Decision on Action and Application for Categorical Exclusion
For Activities Associated with Oil and Gas Development
Section 390, Energy Policy Act of 2005

Inkline Extension POD
Marathon Pennaco Energy
WY-070-3-CX10-294, WY-070-3-CX10-293, WY-070-CX10-3-295
Bureau of Land Management
Buffalo Field Office

Description of the Proposed Action
The Proposed Action is to explore for and possibly develop natural gas reserves within geologic formations currently leased by Marathon Pennaco Energy in Wyoming.

Marathon Pennaco Energy submitted the Inkline Extension POD on 2/9/2010 to the BFO.

Inkline Extension POD has 3 Federal APD's to develop and produce natural gas resources within coal bearing formations of the Powder River Basin (PRB). The wells are vertical bores proposed on an 80 acre spacing pattern with 1 well per location. Each well will produce from Wall coal seams.

Onsite visits were conducted on 6/24/2010 to evaluate the proposal and modify as necessary to alleviate environmental impacts. BLM sent a post-onsite deficiency on 7/6/2010. The project proposal and APDs were considered complete when BLM received the operator's response to the post onsite deficiencies on 8/12/2010.

A list of proposed wells is included in Table 2.1.

Table 2.1 Proposed Wells

	Well Name	Well #	Qtr/Qtr	Sec	TWP	RNG	Lease #	CX #
1	PG Ranch FED	12-22-56-76CACOW	NWSW	22	56N	76W	WYW161441	WY-070-3-CX10-293
2	West FED	11-23-56-76CACOW	NESW	23	56N	76W	WYW145611	WY-070-3-CX10-294
3	Oppelt FED	12-27-56-76CACOW	NWSW	27	56N	76W	WYW148212	WY-070-CX10-3-295

The following water management facility was inspected and approved for use in association with the water management strategy for the Inkline Extension POD:

List of Impoundments:

	IMPOUNDMENT/Water Management Facility Name / Number	Qtr/Qtr	Section	TWP	RNG	Capacity (Acre Feet)	Surface Disturbance (Acres)
1	Injection	SESW	23	56	76	1.3	No New

For a detailed description of design features, construction practices and water management strategies associated with the proposed action, refer to the Master Surface Use Plan (MSUP), Drilling Plan and WMP in the POD and individual APDs. Also see the subject POD for maps showing the proposed well locations and associated facilities described above. More information on CBNG well drilling, production

and standard practices also is available in the PRB FEIS, Volume 1, pages 2-9 through 2-40 (January 2003).

Realty
Additionally, a right-of-way, WYW-170199, granted under the Federal Land Policy and Management Act of 1976, for an existing water injection facility, on public lands described as follows:

6th PM, Campbell County, Wyoming,
T. 56 N., R. 76 W., sec. 23: lot 14.
The water injection facility (water pipeline, fenced pit, and pad) contains 0.349 acres.

The right-of-way was inspected and is required in association with the Master Surface Use Plan for the Inkline POD. It will fall within the constraints of the appropriate stipulations and conditions of approval of the POD.

The total surface disturbance for this action consists of: 10.25 acres

Plan Conformance
The proposed action is in conformance with the terms and the conditions of the Approved Resource Management Plan for the Public Lands Administered by the Bureau of Land Management, Buffalo Field Office (BFO), April 2001 and the PRB FEIS, as required by 43 CFR 1610.5

Plan of Operations
The proposal is designed in conformance with all bureau standards and incorporates appropriate best management practices, required and designed mitigation measures determined to reduce the effects on the environment.

A surface use plan of operations describing all proposed surface-disturbing activities has been reviewed and is approved pursuant to Section 17 of the Mineral Leasing Act, as amended.

Compliance with the Energy Policy Act of 2005
The proposed activity has been determined to be statutorily categorically excluded from NEPA documentation in accordance with Section 390 of the National Energy Policy Act of 2005.

This document has been reviewed and has been determined to consider potential environmental effects associated with the proposed activity at a site specific level.]

