

STATE OF COLORADO

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Memorandum

To: Colorado Oil and Gas Commissioners
From: Bob Randall, Deputy Director
Date: August 12, 2010
Re: Status report on 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 **325,289 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 seven WMPs that collectively cover operations on approximately 321,349 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 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
Delta's Order Limiting Well-Site Density	Mesa	3,840
	TOTAL	325,189

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 each of the seven WMPs that have been finalized, which cover approximately 321,349 acres.

The CDOW continues to negotiate with companies on other WMPs, including: Williams' Ryan Gulch WMP (14,378 acres of federal land in Rio Blanco County), Williams' North of the River WMP (~16,000 acres of mostly private land in Garfield County), Antero's Battlement Mesa WMP (~12,000 acres of mostly private land in Garfield County), and Petroleum Development Corporation's WMP (~12,000 acres of private land in Garfield County).

1) Encana's North Parachute Ranch WMP

The Encana WMP covers approximately 44,713 acres of Encana-owned land west of the Roan Plateau, in Garfield County, known as the North Parachute Ranch (NPR). The WMP includes 22 new well pads, 24 reoccupied pads, one comprehensive drilling pad, gathering lines, and one compressor station and is based on a combination of 40-acre, 20-acre, and 10-acre down-hole spacing and well density. It was signed by Encana and the CDOW NW Regional Manager in September 2009 and amended in January 2010.

In the WMP, Encana agrees to implement certain operational technologies and practices, where appropriate and feasible. Encana also agrees to perform certain environmental and wildlife best management practices and mitigation. For example, during construction Encana agrees to perform on-site biological site surveys for each new development, using the most recent data sets for wildlife and aquatic resources. Encana also agrees to utilize a Wildlife Resources Matrix and Encana's wildlife resource database and maps to identify and document (where appropriate) potential impacts or concerns during the project planning phase for proposed drilling operations and construction of roads, pads, and pipelines. The Wildlife Resources Matrix reflects a prioritization of species habitat sensitivity as agreed upon by CDOW and Encana. Finally, Encana agrees to follow the NPR Integrated Vegetation Management Guidance for interim and final reclamation practices, including identifying appropriate

seed mixes and invasive weed control measures. Selection of seed mixes will be based upon the type of ecosystem affected. Implementation of the NPR Integrated Vegetation Management Guidance will be documented on COGCC Form 4 (Sundry Notice for Reclamation).

During operations, Encana agrees to manage all grazing lease agreements for the NPR under a consistent monitoring program to ensure livestock utilization does not negatively impact other resources. This monitoring will include fence inspections, periodic range checks for trespass cattle or unexpected issues, and grazing utilization baskets to determine percentage of use so that livestock may be removed from an area in a timely manner. Encana also agrees to hire a ranch manager to implement the WMP, prohibit pets on Encana property, prohibit employees and contractors from carrying projectile weapons on Encana property (except during company-organized events), apply fugitive dust control measures where needed, use temporary living quarters where feasible, and dedicate at least one full-time Encana employee for oversight of the environmental considerations in the WMP starting in 2010.

Encana agrees to conduct its operations consistent with a Master Stormwater Management Plan and to use two or more stormwater BMPs to control sediment runoff and control or contain any potential spills where surface disturbance must occur within a riparian habitat. For aquatic resources, Encana agrees to continue studies and sampling efforts, including biannual macro-invertebrate sampling, quarterly water sampling, and cooperation with CDOW to allow access to the West Fork of Parachute Creek to monitor cutthroat trout populations.

The Encana WMP includes a detailed discussion of new disturbance within certain development areas in WMP area. For example, in the Northwest NPR Encana follows a sage grouse plan that focuses on avoidance of habitat, maintenance of buffer zones, and timing restrictions.

