

# **Wildlife Mitigation Plan - Supplemental Best Management Practices Antero Resources Gravel Trend Leasehold Position Three Siblings A Pad**

## **1. Drilling and Production**

- No reserve, drill cuttings or frac/flowback pits will be constructed (wildlife protection measure)
- Closed loop (pitless) drilling systems will be implemented (wildlife protection measure)
- Well pads will be constructed with perimeter berm on downslope area
- Well pads, access roads will be graveled to reduce fugitive dust, sediment run-off
- Above-ground facilities will be located to minimize visual effects, e.g. production tanks will be low profile and painted to mitigate visual impacts. (wildlife protection measure)
- Combustor controls will be used to mitigate odors during flowback testing and production phases of development (wildlife protection measure)
- Well completions will utilize “green” flowback completion technologies and/or flares to reduce odors from plug drillout, and venting of salable and non-salable gas
- High level alarms will be installed on production tanks
- Production tank containment area will be lined with plastic (wildlife protection measure)

## **2. Invasive Non-Native Vegetation Control**

- Weed management plan will be developed and implemented to monitor and control noxious and invasive weeds (wildlife protection measure)
- Noxious weed control includes three treatments per year
- Existing weed infestations will be mapped prior to the development of each pad, access road and pipeline when practicable
- Reclamation/revegetation will be used as a weed management tool

## **3. Planning Infrastructure and Development Activities**

- Directional drilling will be implemented to minimize habitat loss and habitat fragmentation (wildlife protection measure)
- Remote monitoring using SCADA systems to reduce truck traffic, fugitive dust (wildlife protection measure)
- Buried water and gas pipeline infrastructure will be installed concurrently where possible (wildlife protection measure)
- Bury all gas and water pipelines adjacent to roads whenever possible
- SPCC inspections will be conducted quarterly
- Water used for drilling and well completions will be transported to location from local water sources via pipeline where feasible (wildlife protection measure). If local water sources and related pipelines cannot be used to source these activities, water will need to be trucked to location.

- Flowback water will be trucked offsite until the permanent water pipeline infrastructure is completed
- Baseline and post drilling/completion water well testing will be performed for permitted water wells within ½ mile of down-hole location
- A public planning meeting will be conducted with the Rifle-Silt-New Castle community to inform the local population of the plans related to this activity.

#### **4. Stormwater Management**

- Facilities will be operated with a Water Quality Control Division (WQCD) stormwater construction permit.
- Stormwater BMPs in accordance with the Stormwater Management Plan will be implemented in a manner that minimizes erosion, transport of sediment offsite, and site degradation (wildlife protection measure)
- Inspections will be conducted every two weeks or monthly and in accordance with WQCD General Permit to confirm that applicable BMPs are in place, maintained and functioning properly.

#### **5. Public Water System Protection Section 317B(d) and COGCC Conditions of Approval**

- Best management practices will be implemented to contain any unintentional releases of fluids for locations within 500 feet of surface water
- Locations within 500 feet of surface water will ensure 110 percent secondary containment for any volume of fluids contained at a well site during drilling and completion operations

#### **6. Mitigation Plan - Best Management Practices**

- Mitigation Plan signed by Ron Velarde, CDOW NW Regional Manager and Kevin Kilstrom, Antero Resources VP Production, on March 24, 2010.
- Participation in raptor and other birds (great blue heron) monitoring and surveying with protocol to be developed by CDOW and implemented by Antero when practicable.
- Seasonal raptor RSOs for species not included in new COGCC rules will be considered where practicable.
- Avoidance/seclusion area in the northeast corner of the CDP (Burning Mountain) unless lease expiration warrants development.
- Restricted rig operation to less than 2 per section within the big game seclusion areas during the winter (to be determined in consultation with CDOW).
- Maintaining a ¼ mile no surface occupancy buffer around active bald eagle nests.
- New pad construction not to exceed 3 acres.
- Pad density not to exceed 1 pad per 120 acres.
- The mitigation opportunities/projects will be defined by the Mitigation Plan for each well pad.
- The mitigation opportunities/projects will be determined cooperatively with the CDOW during the annual Antero Mitigation Plan Review.

- CDOW Actions to Minimize Adverse Impacts to Wildlife Resources is attached to the March 22, 2010 Mitigation Plan
- Seed mixes will be certified weed-free
- Sites will be reclaimed with wildlife friendly seed mixes in consultation with the Colorado Division of Wildlife or in accordance with the terms and conditions of the Surface Use Agreement (SUA)