The environmental assessment for Plateau POD EA# WYW070-EA06-129 was approved on 2/03/2006 and identifies the development of future Federal APD's as reasonably foreseeable.

Persons and Agencies Consulted

Wildlife
The wildlife biologist has reviewed the proposal and determined that the proposal, combined with the Conditions of Approval from Yates Petroleum's Plateau POD approved February 3, 2006 (EAWY-070-07-114) are (1) consistent with the Final Environmental Impact Statement (WY-070-02-065) and programmatic biological opinion (ES-6-WY-07-F012) for the Powder River Basin Oil and Gas Project; and (2) consistent with the effects analyzed in the site specific Endangered Species Act section 7 consultation and does not change the determinations in that consultation.

Water Management:
The operator has submitted comprehensive Water Management Plans (WMP) for the Inkline Extension projects which incorporate sound water management practices, monitoring of downstream impacts within the Upper Powder River watershed, and commitment to comply with Wyoming State water laws and regulations. It also addresses potential impacts to the environment and landowner concerns. Qualified hydrologists, in consultation with the BLM, developed the water management plan. Adherence with the plan, in addition to BLM applied mitigation (in the form of COAs), would reduce project area and downstream impacts from proposed water management strategies.

The operator proposes to inject 100% of the produced water from this project into the Lance Formation and Fox Hills sandstone which are stratigraphically below any of the economically viable coal zones in the overlying Fort Union formation sandstones at a depth of 1100 to 1300 feet. There is one existing injection well outside the project area and two proposed with this project located inside the project area.

The facilities proposed for use in the injection process have been developed for fee and state CBNG production, and are in good condition. Apart from the installation of pipelines from the three Inkline Extension wells to the existing pipelines, no new surface disturbance will be associated with the water management of this project. The existing infrastructure that will be used for the injection process include the injection well, a single on-channel surge reservoir, and an injection well facility that includes pumps, a tank, and chemical injectors to treat the water per WDEQ guidelines.

According to Wyoming State Water Law (W.S. 41-3-101) the water extracted in the production of CBNG is the waters of the state; BLM policy 1982 directs the BLM's cooperation and full compliance with State water laws. Injection of produced water is permitted and regulated by Wyoming Department of Environmental Quality (WDEQ) through the UIC program, requiring a WDEQ 5C3 Underground Injection Control (UIC) permit. The BLM is responsible for analyzing the proposed action with available data provided in the WMP for the POD and disclose potential impacts of the proposed action. Responsibility, liability, monitoring, mitigation measures and reclamation should be addressed in the surface use agreement (SUA).
Long term produced water injection creates the potential for impacts to deep groundwater aquifers. Impacts to these resources are difficult to predict or model. However, the targeted aquifers are generally of poorer quality than the injectate, and are typically economically unusable. Impacts that may occur are addressed under the authority of WDEQ. Monitoring and reclamation standards are outlined in the UIC permit.

Groundwater
The average anticipated water production per well is 10 gpm which equates to a combined 30 gpm (0.07 cfs or 48 acre-feet per year) for the three wells in the Inkline Extension project. The water quality of the produced water is expected to be similar to a reference water sample analysis which was submitted from a well producing from the Cook, Canyon and Wall coal zones (see table below).

The PRB FEIS predicted that only 5% of the CBNG produced water would be injected into disposal wells in the Upper Powder River watershed (PRB FEIS pg 2-46). For this action, it may be assumed that a maximum of 30 gpm will be injected into the Lance formation and Fox Hills sandstone in or near the project area (48 acre feet per year). This water will mix with water that will potentially mix with water in the Fort Union sandstones which may be used for stock and domestic purposes. According to the PRB FEIS, "the increased volume of water recharging the underlying aquifers of the Wasatch and Fort Union Formations would be chemically similar to alluvial groundwater." (PRB FEIS pg 4-54). Therefore, the chemical nature and the volume of the discharged water may not degrade the groundwater quality.