In addition, Encana agreed to attach the following practices, where appropriate and feasible, to all Forms 2A submitted to the COGCC:

- using solar panels for on-location production equipment;
- placing multiple gathering lines in a single trench to minimize disturbance and construction;
- installing trench plugs (sloped to allow wildlife or livestock to exit the trench) at known wildlife or livestock trails, to allow safe crossing on long spans of open trench;
- installing pipeline crossings at right angles to the drainages, wetlands, and perennial water bodies;
- limiting in-stream construction activity to 24 hours for water bodies less than 10-feet wide and to 48 hours for water bodies greater than 10-feet wide at locations where horizontal boring is not feasible;
- maintaining a minimum of five feet of soil cover between the pipeline and the lowest point of the drainage or water body channel;
- performing biological surveys (on-site) for each new development, using the most recent data sets for wildlife and aquatic resources;
- performing pre-disturbance surveys when the on-site inspection and commencement of disturbance occur during different field seasons, using the most recent data sets for wildlife and aquatic resources;
- using the Encana Wildlife Resources Matrix to identify and document potential impacts or concerns during the project-planning phase for proposed drilling operations and construction of roads, pads, and pipelines;
- prohibiting Encana employees and contractors from carrying projectile weapons on Encana property, except during company-organized events;
- prohibiting pets on EnCana property;

- strategically applying fugitive dust control measures, including enforcement of established speed limits on Encana private roads, to reduce coating of vegetation and deposition in water sources;
- using engineering controls at all water draw points from Parachute Creek (i.e. overhead loading, one-way valves, installation of stationary draw hoses with screened intakes) to prevent contamination of the Parachute Creek drainage; and
- using enclosed, locking garbage receptacles or implementing a strict daily trash removal regime on each temporary or permanent work location.

Finally, Encana agrees to compensatory mitigation for unavoidable impacts taking place in the WMP. Encana will continue to fund CDOW Piceance Basin research projects as previously agreed upon (\$300,000 for 2008, and \$150,000 per year from 2009 to 2012), totaling \$900,000 over five years. Encana also agrees to maintain public hunting to a portion of the WMP area and public access to BLM property, taking into consideration the safety of both the public and Encana personnel.

Encana and CDOW commit to reviewing the WMP annually, though discussions of development activity or changes in species and habitats considered in the WMP may occur prior to or during the annual review. At this annual meeting, Encana will make available to CDOW records related to reclamation, weed control, on-site biological reports and wildlife matrix forms, biological and pre-construction surveys, and grazing management. Encana will contract with a third party to audit its operations pursuant to the WMP for the prior two-year period, starting from the effective date of the WMP, and provide the audit results to CDOW during the annual review.

2) Antero's Rifle-Silt WMP

The WMP covers a 25,599-acre area between Rifle and Silt. Development in this area includes 58 new well pads and work on 38 existing pads (96 total), as well as the Wasatch Bench Water Storage and Handling Facility as of March 24, 2010. Of the 58 proposed new pads, 43 lie within mule deer sensitive habitat and 5 are within bald eagle sensitive wildlife habitat. The WMP was signed by Antero and the CDOW NW Regional Manager in March 2010.

For the pads within the Wildlife Mitigation Plan area including the bald eagle sensitive wildlife habitat (SWH) areas, Antero agreed to:

- maintain a 1/4 mile no-surface-occupancy buffer around active bald eagle nests;
- implement a monitoring program for raptors and other birds, including great blue heron, as developed by CDOW and where practicable;
- limit pad construction to 3 acres or less;
- limit pad density to 1 pad per 120 acres; and
- bury all gas and water pipelines adjacent to roads, where possible.

In addition, Antero agreed to the following operational practices to reduce impacts to wildlife:

- drilling with a closed loop (pitless) system;
- committing to NSO on 1996 acres of riparian habitat;
- committing to NSO on 587 acres to create a big game seclusion area;
- holding an annual planning meeting with CDOW to discuss mitigation projects and future development plans;
- participating in raptor monitoring and surveying protocol developed by CDOW and implemented by Antero;
- burying a water pipeline distribution system to reduce truck traffic;
- observing seasonal restricted surface occupancy (RSO) areas for raptors that do not trigger consultation under the COGCC's amended rules;

- avoiding a seclusion area in the NW corner of the WMP (Burning Mountain) area, unless development is necessary to hold onto a lease; and
- restricting rig operation to less than 2 per section within big game seclusion areas during winter (to be determined in consultation with CDOW), unless lease expiration warrants development.

Finally, Antero agreed to select from and annually fund projects from a list of “mitigation opportunities/projects recommended by the CDOW” over the life of the WMP. Antero and CDOW will meet annually to review the WMP and to schedule and prioritize mitigation projects from the list. This list includes:

- yearly contribution of \$15,000 to support the Pauline S. Snegass wildlife rehabilitation center that operates within the WMP boundary;
- annual weed treatment in the Valley Farm area for three years, to eradicate Russian knapweed;
- inventory and mapping of noxious weeds in the WMP area, with priority placed on the southern portion of the WMP;
- improvements at Burning Mountain on BLM land in the northeast corner of the WMP; and
- removal of Russian olive and tamarisk along the riparian corridors leading to the Colorado River.

