

## **CHAPTER 69-05.2-22**

### **PERFORMANCE STANDARDS - REVEGETATION**

#### **Section**

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#### **69-05.2-22-01. Performance standards - Revegetation - General requirements.**

The permittee shall establish a diverse, effective, and permanent vegetative cover of the same seasonal variety native to the area for all disturbed areas, except water areas, surface areas of roads, and other facilities that are approved as a part of the postmining land use, or shall plant species that will support the approved postmining land use. Species planted must be compatible with plant and animal species of the area, meet the requirements of applicable state and federal seed and introduced species laws, and must not be poisonous or noxious. The postmining vegetative cover must be capable of stabilizing the soil surface from erosion and will be considered of the same seasonal variety when it consists of a mixture of species of equal or superior utility for the approved postmining land use when compared to the utility of vegetation existing prior to mining during each season of the year. If the postmining land use is cropland, planting of the crops normally grown will meet this requirement. The commission may approve the substitution of introduced species only if appropriate field trials have demonstrated that the introduced species are desirable and necessary to achieve the approved postmining land use. Lands that have been approved for postmining agricultural uses must be returned to productivity levels equal to or exceeding that of unmined agricultural lands in the surrounding area under equivalent management practices.

**History:** Effective August 1, 1980; amended effective June 1, 1983; May 1, 1990.

**General Authority:** NDCC 38-14.1-03

**Law Implemented:** NDCC 38-14.1-24

#### **69-05.2-22-02. Performance standards - Revegetation - Methods.**

1. All revegetation must be carried out in accordance with the approved reclamation plan.
2. When the approved postmining land use is tame pastureland, the permittee shall seed or plant species of introduced grasses and legumes adapted to the local site conditions and capable of supporting grazing and occasional haying under proper management.
3. When the approved postmining land use is native grassland, the species of grasses, legumes, forbs, half-shrubs, or shrubs seeded or planted and their pattern of distribution must be selected by the permittee to provide a diverse, effective, and permanent vegetative cover with seasonal variety, succession, and regenerative capabilities native to the area.
4. When the approved postmining land use is woodland or fish and wildlife habitat where the vegetation type is woodland, the permittee shall plant woody species adapted for local site conditions and climate, in combination with a cover of grains, grasses, legumes, or forbs to provide a diverse, effective, and permanent vegetative cover with the seasonal variety, succession, and regenerative capabilities native to the area. Approval of species composition, minimum stocking, spacing and planting arrangements of trees, shrubs, half-shrubs, and

ground cover will be based on local and regional recommendations following consultation with the state game and fish department, state forester, and the natural resource conservation service.

5. When the approved postmining land use is shelterbelt, the permittee shall plant woody species adapted for local site conditions and climate. Understory vegetation must be controlled until it no longer interferes with the growth of woody species. The stocking of trees and shrubs must follow current standards and specifications developed by the natural resource conservation service for farmstead and field windbreaks in North Dakota or others approved by the commission.
6. When fish and wildlife habitat is included in the postmining land use, the permittee shall consult with appropriate state wildlife and land management agencies and shall select those plant species that will fulfill the needs of wildlife for food and cover. Plant groupings and water resources must be appropriately spaced and distributed.

**History:** Effective August 1, 1980; amended effective June 1, 1983; May 1, 1990; June 1, 1997.

**General Authority:** NDCC 38-14.1-03

**Law Implemented:** NDCC 38-14.1-24, 38-14.1-42

**69-05.2-22-03. Performance standards - Revegetation - Use of introduced species.**

Repealed effective May 1, 1990.

**69-05.2-22-04. Performance standards - Revegetation - Timing.**

Seeding and planting of disturbed areas must be conducted during the first normal period for favorable planting conditions after suitable plant growth materials have been spread. The normal period for favorable planting is that planting time generally accepted locally for the type of plant materials selected.

**History:** Effective August 1, 1980; amended effective May 1, 1990.

**General Authority:** NDCC 38-14.1-03

**Law Implemented:** NDCC 38-14.1-24

**69-05.2-22-05. Performance standards - Revegetation - Mulching and other soil stabilizing practices.**

1. Mulching or other soil stabilizing practices must be used on all regraded and topsoiled areas to control erosion, promote germination of seeds, or increase the moisture-retention capacity of the soil. The commission may, on a case-by-case basis, suspend the requirement for mulch if the permittee can demonstrate that alternative procedures will achieve the requirements of section 69-05.2-22-07 and do not cause or contribute to air or water pollution.
2. When required by the commission, mulches must be mechanically or chemically anchored to the soil surface to assure effective protection of the soil and vegetation.
3. Annual grasses and grains may be used alone or in conjunction with another mulch when the commission determines that they will provide adequate soil erosion control and will later be replaced by species approved for the postmining land use.

