

**TITLE 19        NATURAL RESOURCES AND WILDLIFE**  
**CHAPTER 8      COAL MINING**  
**PART 20        PERFORMANCE STANDARDS - SURFACE COAL MINING OPERATIONS**

**19.8.20.1        ISSUING AGENCY:** New Mexico Coal Surface Mining Commission  
[19.8.20.1 NMAC - N, 9-29-2000]

**19.8.20.2        SCOPE:** All persons subject to the New Mexico Surface Mining Act, NMSA 1978, Sections 69-25A-1 et. Seq. (1979)  
[19.8.20.2 NMAC - N, 9-29-2000]

**19.8.20.3        STATUTORY AUTHORITY:** NMSA 1978, Sections 69-25A-1 et. seq. (1979)  
[19.8.20.3 NMAC - N, 9-29-2000]

**19.8.20.4        DURATION:** Permanent  
[19.8.20.4 NMAC - N, 9-29-2000]

**19.8.20.5        EFFECTIVE DATE:** November 29, 1997, unless a later date is cited at the end of a section.  
[19.8.20.5 NMAC - N, 9-29-2000]

**19.8.20.6        OBJECTIVE:** The objective of Parts 1 - 35 of Chapter 8 is to establish regulations to implement the New Mexico Surface Mining Act as directed in NMSA 1978, Section 69-25A-5 (1979). These regulations are intended to ensure proper reclamation through permitting for operations subject to the New Mexico Surface Mining Act, in accordance with provisions and standards outlined in the New Mexico Surface Mining Act.  
[19.8.20.6 NMAC - N, 9-29-2000; A, 1-15-2002]

**19.8.20.7        DEFINITIONS: [RESERVED]**  
[19.8.20.7 NMAC - N, 9-29-2000]  
[Definitions for this part can be found in 19.8.1.7 NMAC.]

**19.8.20.8 - 19.8.20.1999 [RESERVED]**  
[19.8.20.8 - 19.8.20.1999 NMAC - N, 9-29-2000]

**19.8.20.2000    SIGNS AND MARKERS:**

- A.** Specification signs and markers required under 19.8.20 NMAC shall:
- (1) be posted and maintained by the person who conducts the surface coal mining operations;
  - (2) be of a uniform design throughout the operation that can be easily seen and read;
  - (3) be made of durable material; and
  - (4) conform to local ordinances and codes.
- B.** Duration of maintenance. Signs and markers shall be maintained during the conduct of all activities to which they pertain.
- C.** Mine and permit identification signs.
- (1) Identification signs shall be displayed at each point of access to the permit area from public roads.
  - (2) Signs shall show the name, business address, and the telephone number of the person who conducts the surface coal mining operations and the identification number of the current permit authorizing surface coal mining operations.
  - (3) Signs shall be retained and maintained until after the release of all bonds for the permit area.
- D.** Perimeter markers. The perimeter of a permit area for surface mining activities or for underground mining activities, the areas to be affected within the permit area by surface operations or facilities shall be clearly marked before the beginning of surface coal mining operations. Access and haul roads leading from public roads that have been constructed, used, reconstructed, improved or maintained for use in coal explorations or surface coal mining and reclamation operations, including use by coal hauling vehicles traveling to transfer, processing, or storage areas shall be marked by a perimeter marker at one mile intervals from the identification required by Paragraph (1) of Subsection C of 19.8.20.2000 NMAC to within one half (1/2) mile of the active working area of a surface or underground coal mining operation.

**E.** Stream buffer zone markers. Stream buffer zones shall be marked along their boundaries as required under 19.8.20.2025 NMAC.

**F.** Topdressing markers. Where topdressing is segregated and stockpiled as required under 19.8.20.2006 NMAC the stockpiled material shall be clearly marked.  
[11-29-97; 19.8.20.2000 NMAC - Rn, 19 NMAC 8.2.20.2000, 9-29-2000]

**19.8.20.2001 CASING AND SEALING OF DRILLED HOLES: GENERAL REQUIREMENTS:** Each exploration hole, other drill or borehole, shaft, well, or other exposed underground opening shall be cased, sealed, or otherwise managed, as approved by the director, to prevent acid or other toxic drainage from entering ground or surface waters, to minimize disturbance to the prevailing hydrologic balance, and to ensure the safety of people, livestock, fish and wildlife, and machinery in the permit and adjacent area. Each exploration hole, drill hole, shaft or borehole or well that is uncovered or exposed by mining activities within the permit area shall be permanently closed, unless approved for water monitoring, or otherwise managed in a manner approved by the director. Use of a drilled hole or borehole or monitoring well as a water well must meet the provisions of 19.8.20.2021 NMAC. 19.8.20.2021 NMAC does not apply to holes solely used for blasting.  
[11-29-97; 19.8.20.2001 NMAC - Rn, 19 NMAC 8.2.20.2001, 9-29-2000]

**19.8.20.2002 CASING AND SEALING OF DRILLED HOLES AND UNDERGROUND OPENINGS: TEMPORARY:**

**A.** Each exploration hole, other than drill or boreholes, wells and other exposed underground openings which have been identified in the approved permit application for use to return, underground development waste, coal processing waste or water to underground workings or to be used to monitor ground water conditions, shall be temporarily sealed before actual use and protected during use by barricades, or fences, or other protective devices approved by the director. These devices shall be periodically inspected and maintained in good operating condition by the person who conducts the surface coal mining operations.

**B.** Each underground mine entry which is temporarily inactive, but has a further projected useful service under the approved permit application, shall be protected by barricades or other covering devices, fenced, and posted with signs, to prevent access into entry and to identify the hazardous nature of the opening. These devices shall be periodically inspected and maintained in good operating conditions by the person who conducts the underground mining activities.  
[11-29-97; 19.8.20.2002 NMAC - Rn, 19 NMAC 8.2.20.2002, 9-29-2000]

**19.8.20.2003 CASING AND SEALING OF DRILLED HOLES AND UNDERGROUND OPENINGS: PERMANENT:** When no longer needed for monitoring or other use approved by the director upon a finding of no adverse environmental or health and safety effects, or unless approved for transfer as a water well under 19.8.20.2021 NMAC, each exploration hole, other drilled hole or borehole, well, and other exposed underground openings such as shafts, drifts, adits, tunnels or entryways shall be capped, sealed, backfilled, or otherwise properly managed, as required by the director, under 19.8.20.2001 NMAC and consistent with 30 CFR 75.1711. Permanent closure measures shall be designed to prevent access to the mine workings by people, livestock, fish and wildlife, and machinery, and to keep acid or other toxic drainage from entering ground or surface waters.  
[11-29-97; 19.8.20.2003 NMAC - Rn, 19 NMAC 8.2.20.2003, 9-29-2000]

**19.8.20.2004 TOPDRESSING: GENERAL REQUIREMENTS:**

**A.** Before disturbance of an area, topsoil, subsoils or other approved material suitable as a topdressing to be saved under 19.8.20.2005 NMAC shall be separately removed and segregated from other material.