There are seven permitted water wells within 1 mile of the Inkline Extension project area, which range from 500 to 1100 feet in depth compared to 415 - 1120 feet to the coal zones. The operator has offered water well agreements to holders of properly permitted domestic and stock wells within the circle of influence (½ mile of a federal CBNG producing well) of the proposed wells.

Surface Water

The following table shows the average values of EC and SAR as measured at selected USGS gauging stations at high and low monthly flows as well as the Wyoming groundwater quality standards for TDS and SAR for Class I to Class III water (there is no current standard for EC). It also shows constituent limits for TDS, SAR and EC detailed in the project area WYPDES permit, and the concentrations found in the POD's representative water sample.

Comparison of Existing and Predicted Water Quality

Sample location or Standard	TDS mg/l	SAR	EC µmhos/cm
Upper Powder River Watershed at Arvada, WY Gauging station			
Historic Data Average at Maximum Flow		4.76	1,797
Historic Data Average at Minimum Flow		7.83	3,400
WDEQ Quality Standards for Wyoming Groundwater (Chapter 8)	500		
Drinking Water (Class I)	2,000		
Agricultural Use (Class II)	5,000	8	
Livestock Use (Class III)			
WDEQ Water Quality Requirement for WYPDES Permit: #WY0053694 at discharge point	NA	NA	7,500
Predicted Produced Water Quality Comingled Cook, Canyon and Wall Coal Zones	1610	36.4	2500

There were no springs located within the Inkline POD boundary or within ½ mile radius.

The operator has obtained a Wyoming Pollutant Discharge Elimination System (WYPDES) permit #WY0053694 for the discharge of water produced to the Injection surge reservoir associated with the Inkline Extension POD, and a UIC permit (UIC 00-233) from the WDEQ.

WDEQ Permit Parameters

Parameters	POD Water Quality 7/14/10	WYPDES Permit WY0053694 Maximum Concentrations	UIC Permit 00-233 Limit
pH	7.69	6.5 to 9.0	6.5 to 8.5
Specific Conductance	2500 µmhos	7,500 µmhos/cm max	NA
Dissolved Iron	77 µg/l	1,000 µg/l max	NA
Total Arsenic	NA	NA	NA
Chlorides	49 mg/l	2,000 mg/l	2,000 mg/l
Total Dissolved Solids	1610 mg/l	NA	5,000 mg/l
Sulfate	NA	NA	3,000 mg/l

The PRB FEIS projected the total amount of water that was anticipated to be produced from CBNG development per year (Table 2-8 Projected Amount of Water Produced from CBM Wells under

Alternatives 1, 2A and 2B pg 2-26). For the Upper Powder River drainage, the projected volume produced within the watershed area was 60,319 acre-feet in 2010 (maximum production is estimated in 2006 at 171,423 acre-feet). As such, the volume of water resulting from the production of these wells is 0.7% of the total volume projected for 2010. This volume of produced water is within the predicted parameters of the PRB FEIS.

Cultural

Class III cultural resource inventory was conducted for the project prior to on-the-ground work (BFO # 70090075, 70100077). Foothills and Arcadis conducted Class III cultural resource inventories following the Archeology and Historic Preservation, Secretary of the Interior's Standards and Guidelines (48CFR190) for the project. Seth Lambert, BLM Archaeologist, reviewed the reports for technical adequacy and compliance with Bureau of Land Management (BLM) standards, and determined them to be adequate.

There are no eligible sites within the APE of the proposed project. Following the Wyoming State Protocol Section VI (A)(1) the Bureau of Land Management electronically notified the Wyoming State Historic Preservation Officer (SHPO) on 09/07/2010 that no historic properties exist within the APE.

Decision and Rationale on Action

I have decided to implement Marathon Pennaco Energy to develop the 3 Federal APD's as described in the Inkline Extension POD the following Conditions of Approval (COAs):

1. Adhere to all conditions of approval. See attachment A.

2. The results of a water quality analysis of a sample collected from a production wellhead will be provided to the BLM within 30 days of approval. The sample will be collected from a well located within six miles of the Inkline POD boundary that produces water from the same coals targeted by the Inkline POD. The analysis will provide data on the same water quality parameters as outlined in the WDEQ WYPDES initial monitoring report.

