



ADMINISTRATIVE RULES OF MONTANA



17.24.520 THICK OVERBURDEN AND DISPOSAL OF EXCESS SPOIL

- (1) Thick overburden occurs where the final spoil thickness exceeds 1.2 times the sum of the overburden thickness and mineral thickness for the entire area to be mined in the permit area. Final spoil thickness is the product of the overburden thickness times the swell factor, which is also to be determined for the entire area to be mined in the permit area.
- (2) Where thick overburden is encountered, and if the operator wishes to dispose of excess spoil outside of the mined area, the operator shall demonstrate that the volume of spoil and available waste materials is more than sufficient to restore the disturbed area to the approximate original contour. In this case, highwall elimination must be achieved by backfilling with spoils and waste materials. Any excess spoil material must be disposed of in accordance with the requirements of this rule as well as all other rules.
- (3) Spoil not required to achieve the approximate original contour may be transported to and placed in a controlled (engineered) manner in a disposal area other than the mine workings or excavations. All of the following conditions, in addition to the other requirements of the Act and this subchapter, must be met:
 - (a) The disposal area must be within the permit area, and it must be approved by the department as suitable for construction of fills and for reclamation and revegetation compatible with the natural surroundings.
 - (b) The disposal area must be located on the most moderately sloping and naturally stable areas available as approved by the department. Fill materials suitable for disposal must be placed upon or above a natural terrace, bench, or berm if such placement provides additional stability and prevents mass movement.
 - (c) The fill must be designed using recognized professional standards, certified by a licensed professional engineer, experienced in the design of earth and rock fills, to ensure stability and meet other applicable requirements of this subchapter, and approved by the department.
 - (d) Leachate and surface runoff from the fill must not degrade surface or ground waters or exceed the effluent limitations of ARM 17.24.633.
 - (e) The disposal area must not contain springs, natural water courses, or wet weather seeps unless lateral drains are constructed from the wet areas to excess spoil underdrains in such a manner that infiltration of the water into the spoil pile will be prevented.
 - (f) Underdrains must consist of durable rock or pipe, be designed and constructed using current, prudent engineering practices, and approved by the department. The underdrain system must be designed to carry the anticipated seepage of water due to rainfall away from

the excess spoil fill and from seeps and springs in the foundation of the disposal area and must be protected from piping and contamination by an adequate filter. Rock underdrains must be constructed of durable, nonacid-, nontoxic-forming rock (e.g., natural sand and gravel, sandstone, limestone, or other durable rock) that does not slake in water or degrade to soil-like material, and which is free of coal, clay or other nondurable material. Perforated pipe underdrains must be corrosion resistant and must have characteristics consistent with the long-term life of the fill.

- (g) All organic material must be removed from the disposal area, and the soil must be removed, segregated, and redistributed or stockpiled according to the provisions of ARM 17.24.701 through 17.24.703, before the excess spoil material is placed in the disposal area. However, if approved by the department, organic material may be used as mulch or may be included in the soil.
- (h) Slope protection must be provided to minimize surface erosion at the site. Diversion design must conform with the requirements of ARM 17.24.635 through 17.24.637. All disturbed areas, including diversion ditches that are not riprapped, must be vegetated upon completion of construction.
- (i) The spoil must be transported and placed in a controlled manner, in horizontal lifts not exceeding four feet in thickness, concurrently compacted as necessary to ensure mass stability and prevent mass movement, covered, and graded to allow surface and subsurface drainage to be compatible with the natural surroundings and to ensure a long-term static safety factor of 1.5. Horizontal lifts exceeding four feet in thickness may be allowed if the design ensures stability, is certified by a licensed professional engineer, and is approved by the department. The final configuration of the fill must be suitable for postmining land uses except that no depressions or impoundments may be allowed on the completed fill. Terraces must not be constructed unless approved by the department to prevent erosion and ensure stability.
- (j) The fill must be inspected for stability at least quarterly by the licensed engineer or other qualified professional specialist under the direction of a licensed engineer. The engineer or specialist must be experienced in the construction of similar earth and water structures. The above-described inspections must be made during critical construction periods to assure removal of all organic material and soil, placement of underdrainage and surface drainage systems, and proper placement and compaction of fill materials, and revegetation. The permittee shall provide a report by the licensed engineer or other qualified professional specialist within two weeks after each inspection. The report must certify that the fill has been constructed as specified in the design approved by the department. A copy of the report must be retained at the mine site.
 - (i) "Critical construction periods" include, at a minimum:
 - (A) foundation preparation, including the removal of all organic material and soil;
 - (B) placement of underdrains and protective filter systems;
 - (C) installation of final surface drainage systems; and
 - (D) the final graded and revegetated fill. Regular inspections by the engineer or specialist must also be conducted during placement and compaction of fill materials.