**B.** After removal, topdressing shall be immediately redistributed in accordance with 19.8.20.2007 NMAC, stockpiled pending redistribution under 19.8.20.2006 NMAC, or if the permittee can demonstrate that an alternative procedure will provide equal or more protection for the topdressing, the director may, on a case by case basis, approve an alternative.  
[11-29-97; 19.8.20.2004 NMAC - Rn, 19 NMAC 8.2.20.2004, 9-29-2000]

**19.8.20.2005 TOPSOIL: REMOVAL:**

**A.** Materials to be removed. Topsoil to be used as topdressing shall be removed in a separate layer from the areas to be disturbed, unless use of substitute or supplemental materials is approved by the director in accordance with Subsection E of 19.8.20.2005 NMAC. If use of substitute or supplemental materials is approved, all materials to be redistributed shall be removed.

**B.** Material to be removed in thin topsoil situations. If the topsoil to be used as topdressing is less than 6 inches, a 6-inch layer that includes the A horizon and the suitable unconsolidated materials immediately below the A horizon or the A horizon and all suitable unconsolidated material if the total available is less than 6 inches, shall be removed and the mixture segregated and redistributed as the surface soil layer, unless topsoil substitutes are approved by the director pursuant to Subsection E of 19.8.20.2005 NMAC.

**C.** Timing. If topsoil is to be removed, then it shall be removed from areas to be affected by surface operations or major structures, after vegetative cover that would interfere with the use of the topsoil is cleared from portions of those areas that will be disturbed, but before any drilling for blasting, mining, or other surface disturbance of surface lands.

**D.** Subsoil segregation. The B horizon and portions of the C horizon, if these horizons are present, or other underlying layers demonstrated to have qualities for comparable root development shall be removed and replaced as subsoil, if the director determines that either of these is necessary or desirable to ensure soil productivity consistent with the approved postmining land use.

**E.** Topsoil substitutes and supplements.

(1) Selected overburden materials may be substituted for or used as a supplement to topsoil, if the director determines that the resulting soil medium is equal to or more suitable for sustaining vegetation than is the available topsoil and the substitute material is the best available to support vegetation. This determination shall be based on:

(a) the results of chemical and physical analyses of overburden and topsoil. These analyses shall include determinations of pH, net acidity or alkalinity, available phosphorus and potassium, texture class and other analyses as required by the director. The director may also require that results of field-site trials or greenhouse tests be used to demonstrate the feasibility of using these overburden materials.

(b) Methodologies and results of analyses, trials or tests which demonstrate that the proposed substitute material is equal to or more suitable for reclamation and revegetation than is the available topsoil shall be certified by a qualified professional and shall be submitted to the director.

(2) Substituted or supplemental material shall be removed, segregated, and replaced in compliance with the requirements for topsoil under 19.8.20 NMAC.

**F.** Limits on topsoil removal area. Where the removal of vegetative material, topsoil, or other materials may result in accelerated erosion which may cause air or water pollution:

(1) The size of the area from which topsoil is removed at any one time shall be limited.

(2) The topdressing shall be distributed at a time when the physical and chemical properties of the topdressing can be protected and erosion can be minimized; and

(3) Such other measures shall be taken as the director may approve or require to control erosion.

**G.** If it is demonstrated to the director that it is technologically infeasible to remove topsoil or topsoil substitutes from particular slopes without endangering equipment operators or without mixing unsuitable material with such topsoil or topsoil substitutes, segregation and utilization of such material shall not be required.

[11-29-97; 19.8.20.2005 NMAC - Rn, 19 NMAC 8.2.20.2005, 9-29-2000]

#### **19.8.20.2006 TOPDRESSING: STORAGE:**

**A.** Topdressing removed under 19.8.20.2005 NMAC shall be stockpiled only when it is impractical to promptly redistribute such materials on regraded areas.

**B.** Stockpiled materials shall be selectively placed on a stable area within the permit area, not disturbed, and protected from wind and water erosion, unnecessary compaction, and contaminants which lessen the capability of the materials to support vegetation when redistributed.

(1) Protection measures shall be accomplished either by:

(a) an effective cover of non-noxious, quick-growing annual and perennial plants, seeded or planted during the first normal period after removal for favorable planting conditions; or

(b) other methods demonstrated to and approved by the director to provide equal protection.

(2) Unless approved by the director, stockpiled topdressing shall not be moved until required for redistribution on a regraded area.

[11-29-97; 19.8.20.2006 - Rn, 19 NMAC 8.2.20.2006, 9-29-2000]

#### **19.8.20.2007 TOPDRESSING: REDISTRIBUTION:**

**A.** After final grading and before the replacement of topdressing, regraded land shall be scarified or otherwise treated as required by the director to eliminate slippage surfaces and to promote root penetration. If the person who conducts the surface coal mining operations shows, through appropriate tests, and the director approves,

that no harm will be caused to the topdressing and vegetation, scarification may be conducted after the placement of topdressing.

**B.** Topdressing shall be redistributed in a manner that:

- (1) achieves an approximate uniform, stable thickness consistent with the approved postmining land uses, contours, and surface water drainage system;
- (2) prevents excess compaction of topdressing; and
- (3) protects the topdressing from wind and water erosion before and after it is seeded and planted.