The above COAs and/or terms and conditions provide justification for this decision and may not be segregated from project implementation without further NEPA review. In addition, I have reviewed the plan conformance statement and have determined that the proposed activity is in conformance with the applicable land use plan(s). Further, I have reviewed the proposal to ensure the appropriate exclusion category as described in Section 390 of the Energy Policy Act of 2005 has been correctly applied. It is my determination that no further environmental analysis is required.

The above described action must be completed by 2/03/2011.

Implementation Date

This project will be implemented on or after the below date.

Duane Spencer
Field Manager

9/16/10
Date

Administrative Review or Appeal Opportunities
This decision is subject to administrative review in accordance with 43 CFR 3165. Any request for administrative review of this decision must include information required under 43 CFR 3165.3(b) (State Director Review), including all supporting documentation. Such a request must be filed in writing with the State Director, Bureau of Land Management, P.O. Box 1828, Cheyenne, Wyoming 82003, no later than 20 business days after this Decision Record is received or considered to have been received.

Any party who is adversely affected by the State Director's decision may appeal that decision to the Interior Board of Land Appeals, as provided in 43 CFR 3165.4.

Meleah Corey, Natural Resource Specialist
Casey Freise, Supervisory Natural Resource Specialist
Brent Sobotka, Hydrologist
Mathew Warren, Petroleum Engineer
Kristine Phillips, Legal Instruments Examiner
Seth Lambert, Archaeologist
Jim Verplancke, Wildlife Biologist
Kerry Aggen, Geologist
Chris Durham, Assistant Field Manager, Resources
Paul Beels, Associate Field Manager, Minerals & Lands
Duane W. Spencer, Field Manager

Interdisciplinary Team Lead: Meleah Corey

Contact Person
For additional information concerning this decision, contact
Meleah Corey
Natural Resource Specialist
Buffalo Field Office
1425 Fort Street
Buffalo WY 82834
307-684-1070

APPENDIX A: CONDITIONS OF APPROVAL FOR THE APPLICATION FOR PERMIT TO DRILL

POD Name: Inkline Extension

Operator Name: Marathon Pennaco Energy

Field Office: Buffalo Field Office
Address: 1425 Fort Street
Buffalo, Wyoming 82834

Office Telephone Number: 307-684-1100

List of Wells:

	Well Name	Well #	Qtr/Qtr	Sec	TWP	RNG	Lease #	CX #
1	PG Ranch FED	12-22-56-76CACOW	NWSW	22	56N	76W	WYW161441	WY-070-3-CX10-293
2	West FED	11-23-56-76CACOW	NESW	23	56N	76W	WYW145611	WY-070-3-CX10-294
3	Oppelt FED	12-27-56-76CACOW	NWSW	27	56N	76W	WYW148212	WY-070-CX10-3-295

List of Impoundments:

	IMPOUNDMENT/Water Management Facility Name / Number	Qtr/Qtr	Section	TWP	RNG	Capacity (Acre Feet)	Surface Disturbance (Acres)
1	Injection	SESW	23	56	76	1.3	No New

SITE SPECIFIC

1. The results of a water quality analysis of a sample collected from a production wellhead will be provided to the BLM within 30 days of approval. The sample will be collected from a well located within six miles of the Inkline POD boundary that produces water from the same coals targeted by the Inkline POD. The analysis will provide data on the same water quality parameters as outlined in the WDEQ WYPDES initial monitoring report.

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 Inkline POD is Carlsbad Canyon, 2.5Y 6/2.

