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

SURFACE USE
CONDITIONS OF APPROVAL
EA # WY-070- EA09-155

POD Name: Crossbow 5-18H, 6-18M, and 19-18H Wells

Operator: EOG Resources INC

Well Name & Number	QTR	Sec.	T	R	Lease #
Crossbow 5-18H	NWNE	18	41N	71W	WYW-108556
Crossbow 6-18M	SENE	18	41N	71W	WYW-108556
Crossbow 19-18H	NWNE	18	41N	71W	WYW-108556

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 can be applied by BLM, as determined necessary at the site-specific NEPA APD stage, as COAs and will be in addition to stipulations applied at the time of lease issuance and any standard COA.

Visual Resources

1. The Companies will mount lights at compressor stations on a pole or building and direct them downward to illuminate key areas within the facility while minimizing the amount of light projected outside the facility.

Noise

1. Noise mufflers will be installed on the exhaust of compressor engines to reduce the exhaust noise.

2. Where noise impacts to existing sensitive receptors are an issue, noise levels will be required to be no greater than 55 decibels measured at a distance of one-quarter mile from the appropriate booster (field) compressor. When background noise exceeds 55dBA, noise levels will be no greater than 5dBA above background. This may require the installation of electrical compressor motors at these locations.

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 form the BLM authorized officer.

II. Site Specific Conditions of Approval

General

1. All changes agreed to at the pre-approval onsite will be followed. The agreed-upon changes have been incorporated into the operator's APD package and the EA.

2. All proposed access roads, pads, and other locations where engineered construction will occur will be completely slope staked for the pre-construction meeting.

3. All EOG Resources representatives and contractors will have a copy of the approved APD package and COAs at all times while conducting construction activities.

4. Onshore Order #1, as revised effective 05-07-07, requires that all operators certify to the Field Office in writing that they have supplied a copy of the Surface Use Plan to each of the private surface owners affected by the project. This self-certification must be received by the Buffalo Field Office before construction on the project begins.

Vegetation

1. Temporarily fence reseeded areas for at least two complete growing seasons to ensure reclamation success on problematic sites (e.g., close to livestock watering source, erosive soils, etc.).

Soils

1. Grading and site preparation BMPs and other soil retention measures will mitigate for potential soil losses and other erosive forces. Topsoil segregation will occur at the proposed well pads to be used during future pad reclamations and project restorations, thereby mitigating impacts to soils at the two proposed locations. An existing road to the 5-18 location will be used to minimize soil disturbances to the 5-18 location and the proposed reclamation of the 6-18 well pad and access road will further mitigate for soils loss to erosive forces.

Wetlands and Riparian

1. Implement site BMPs during construction and reclamation to mitigate secondary impacts to wetland and riparian resources. BMPs will be installed and maintained in accordance with applicable stormwater measures and BMPs.

Wildlife

1. The Project Area and 0.5-mile buffer will be surveyed for raptor nest activity by a qualified biologist prior to construction activities between April 15 and June 30.
2. Surface disturbance activities will be restricted within 0.5 mile of an occupied raptor nest between February 1 and July 31.
3. All infrastructure requiring human visitation will be located more than 0.25 mile from occupied raptor nests. Human activities within the 0.25-mile buffer could occur if activities are obscured by vegetation or topography from nest line-of-sight.

4. Pre-construction surveys for mountain plover will be conducted within 0.25 mile of the Project Area between May 1 and June 15. A 0.25-mile disturbance-free buffer zone will be established for all nesting locations between March 15 and July 31.

5. Project-related features that encourage or enhance the hunting efficiency of predators of mountain plover will not be constructed within 0.25 mile of known mountain plover nest sites.

6. Creation of hunting perches or nest sites for avian predators within 0.5 mile of identified nesting areas will be avoided by using the lowest possible structures for fences and by incorporating perch-inhibiting devices into their design.

7. When above ground markers are used on capped and abandoned wells, they will be identified with markers no taller than four feet with perch-inhibiting devices on the top to avoid creation of raptor hunting perches within 0.5 mile of nesting areas.

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 any BLM surface will require prior approval from the BLM AO.

Please contact Meleah Corey – Natural Resource Specialist, Bureau of Land Management, Buffalo, if there are any questions concerning surface use COAs.

Surface Use

1. 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 Crossbow 5-18H and 19-18H is Covert Green (18-0617 TPX).

2. Any oil or other toxic fluids that are inadvertently put into the reserve pit during drilling operations or up to the time of pit closure will be immediately (within 24 hours) removed by the operator.

3. Toe of fill stakes will remain in place during construction of the well pad until interim reclamation is initiated.

4. The minimum cover over culverts will be 12" or one-half the diameter, whichever is greater. Drainage laterals in the form of culverts or water bars shall be placed according to the following spacing:

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

5. Provide 4” of aggregate where grades exceed 8% for stability and erosion prevention.

6. All rills, gullies, and other surface defects shall be ripped to the full depth of erosion across the entire width of the roadway prior to final grading and surfacing.