[11-29-97; 19.8.20.2007 NMAC - Rn, 19 NMAC 8.2.20.2007, 9-29-2000]

**19.8.20.2008 TOPDRESSING: NUTRIENTS AND SOIL AMENDMENTS:** Nutrients and soil amendments in the amount determined by soil tests shall be applied to the redistributed topdressing, so that it supports the approved postmining land use and meets the revegetation requirements of 19.8.20.2060 through 2066 NMAC. All soil analyses shall be performed by a qualified state approved laboratory using standard methods approved by the director. Methods and results from topdressing analyses shall be submitted to the director.  
[11-29-97; 19.8.20.2008 NMAC - Rn, 19 NMAC 8.2.20.2008, 9-29-2000; A, 1-15-2002]

**19.8.20.2009 HYDROLOGIC BALANCE: GENERAL REQUIREMENTS:**

**A.** Surface coal mining operations shall be planned and conducted to minimize changes to the prevailing hydrologic balance in both the permit and adjacent areas and prevent material damage outside of the permit area in order to prevent adverse changes in that balance that could result from those operations.

**B.** Changes in water quality and quantity, in depth to ground water, and in the location of surface water drainage channels shall be minimized so that the approved postmining land use of the permit area is not adversely affected.

**C.** In no case shall federal and state water quality statutes, regulations, standards, or effluent limitations be violated.

**D.** Operations shall be conducted to minimize water pollution and, where necessary, sediment ponds or other treatment facilities shall be used to control water pollution.

(1) Each person who conducts surface coal mining operations shall emphasize mining and reclamation practices that prevent or minimize water pollution. Methods listed in Paragraphs (2) and (3) of Subsection D of 19.8.20.2009 NMAC shall be capable of containing or treating all surface flow from the disturbed areas and shall be used in preference to the use of sediment ponds or water treatment facilities.

(2) Acceptable practices to control sediment and minimize water pollution include, but are not limited to:

(a) stabilizing disturbed areas through land shaping, berming, contour furrowing or regrading to final contour;

(b) diverting runoff;

(c) achieving quickly germinating and growing stands of temporary vegetation;

(d) regulating channel velocity of water;

(e) lining drainage channels with rock or revegetation;

(f) mulching;

(g) selectively placing and sealing acid-forming and toxic-forming materials; and

(h) selectively placing waste materials in backfill areas.

(3) In addition, unless demonstrated to the director otherwise, all acceptable practices for controlling and minimizing water pollution at underground mines shall include, but not be limited to:

(a) designing mines to prevent gravity drainage of acid waters;

(b) sealing all underground mine openings;

(c) controlling subsidence; and

(d) preventing acid mine drainage.

(4) If the practices listed in Paragraph (2) of Subsection D of 19.8.20.2009 NMAC are not adequate to meet the requirements of Paragraph (1) of Subsection D of 19.8.20.2009 NMAC, the person who conducts surface coal mining operations shall comply with the requirements of 19.8.20.2010 NMAC, unless the director issues a waiver under Subsection E of 19.8.20.2009 NMAC.

**E.** The director may waive the requirements of 19.8.20.2009 NMAC for regraded areas if the operator can demonstrate to the director that the runoff from the regraded area is as good as or better quality than the waters entering the permit area and erosion from the regraded area has been controlled to the satisfaction of the director.

(1) To provide for baseline data for waters entering the permit area, the operator shall operate and maintain monitoring on all drainages leading into the permit area, in a manner approved by the director, in order to obtain and evaluate occurrences and changes in water quality and quantity during the life of mining operations.

(2) In order to ensure that runoff from the regraded area is in no way a hazard to the environment of the adjacent areas, the waters draining off of the regraded area shall not:

(a) exceed the values of total suspended solids, iron, manganese, pH and those parameters listed in Subparagraph (a) of Paragraph (3) of Subsection E of 19.8.20.2009 NMAC from the baseline analyses from the water entering the permit area;

(b) create an increase in sediment load into the receiving streams;

(c) create any environmental harm or threat to public health and safety; and

(d) degrade, pollute or otherwise diminish the characteristics of existing streams and drainages so as to cause imminent environmental harm to fish and wildlife habitats.

(3) Baseline data shall be collected from waters in drainages entering the permit area and runoff from regraded areas shall be collected during any precipitation event that produces such runoff. The operator shall demonstrate to the director that the runoff from the regraded area has as good as or better chemical quality than the baseline analyses from waters entering the permit area.

(a) In addition to Subparagraph (a) of Paragraph (2) of Subsection E of 19.8.20.2009 NMAC, chemical analysis of the runoff from the regraded area and baseline data from waters entering the permit area shall include, but not limited to, the following parameters:

Arsenic (As)	Phosphorus (P)	Carbonate (CO <sub>3</sub> )
Boron (B)	Potassium (K)	Bicarbonate (HCO <sub>3</sub> )
Calcium (Ca)	Selenium (Se)	Nitrate (NO <sub>3</sub> )
Chloride	Sodium (Na)	Sulfate (SO <sub>4</sub> )
Cadmium (Cd)	Uranium (U)	Total Dissolved Solids (TDS)
Fluoride	Vanadium (V)	Sodium Adsorption Ratio (SAR)
Lead (Pb)	Radioactivity	
Magnesium (Mg)	Radium Ra <sup>226</sup>	
	Radium Ra <sup>228</sup>	

(b) The director may require additional tests and analyses as he deems necessary.

(c) If the operator can demonstrate that the analysis of any particular parameter are of little or not significance in the permit or adjacent areas, then such parameter(s) may be waived upon approval by the director.

(4) All analysis shall be submitted to the director within 90 days following sample collection.

(5) Monitoring of regraded areas shall continue in accordance with Subsection E of 19.8.20.2009 NMAC until that portion of the bond is released pursuant to 19.8.14.1412 NMAC.

**F.** Other treatment facilities shall be designed to treat the 10-year, 24-hour precipitation event unless a lesser design is approved by the director based on terrain, climate, other site-specific conditions and a demonstration by the operator that the effluent limitations of 19.8.20.2010 NMAC will be met. Other treatment facilities shall be designed in accordance with the applicable requirements of 19.8.20.2014 NMAC.