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:

Species	% in Mix	Lbs PLS*
Western Wheatgrass (Pascopyrum smithii)	40	4.8
Bluebunch Wheatgrass (Pseudoroegneria spicata ssp. Spicata)	10	1.2
Green needlegrass (Nassella viridula)	25	3.0
Thickspike Wheatgrass (Elymus lanceolatus ssp. lanceolatus)	10	1.2
Prairie coneflower (Ratibida columnifera)	5	0.6
White or purple prairie clover (Dalea candidum, purpureum)	5	0.6
Rocky Mountain beeplant (Cleome serrulata) /or American vetch(Vicia americana)	5	0.6
Chapter 1 Total		**12**

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.

1. Please contact Meleah Corey Natural Resource Specialist, at (307) 684-1070 Bureau of Land Management, Buffalo, if there are any questions concerning these surface use COAs.

STANDARD

General

1. All contractors/operators will have a complete copy of the approved APD/POD, including COAs, at the drill site, during the construction of the roads and drill pad, the drilling of the well, completion of the well, and all other related construction activities.

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 NRS Meleah Corey at 307-684-1070 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. Approval of this APD does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease that would entitle the applicant to conduct operations thereon. In addition, approval of this APD does not imply that the operator has legal access to the drilling location. When crossing private surface 43 CFR 3814 regulations must be complied with and when crossing public surface off-lease the operator must have an approved right-of-way.

4. Confine all equipment and vehicles to the access road(s), pad(s), and area(s) specified in the approved APD or POD.

5. The approval of this project does not grant authority to use off lease Federal lands. No surface disturbing activity, or use of off-lease federal lands, is allowed on affected leases until right-of-way grants become effective which is the date signed by the authorized officer.

6. This POD is valid for two years from the date of approval or until the oil and gas lease expires/terminates, whichever occurs first. If this well intends to earn a lease extension, diligent operations (actual drilling) must be in progress over the lease expiration date, advance lease rentals must have been paid, and a letter stating drilling operations were in progress must be submitted to this office no later than five days past the expiration date. If the APD terminates, any surface disturbance created under the application must be reclaimed according to an approved plan.

7. The operator will be in compliance with all applicable local, state and/or federal laws, regulations, and/or statutes.

8. A progress report must be filed a minimum of once a month starting with the month the well was spudded continuing until the well is completed. The report must be filed by the 25th of each month on a Sundry Notice (Form 3160-5). The report will include the spud date, casing information such as size, grade, weight, hole size, and setting depth, amount and type of cement used, top of cement, depth of cementing tools, casing test method, intervals tested, perforated, acidized, fractured and results obtained and the dates all work done.

9. In the event abandonment of the hole is desired, an oral request may be granted by this office but must be timely followed within 5 days with a "Notice of Intention to Abandon" (Form 3160-5). The "Subsequent Report of Abandonment" (Form 3160-5) must be submitted within 30 days after the actual plugging of the well bore, reporting where the plugs were placed, and the current status of the surface restoration.

10. Whether the well is completed as a dry hole or as a producer, two copies of all logs run, core descriptions, core analysis, well-test data, geologic summaries, sample descriptions, and all other surveys or data obtained and compiled during the drilling, work over, and/or completion operations will be filed with Form 3160-4. A gamma ray log shall be run from T.D. to ground surface.

11. The operator is responsible for informing all persons associated with this project that they shall be subject to prosecution for damaging, altering, excavating or removing any archaeological, historical, or vertebrate fossil objects on site. If archaeological, historical, or vertebrate fossil materials are discovered, the operator is to suspend all operations that further disturb such materials and immediately contact the Authorized Officer. Operations are not to resume until written authorization to proceed is issued by the Authorized Officer.

12. Within five (5) working days, the Authorized Officer will evaluate the discovery and inform the operator of actions that will be necessary to prevent loss of significant cultural or scientific values.

13. The operator is responsible for the cost of any mitigation required by the Authorized Officer. The Authorized Officer will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the Authorized Officer that the required mitigation has been completed, the operator will be allowed to resume operations.
    a. 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.

    b. 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.

