

STATE OF COLORADO

OFFICE OF THE EXECUTIVE DIRECTOR

Department of Natural Resources
1313 Sherman Street, Room 718
Denver, Colorado 80203
Phone: (303) 866-3311
Fax: (303) 866-2115
dnr.state.co.us



Memorandum

To: Natural Resources & Environmental Law Sections of the Colorado Bar Association
From: Bob Randall, DNR Deputy Director
Date: November 12, 2010
Re: Efforts to address impacts of oil and gas operations on wildlife habitat

Bill Ritter, Jr.
Governor

Mike King
Executive Director

The new and amended COGCC rules contain several measures designed to avoid, minimize, and mitigate impacts from oil and gas activities to wildlife. Two such measures provide operators with an opportunity to address potential impacts to wildlife habitat before they apply for a permit to construct a location or to drill a well: Wildlife Mitigation Plans and COGCC orders limiting the number of well sites within a particular area.

To date, operators have opted to use these tools to provide enhanced wildlife protection on over **397,814 acres** in western Colorado, while simultaneously eliminating the need for consultation among operators, surface owners, and staff of the Colorado Division of Wildlife and COGCC on potential wildlife impacts of individual permits, thereby streamlining the issuance of COGCC drilling permits.

Since before the amended rules went into effect, the Colorado Division of Wildlife (CDOW) has worked with operators on ways to address potential impacts to wildlife on a landscape scale. At any one time, the CDOW has been in discussions on Wildlife Mitigation Plans (WMPs) with up to 20 companies. It is important to note that WMPs are strictly voluntary and that it has typically taken up to 18 months to finalize a WMP, demonstrating the significant resource commitments operators have made to wildlife issues. Through the hard work and dedicated efforts of CDOW staff and the staff of oil and gas operators, the CDOW has now entered into eleven WMPs with nine companies that collectively cover operations on approximately 393,349 acres of valuable wildlife habitat in western Colorado.

In addition, the COGCC recently entered an order that will limit the density and timing of development on 3,840 acres in western Colorado. This order was entered at the request of Delta Petroleum, and it will limit development in six sections in Mesa County and eliminate the need for Delta to consult with the CDOW on individual permits in these areas of sensitive wildlife habitat.

OPERATOR	COUNTY	ACREAGE
Encana's North Parachute Ranch WMP	Garfield	44,713
Antero's Rifle-Silt Wildlife Mitigation Plan	Garfield	25,599
Marathon's Wildlife Mitigation Plan	Garfield	20,261
Noble's Wildlife Mitigation Plan	Garfield & Mesa	19,200
Black Hills' Wildlife Mitigation Plan	Garfield & Mesa	23,420
Williams' South of the River WMP	Garfield	38,210
ExxonMobil Wildlife Mitigation Plan	Rio Blanco	149,946
Williams' North of the River WMP	Garfield	27,420
Petroleum Development Corp. WMP	Garfield	8,000
Williams' Ryan Gulch WMP	Rio Blanco	17,205
Bill Barrett Corp. Wildlife Mitigation Plan	Garfield	20,000
Delta's Order Limiting Well-Site Density	Mesa	3,840
TOTAL		397,814

1) Wildlife Mitigation Plans

Pursuant to COGCC Rule 1202.d.(2), the CDOW will not be required to consult with companies on individual Form 2As that are located in Sensitive Wildlife Habitat (SWH) or a Restricted Surface Occupancy (RSO) area so long as the location is covered by the WMP and the operator is in compliance with the WMP. By working with companies on these WMPs, the CDOW has effectively pre-consulted and arrived at agreed-upon ways the operator can avoid, minimize, and mitigate impacts to wildlife resources.