[11-29-97; 19.8.20.2009 NMAC - Rn, 19 NMAC 8.2.20.2009, 9-29-2000; A, 1-15-2002]

### **19.8.20.2010 HYDROLOGIC BALANCE: WATER QUALITY STANDARDS AND EFFLUENT LIMITATIONS:**

**A.** Treatment of disturbed area surface flow.

(1) With the exception of surface flow leaving the disturbed area with respect to which area the operator has complied with the requirements of 19.8.20.2009 NMAC, all surface flow that leaves the disturbed area shall be passed through a sedimentation pond or series of sedimentation ponds or other treatment facilities before leaving the permit area. Any discharge of water from underground workings to surface waters which does not meet the effluent limitations of 19.8.20 NMAC shall also be passed through a sedimentation pond, a series of sedimentation ponds, or a treatment facility before leaving the permit area.

(2) Sedimentation ponds and other treatment facilities shall be maintained until the disturbed area has been regraded and erosion on the regraded area has been controlled.

(3) Sedimentation ponds and treatment facilities for discharges from underground workings shall be maintained until either the discharge continuously meets the effluent limitations of 19.8.20 NMAC without treatment or until the discharge has permanently ceased.

(4) The director may grant exemptions from these requirements only when:

(a) the disturbed drainage area within the total disturbed area is small; and  
(b) the person who conducts the surface coal mining operations demonstrates that sedimentation ponds and treatment facilities are not necessary for drainage from the disturbed drainage areas to meet the effluent limitations in Paragraph (8) of Subsection A of 19.8.20.2010 NMAC and the applicable state and federal water quality standards for downstream and receiving waters.

(5) For the purposes of 19.8.20 NMAC only, disturbed area shall not include those areas in which only diversion ditches, sedimentation ponds, or roads are installed in accordance with 19.8.20 NMAC and the upstream area is not otherwise disturbed by the person who conducts the surface coal mining operations.

(6) Sedimentation ponds required by 19.8.20 NMAC shall be constructed in accordance with 19.8.20.2014 NMAC in appropriate locations before beginning any surface coal mining operations in the drainage area to be affected.

(7) Where the sedimentation pond or series of sedimentation ponds is used so as to result in the mixing of drainage from the disturbed areas with drainage from other areas not disturbed by current surface coal mining and reclamation operations, the permittee shall achieve the effluent limitations set forth below for all of the mixed drainage when it leaves the pond discharge point.

(8) Discharges of water from areas disturbed by surface mining activities and underground mining activities shall be made in compliance with all applicable state and federal water-quality laws and regulations and with the effluent limitations for coal mining promulgated by the U.S. environmental protection agency set forth in 40 CFR Part 434.

**B.** A discharge from the disturbed areas is not subject to the effluent limitations of 19.8.20 NMAC, if:

(1) the discharge is demonstrated by the discharger to have resulted from a precipitation event equal to or larger than a 10-year 24-hour precipitation event; and

(2) the discharge is from facilities designed, constructed, and maintained in accordance with the requirements of 19.8.20 NMAC.

**C.** Adequate facilities shall be installed, operated, and maintained to treat any water discharged from the disturbed area so that it complies with all federal and state laws and regulations and the limitations of 19.8.20 NMAC. If the pH of water to be discharged from the disturbed area is less than 6.0, an automatic lime feeder or other automatic neutralization process approved by the director shall be installed, operated, and maintained. The director may authorize the use of a manual system, if he finds that:

(1) flow is infrequent and presents small and infrequent treatment requirements to meet applicable standards which do not require use of an automatic neutralization process; and

(2) timely and consistent treatment is ensured.

[11-29-97; 19.8.20.2010 NMAC - Rn, 19 NMAC 8.2.20.2010, 9-29-2000; A, 12-31-2007; A, 08-31-2010]

**19.8.20.2011 HYDROLOGIC BALANCE: DIVERSIONS AND CONVEYANCE OF OVERLAND FLOW AND SHALLOW GROUND WATER FLOW AND EPHEMERAL STREAMS:** Overland flow, including flow through litter, and shallow ground water flow from undisturbed areas, and flow in ephemeral streams, may be diverted away from disturbed areas by means of temporary or permanent diversions, if required or approved by the director as necessary to minimize erosion, to reduce the volume of water to be treated, and to prevent or remove water from contact with acid-forming or toxic-forming materials. The following requirements shall be met for all diversions and for all collection drains that are used to transport water into water-treatment facilities and for all diversions of overland and shallow ground water flow and ephemeral streams.

**A.** All diversions shall be designed, constructed and maintained to minimize adverse impacts to the hydrologic balance within the permit and adjacent areas, to prevent material damage outside the permit area and to assure the safety of the public.

**B.** Temporary diversions shall be constructed to safely pass the peak runoff from a 2-year, 24-hour precipitation event or a larger event as specified by the director.

**C.** To protect fills and property and to avoid danger to public health and safety, permanent diversions shall be constructed to safely pass the peak runoff from a 10-year, 24-hour precipitation event, or larger as specified by the director. Permanent diversions shall be constructed with gently sloping banks that are stabilized by vegetation. Asphalt, concrete, or other similar linings shall be used only when approved by the director to prevent seepage or to provide stability.

**D.** Diversions shall be designed, constructed, and maintained in a manner which prevents additional contributions of suspended solids to streamflow and to runoff outside the permit area, to the extent possible using the best technology currently available. Appropriate sediment control measures for these diversions may include,

but not be limited to, maintenance of appropriate gradients, channel lining, revegetation, roughness structures, and detention basins.

**E.** No diversion shall be located so as to increase the potential for land slides. No diversion shall be constructed on existing land slides, unless approved by the director.

**F.** When no longer needed, each temporary diversion shall be removed and the affected land regraded, topdressed, and revegetated in accordance with 19.8.20.2007, 2008, 2054 through 2059, and 2060 through 2066 NMAC.

**G.** Diversion design shall incorporate the following.

(1) Channel lining shall be designed using standard engineering practices to pass safely the design velocities. Rip rap shall be required where necessary to control erosion.

(2) Freeboard shall be no less than 0.3 feet. Protection shall be provided for transition of flows and for critical areas such as swales and curves. Where the area protected is a critical area as determined by the director, the design freeboard may be increased.

(3) Energy dissipators shall be installed when necessary at discharge points, where diversions intersect with natural streams and exit velocity of the diversion ditch flow is greater than that of the receiving stream.

(4) Excess excavated material not necessary for diversion channel geometry or regrading of the channel shall be disposed of in accordance with 19.8.20.2034 through 2037 NMAC.