3) Marathon WMP

The Marathon WMP covers 20,261 acres of fee surface and minerals north of the Colorado River and I-70 near Parachute, in Garfield County. Marathon leases cover 8,366 acres within the WMP boundary, and Marathon proposes activity on 36 new well pads and on 18 existing well pads. This development will result in direct disturbance of 347 acres. The WMP was signed by Marathon and the CDOW NW Regional Manager in March 2010.

Marathon agrees in the WMP to the following BMPs to provide operational and wildlife management and to avoid or minimize impacts to wildlife.

- Locating roads as far from riparian areas and bottoms of drainages as possible and outside of riparian habitat. However, Marathon notes that it is limited in areas where landowners dictate utilization of existing and location of roads.
- Implementing road and traffic management measures, including maintaining a 25 mph limit for all roads and a ban on radio/cell phone use while driving to enhance driving management, and encouraging carpooling for major projects.
- Using a SCADA remote sensing and monitoring system to reduce traffic. Marathon notes that it has eight well pads in production which require daily visits until the remote sensing system in place.
- Using a Temporary Living camp to house the resources needed to support the drilling operations. The site supports approximately 50 personnel that function on 12-hour shifts, on a 2-weeks-on and 2-weeks-off schedule. The Temporary Living Camp thus reduces 25 vehicles per day, 7 days per week.
- Installing a consolidated and centralized fluid collection and shared/consolidated corridor for lines. Marathon predicts that it would have the majority of the waterlines in place by the end of 2009, and that waterlines would be located adjacent to existing roads and within existing rights of way.
- Installing a centralized water line. Because each well requires approximately 25,000 barrels of water to drill and complete (250 truckloads at 100 barrels per load), the centralized waterline system would reduce trucking by about 2,000 truck loads per pad.
- Conducting an annual review of the scheduled civil construction, drilling, and completion activities to avoid portions of SWH, particularly for the Greater Sage Grouse. Additionally, Marathon commits to scheduling its activities in an effort to avoid or minimize operations near and within lek sites, elk production areas, and active raptor nests. Marathon’s goal during

annual scheduling of its Plan of Development is to avoid, at a minimum, 66% of the Greater Sage Grouse SWH.

- Where an area cannot be avoided, attempting to avoid the following time periods in which wildlife is particularly sensitive, including:
 - Avoiding leks from March 1 to May 15 for major activities;
 - Rotating elk production areas on a seasonal basis to protect habitat; and
 - Maintaining a 4-mile buffer for greater sage grouse from March 1 to June 30.
- Following rule requirements for noise and installing raptor perch deterrents in areas where surrounding habitats do not provide natural perches.
- Utilizing approved seed mixes and restoring disturbed sagebrush where Marathon jointly owns property. In leased areas, the land owner dictates seed mixes and sagebrush restoration, though there are discussions with land owners on decisions regarding high priority habitat (lek areas and adjacent lands) where sagebrush can be restored.
- Considering whether to conduct raptor surveys, and enlisting CDOW to assist in evaluating survey data protocols.

In the WMP, Marathon agreed to perform serviceberry treatments on 22 acres and to contribute \$300,000 to CDOW Piceance Project Research. The intent of this project is to contribute to the understanding of mule deer and greater sage-grouse species and habitats within the Piceance Basin. Marathon also agreed to undertake remote well monitoring, closed loop pitless drilling, liquids distribution pipelines, and high-efficiency rigs.

Marathon also agreed to conduct diurnal raptor surveys to focus on (1) existing and proposed pads within and in proximity to established leks, (2) confirmation of raptor nest locations within the project area, and (3) other identified priority areas. The objective of these surveys is to establish species, counts, and location within set boundaries, and the surveys would be conducted annually. The estimated cost of these surveys is \$150,000. Marathon will also conduct a land cover analysis, including review of satellite imagery, established vegetation plots for indicator species, vegetation plot photos for initial visual indicators, indicator polygons-GIS tools, modified land cover classification, and land cover change detection analysis. Marathon will share data sets with CDOW, and CDOW will be provided a copy of imagery with shape files. The approximate cost for five years of this land cover analysis is \$115,000. Marathon will be responsible for providing contractors to perform the raptor monitoring and the land cover analysis.

