wells and infrastructure:

Township/Range	Section	Wells and Infrastructure
52/77	10	Well: 16-10-52-77AW ALL project related activities within this ENTIRE section.
52/77	11	Wells: 12-11-52-77AW and 14-11-52-77AW ALL project related activities within this ENTIRE section.
52/77	14	Wells: 4-14-52-77AW and 6-14-52-77AW ALL project related activities within this ENTIRE section.

- a. If a roost is identified and construction has not been completed, a year round disturbance-free buffer zone of 0.5 mile will be established for all bald eagle winter roost sites (November 1 - April 1). Additional measures such as remote monitoring and restricting maintenance visitation to between 9:00 AM and 3:00 PM may be necessary to prevent disturbance.
- b. If a nest is identified and construction has not been completed, a minimum disturbance-free buffer zone of 0.5 mile (i.e., no surface occupancy) would be established year round for all bald eagle nests. A seasonal minimum disturbance-free buffer zone of 1-mile will be established for all bald eagle nest sites (February 1 - August 15).
- c. Additional mitigation measures may be necessary if the site-specific project is determined by a Bureau biologist to have an adverse affect to bald eagles or their habitat.

14. The following conditions will minimize the impacts to raptors:

- a. No surface disturbing activity shall occur within ½ mile of all identified raptor nests from February 1 through July 31, annually, prior to a raptor nest occupancy survey for the current breeding season. This timing limitation will affect the following:

Township/Range	Sec.	Affected Wells and Infrastructure
52/77	10	Well:16-10-52-77AW
52/77	10	ALL project related activities within this ENTIRE section.

- b. Surveys to document nest occupancy shall be conducted by a biologist following BLM protocol, between April 15 and June 30. All survey results shall be submitted in writing to a Buffalo BLM biologist and approved prior to surface disturbing activities. Surveys outside this window may not depict nesting activity. If a survey identifies active raptor nests, a ½ mile timing buffer will be implemented. The timing buffer restricts surface disturbing activities within ½ mile of occupied raptor nests from February 1 to July 31.
- c. Nest productivity checks shall be completed for the first five years following project completion. The productivity checks shall be conducted no earlier than June 1 or later than June 30 and any evidence of nesting success or production shall be recorded. Survey results will be submitted to a Buffalo BLM biologist in writing no later than July 31 of each survey year. This applies to the following nest(s):

BLM ID#	SPECIES	UTM	LEGAL LOCATION	SUBSTRATE	CONDITION	STATUS IN 2005/2006
3053	Red-tailed hawk	411868E 4928976N	NWSE Sec. 3 T52N, R77W	Cottonwood, live	Good	Active/Inactive
3054	Golden eagle	411480E 4928219N	NENW Sec. 10	Cottonwood, live	Good	Active/Active

BLM ID#	SPECIES	UTM	LEGAL LOCATION	SUBSTRATE	CONDITION	STATUS IN 2005/2006
			T52N, R77W			
3055	Red-tailed hawk	411497E 4926622N	NENW Sec. 15 T52N, R77W	Cottonwood, live	Good	Active/Inactive
3763	Red-tailed hawk	412536E 4929619N	SENE Sec. 3 T52N, R77W	Cottonwood, live	Excellent	Active/Active
3764	Northern harrier	414112E 4929179N	NESE Sec. 2 T52N, R77W	Ground	Good	Inactive/Active
3765	Great-horned owl	411976E 4929036N	NWSE Sec. 3 T52N, R77W	Cottonwood, live	Good	Inactive/Active
3766	Unknown	411560E 4927457N	NESW Sec. 10 T52N, R77W	Cottonwood, live	Poor	Inactive/Inactive
3767	Red-tailed hawk	411816E 4927139N	SWSE Sec. 10 T52N, R77W	Cottonwood, live	Good	Active/Active
3768	Red-tailed hawk	415512E 4926871N	SWSE Sec. 12 T52N, R77W	Juniper, live	Good	Unknown/Active
3769	Northern harrier	413722E 4925268N	SWSE Sec. 4 T52N, R77W	Ground	Good	Unknown/Active

- d. If an undocumented raptor nest is located during project construction or operation, the Buffalo Field Office (307-684-1100) shall be notified within 24 hours.
- e. Well metering, maintenance and other site visits within 0.5 miles of raptor nests shall be minimized as much as possible during the breeding season (February 1 – July 31), and restricted to between 0900 and 1500 hours.