(5) Topdressing shall be handled in compliance with 19.8.20.2004 through 2008 NMAC.

**H.** Diversions shall not be constructed or operated to divert water into underground mines without the approval of the director under 19.8.20.2023 NMAC.

[11-29-97; 19.8.20.2011 NMAC - Rn, 19 NMAC 8.2.20.2011, 9-29-2000]

#### **19.8.20.2012 HYDROLOGIC BALANCE: STREAM CHANNEL DIVERSIONS:**

**A.** Diversions from perennial and intermittent streams within the permit area shall be approved by the director, if he finds that the diversions comply with:

(1) the requirements of Subsection A of 19.8.20.2025 NMAC and Subsection A of 19.8.20.2011 NMAC;

(2) local, state and federal statutes and regulations; and

(3) The diversion will not impair water quantity and quality and will not adversely affect related environmental resources of the stream.

**B.** When streamflow is allowed to be diverted, the stream channel diversion shall be designed, constructed, and removed in accordance with the following:

(1) The longitudinal profile of the stream, the channel, and the flood-plain shall be designed and constructed to remain stable and to prevent, to the extent possible using the best technology currently available, additional contributions of suspended solids to streamflow or to runoff outside the permit area. These contributions shall not be excess of requirements of state or federal law. Erosion control structures such as channel lining structures, retention basins, and artificial channel roughness structures shall be used in diversions only when approved by the director as being necessary to control erosion. These structures shall be approved for permanent diversions only where they are stable and will require infrequent maintenance.

(2) The combination of channel, bank, and flood-plain configurations shall be adequate to pass safely the peak runoff of a 10-year, 24-hour precipitation event for temporary diversions, a 100-year, 24-hour precipitation event for permanent diversions, or larger events specified by the director. However, the capacity of the channel itself should be at least equal to the capacity of the unmodified stream channel immediately upstream and downstream of the diversion.

**C.** The design and construction of all stream channel diversions of perennial and intermittent streams shall be certified by a qualified registered professional engineer as meeting the performance standards of 19.8.20 NMAC and any design criteria set by the director.

**D.** When no longer needed to achieve the purpose for which they were authorized, all temporary stream channel diversions shall be removed and the affected land regraded and revegetated, in accordance with 19.8.20.2007, 2008, 2054 through 2058, and 2060 through 2066 NMAC. At the time diversions were removed, downstream water treatment facilities previously protected by the diversion shall be modified or removed to prevent overtopping or failure of the facilities. The requirement shall not relieve the person who conducts the surface coal mining operations from maintenance of a water treatment facility otherwise required under 19.8.20 NMAC or the permit.

**E.** When permanent diversions are constructed or stream channels restored, after temporary diversions, the operator shall:

(1) restore, enhance where practicable, or maintain natural riparian vegetation on the banks of the stream;

(2) establish or restore the stream to a longitudinal plan and profile, gradient and cross-section, including aquatic habitats (usually a pattern, of riffles, pools, and drops rather than uniform depth) that approximate premining stream channel characteristics.

[11-29-97; 19.8.20.2012 NMAC - Rn, 19 NMAC 8.2.20.2012, 9-29-2000]

**19.8.20.2013 HYDROLOGIC BALANCE: SEDIMENT CONTROL MEASURES:**

**A.** Appropriate sediment control measures shall be designed, constructed, and maintained using the best technology currently available to:

(1) prevent, to the extent possible, additional contributions of sediment to streamflow or to runoff outside the permit area;

(2) meet the more stringent of applicable state or federal effluent limitations; and

(3) minimize erosion to the extent possible.

**B.** Sediment control measures include practices carried out within and adjacent to the disturbed area. The sedimentation storage capacity of practices in and downstream from the disturbed area shall reflect the degree to which successful mining and reclamation techniques are applied to reduce erosion and control sediment. Sediment control measures consist of the utilization of proper mining and reclamation methods and sediment control practices, singly or in combination. sediment control methods include but are not limited to:

(1) disturbing the smallest practicable area at any one time during the mining operation through progressive backfilling, grading, and prompt revegetation as required in Subsection B of 19.8.20.2060 NMAC;

(2) stabilizing the backfill material to promote a reduction in the rate and volume of runoff, in accordance with the requirements of 19.8.20.2054 NMAC;

(3) retaining sediment within disturbed areas;

(4) diverting runoff away from disturbed areas;

(5) diverting runoff using protected channels or pipes through disturbed areas so as not to cause additional erosion;

(6) using straw dikes, riprap, check dams, mulches, vegetative sediment filters, dugout ponds, and other measures that reduce overland flow velocity, reduce runoff volume, or trap sediment;

(7) treating with chemicals; and

(8) for underground operations treating mine drainage in underground sumps.

[11-29-97; 19.8.20.2013 NMAC - Rn, 19 NMAC 8.2.20.2013, 9-29-2000]

**19.8.20.2014 HYDROLOGIC BALANCE: SEDIMENTATION PONDS:**

**A.** When required under 19.8.20.2010 NMAC sedimentation ponds shall be used individually or in series and shall:

(1) be constructed and certified before any disturbance of the undisturbed area to be drained into the pond and, in addition, for underground mines prior to any discharge of water to surface waters from underground mine workings.

(2) be located as near as possible to the disturbed area and out of perennial streams, unless approved by the director.

(3) meet all the criteria of 19.8.20 NMAC.

(4) be certified to the director by a qualified registered professional engineer as having been constructed as designed and approved in the permit. Sediment ponds that do not meet the size or other criteria of 30 CFR 77.216(a) shall be certified by either a qualified registered professional engineer or qualified registered professional land surveyor.

(5) be designed, constructed, maintained and inspected in accordance with 19.8.20.2017 NMAC.

(6) be maintained until removal is authorized by the director and the disturbed area has been stabilized and revegetated.

**B.** Sedimentation ponds shall be designed, constructed and maintained to provide adequate sediment storage volume and provide for periodic sediment removal sufficient to maintain adequate volume for the design event.

**C.** Sedimentation ponds shall provide the required theoretical detention time for the water inflow or runoff entering the pond from a 10-year, 24-hour precipitation event (design event) plus the average inflow from any



underground mine. The operator will comply with the applicable state laws and the regulations of the state engineer pertaining to the detention of water.