In general, these plans are beneficial to wildlife and to CDOW because these plans may:

- define measures by which operators can avoid and minimize impacts, and mitigate remaining impacts through projects that improve habitat;
- allow industry to plan development and CDOW to consider ways to address impacts to wildlife on a landscape scale and more effectively conduct long-term wildlife planning;
- contain a company's commitment to undertake certain practices that go beyond the requirements of the COGCC rules to reduce impacts to wildlife for the duration of the WMP;
- include commitments to perform or fund off-site mitigation to address impacts that cannot be avoided or minimized, resulting in enhanced habitat in the area;
- contain commitments to fund research that assists the CDOW in effectively managing wildlife resources in the future; and
- eliminate the need to perform consultations on a site-by-site basis, reducing workload on CDOW staff and allowing CDOW staff to focus efforts on other aspects of wildlife management.

The following discussion provides some background on just one of the eleven WMPs that have been finalized, which cover approximately 393,974 acres.

EXAMPLE: Williams' South of the River WMP

The Williams South of the River (SOR) WMP covers 38,210 acres south of the Colorado River and includes the towns of Rulison and Battlement Mesa in Garfield County. The SOR acreage includes private (fee) and federal mineral and surface ownership that is under the management of BLM's Colorado River Valley Field Office in Silt. The WMP area includes the following sensitive wildlife habitats: golden eagle active nest site, bald eagle nest and roost sites, mule deer critical winter range, and elk winter concentration and production areas. It also includes restricted surface occupancy areas

such as a bald eagle active nest site, golden eagle active nest site, and designated cutthroat trout habitat. In general, Williams proposes to develop its leasehold in the SOR planning area on ~10 acre down-hole spacing. Within the WMP boundary, there are 154 existing well pads, and Williams proposes approximately 96 new well pads and additional drilling on 44 existing pads. The anticipated duration of the WMP is 5-10 years. The WMP was signed by Williams and the CDOW NW Regional Manager in July 2010.

The WMP contemplates that CDOW and Williams will its first WMP review meeting six months from the WMP approval date to discuss the project schedule, development status, and implementation of compensatory mitigation projects. Thereafter, CDOW and Williams will meet annually to review the Best Management Practices (BMPs) and Conditions of Approval (COAs), to update and discuss the status of development in the WMP area, and to assess the implementation of compensatory mitigation projects. Williams will provide any updates to the operations maps and shape files prior to the meeting. Amendments to the WMP will be appended to the document, as necessary, after the annual meetings, including any modifications or reprioritizations of the mitigation opportunities/projects.

The WMP incorporates a “Wildlife Plan” developed by Williams that includes a long-term operations plan, provisions related to CDOW consultations, and a list of BMPs to be followed by Williams either field-wide or on a site-specific basis, as discussed below. For long-term operations, the Wildlife Plan states that Williams’ development of its lease acreage will typically follow a phased approach reflecting a “step-out” strategy whereby Williams will enlarge and connect areas of production in order to provide wintering wildlife with ever-expanding zones where no drilling activity is occurring. To the extent feasible, Williams will consolidate the use of production facilities that separate well stream fluids into manageable products (gas, condensate, and water) from each well individually and that deliver each product to its ultimate destination. Pipeline construction for production facilities will typically occur in a 50-foot wide easement, and pipeline corridors will be reclaimed as agreed to by Williams and the surface owner or surface management agency as soon as practical (within 6-9 months). Where practicable, condensate and water lines installed to transport liquids to a centralized collection facility will be collocated with the gas gathering system, reducing the amount of surface disturbance and reducing the amount of trucking.

With regard to CDOW consultations, the Wildlife Plan provides that Williams will consult with CDOW on development strategies, design features, BMPs, and mitigation measures. CDOW and Williams will consult at a site-specific level on drilling activities to occur approximately two years out, and at a conceptual level for drilling activities to occur three or more years out. At the annual meetings, Williams will present CDOW with planned locations and anticipated drilling times, along with a description of design features of each pad. Where CDOW and Williams agree on particular BMPs, such measures will become the basis for COAs that CDOW will recommend to COGCC on specific well pads.