Marathon and CDOW agree in the WMP to maintain adaptability to future project schedules and modifications. They will meet annually (beginning 6 months from WMP approval date) to discuss the project schedule, development status, and implementation of compensatory mitigation projects. Each annual meeting will include a review of the BMPs implemented, compensatory mitigation measures undertaken, and the status of oil and gas development.

4) Noble WMP

The Noble WMP covers a 19,200 acre area southeast of Parachute, in Garfield and Mesa Counties. Noble's proposed project in the area includes up to 80 multi-well pads (13-22 wells per pad, averaging 16 wells per pad) and all of the associated roads, pipelines, and facilities. Of these 80 pads, five are planned in cutthroat trout RSO areas. 35 of the proposed pads are located in SWH, most of which are for elk production areas, though a few are on the outskirts of elk winter concentration areas or mule deer critical winter range. The activity covered by the WMP is to be completed in the next 6 years. In the WMP, Noble and the CDOW acknowledge that while the project consists of up to 80 pads over this six year period, the actual number of pads constructed and wells drilled is likely to be less, depending on a range of business factors. Under current business plans, Noble expects to construct approximately 25

total pads and drill approximately 400 wells over the life of this WMP. The WMP was signed by Noble and the CDOW NW Regional Manager in May 2010.

There are 3 distinct areas within the boundary of the Noble WMP that have unique ownership structures, varying levels of development, differing production results, and varied elevations and terrain, habitats, and uses. The west third of the project area is South Grand Valley and is largely developed. It has approximately 60 existing well pads with all necessary road access and pipeline infrastructure for the production of natural gas and produced water. It is 2-3 years into interim reclamation and has approximately 17 well pads planned, 2 of which are in the SWH for elk winter concentration and/or mule deer critical winter range. The middle third is Battlement Mesa and is approximately 20% developed. This area has 11 well pads with and the necessary road access and pipeline infrastructure for the production of natural gas and produced water. There are approximately 33 pads planned in the BM area, 5 in the RSO and 12 in the SWH for elk production. The east third of the project area is Rulison, and only about 5% of this area is developed. There are 30 well pads planned, 11 of which are in SWH for elk production.

In the WMP, Noble agrees not to develop several areas within the project area during the six-year life of the WMP. These include significant portions of the South Grand Valley area of the project, two sections on the southern edge of the project boundary that are elk production area SWH, one such section on the northern edge, and all or parts of eight sections on the southeast corner that are next to or within USFS roadless areas.

Noble also agrees to implement BMPs to minimize the impacts of activities within the project area. These include:

- Attempting a phased development approach during all planning stages, including:
 - Multi-well pads on sectional drilling for one-time surface disturbance and interim reclamation;
 - No more than 3-4 drilling rigs in the area at any given time (with an average of 1-2 rigs);
 - Gathering lines buried adjacent to or in the road, where possible;
 - Engineering pads with erosion control measures, taking into account nearby wildlife and riparian habitat; and
 - Initiation of interim reclamation as soon as possible.
- Educating employees and contractors about specific wildlife issues, such as:
 - No fishing in Battlement Creek;
 - Use of bear-proof containers for all human-related trash;
 - Paying close attention to vehicle traffic and speeds during the three hours surrounding dusk and dawn;
 - Maintaining a single-use/clean hose for drawing water from local sources to prevent cross-contamination with diseases and bacteria.
- Continued conversations with private landowners to:
 - Restrict access with gates and/or incorporate speed limit signs;
 - Control hunting and over-grazing; and
 - Suggest overgrowth vegetation control with chippers/hydro-axing.
- Maintain a Land Management Prescription for Noble's privately owned surface area
 - Controlled access (locked gates) at four or more specified locations.
- Treatment of long-term wastewater pits for mosquitoes when appropriate and feasible.
- Fencing and netting of all long-term wastewater pits.
- Prohibiting pets by Noble employees and contractors.
- Using appropriate dust mitigation measures during dry seasons.

In addition, NOBLE agrees to implement additional “mitigative” BMPs that would contribute significantly to lessen the project’s overall impacts to air quality, surface disturbance, and noise normally associated with a project of this size. These BMPs include:

- SCADA (or remote well monitoring);
- Man camps for drilling locations;
- Closed-loop/pitless drilling;
- Liquids distribution pipelines for produced water gathering; and
- Use of high-efficiency directional drilling rigs on multi-well pads, including centralized production facilities located on the pad.