**D.** The water storage resulting from inflow shall be removed by a non-clogging dewatering device, conduit spillway, or other methods approved by the director. Stationary dewatering devices shall not be located at a lower elevation than the maximum elevation of the sedimentation storage volume.

**E.** Each person who conducts surface coal mining operations shall design, construct, and maintain sedimentation ponds to prevent short circuiting to the extent possible.

**F.** The design, construction, and maintenance of a sedimentation pond or other sediment control measures in accordance with 19.8.20 NMAC shall not relieve the person from compliance with applicable effluent limitations as contained in 19.8.20.2010 NMAC.

**G.** A sedimentation pond shall include either a combination of principal and emergency spillways or a single spillway configured as specified in Paragraph (1) of Subsection G of 19.8.20.2014 NMAC, designed and constructed to safely pass the applicable design precipitation event specified in Paragraph (2) of Subsection G of 19.8.20.2014 NMAC, except as set forth in Paragraph (3) of Subsection G of 19.8.20.2014 NMAC.

(1) The director may approve a single open-channel spillway that is:

(a) of nonerodible construction and designed to carry sustained flows; or

(b) earth or grass-lined and designed to carry short-term infrequent flows at nonerosive velocities where sustained flows are not expected.

(2) Except as specified in Paragraph (3) of Subsection G of 19.8.20.2014 NMAC, the required design precipitation event for spillways for sedimentation ponds is:

(a) for a sedimentation pond meeting the size or other criteria of mine safety and health administration 30 CFR 77.216(a), a 100-year 6 hour event, or greater event as specified by the director;

(b) for a sedimentation pond not meeting the size or other criteria of 30 CFR 77.216(a), a 25-year 6-hour event, or greater event as specified by the director.

(3) In lieu of meeting the requirements in Paragraph (1) of Subsection G of 19.8.20.2014 NMAC, the director may approve a sedimentation pond that relies primarily on storage to control the runoff from the design precipitation event when it is demonstrated by the operator and certified by a qualified registered professional engineer or qualified registered professional land surveyor that the sedimentation pond will safely control the design precipitation event, the water from which shall be safely removed in accordance with current, prudent, engineering practices. Such a sedimentation pond shall be located where failure would not be expected to cause loss of life or serious property damage. The following design criteria shall apply:

(a) in the case of a sedimentation pond meeting the size or other criteria of 30 CFR 77.216(a), it is designed to control the runoff from the probable maximum precipitation of a 6-hour event, or greater event as specified by the director;

(b) in the case of a sedimentation pond not meeting the size or other criteria of 30 CFR 77.216(a), it is designed to control the runoff of a 100-year, 6-hour event, or greater event as specified by the director.

**H.** The embankment foundation area shall be cleared of all organic matter, all surfaces sloped to no steeper than 1v:1h and the entire foundation surface scarified.

**I.** The fill material shall be free of sod, large roots, other large vegetative matter, and frozen soil, and in no case shall coal-processing waste be used.

**J.** The embankment area shall be compacted properly to ensure against excessive settlement.

**K.** When a sediment pond is removed, the land on which the pond is located and the affected area shall be regraded and revegetated in accordance with the approved permit.

[11-29-97; 19.8.20.2014 NMAC - Rn, 19 NMAC 8.2.20.2014, 9-29-2000]

**19.8.20.2015 HYDROLOGIC BALANCE: DISCHARGE STRUCTURES:** Discharge from sedimentation ponds, permanent and temporary impoundments, coal processing waste dams and embankments, and diversions shall be controlled, by energy dissipators, riprap channels, and other devices, where necessary, to reduce erosion, to prevent deepening or enlargement of stream channels, and to minimize disturbance of the hydrologic balance. Discharge structures shall be designed according to standard engineering design procedures.

[11-29-97; 19.8.20.2015 NMAC - Rn, 19 NMAC 8.2.20.2015, 9-29-2000]

**19.8.20.2016 HYDROLOGIC BALANCE: ACID-FORMING AND TOXIC-FORMING SPOIL:**

Drainage from acid-forming and toxic-forming spoil into ground and surface water shall be avoided by:

**A.** identifying, burying, and treating where necessary, spoil which, in the judgment of the director, may be detrimental to vegetation or may adversely affect water quality if not treated or buried;

**B.** preventing water from coming into contact with acid-forming and toxic-forming spoil in accordance with 19.8.20.2056 NMAC, and other measures as required by the director; and

**C.** burying or otherwise treating all acid-forming or toxic-forming spoil within 30 days after it is first exposed on the mine site, or within a lesser period required by the director. Temporary storage of the spoil may be approved by the director upon a finding that burial or treatment within 30 days is not feasible and will not result in any material risk of water pollution or other environmental damage. Storage shall be limited to the period until burial or treatment first becomes feasible. Acid-forming or toxic-forming spoil to be stored shall be placed on impermeable material and protected from erosion and contact with surface water.

[11-29-97; 19.8.20.2016 NMAC - Rn, 19 NMAC 8.2.20.2016, 9-29-2000]

**19.8.20.2017 HYDROLOGIC BALANCE: PERMANENT AND TEMPORARY IMPOUNDMENTS:**

**A.** Permanent impoundments are prohibited unless authorized by the director, upon the basis of the following demonstrations:

(1) the size and configuration of such impoundment will be adequate for its intended purposes;

(2) the quality of impounded water will be suitable on a permanent basis for its intended use and, after reclamation, will meet applicable state and federal water quality standards, and discharges from the impoundment will meet applicable effluent limitations and will not degrade the quality of receiving water below applicable state and federal water quality standards;

(3) the water level will be sufficiently stable and be capable of supporting the intended use;

(4) final grading will provide for adequate safety and access for proposed water users;

(5) the impoundment will not result in the diminution of the quality and quantity of water utilized by adjacent or surrounding landowners for agricultural, industrial, recreational, or domestic uses; and

(6) the impoundment will be suitable for the approved postmining land use.

**B.** The design of impoundments shall be certified by a qualified registered professional engineer as designed to meet the requirements of 19.8.20 NMAC using current, prudent engineering practices, and any design criteria established by the director. The qualified registered professional engineer shall be experienced in the design and construction of impoundments.