7. The reserve pit will be closed as soon as possible, but no later than 6 months from time of drilling/well completion, unless the BLM AO 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.

8. Adequate drainage control must be in place at all stages of construction and culverts installed as soon as feasible.

9. If a dry hole, all rehabilitation work, including seeding, will be initiated within 30 days after plugging operations are completed (pending seasonal conditions).

10. Interim reclamation of disturbed areas will adhere to the following guidance (as per the Wyoming Policy on Reclamation (IM WY-90-231):
    A. The reclaimed area shall be stable and exhibit none of the following characteristics:
        i. Large rills or gullies.
        ii. Perceptible soil movement or head cutting in drainages.
        iii. Slope instability on, or adjacent to, the reclaimed area in question.
    B. 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 soil movement.
    C. 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:

        i. Successful onsite establishment of species included in the planting mixture or other desirable species.
        ii. Evidence of vegetation reproduction, either by rhizomatous species or seed production.

    D. 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.

11. All topsoil removed during construction activities will be re-spread for interim reclamation success.

12. 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:

    10-14" Precipitation Zone
    Sandy Ecological Site

Seed Mix

Species		**% in Mix**	Lbs PLS*
Thickspike Wheatgrass (*Elymus lanceolatus ssp. lanceolatus*)		20	2.4
Prairie sandreed (*Calamovilfa longifolia*)		30	3.6
Indian ricegrass *(Achnatherum hymenoides)*		20	2.4
Needleandthread (*Hesperostipa comata ssp. comata*)		15	1.8
Prairie coneflower (*Ratibida columnifera*)		5	0.6
White or purple prairie clover (*Dalea candidum, purpureum*)		5	0.6
Scarlet Globemallow (*Sphaeralcea coccinea*) / or **Blue flax**(*Linum lewisii*)		5	0.6
Chapter 1 Chapter 2 **Totals**		**100%**	**12 lbs/acre**

*PLS = pure live seed
*Northern Plains adapted species
*Double this rate if broadcast seeding

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

I. 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 AO 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 AO 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 AO. 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. If any dead or injured threatened, endangered, proposed, or candidate species is located during construction or operation, the USFWS'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.

5. All other conservation measures and terms and conditions identified in the Powder River Basin Oil and Gas Project Biological Opinion (WY07F0075) shall be complied with.

6. 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.

7. All contractors will have a copy of the engineered pad and road designs, as well as conditions of approval, with them at all time.

B. Construction

1. 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.

2. 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.

3. 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.

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. Construct the backslope no steeper than 1½:1, and construct the foreslope no steeper than 2:1, unless otherwise directed by the BLM AO.

6. 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 AO.

7. To minimize electrocution potential to raptors, all overhead electrical power lines will be constructed to standards identified by the Avian Power Line Interaction Committee (1996) standards and additional standards identified in the PRB FEIS Biological Opinion (Volume 3, Appendix K, page 43).

8. 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.

9. 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.

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

11. 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.

12. All culverts will be appropriately sized in accordance with standards in BLM Manual 9113.

13. Construction and other project-related traffic will be restricted to approved routes. Cross-country vehicle travel will not be allowed.

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

15. During construction, emissions of particulate matter from well pad and road construction will 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 AO.

16. 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.

17. 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.

C. Operations/Maintenance

1. Confine all equipment and vehicles to the access roads, pads, and areas specified in the approved APD or POD.

2. All waste, other than human waste and drilling fluids, will be contained in a portable trash cage. This waste will be transported to a State approved waste disposal site immediately upon completion of drilling operations. No trash or empty barrels will be placed in the reserve pit or buried on location. All state and local laws and regulations pertaining to disposal of human and solid waste will be complied with.

3. Rat and mouse holes shall be filled and compacted from the bottom to the top immediately upon release of the drilling rig from the location.

4. The operator will be responsible for 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 AO 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 AO to such use.

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

6. The operator and their contractors shall ensure that all use, production, storage, transport and disposal of hazardous and extremely hazardous materials associated with the drilling, completion and production of this well will be in accordance with all applicable existing or hereafter promulgated federal, state and local government rules, regulations and guidelines. All project related activities involving hazardous materials will be conducted in a manner to minimize potential environmental impacts. 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.

7. 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.

8. 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 AO requiring specific testing and closure requirements.

9. 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.

10. 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 firefighting 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 APD 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. 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.
    - Decommissioning/removal of all surface facilities.

7. BLM will not release the performance bond until all disturbed areas associated with the APD have been successfully re-vegetated (evaluation will be mode 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	200
2 – 4	100
4 – 5	75
>5	50

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 AO. 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 AO.

4. Any spilled or leaked oil, produced water or treatment chemicals must be reported in accordance with NTL-2A 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 AO to prevent soil erosion and accommodate safe, environmentally-sound access.

7. Prior to construction of production facilities not specifically addressed in the APD, the operator shall submit a Sundry Notice to the BLM AO 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 supersede or apply where specific road requirements are addressed in the APF surface use plan (e.g., two track road, spot upgrade, etc.).