15. The following conditions will minimize the impacts to sage-grouse:

- a. A survey is required for sage-grouse between April 1 and May 7, annually, within the project area for the life of the project and results shall be submitted to a BLM biologist. The required sage grouse survey will be conducted by a biologist following the most current WGFD protocol. All survey results shall be submitted in writing to a Buffalo BLM biologist and approved prior to surface disturbing activities.
- b. If an active lek is identified during the survey, the 2 mile timing restriction (March 1- June 15) will be applied and surface disturbing activities will not be permitted until after the nesting season. If surveys indicate that the identified lek is inactive during the current breeding season, surface disturbing activities may be permitted within the 2 mile buffer until the following breeding season (March 1).
- c. Creation of raptor hunting perches will be avoided within 0.5-mile of documented sage grouse lek sites. Perch inhibitors will be installed to deter avian predators from preying on sage grouse.
- d. Well metering, maintenance and other site visits within 0.5 miles of documented sage grouse lek sites shall be minimized as much as possible during the breeding season (March 1– June 15), and restricted to between 0900 and 1500 hours.

16. Please contact Jim Verplancke Natural Resource Specialist, @ (307) 684-1057, Bureau of Land Management, Buffalo, if there are any questions concerning these surface use COAs.

III Standard Conditions of Approval

A. General

1. If any cultural values [sites, artifacts, human remains (Appendix L FEIS)] are observed during operation of this lease/permit/right-of-way, they will be left intact and the Buffalo Field Manager notified. The authorized officer will conduct an evaluation of the cultural values to establish appropriate mitigation, salvage or treatment. The operator is responsible for informing all persons in the area who are associated with this project that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are uncovered during construction, the operator is to immediately stop work that might further disturb such materials, and contact the authorized BLM officer (AO). Within five working days the AO will inform the operator as to:
 - whether the materials appear eligible for the National Register of Historic Places;
 - the mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not necessary); and,
 - a time-frame for the AO to complete an expedited review under 36 CFR 800.11 to confirm, through the State Historic Preservation Officer, that the findings of the AO are correct and that mitigation is appropriate. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction measures.
2. If paleontological resources, either large or 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.
3. The operator shall restrict travel on unimproved two-track roads during periods of inclement weather or spring thaw when the possibility exists for excessive surface resource damage (e.g., rutting in excess of 4-inches, travel outside two-track roadway, etc.).
4. The first producing well drilled to each targeted coal zone will be designated as the POD "Reference Well". Reference wells will not be required for PODs within a 6 mile radius of the first reference well designated by the operator, nor for co-mingled coal zones. The designated reference well must be equipped to be sampled at the well head. A reference well sample will be collected from the wellhead and submitted for analysis; using the list of analytes identified in WDEQ WYPDES Application for Permit to Surface Discharge Produced Water from CBM New Discharges, Renewals, or Major Modifications, within 30 to 60 days of initial water production. Results of the analysis will be submitted to the BFO-BLM authorized Officer as they become available.
5. By November 1 each year, companies will provide georeferenced spatial data

depicting as-built locations of all facilities, wells, roads, pipelines, power lines, reservoirs, discharge points, and other related facilities to the BLM for all PODs where construction and development have been completed.

6. If any dead or injured threatened, endangered, proposed, or candidate species is located during construction or operation, the U.S. Fish and Wildlife Service's Wyoming Field Office (307-772-2374), their law enforcement office (307-261-6365), and the BLM Buffalo Field Office (307-684-1100) shall be notified within 24 hours. If any dead or injured sensitive species is located during construction or operation, the BLM Buffalo Field Office (307-684-1100) shall be notified within 24 hours.
7. Wildlife species are dynamic and new individuals may have moved into the Hollcroft/Stotts Draw POD area after the initial wildlife surveys were completed. The Record of Decision for the PRB FEIS includes a programmatic mitigation measure that states, "The companies will conduct clearance surveys for threatened and endangered or other special-concern species at the optimum time". The measure requires companies to coordinate with the BLM before November 1 annually to review the potential for disturbance and to agree on inventory parameters. Should this project not be completed by January 15, and surface disturbance is planned for that year, a Pennaco Energy company representative will coordinate with the BLM to discuss required surveys.
8. All other conservation measures and terms and conditions identified in the Powder River Basin Oil and Gas Project Biological Opinion (WY6633) shall be complied with.
9. If an undocumented raptor nest is located during project construction or operation, the Buffalo Field Office (307-684-1100) shall be notified within 24 hours.
10. All contractors will have a copy of the pod map and conditions of approval with them at all times.