**C.** An impoundment meeting the size or other criteria of 30 CFR 77.216(a) shall comply with the requirements of 30 CFR 77.216 and 19.8.20 NMAC.

**D.** All impoundments that meet the class B or C criteria for dams in TR-60 or exceed the size or other criteria of 30 CFR 77.216(a) shall be certified to the director by a qualified registered professional engineer, as having been constructed to comply with the requirements of 19.8.20 NMAC. All dams and embankments that do not meet the class B or C criteria for dams in TR-60 or other size criteria of 30 CFR 77.216(a) shall be certified by either a qualified registered professional engineer or a qualified registered professional land surveyor, except that all coal processing waste dams and embankments covered by 19.8.20.2047 through 2049 NMAC shall be certified by a qualified registered professional engineer. All impoundments shall be certified after construction and prior to the intended use.

**E.** The following is a list of general requirements that apply to all temporary or permanent impoundments.

(1) Impoundments meeting the class B or C criteria for dams in the U.S. department of agriculture, natural resources conservation service technical release no. 60 (210-VI-TR60, Oct. 1985), "earth dams and reservoirs", shall comply with the, "minimum emergency spillway hydrologic criteria", table in TR-60 and the requirements of 19.8.20 NMAC.

(2) An impoundment meeting the Class B or C criteria for dams in NRCS technical release no. 60 (210-VI-TR60, Oct. 1985), "earth dams and reservoirs", or the size or other criteria of 30 CFR 77.216(a) shall have a minimum static safety factor of 1.5 for a normal pool with steady state seepage saturation conditions, and a seismic safety factor of at least 1.2.

(3) Impoundments not included in Paragraph (2) of Subsection E of 19.8.20.2017 NMAC, except for a coal mine waste impounding structure, shall have a minimum static safety factor of 1.3 for a normal pool with steady state seepage saturation conditions or meet the requirements of Subsection C of 19.8.9.909 NMAC.

(4) Impoundments meeting the class B or C criteria for dams in NRCS technical release no. 60 (210-VI-TR60, Oct. 1985), "earth dams and reservoirs", shall comply with the freeboard hydrograph criteria in the "minimum emergency spillway hydrologic criteria" table in TR-60.

(5) Impoundments not included in Paragraph (2) of Subsection E of 19.8.20.2017 NMAC shall have adequate freeboard to resist overtopping by waves and by a sudden increase in stored volume.

(6) Foundations and abutments for an impounding structure shall be stable during all phases of construction and operation, and shall be designed based on adequate and accurate information on the foundation conditions. For an impoundment meeting the class B or C criteria for dams in NRCS technical release no. 60 (210-VI-TR60, Oct. 1985), "earth dams and reservoirs", or the size or other criteria of 30 CFR 77.216(a), foundation investigation, as well as any necessary laboratory testing of foundation material, shall be performed to determine the design requirements for foundation stability.

(7) All vegetative and organic materials shall be removed and foundations excavated and prepared to resist failure. Cutoff trenches shall be installed if necessary to ensure stability.

(8) Slope protection shall be provided to protect against surface erosion where surface runoff enters the impoundment area and protect against sudden drawdown.

(9) Faces of embankments and surrounding areas shall be vegetated, or otherwise stabilized in accordance with accepted design and operational practices.

(10) The vertical portion of any remaining highwall shall be located far enough below the low-water line along the full extent of highwall to provide adequate safety and access for the proposed water users.

(11) Appropriate barriers shall be provided to control seepage along conduits that extend through the embankment.

**F.** An impoundment shall include either a combination of principal and emergency spillways or a single spillway configured as specified in Paragraph (1) of Subsection F of 19.8.20.2017 NMAC, designed and constructed to safely pass the applicable design precipitation runoff event specified in Paragraph (2) of Subsection F of 19.8.20.2017 NMAC, except as set forth in Paragraph (3) of Subsection F of 19.8.20.2017 NMAC.

(1) The director may approve a single open-channel spillway that is:

(a) of nonerodible construction and designed to carry sustained flows; or

(b) earth- or grass-lined and designed to carry short-term, infrequent flows at non-erosive velocities where sustained flows are not expected.

(2) Except as specified in Paragraph (3) of Subsection F of 19.8.20.2017 NMAC, the required design precipitation event for spillways for impoundments is:

(a) for an impoundment meeting the class B or C criteria for dams in TR-60 or other size criteria of 30 CFR 77.216(a), a 100-year 6-hour event, or greater event as specified by the director.

(b) for a temporary impoundment not meeting the class B or C criteria for dams in TR-60 or other size criteria of 30 CFR 77.216(a), a 25-year 6-hour event, or greater event as specified by the director.

(c) for a permanent impoundment not meeting the class B or C criteria for dams in TR-60 or other size criteria of 30 CFR 77.216(a), a 50-year, 6-hour event, or greater event as specified by the director.

(3) In lieu of meeting the requirements in Paragraph (1) of Subsection F of 19.8.20.2017 NMAC, the director may approve a temporary impoundment that relies primarily on storage to control the runoff from the design precipitation event when it is demonstrated by the operator and certified by a qualified registered professional engineer or qualified registered professional land surveyor that the impoundment will safely control the design precipitation event and associated runoff, the water from which shall be safely removed in accordance with current, prudent, engineering practices. Such an impoundment shall be located where failure would not be expected to cause loss of life or serious property damage. The following design criteria shall apply:

(a) in the case of an impoundment meeting the size or other criteria of 30 CFR 77.216(a), it is designed to control the runoff of the probable maximum precipitation of a 6-hour event, or greater event as specified by the director, or

(b) in the case of an impoundment not meeting the size or other criteria of 30 CFR 77.216(a), it is designed to control the runoff of a 100-year 6-hour event, or greater event as specified by the director.

**G.** Except as provided in Paragraph (4) of Subsection G of 19.8.20.2017 NMAC, a qualified registered professional engineer or other qualified professional specialist under the direction of a professional engineer, shall inspect each impoundment as provided in Paragraph (1) of Subsection G of 19.8.20.2017 NMAC. The professional engineer or specialist shall be experienced in the construction of impoundments.

(1) Inspections shall be made regularly during construction, upon completion of construction, and at least yearly until removal of the structure or release of the performance bond.