14. The operator shall be responsible for the prevention of fires on public lands caused by its employees, contractors or subcontractors. During conditions of extreme fire danger, surface use operations may be limited or suspended in specific areas.

15. All survey monuments found within the area of operations shall be protected. Survey monuments include, but are not limited to: General Land Office and Bureau of Land Management Cadastral Survey Corners, reference corners, witness points, U. S. Coast and Geodetic benchmarks and triangulation stations, military control monuments, and recognizable civil (both public and private) survey monuments. In the event of obliteration or disturbance of any survey monuments, the incident shall be reported in writing to the Authorized Officer.

16. If any time the facilities located on public lands authorized by the terms of the lease are no longer included in the lease (due to a contraction in the unit or other lease or unit boundary change) the BLM

will process a change in authorization to the appropriate statute. The authorization will be subject to appropriate rental, or other financial obligation determined by the authorized officer.

17. Gas produced from this well may not be vented or flared beyond an initial authorized test period of 30 days or 50 MMCF following its completion, whichever first occurs, without the prior written approval of the authorized officer. If gas is vented or flared without approval beyond the test period authorized above, you may be directed to shut-in the well until the gas can be captured or approval to continue venting or flaring as uneconomic is granted. You shall be required to compensate the lessor for that portion of the gas vented or flared without approval which is determined to have been avoidably lost.

18. 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 and will include the following information: Operator Name, POD Name, Well Name and location and Date Sampled.

19. By November 1 each year, companies will submit the following information, attached to a Sundry Form 3160-5, where construction and development have taken place in the last year.

    - 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.
    - Two as-built copies of Map D.

20. 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.

21. Operators shall comply with all other conservation measures and terms and conditions identified in the Powder River Basin Oil and Gas Project Biological Opinion (ES-6-WY-07-F012).

22. 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.

DRILLING AND PRODUCTION OPERATIONS

1. The spud date will be reported electronically, (see website location above) to the Authorized Officer 24 HOURS BEFORE SPUDDING, unless otherwise required in site specific conditions of approval.

   Spud Notice Site:
   http://www.wy.blm.gov/minerals/og/og_notices/spud_notice.php

2. 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.

Well Control Equipment

1. The well control equipment approved in this project lists the minimum requirements.

2. The flow line shall be a minimum of 30 feet from the well bore and securely anchored. The 30-foot length of line is a minimum and operators must make consideration for increasing this length for topography and/or wind direction.

3. The flow line shall be a straight run.

4. The flow line must be constructed from non-flammable material.

5. All cuttings and circulating medium shall be directed to and contained in a reserve pit.

6. The nearest edge of the pits shall be a minimum of 25' from the rig.

7. A minimum of 2' of freeboard shall be maintained in the pits at all times.

8. The authorized officer may modify these requirements at any time if it is determined that increased pressure control is deemed necessary.

9. Verbal notification shall be given to the Authorized Officer at least 24 hours before formation tests, BOP tests, running and cementing casing, and drilling over lease expiration dates.

Casing Program

1. The minimum requirement for casing centralizers is as follows: all casing strings will have centralizers on the bottom three joints (i.e. a minimum of one centralizer per joint starting with the shoe joint).

2. In addition, the production casing string shall be centralized with API approved centralizers using the following specifications:

   One centralizer per~120'(specifically every third or fourth joint depending on joint length).

   One centralizer 25' above surface casing shoe.

3. Surface casing length shall follow current requirements set forth by the WOGCC. Increased surface casing may be required so that the surface casing shoe may be set into a competent formation.

Cement Program

1. If there are indications of inadequate primary cementing of the surface, intermediate, or production casing strings; such as but not limited to no returns to surface, cement channeling, fallback or mechanical failure of equipment, the operator will evaluate the adequacy of the cementing operations. This evaluation will consist of running a cement bond log (CBL) or an alternate method approved by the Authorized Officer (AO) no sooner than 12 hours and no later than 24 hours from the time the cement was first pumped.