These practices were found to cut down on truck traffic as well as the length of time needed to drill, produce, and maintain a well pad.

Finally, Noble agrees to mitigate impacts on cutthroat trout from the five proposed pads in the RSO by contributing \$150,000 for rehabilitation of the Battlement Mesa Reservoirs south of the project boundary. This funding will occur in 2010 and 2011 and enable CDOW and other agencies to help create a purebred gene pool of cutthroat trout to restock Colorado River cutthroat trout. Noble also commits to contributing \$30,000 to the Colorado Mule Deer Association to mitigate impacts to big game from the 35 potential pads in big game SWH.

In the WMP, CDOW agrees to waive requesting additional conditions of approval when it participates in federal permitting or attends a federal onsite inspection prior to issuance of a federal drilling permit. CDOW also agrees not to request any mitigation that is inconsistent with the WMP when participating in federal permitting. Finally, CDOW agrees to recommend that the BLM grant timing limitation waiver for winter access in two circumstances. First, CDOW will recommend such waiver on the BLM portion of the High Mesa Road in Battlement Mesa. This waiver has already been granted for the past three years to allow Noble to access private acreage not subject to the timing limitation and would continue for the life of the project. The WMP notes that this waiver provides mitigation for the SWH as it helps to expedite the activity in the area and allows Noble to initiate interim reclamation sooner. Second, CDOW will recommend waiver of winter timing stipulations on a federal lease as part of the Cache Creek Master Development Plan EA. Currently there are 5 approved pads in the Rulison area as part of this EA, and year-round drilling would decrease drilling time from 5 years to 3 years, eliminating the need to leave cutting pits open for up to an additional two years.

5) Black Hills WMP

The Black Hills WMP covers 23,420 acres north of the Colorado River and west of DeBeque. The discussions of the WMP involved staff from the BLM’s Grand Junction Field Office, and the WMP will be associated with an Environmental Assessment that the BLM is preparing for Black Hills’ proposed Master Development Plan. Black Hills’ proposed activities covered by the WMP include 67 new pads, 10 compressor stations, and infill drilling on 12 existing pads. The anticipated duration of the WMP is six years, during which the field will incur mostly exploratory drilling. The WMP was signed by Black Hills and the CDOW NW Regional Manager in June 2010.

The project area includes several SWH areas, including a bald eagle roost site, golden eagle active nest site, mule deer critical winter range, and elk winter concentration area. Activity is also proposed in close proximity to RSOs for peregrine falcon, golden eagle, and osprey.

In the WMP, Black Hills agrees to certain BMPs such as remote monitoring (SCADA), installation of a liquids distribution system, and voluntary extension of winter timing stipulations for mule deer and elk. While portions of the field are outside the winter ranges and the winter timing stipulations would therefore not apply, Black Hills has agreed in the WMP to restrict development (drilling and completion)

from December 1 to March 31 in big game severe winter range to reduce impacts to wintering big game. In addition, Black Hills commits to including any conditions of approval from the BLM's Environmental Assessment as BMPs in the WMP.

Black Hills also agrees to contribute to a mitigation fund on a \$200 per acre basis for all new disturbance and reoccupation of existing pads. The assessment of impacts and contribution of funding is to be done yearly, in an annual meeting. The funds would be used for onsite and offsite mitigation, including habitat restoration, installation of water sources, weed treatment, and stream improvements. The WMP provides that a managing entity would receive and track the funds, and an oversight committee consisting of CDOW, BLM, Mesa County, and Black Hills would determine how and where the funds would be spent for wildlife habitat enhancement projects. The WMP also provides that the mitigation funds would be spent within the boundaries of the BLM Grand Junction Field Office.

6. 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 BMPs/COAs, to update and discuss the status of oil and gas 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 in order to maintain a current understanding of the plan of operations. 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 specific basis. 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. This step-out strategy first involves conventional drilling to evaluate the resource, followed by efficiency drilling whereby up to 22 wells are placed on a pad. Typically, efficiency drilling rigs allow for simultaneous directional drilling, completion, and production operations to occur on a single pad (also known as simultaneous operations, or SIMOPS). Where feasible, fracturing equipment will be located at a centralized location and temporary surface or buried pipelines will be installed in order to fracture multiple well pads. 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 practical, 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.

