

Integrated Pest Management Plan

An integrated pest management (IPM) plan is a required component of all coal bed methane (CBM) project Plans of Development (POD) and individual oil and gas Applications for Permit to Drill (APD). The IPM plan will include:

- Preventive practices to avoid the transport and spread of weeds and weed seed during energy development and production activities.
- A plan to control noxious weeds and weeds of local concern within specific project areas.
- A strategy to educate field employees and contractors in noxious weed identification and awareness.

Noxious weed infestations can occur both directly and indirectly from energy and related development. Weeds and weed seed can be transported and spread with road surfacing and other construction and reclamation materials. Weeds and weed seed can also be attached to equipment and vehicles and spread over great distances. Physical soil disturbance such as the construction of pipelines, access roads, well locations and water management structures, as well as the soil moisture and chemical alterations from produced water discharge, stream flow and storage create numerous opportunities for the introduction, infestation and spread of noxious and other weeds of concern.

The following are guidelines to follow in the development of an Integrated Pest Management (IPM) Plan:

I. Incorporate weed prevention into design, layout and construction of access roads, pipelines, well locations and other facilities.

1. Identify areas of (1) noxious weeds, (2) other weeds of concern and (3) biological agent insectaries in the area encompassed by the APD or POD. Data on noxious weeds and their biological agents can be obtained from:
 - Landowner if not BLM surface
 - County weed board data base and weed location information
 - Inventory by knowledgeable person
 - Bureau of Land Management, Natural Resources Conservation Service or other federal/state agency
2. Describe landscape, soils, desirable vegetation present, distance to open water/water table and land use as they pertain to the project proposal. Weeds are more commonly found along drainages and streams; areas with deeper, more productive soils; and in areas previously disturbed or overgrazed.
 - Identify areas with the greatest potential for weed infestation.

- Include proposed strategy to limit disturbance/impacts in areas infested by and/or susceptible to the introduction of weeds in the plan of development.
3. Pipelines, access roads and drainages with flowing produced water can create corridors/conduits for weed spread and produced water storage structures (discharge points, reservoirs, off-channel containment structures, etc.) can harbor weeds and invasive plants.
- Locate pipelines, roads, produced water outfalls/reservoirs where least likely to facilitate weed introduction and spread.

II. Treat noxious weed and weeds of local concern infestations within project areas as necessary to control and contain. Determine the best methods to treat weed(s), as they pertain to the specific situation; consider landscape, soils, desirable vegetation present, distance to open water/water table, land use and other pertinent factors.

1. Control noxious weeds and invasive plants during construction, production and reclamation using an integrated approach, which involves the most effective combination of the following methods.
- Cultural
 - a. The prompt reseeding and revegetation of areas of disturbed soils with certified seed.
 - b. Encourage the cleaning of equipment and vehicles prior to entering and leaving the each work site.
 - c. Minimize surface disturbance, where possible. This is especially important in areas of known weed populations and/or areas susceptible to weed infestation.
 - Physical
 - a. To control annual and noxious weeds, consider mowing newly revegetated areas during the first season of establishment, prior to weed seed formation.
 - b. In some unique circumstances, controlled burning may reduce the infestation of some weed species. Ensure that necessary approval is obtained and exercise extreme caution when considering/utilizing this option.
 - Biological
 - a. Utilize approved/available biological control agent (usually an insect) if it would be effective for the weed species considered for control.
 - b. Consider domestic animals for control of specific weed species.

- Chemical
 - a. Consider weed species, the site on which herbicide will be applied and desired result when selecting appropriate herbicide for noxious weed control.
 - b. Ensure selected herbicide is approved for weed(s) to be controlled, for type of application and that herbicide label is otherwise consistent with intended use. Strictly adhere to herbicide label.
 - c. Ensure that all herbicides are handled and applied by properly trained and licensed personnel.
- 2. On BLM administered public lands, an approved Pesticide Use Permit (PUP) is required to apply chemical herbicide and an approved Biological Release Permit (BRP) is required for the release of biological agents.. The necessary forms and direction will be included with the approved POD or APD and/or may be obtained from your local BLM office.
 - See current list of herbicides approved for application on Bureau of Land Management administered lands.
- 3. On private lands first consult the private surface owner as to the desired method(s) for the control/treatment of noxious weeds/invasive plants.

III. Incorporate weed prevention and control measures into environmental restoration and infrastructure maintenance activities.

1. Use only certified weed-free hay, straw and/or other organic mulches used for erosion control and other environmental restoration activities.
2. Use only road surfacing and other earthen materials for construction/maintenance that are certified weed-free.
3. Clean all vehicles and equipment used in construction, drilling, restoration and maintenance activities by pressure washing, or other effective means. Ensure that all equipment/vehicles are weed-free prior to transporting into new areas of development.
4. Reseed all areas not utilized for production/maintenance immediately following construction and reclamation activities.
5. Use only certified weed-free seed for the reclamation of areas disturbed by coal bed methane development or related activities.

IV. Minimize weed seed source and limit opportunity of weed seed transport/spread into weed-free areas.

1. Identify and treat/remove weed seed sources that are within/adjacent to pipelines, access roads, produced water courses and other areas where noxious weed seed could be picked up by vehicles or flowing water and spread into weed free areas.
2. Prevent the accidental transport and spread of weeds and weed seeds into new areas of development.
 - Clean all construction equipment and vehicles of mud, dirt and plant parts before coming onto and leaving work sites.
 - Transport/use only gravel or other earthen fill material from certified weed-free sources.

V. Initiate a weed education policy to assist contractors and field employees in the identification of noxious weeds and to create an awareness of the impacts that noxious weeds and invasive plants have on the environment.

1. Participate in cooperative education and awareness programs with county weed districts, state and federal agencies and educational institutions.
2. Encourage contractors and employees to report new noxious weed infestations to company representative responsible for weed management and the appropriate county weed board.
3. Distribute and review weed education material at onsite inspections and pre-construction conferences.