B. Construction

1. 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 Jim Verplancke @ 307-684-1057 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.
2. The operator will limit vegetation removal and the degree of surface disturbance wherever possible. Where surface disturbance cannot be avoided, all practicable measures will be utilized to minimize erosion and stabilize disturbed soils.
3. Construction and drilling activity will not be conducted using frozen or saturated soil material during periods when watershed damage or excessive rutting is likely to occur.
4. Remove all available topsoil (depths vary from 4 inches on ridges to 12+ inches in bottoms) from constructed well locations including areas of cut and fill, 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 annual ryegrass or other suitable cover crop.

5. 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 does not impede watershed and drainage flows.
6. Construct the backslope no steeper than 1½:1, and construct the foreslope no steeper than 2:1, unless otherwise directed by the BLM Authorized Officer.
7. Maintain a minimum 20-foot 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.
8. With the overall objective of minimizing surface disturbance and retaining land stability and 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).
9. To minimize electrocution potential to raptors, all overhead electrical power lines will be constructed to Avian Power Line Interaction Committee (1996) standards and additional standards identified in the PRB FEIS Biological Opinion (Volume 3, Appendix K, page 43).
10. The operator shall utilize wheel trenchers or ditchers to construct all pipeline trenches, except where extreme topography or other environmental factors preclude their use.
11. Reserve pits 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 is used, it 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.
12. 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.
13. 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 that 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. In gravelly or rocky soils, a suitable bedding material such as sand will be used prior to installing the liner.

14. The reserve pit will be constructed so that at least half of its total volume is in solid cut material (below natural ground level).
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. However, all culverts will be appropriately sized in accordance with standards in BLM Manual 9113.
17. Construction and other project-related traffic will be restricted to approved routes. Cross-country vehicle travel will not be allowed.
18. Maximum design speed on all operator-constructed and maintained roads will not exceed 25 miles per hour.
19. Pipeline construction shall not block nor change the natural course of any drainage. Pipelines shall cross perpendicular to drainages. Pipelines shall not be run parallel in drainage bottoms. Suspended pipelines shall provide adequate clearance for maximum runoff.
20. Pipeline trenches shall be compacted during backfilling. Pipeline trenches shall be routinely inspected and maintained to ensure proper settling, stabilization and reclamation.
21. During construction, emissions of particulate matter from well pad and road construction would be minimized by application of water or other non-saline dust suppressants with at least 50 percent control efficiency. Dust inhibitors (surfacing materials, non-saline dust suppressants, and water) will be used as necessary on unpaved roads that present a fugitive dust problem. The use of chemical dust suppressants on public surface will require prior approval from the BLM Authorized Officer.
22. Operators are required to obtain a National Pollution Discharge Elimination System (NPDES) Storm Water Permit from the Wyoming DEQ for any projects that disturb five or more acres (changing to one acre in March 2005). This general construction storm water permit must be obtained from WDEQ prior to any surface disturbing activities and can be obtained by following directions on the WDEQ website at <http://deq.state.wy.us>. Further information can be obtained by contacting Barb Sahl at (307) 777-7570.
23. The operator shall submit a Sundry Notice (Form 3160-5) to BLM for approval prior to construction of any new surface disturbing activities that are not specifically addressed in the approved APD or POD Surface Use Plan.
24. Weed educational material will be reviewed with operators during pre-construction on-site meetings with operators, subcontractors, and landowners and will also be attached to approved APDs and PODs.
25. Companies will contact the counties to pursue development of maintenance agreements to ensure county roads are adequately maintained for the projected

increase in use.

C. Operations/Maintenance

1. The operator shall complete coal bed natural gas wells (case, cement and under ream) as soon as possible, but no later than 30 days after drilling operations, unless an extension is given by the BLM Authorized Officer.
2. 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.
3. Confine all equipment and vehicles to the access road(s), pad(s), and area(s) specified in the approved APD or POD.
4. 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.
5. 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.
6. The operator will be responsible for prevention and control of noxious weeds and weeds of concern 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.
7. Sewage shall be placed in a self-contained, chemically treated porta-potty on location.
8. 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 these wells 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. In accordance with OSHA requirements, 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.
9. 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.
10. 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 exempt