Williams owns six ranches within the SOR planning area. While these ranches were originally purchased for energy development related uses, the Ranch Management Plans were developed based on wildlife habitat as a primary value for which each of the ranches is managed and several mitigation actions have completed on the ranches since 2006. The Wildlife Plan acknowledges that the six ranches will continue to provide large parcels of actively managed habitat in the center of Williams drilling activities in the SOR area.

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 strategy, 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 26, 27, 34, and 35 of T7S R96W;
- Maintenance of old HPP project on private land in section 30, T7S R95W;
- Pinyon-juniper treatment and water development on private and BLM land in section 9 T7S R95W;
- Weed control on private land in sections 3 and 4, T7S R95W;
- Minimize intensity of active drilling on private and BLM land in sections 1 and 2, T7S R95W;
- Leave 3rd cutting of hay for wintering deer and elk on private land in sections 35 and 36, T6S R95W;
- Hayfield/pasture treatments on private land to hold wintering deer and elk in section 6, T7S R94W;
- A controlled burn on BLM land in section 9, T7S R94W;
- Unique development plan and habitat treatments in and around non-irrigated private pastureland in sections 25 and 36, T6S R94W; and
- Maintain habitat connectivity on BLM and private land in sections 1, 2, 11-14, 23, and 24, T7S R95W and sections 25, 35 and 36, T6S R95W.

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/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 necessary 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 the wildlife encountered;
 - 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 monitor effectively and target areas that will likely become issues after development; and
 - Establish vegetation with plant diversity of non-invasive species which is at least half that of pre-disturbance or reference area levels and quantify diversity of vegetation using a metric that considers only species with at least 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” on a site-specific basis 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.

7. ExxonMobil WMP

The Exxon Mobil Corporation and ExxonMobil Oil Corporation (collectively “ExxonMobil”) WMP covers 149,946 acres of largely federal land in Rio Blanco County in four ExxonMobil federal units: Piceance Creek Unit, North Piceance Unit, Freedom Unit, and the Expanded Liberty Unit. The WMP does not address acreage within these areas that is operated by other companies. The WMP Area includes the following sensitive wildlife habitats: greater sage-grouse production areas, an elk winter concentration area, elk production area, mule deer critical winter range, golden eagle active nest sites, and a northern goshawk active nest site. It addresses ExxonMobil’s activities to occur within the next 2-3 years. During this time, ExxonMobil plans to drill from approximately 70 new well pads, perform additional drilling operations on 24 existing well pads, build or improve 8.7 miles of new roads, and build 48 miles of new pipelines. The WMP was signed by ExxonMobil and the CDOW NW Regional Manager in October 2009.

Under the terms of the WMP, further consultation between ExxonMobil and CDOW will not be required for any APD or Form 2A addressing EM operations that are located within the WMP Area. While BLM is contemplated as a party to the WMP, ExxonMobil and CDOW will work with BLM to obtain any input or approvals that may be required from BLM as a surface owner in the event BLM does not execute it. Should BLM not execute the WMP, BLM will have no rights or obligations under the agreement. Nonetheless, the parties to the agreement may elect to include BLM in WMP meetings due to BLM ownership of the surface of the majority of the WMP Area.

ExxonMobil and CDOW (and BLM, where applicable) will meet annually to review the WMP, with the first such meeting to be held within six months of execution by at least two parties. At the annual meetings, ExxonMobil will provide a forecast of its activities within the WMP area covering the next three (3) years, as well as any proposed changes to the BMP or mitigation lists (see below) and updates to any operations maps and shape files. In addition to the annual meetings, the parties can meet as needed to facilitate the implementation and stewardship of the WMP. In implementing the WMP, the parties will utilize the principles of adaptive management to assess the effectiveness of ongoing BMPs and compensatory mitigation measures, and to adjust such BMPs and compensatory mitigation measures in order to make them as efficient as practicable. The WMP expressly provides that it is transferrable to another operator upon agreement by all parties who have executed the WMP.