2. If the evaluation indicates inadequate cementing, the operator shall contact a BLM Buffalo Field Office Petroleum Engineer for approval of remedial cementing work. Remedial cementing will consist of, but may not be limited to:

   Perforating and squeezing cement to ground surface should the top of cement (TOC) be below the surface casing shoe. This shall be done within 36 hours of the completion of pumping the primary cement job.

   One-inching cement to ground surface should the top of cement (TOC) be above the surface casing shoe.

   Fallback that is found to be less than 30' from ground surface may be topped off with cement slurry.

3. The adequacy of the remedial cementing operations shall be verified by a cement bond log (CBL) or an alternate method approved by the Authorized Officer (AO). All remedial work shall be completed and verified prior to drilling out the casing shoe or perforating the casing for purposes other than remedial cementing.

4. The cement mix water used must be the same water used to develop the cement program and be of adequate quality, so as not to degrade the setting properties. Waters containing high carbonates or bicarbonates (greater than 2,000 ppm) should be avoided.

Production Equipment

1. All gas measurement equipment that deviates from Onshore Order #5 (or WY NTL 2004-1 in the case of electronic flow computers) shall be approved via a Notice of Intent sundry (Form No. 3160-5) prior to installation and use. This includes any type of primary device other than a standard orifice plate meter. Requests for a variance from the minimum standards of Onshore Order #5 must list:

   The specific type of equipment.

   How this equipment will meet or exceed the requirements of Onshore Order #5.

   The location, specific well and lease number where the equipment will be used.

2. An appropriate pressure gauge is required to be installed on each casing annulus to monitor this pressure.

3. Other actions such as off-lease measurement, commingling, allocation, etc. shall be approved via a Notice of Intent sundry (Form No. 3160-5). Submission of additional information in the POD shall not be construed as permission for these items. If the operator wishes to utilize off-lease gas measurement for wells approved in this POD, they are required to obtain approval via a Notice of Intent sundry (Form No. 3160-5) prior to any gas production. A map shall be attached to the sundry

that delineates where the individual wells will be measured for federal royalty. Unless this POD is committed to a Federal Oil & Gas Unit or Agreement, the production from all Federal wells shall be measured for Federal royalty prior to being combined with production from any other Federal, Indian, or non-Federal leases.

Well and POD Building Identification

1. From the time a well pad is constructed or a well is spudded (if no well pad needed), until abandonment, all well locations must be properly identified with a legible sign. The sign will include the well name and number, operator name, lease number, and the surveyed location.

2. At each POD building site where federal wells are metered, the operator is required to maintain a legible sign displayed in a conspicuous place. This sign is required to be in place at the time metering goes online. The sign shall include: POD name, Operator, Federal well names and numbers, Federal lease numbers being metered at the POD building, and surveyed location of the building.

Protection of Fresh Water Resources

1. All oil and gas operations shall be conducted in a manner to prevent the pollution of all freshwater resources. All fresh waters and waters of present or probable future value for domestic, municipal, commercial, stock or agricultural purposes will be confined to their respective strata and shall be adequately protected. Special precautions will be taken to guard against any loss of artesian water from the strata in which it occurs and the contamination of fresh water by objectionable water, oil, condensate, gas or other deleterious substance to such fresh water.

Miscellaneous Conditions

1. Any changes to the approved drilling plan and/or these conditions of approval shall be approved by the BLM-Buffalo Field Office Petroleum Engineer prior to being implemented.

   After hour's numbers:

Petroleum Engineer: Mike Worden	Home Telephone: 307-217-2995
Petroleum Engineer: Matthew Warren	Home Telephone: 307-620-0103
Petroleum Engineer: James Evans	Home Telephone: 307-331-5421

2. If any cores are collected, a copy of all analysis performed shall be submitted to the BLM-Buffalo Field Office Petroleum Engineer.

SURFACE USE STANDARD

A. Construction

1. Prior to construction, the operator will remove all staking (engineered road, pads, well stakes, etc.) for those areas which were not approved with the POD/APD.