**History:** Effective August 1, 1980; amended effective May 1, 1990.

**General Authority:** NDCC 38-14.1-03

**Law Implemented:** NDCC 38-14.1-24

#### **69-05.2-22-06. Performance standards - Revegetation - Grazing.**

Livestock grazing will not be allowed on revegetated land until the seedlings are established and can sustain managed grazing. No grazing will be permitted unless the grazing and stocking capacity is agreed to by the commission, the permittee, and the landowner or the governmental land managing agency having jurisdiction over the surface.

**History:** Effective August 1, 1980; amended effective June 1, 1983; May 1, 1990.

**General Authority:** NDCC 38-14.1-03

**Law Implemented:** NDCC 38-14.1-24

#### **69-05.2-22-07. Performance standards - Revegetation - Standards for success.**

1. Success of revegetation must be measured by using statistically valid techniques approved by the commission. Comparison of ground cover and productivity may be made on the basis of reference areas, through the use of standards in technical guides published by the United States department of agriculture, or through the use of other approved standards. If reference areas are used, the management of the reference area during the responsibility period required in subsection 2 must be comparable to that required for the approved postmining land use of the permit area. If standards are used, they must be approved by the commission and the office of surface mining reclamation and enforcement. Approved standards are contained in the commission's Standards for Evaluation of Revegetation Success and Recommended Procedures for Pre- and Postmining Vegetation Assessments.
2. The period of responsibility under the performance bond requirements of section 69-05.2-12-09 will begin following augmented seeding, planting, fertilization, irrigation, or other work, except for cropland and prime farmland where the period of responsibility begins at the date of initial planting of the crop being grown or a precropland mixture of grasses and legumes, and must continue for not less than ten years. However, for eligible lands that are remined, the revegetation responsibility period must continue for not less than five years.
3. Vegetation establishment, for the purpose of the third stage bond release provided for in subdivision c of subsection 7 of North Dakota Century Code section 38-14.1-17, will be determined for each postmining land use according to the following procedures:
  - a. For native grassland, tame pastureland, and fish and wildlife habitat where the vegetation type is grassland, ground cover on the permit area must be equal to or greater than that of the approved reference area or standard with ninety percent statistical confidence. All species used in determining ground cover must be perennial species not detrimental to the approved postmining land use.
  - b. For cropland, vegetation will be considered established after the successful seeding of the crop being grown or a precropland mixture of grasses and legumes.
  - c. For prime farmland, annual average crop production from the permit area must be equal to or greater than that of the approved reference area or standard with ninety percent statistical confidence for a minimum of three crop years.
  - d. For woodland, shelterbelts, and fish and wildlife habitat where the vegetation type is woodland, the number of trees and shrubs must be equal to or greater than the approved standard. Understory growth must be controlled. Erosion must be adequately controlled by mulch or site characteristics.
  - e. For fish and wildlife habitat where the vegetation type is wetland, the basin must exhibit the capacity to hold water and support wetland vegetation. Ground cover of the contiguous areas must be adequate to control erosion.

4. The success of revegetation on the permit area at the time of final bond release must be determined for each postmining land use according to the following:
  - a. For native grassland, the following must be achieved for any two years after year six of the responsibility period:
    - (1) Ground cover and productivity of the permit area must be equal to or greater than that of the approved reference area or standard with ninety percent statistical confidence; and
    - (2) Diversity, seasonality, and permanence of the vegetation of the permit area must equal or exceed the approved standard.
  - b. For tame pastureland, ground cover and productivity of the permit area must be equal to or greater than that of the approved standard with ninety percent statistical confidence for any two years after year six of the responsibility period.
  - c. For cropland, crop production from the permit area must be equal to or greater than that of the approved reference area or standard with ninety percent statistical confidence for any two years after year six of the responsibility period.
  - d. For prime farmlands, a showing that the requirements for the restoration of productivity as specified in subdivision c of subsection 3 have been met and that the ten-year period of responsibility has elapsed.
  - e. For woodlands and fish and wildlife habitat where the vegetation type is woodland, the following must be achieved during the growing season of the last year of the responsibility period:
    - (1) The number of woody plants established on the permit area must be equal to or greater than the number of live woody plants of the same life form of the approved standard with ninety percent statistical confidence. Trees, shrubs, half-shrubs, root crowns, or root sprouts used in determining success of stocking must meet the following criteria:
      - (a) Be healthy;
      - (b) Be in place for at least two growing seasons;
      - (c) If any replanting of woody plants took place during the responsibility period, the total number planted during the last six years of that period must be less than twenty percent of the total number of woody plants required. Any replanting must be by means of transplants to allow for adequate accounting of plant stocking; and
      - (d) Volunteer trees and shrubs of approved species will be considered at least two years of age and can be counted toward meeting success standards; however, volunteer trees must be at least thirty inches [76 centimeters] in height to be included in the count. Suckers on shrubby vegetation can be counted as volunteer plants when it is evident the shrub community is vigorous and expanding;
    - (2) The ground cover must be equal to or greater than ninety percent of the ground cover of the approved standard with ninety percent statistical confidence and must be adequate to control erosion; and