Williams has undertaken voluntary mitigation efforts within the SOR area that are expected to provide a lasting benefit to wildlife. In anticipation of the need for mitigation projects in areas where Williams does not own or control the surface and where development strategies, design features, and proposed BMPs are insufficient to reduce wildlife impacts, Williams and CDOW identified the following nine potential mitigation areas within the SOR area to supplement mitigation activities that are carried out on Williams’ ranches:

- Hayfield/pasture maintenance on private land in sections four sections of land;
- Maintenance of old HPP project on private land in one section;
- Pinyon-juniper treatment and water development on private and BLM land in one section;
- Weed control on private land in two sections;
- Minimize intensity of active drilling on private and BLM land in two sections;

- Leave 3rd cutting of hay for wintering deer and elk on private land in two sections;
- Hayfield/pasture treatments on private land to hold wintering deer and elk in one section;
- A controlled burn on BLM land in one section;
- Unique development plan and habitat treatments in and around non-irrigated private pastureland in two sections; and
- Maintain habitat connectivity on BLM and private land in eleven sections of land.

In the WMP, Williams indicated to CDOW that it planned several BMPs to avoid and/or minimize the impacts from oil and gas development, including SCADA (remote well monitoring), a liquids distribution system, phased drilling using high-efficiency rigs, and SIMOPS (or simultaneous drilling and completion operations). The Wildlife Plan contains six pages of field-wide and site-specific BMPs that will be applied on a case-by-case basis, including:

- **Field-Wide BMPs**
 - **General**
 - Contribute to organizations that acquire/manage habitat;
 - Identify conservation easement opportunities on Williams-owned or -managed properties; and
 - Acquire water rights and irrigate key habitat areas.
 - **Planning**
 - Identify private and Federal land seclusion areas where drilling will be voluntarily deferred in critical seasonal habitats;
 - Minimize the number, size, and distribution of well pads and locate pads along existing roads where possible; and
 - Adequately size infrastructure and facilities to accommodate both current and future gas production
 - **Construction**
 - Schedule construction in stream courses to avoid critical spawning times;
 - Protect culvert inlets from erosion and sedimentation and install energy dissipation structures at outfalls; and
 - Construct pit fences and nets that are capable of withstanding animal pressure and environmental conditions and that are appropriately sized for wildlife;
 - **Drilling/Completions**
 - Store and stage emergency spill response equipment at strategic locations so that it is available to expedite effective spill response;
 - Screen water suction hoses to exclude fish; and
 - Limit parking to already disturbed areas that have not yet been reclaimed.
 - **Production/Reclamation**
 - Install automated emergency response systems (e.g. high-tank alarms, emergency shut-down systems, etc.);
 - Map the occurrence of existing weed infestations prior to development to target areas that will likely become issues after development; and
 - Establish vegetation with diversity of non-invasive species of at least half that of pre-disturbance or reference area levels and quantify diversity of vegetation using a metric that considers only species with >3% relative plant cover.
- **Site-Specific BMPs**
 - **Planning**
 - Minimize newly planned activities and operations within 300' of the ordinary high water mark of any reservoir, lake, wetland, or natural perennial or seasonally flowing stream or river;

- Combine utility infrastructure (gas, electric, and water) planning with roadway planning to avoid separate utility corridors; and
 - Accelerate development under a “clustered-development concept” where Williams has a 100% mineral interest or control of mineral development.
- **Construction**
 - Close and reclaim roads not necessary for development, including removing all bridges and culverts and recontouring/reclaiming all stream crossings;
 - Construct retention basins and ponds that benefit wildlife; and
 - Design road crossings of streams to allow fish passage at all flows and to minimize the generation of sediment.
- **Drilling/Completions**
 - Use centralized hydraulic fracturing operations;
 - Install and maintain adequate measures to exclude all types of wildlife (e.g., big game, birds, and small rodents) from all fluid pits (e.g. fencing, netting, etc.)
 - Conduct well completions with drilling operations to limit the number of rig moves and traffic.
- **Production/Reclamation**
 - Utilize staked soil retention blankets for erosion control and reclamation of large surface areas with 1.5:1 or steeper slopes, and avoid the use of plastic blanket materials;
 - Restore both form and function of impacted wetlands and riparian areas and mitigate erosion; and
 - Avoid dust-suppression activities within 300 feet of the ordinary high water mark of any reservoir, lake, wetland, or natural perennial or seasonally flowing stream or river.