2. All roads, well pads, rig slots, culverts, spot upgrades and locations where engineered construction will occur will be completely slope staked for review prior to construction.

3. Topsoil will be segregated for all excavation including the entire disturbance area for constructed pads and excavated areas for rig leveling, reserve pits, constructed roads, spot upgrades, reservoir upgrades, outfalls and utility trenches and redistributed for interim reclamation activities. This requirement will not be applied for pipelines installed with wheel trenchers.

4. 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.

5. Maintain a minimum 20-foot undisturbed vegetative border between disturbance areas and the edge of adjacent drainages, unless otherwise directed by the BLM Authorized Officer.

6. 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.

7. 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.

8. The reserve pit will be lined with an impermeable liner if permeable subsurface material is encountered. An impermeable liner is any liner having 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.

9. The reserve pit will be constructed so that at least half of its total volume is in solid cut material (below natural ground level).

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:

Soil Type	Road Grade 2-4%	Road Grade 5-8%	Road Grade 9-12%	Road Grade 13-16%
Highly erosive Granitic or sandy	240	180	140	100
Intermediate Erosive clay or load	310	260	200	150
Low erosive shale or gravel	400	325	250	175

11. Provide 4" of aggregate where grades exceed 8%. Surface material must meet requirements set forth in Wyoming Supplement to BLM Road Manual 9113.

12. The minimum diameter for culverts will be 18 inches. However, all culverts will be appropriately sized in accordance with standards in BLM Manual 9113 or at the discretion of the Authorized Officer.

13. Maximum speed on all operator-constructed and maintained roads will not exceed 25 miles per hour.

14. Pipeline construction shall not block nor change the natural course of any drainage. Pipelines shall cross perpendicular to drainages. Suspended pipelines shall provide adequate clearance for maximum runoff.

15. 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.

16. All overhead power lines will be constructed to Avian Power Line Interaction Committee (2006 edition or most recent edition) by the standards and additional standards identified in the PRB FEIS Biological Opinion (Volume 3, Appendix K, page 43).

B. Operations/Maintenance

1. 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. Operators and their contractors will comply with all state and local laws and regulations pertaining to disposal of human and solid waste will be complied with.

2. Sewage shall be placed in a self-contained, chemically treated porta-potty on location.

3. 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.

4. 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.

5. 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.

6. 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. 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.

7. 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.

8. 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.

9. Prior to the use of pesticides on public land, the holder shall obtain from the BLM authorized officer a pesticide use permit (PUP). The PUP must include a 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.

C. 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.

2. 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.

3. Distribute stockpiled topsoil evenly over those areas not required for production (ie.,cut/fill slopes, road ditches, pipelines, etc.) and reseed with approved seed mix.

4. 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.

D. Reclamation/Dry Hole

1. 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.

2. A Notice of Intent to Abandon and a Subsequent Report of Abandonment must be submitted for abandonment approval.

3. 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.

4. 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:

   - 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 CBNG water, including discharge points, reservoirs, off-channel pits, land application areas, livestock/wildlife watering facilities, surface discharge stream channels, etc.
   - Refer to *BLM Impoundment Reclamation Guidance* for further information on reclaiming impoundments.
   - Refer to the *Wyoming Reclamation Policy* for further guidance on reclamation.

5. All disturbed lands associated with this project, including the pipelines, access roads, water management facilities, etc will be reclaimed and reseeded within 180 days of well plugging. The

reclamation work must be in accordance with the surface use plan and any pertinent site-specific COAs.

6. Disturbed lands will be re-contoured back to conform with existing undisturbed topography. No depressions will be left that trap water or form ponds.

7. 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.

8. Before the location has been reshaped and prior to redistributing the topsoil, the operator will rip or scarify the drilling area and access road on the contour to 4" below the compacted layer. The rippers are to be no farther than 24 inches apart.

9. Distribute the topsoil evenly over all disturbed areas. Prepare the seedbed and seed with approved seed mix.

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	200
2 - 4	100
4 - 5	75
> 5	50