- (ii) The qualified licensed professional engineer shall promptly provide to the department a certified report discussing whether the fill has been constructed and maintained as designed and in accordance with the approved plan and this subchapter. The report must address indications of instability, structural weakness, and other hazardous conditions.
- (iii)
 - (A) The certified report on the drainage system and protective filters must include color photographs taken during and after construction, but before underdrains are covered with excess spoil. If the underdrain system is constructed in phases, each phase must be certified separately.
 - (B) Whenever excess durable rock spoil is placed in single or multiple lifts such that the underdrain system is constructed simultaneously with excess spoil placement by the natural segregation of dumped materials, in accordance with (3)(j)(iv), color photographs of the underdrain must be taken as the underdrain system is being formed.
 - (C) The photographs accompanying each certified report must be taken in adequate size and number with enough terrain or other physical features of the site shown to provide a relative scale to the photographs and to specifically and clearly identify the site.
- (iv) The department may approve the alternative method of disposal of excess durable rock spoil by gravity placement in single or multiple lifts, whenever the following additional conditions are met:
 - (A) the excess spoil must consist of at least 80% nontoxic-forming rock that does not slake in water and will not degrade to unconsolidated soil-like material. Whenever used, noncemented clay shale, clay spoil, unconsolidated or other nondurable excess spoil materials must be mixed with excess durable rock spoil in a controlled manner so that no more than 20% of the fill volume, as determined by tests performed by a licensed engineer and approved by the department, is not durable rock;
 - (B) an earthquake safety factor of at least 1.1 must be used; and
 - (C) surface water runoff from areas adjacent to and above the fill must not be allowed to flow onto the fill and must be diverted into stabilized diversion channels designed to meet the requirements of ARM 17.24.635 and 17.24.637 and to safely pass the runoff from a 100-year, 24-hour precipitation event.
- (k) Coal mine wastes and coal processing wastes may not be disposed of in excess spoil fills and may be disposed of in the mine excavations only upon the prior approval of the department. See ARM 17.24.505 and 17.24.510.
- (l) The foundation and abutments of the fill must be stable under all conditions of construction and operation. Sufficient foundation investigation and laboratory testing of foundation materials must include the effect of underground mine workings, if any, upon the stability of the structure.
- (m) Excess spoil, coal mine wastes and coal processing wastes may be returned to underground mine workings, but only in accordance with a disposal program approved by the department

and the mine safety and health administration upon the basis of a plan submitted under ARM 17.24.901(1)(b), 17.24.920, 17.24.924(1), 17.24.930, and 17.24.932(1).

- (n) Excess spoil must not be disposed of in valley fills or head-of-hollow fills.
- (o) To achieve approximate original contour, the department may require that a spoil pile, or part thereof, be retained in an unreclaimed condition to be returned to the mine workings at a later date.

Authorizing statute(s): 82-4-205, MCA

Implementing statute(s): 82-4-231, MCA

History: NEW, 1980 MAR p. 725, Eff. 4/1/80; AMD, 1989 MAR p. 30, Eff. 1/13/89; AMD, 1990 MAR p. 936, Eff. 5/18/90; TRANS, from DSL, 1996 MAR p. 3042; AMD, 1999 MAR p. 811, Eff. 4/23/99; AMD, 1999 MAR p. 2768, Eff. 12/3/99; AMD, 2004 MAR p. 2548, Eff. 10/22/04; AMD, 2024 MAR p. 255, Eff. 2/10/24.