2) COGCC Orders Limiting Well Sites

Pursuant to COGCC Rule 1202.d.(5), the CDOW will not be required to consult with companies on an individual Form 2A if the operator applies for and obtains a Commission order pursuant to Rule 503 providing that:

- There will not be more than three well sites per section; and
- Ground disturbing activity will be limited to one such well site, as determined by the Director, during the period from January 1 to March 31 (or other biologically appropriate alternative period of up to 90 consecutive days, as determined by the COGCC Director, depending on the species of concern, range, or roosting area present).

In adopting this provision, the Commission noted that while the period during which ground-disturbing activities are limited for wildlife habitat protection may be up to 90 consecutive days for some species, it may be as few as 30 days for other species.

Under the rule, this exemption from consultation will not apply to operations in greater sage grouse sensitive wildlife habitat in Moffat, Routt, or Jackson Counties or in occupied Gunnison sage grouse sensitive wildlife habitat in Delta, Mesa, Gunnison, San Miguel, Dolores, or Montezuma Counties

Such an order is beneficial to wildlife and to CDOW because it would:

- reduce the density of development;
- limit ground disturbing activities during certain periods where wildlife species are particularly susceptible to disturbance; and
- eliminate the need to perform consultations on a site-by-site basis, reducing workload on CDOW staff and allowing them to focus efforts on other aspects of wildlife management.

EXAMPLE: Delta Petroleum

On February 3, 2010, Delta Petroleum Corp. filed an application for an order under Rules 503 and 1202.d.(5) limiting the number of well sites to no more than three per section in 5 sections of Mesa County, and to no more than one well site on another section. The area in question contained elk winter concentration areas, SWH under the COGCC rules.

Under applicable prior orders, Delta would have been authorized to drill the equivalent of one well per 10 acres, with no more than one well site per 40-acre quarter-quarter section -- resulting in up to 16 well sites per section. The applied-for order to limit well sites in these areas, then, would represent more than an 80% reduction in the number of well sites and associated surface disturbance on the affected lands.

Though the BLM initially protested this order pursuant to the 1991 MOU between the Commission and the BLM, indicating a concern that the proposed reduction in well sites might prevent production of the federal mineral estate, the BLM subsequently withdrew its protests.

Because of surface topography, depth of targets, type of production, and the availability of appropriate equipment and technology, Delta testified that development of the resources through directional drilling from a limited number of sites was technically and economically feasible at this site, though it would not be in many other oil and gas field settings. Delta also testified that it has successfully drilled six "S" shaped wells with a horizontal departure of between 2,000 and 2,400 feet in the two fields, and that its application for an order would allow efficient extraction of the resource in a manner that will prevent waste.

At its June 1 hearing, the COGCC Commissioners approved Delta's application and issued an order for five sections limiting development to no more than three well sites and restricting ground disturbing activities to no more than one well site during the period of January 1 to March 31 in any year. The order also limits the number of well sites to a single location in one section.

As a result of this order, Delta will be excused from the consultation requirements contained in Rule 306.c with respect to Form 2As for the allowed well sites on the lands covered by the application. If Delta (or a successor in interest) determines that additional well sites are necessary for the prevention of waste and maximum efficient recovery of the resource, Delta or the successor must file an application to vacate the order and the BLM and CDOW will be granted standing as a protestant or intervenor as-of-right. Finally, the order provides that in considering any such application to vacate the order, the Commission will give primary consideration to whether or not Delta or its successor has negotiated and executed a wildlife mitigation agreement with the CDOW.