ExxonMobil agrees to implement, where and to the degree that such implementation is efficient, practicable, BMPs in order to further avoid adverse impacts, and minimize the severity and extent of unavoidable adverse impacts, including:

- providing support and funding for wildlife and habitat studies with the intent of identifying improved BMPs to mitigate any adverse effects caused by oil and gas development within the WMP area;

- conducting its operations on a year-round basis in order to reduce wildlife impacts by minimizing surface disturbance, traffic, noise and areas disturbed;
- drilling multiple wells from each development pad, and increasing the current maximum of 10 wells per pad to a target of up to 22 wells per pad (subject to the limits imposed by topography, resource capture requirements, etc.); so increasing the number of wells per pad will decrease the resulting environmental footprint by approximately 50%;
- permitting and implementing a second produced water disposal and cuttings injection pilot well to minimize flowlines and traffic;
- expanding a produced water management plan to include a produced water gathering and distribution system covering the core development area;
- continuing the use of low-emission, tier 2 powered drilling rigs until ExxonMobil's planned conversion to gas-fired electrification;
- conserving fresh water by using produced water for drilling in depths below fresh water sands and for fracture stimulation of wells. To date, ExxonMobil has used such methods to reduce its use of fresh water by 40% as compared to early 2009;
- reclaiming pipeline rights-of-way as soon as practicable after installation of pipe; and
- utilizing a SCADA system (remote monitoring and control of facilities) to provide real-time information to address safety and environmental issues.

ExxonMobil also agrees to implement, where and to the degree that such implementation is efficient, practicable, mitigation measures to further avoid adverse impacts, and minimize the severity and extent of unavoidable adverse impacts, including:

- minimizing drilling in northern and eastern North Piceance Unit, eastern Piceance Creek Unit, and Expanded Liberty Unit for the next 5 years;
 - The only wells planned for these areas in the next 5 years will be drilled to assess the resource. While 6 such wells are currently planned, additional wells within that timeframe may be required to maintain federal units or leases.
 - ExxonMobil agrees to work with CDOW and BLM to explore mutually beneficial ways to minimize the number of wells that are required for unit and lease maintenance in order to reduce the severity and extent of adverse impacts.
- planning to reduce overall truck transportation by delivering water through pipelines and by using onsite disposal to reduce dust, risk of spills, traffic accidents and environmental impacts in sensitive areas;
- planning to pursue reduction of greenhouse gas emissions thorough the use of gas-fired electrification for drilling and ongoing operations.
 - Gas fired electrification reduces greenhouse gas emissions and trucking by reducing or eliminating the use of diesel fuel. For example, early projections indicate emissions for a 20-rig fleet using gas-fired generators are below emissions of an 8-rig fleet with diesel generators.
- moving forward on a project to remove pinyon-juniper on selected BLM lands within the WMP Area, in order to achieve terrestrial habitat improvement designed to support resident mule deer populations.
 - CDOW and BLM have identified areas suitable for treatment and will select approximately 1,200 acres from these areas for hydro-axe removal and reclamation.
 - ExxonMobil will fund this effort up to a maximum cost of \$565,000.
 - Such treatment and removal will commence only after completion of any required NEPA analysis. ExxonMobil will bear the cost of any surveys required to document NEPA compliance.
 - Pending timely NEPA analysis, the treatments are planned to commence in 2010 and will be implemented over a period of three calendar years.

- Approximately 100 acres will be treated in 2010, with the remaining acreage being somewhat evenly divided between 2011 and 2012.
 - Invasive plant control and monitoring shall continue into 2013.
- This mule deer habitat improvement project will be carried out in coordination with other wildlife and habitat studies, including the CDOW's Piceance Basin Mule Deer research project.

In addition, ExxonMobil plans to review additional mitigation measures for technical feasibility and cost-effectiveness, including:

- improving terrestrial habitat through restoration of selected irrigated hay fields within or in close proximity to the WMP area;
- purchasing transmitters for greater sage-grouse monitoring performed by CDOW through the Piceance Basin Greater Sage-grouse research project;
- conducting land exchanges designed to consolidate CDOW acreage and provide additional hunting / fishing access; and
- conducting riparian studies.

Notwithstanding the above-mentioned BMP and mitigation obligations, ExxonMobil is free to voluntarily undertake enhanced BMPs or mitigation measures and receive appropriate credit, as determined by CDOW, to offset future development activities or disturbances not contemplated by this WMP. ExxonMobil agrees to advise CDOW and BLM of any such efforts and attempt to address any concerns or potential improvements suggested by CDOW or BLM.

COGCC Order 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.

1) 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.