It 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 rinsate

Any 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. Reserve pits will be closed as soon as possible, but no later than 90 days from time of drilling/well completion, unless the BLM Authorized Officer gives an extension. Squeezing of pit fluids and cuttings is prohibited. Pits must be dry of fluids or they must be removed via vac-truck or other environmentally acceptable method prior to backfilling, re-contouring and replacement of topsoil. Mud and cuttings left in pit must be buried at least 3-feet below re-contoured grade. The operator will be responsible for re-contouring any subsidence areas that develop from closing a pit before it is sufficiently dry.
12. 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.
13. If this well is drilled during the fire season (June-October), the operator shall institute all necessary precautions to ensure that fire hazard is minimized, including but not limited to mowing vegetation on the access route(s) and well location(s), keeping fire fighting equipment readily available when drilling, etc.

D. 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 and any pertinent site-specific COAs.
2. Disturbed lands will be re-contoured 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 re-contouring pit area. The operator will be responsible for re-contouring of any subsidence areas that develop from closing a pit before it is completely dry. The plastic pit liner (if any) will be cut off below grade and properly disposed of at a state authorized landfill before beginning to re-contour 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. Phased reclamation plans will be submitted to BLM for approval prior to individual POD facility abandonment via a Notice of Intent (NOI) Sundry Notice. Individual facilities, such as well locations, pipelines, discharge points, impoundments, etc. need to be addressed in these plans as they are no longer needed. Individual items that will need to be addressed in reclamation plans include:
 - Pit closure (Close ASAP after suitably dry, but no later than 90 days from time of drilling unless an extension is given by BLM Authorized Officer.) BLM may require closure prior to 90 days in some cases due to land use or environmental concerns.
 - Configuration of reshaped topography, drainage systems, and other surface manipulations
 - Waste disposal
 - Revegetation methods, including specific seed mix (pounds pure live seed/acre) and soil treatments (seedbed preparation, fertilization, mulching, etc.). On private surface, the landowner should be consulted for the specific seed mix.
 - Other practices that will be used to reclaim and stabilize all disturbed areas, such as water bars, erosion fabric, hydro-mulching, etc.
 - An estimate of the timetables for beginning and completing various reclamation operations relative to weather and local land uses.
 - Methods and measures that will be used to control noxious weeds, addressing both ingress and egress to the individual well or POD.
 - Decommissioning/removal of all surface facilities
 - Closure and reclamation of areas utilized or impacted by produced CBM water, including discharge points, reservoirs, off-channel pits, land application areas, livestock/wildlife watering facilities, surface discharge stream channels, etc
 7. BLM will not release the performance bond until all disturbed areas associated with the APD/POD have 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.
 8. A Notice of Intent to Abandon and a Subsequent Report of Abandonment must be submitted for abandonment approval.
 9. For performance bond release approval, a Final Abandonment Notice (with a surface owner release letter on split-estate) must be submitted prior to a final abandonment evaluation by BLM.
 10. Soil fertility testing and the addition of soil amendments may be required to stabilize some disturbed lands.
 11. Any mulch utilized for reclamation needs to be certified weed free.
 12. 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:

Slope (percent)	Spacing Interval (feet)
≤ 2 - 4	310
5 - 8	260
9 - 12	200

E. Producing Well

1. 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 re-contouring pit area. The operator will be responsible for re-contouring and reseeding of any subsidence areas that develop from closing a pit before it is completely dry.
2. 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.
3. 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 unless otherwise approved by the BLM Authorized Officer.
4. Any spilled or leaked oil, produced water or treatment chemicals must be reported in accordance with NTL-3A and immediately cleaned up in accordance with BLM requirements. This includes clean-up and proper disposition of soils contaminated as a result of such spills/leaks.
5. Distribute stockpiled topsoil evenly over those areas not required for production and reseed as recommended.
6. Upgrade and maintain access roads and drainage control (e.g., culverts, drainage dips, ditching, crowning, surfacing, etc.) as necessary and as directed by the BLM Authorized Officer to prevent soil erosion and accommodate safe, environmentally-sound access.
7. Prior to construction of production facilities not specifically addressed in the APD/POD, the operator shall submit a Sundry Notice to the BLM Authorized Officer for approval.
8. 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. This requirement does not supercede or apply where specific road requirements are addressed in the APD/POD surface use plan (e.g., two track road, spot upgrade, etc.)
9. Waterbars shall be installed on all reclaimed pipeline corridors per the guidelines in D #12.