- (3) Species diversity, seasonal variety, and regenerative capacity of the vegetation on the permit area must be evaluated on the basis of species stocked and expected survival and reproduction rates.
- f. For shelterbelts, the following must be achieved during the growing season of the last year of the responsibility period:
  - (1) Trees, shrubs, half-shrubs, root crowns, or root sprouts used in determining success of stocking must meet the following criteria:
    - (a) Be healthy;
    - (b) Be in place for at least two growing seasons;
    - (c) If any replanting of woody plants took place during the responsibility period, the total number planted during the last six years of that period must be less than twenty percent of the total number of woody plants required. Any replanting must be by means of transplants to allow for adequate accounting of plant stocking; and
    - (d) Volunteer trees and shrubs of approved species will be considered at least two years of age and can be counted toward meeting success standards; however, volunteer trees must be at least thirty inches [76 centimeters] in height to be included in the count. Suckers on shrubby vegetation can be counted as volunteer plants when it is evident the shrub community is vigorous and expanding;
  - (2) Shelterbelt density and vigor must be equal to or greater than that of the approved standard; and
  - (3) Erosion must be adequately controlled.
- g. For fish and wildlife habitat, where the vegetation type is wetland, vegetation zones and dominant species must be equal to those of the approved standard during the growing season of the last year of the responsibility period. In addition, wetland permanence and water quality must meet approved standards.
- h. For fish and wildlife habitat, where the vegetation type is grassland, the following must be achieved during the growing season of the last year of the responsibility period:
  - (1) Ground cover must be equal to or greater than that of the approved standard with ninety percent statistical confidence and must be adequate to control erosion.
  - (2) Species diversity, seasonal variety, and regenerative capacity of the vegetation must meet or exceed the approved standard.
- i. For previously mined areas that were not reclaimed to the requirements of this chapter, any reclamation requirements in effect when the areas were mined must be met. In addition, the ground cover may not be less than can be supported by the best available plant growth material in the reaffected area, nor less than the ground cover existing before redisturbance. Adequate measures must be in place to control erosion as approved by the commission. If lands affected by coal mining activities prior to January 1, 1970, are remined or otherwise redisturbed, the applicable standard must be met for the last two consecutive years of the minimum five-year responsibility period that applies to remined lands. However, if the postmining land use for the remined area is woodlands, shelterbelts, or fish and wildlife habitat, the applicable standard must be met for just the last year of the responsibility period.

- j. For areas to be developed for water, residential, or industrial and commercial uses within two years after the completion of grading or soil replacement, the ground cover on these areas may not be less than required to control erosion.
  - k. For areas to be developed for recreation, woody plants must meet or exceed the stocking and plant establishment standards for woodlands or shelterbelts found in paragraph 1 of subdivision e or in subdivision f as applicable. In addition, ground cover must not be less than required to achieve the approved postmining land use.
  - l. If a reclaimed tract contains a mixture of prime and nonprime farmlands, the commission may approve a single yield standard for the entire tract based on the soil types that occurred on the prime and nonprime areas prior to mining. The operator must provide a detailed description and comparison of the soil mapping units, acreages, and yield calculations in the reclamation plan as required by subsection 8 of section 69-05.2-09-15. When a single yield standard is approved, the operator must demonstrate that the standard has been achieved for any three years starting no sooner than the sixth year of the responsibility period. If this option is approved, the operator must also meet the applicable requirements of section 69-05.2-26-05 for the entire tract.
5. Throughout the liability period the permittee must:
- a. Maintain any necessary fences and use proper management practices; and
  - b. Conduct periodic measurements of vegetation, soils, and water prescribed or approved by the commission.

**History:** Effective August 1, 1980; amended effective June 1, 1983; May 1, 1990; May 1, 1992; January 1, 1993; June 1, 1997; May 1, 1999; May 1, 2001; March 1, 2004; April 1, 2007; April 1, 2011.

**General Authority:** NDCC 38-14.1-03

**Law Implemented:** NDCC 38-14.1-24

**69-05.2-22-08. Performance standards - Revegetation - Tree and shrub stocking for woodlands.**

Repealed effective May 1, 1990.