(2) The qualified registered professional engineer, or qualified registered professional land surveyor as specified in Paragraph (4) of Subsection G of 19.8.20.2017 NMAC, shall promptly after each inspection required in Paragraph (1) of Subsection G of 19.8.20.2017 provide to the director a certified report that the impoundment has been constructed and/or maintained as designed and in accordance with the approved plan and 19.8.20 NMAC. The

report shall include discussion of any appearance of instability, structural weakness or other hazardous conditions, depth and elevation of any impounded waters, existing storage capacity, any existing or required monitoring procedures and instrumentation, and any other aspects of the structure affecting stability.

(3) A copy of the report shall be retained at or near the mine site.

(4) A qualified registered professional land surveyor may inspect any temporary or permanent impoundment that does not meet the class B or C criteria for dams in TR-60 or other size criteria of 30 CFR 77.216(a) and certify and submit the report required by Paragraph (2) of Subsection G of 19.8.20.2017 NMAC, except that all coal mine waste impounding structures covered by 19.8.20.2047 through 2049 NMAC shall be certified by a qualified registered professional engineer. The professional land surveyor shall be experienced in the construction of impoundments.

(5) Impoundments meeting the class B or C criteria for dams in TR-60 or subject to 30 CFR 77.216(a) must be examined in accordance with 30 CFR 77.216-3. Other impoundments shall be examined at least quarterly by a qualified person designated by the operator for appearance of structural weakness and other hazardous conditions.

(6) If an impoundment is constructed without an embankment, the director may waive the quarterly examination requirement. Therefore, excavated ponds, haulroad sumps and any impoundment that is built without embankments may be exempt from the requirements of Paragraph (5) of Subsection G of 19.8.20.2017 NMAC with the approval of the director. Any waiver granted under this paragraph shall not relieve the operator of the requirement to maintain impoundments in accordance with the approved plan and 19.8.20 NMAC.

(7) Emergency procedures. If any examination or inspection discloses that a potential hazard exists, the person who examined the impoundment shall promptly inform the director of the finding and of the emergency procedures formulated for public protection and remedial action. If adequate procedures can not be formulated or implemented, the director shall be notified immediately. The director shall then notify the appropriate agencies that other emergency procedures are required to protect the public.

[11-29-97; A, 12-15-99; 19.8.20.2017 NMAC - Rn, 19 NMAC 8.2.20.2017, 9-29-2000; A, 12-31-2007]

#### **19.8.20.2018 HYDROLOGIC BALANCE: GROUND WATER PROTECTION:**

**A.** Backfilled materials shall be placed so as to minimize contamination of ground water systems with acid, toxic, or otherwise harmful mine drainage, to minimize adverse effects of mining on ground water systems outside the permit area, and to support approved postmining land uses.

**B.** To control the effects of mine drainage, pits, cuts and other mine excavation or disturbances shall be located, designed, constructed, and utilized in such manner as to prevent or control discharge of acid, toxic, or otherwise harmful mine drainage waters into ground water systems and to prevent adverse impacts on such ground water systems or on approved postmining land uses.

[11-29-97; 19.8.20.2018 NMAC - Rn, 19 NMAC 8.2.20.2018, 9-29-2000]

#### **19.8.20.2019 HYDROLOGIC BALANCE: PROTECTION OF GROUND WATER RECHARGE**

**CAPACITY:** Surface mining activities shall be conducted in a manner that facilitates reclamation which will restore approximate premining recharge capacity, through restoration of the capability of the reclaimed areas as a whole, excluding coal processing waste and underground development waste disposal areas and fills, to transmit water to the ground water system. The recharge capacity shall be restored to a condition which:

**A.** supports the approved postmining land use;

**B.** minimizes disturbances to the prevailing hydrologic balance in the permit area and in adjacent areas; and

**C.** provides a rate of recharge that approximates the premining recharge rate.

[11-29-97; 19.8.20.2019 NMAC - Rn, 19 NMAC 8.2.20.2019, 9-29-2000; A, 12-31-2007]

#### **19.8.20.2020 HYDROLOGIC BALANCE: SURFACE AND GROUND WATER MONITORING:**

**A.** Ground water.

(1) Ground water levels, subsurface flow and storage characteristics and the quality of ground water shall be monitored in a manner approved by the director, to determine the effects of surface coal mining operations on the recharge capacity of reclaimed land and on the quantity and quality of water in ground water systems in the permit and adjacent areas.

(2) When surface coal mining operations may affect the ground water systems which serve as aquifers which significantly ensure the hydrologic balance of water use on or off the permit and adjacent areas, ground water levels and ground water quality shall be periodically monitored. Monitoring shall include

measurements from a sufficient number of wells and mineralogical and chemical analyses of aquifer, overburden and spoil that are adequate to reflect changes in ground water quantity and quality resulting from those activities. Monitoring shall be adequate to plan for modification of surface coal mining operations, if necessary, to minimize disturbance of the prevailing hydrologic balance.

(3) The director may specify additional hydrologic tests, including drilling, infiltration tests, and aquifer tests.

(4) Each person shall satisfy any requirements of the water quality control commission regulations.

(5) Ground-water monitoring data shall be submitted every 3 months to the director or more frequently as prescribed by the director. Monitoring reports shall include analytical results from each sample taken during the reporting period. When the analysis of any ground-water sample indicates noncompliance with the permit conditions, then the operator shall promptly notify the director and immediately take the actions provided for in Subsection A of 19.8.11.1113 NMAC.

(6) Ground-water monitoring shall proceed through mining and continue during reclamation until bond release. The director may modify the monitoring requirements, including the parameters covered and the sampling frequency, if the operator demonstrates, using the monitoring data obtained under this paragraph, that:

(a) the operation has minimized disturbance to the hydrologic balance in the permit and adjacent area and prevented material damage to the hydrologic balance outside the permit area; water quantity and quality are suitable to support approved postmining land uses, and the water rights of other users have been protected or replaced; or

(b) monitoring is no longer necessary to achieve the purposes set forth in the monitoring plan approved under Paragraph (4) of Subsection B of 19.8.9.907 NMAC.

(7) If an operator can demonstrate by the use of the determination required under Subsection C of 19.8.9.907 NMAC and other available information that a particular water-bearing stratum in the proposed permit and adjacent areas is not one which serves as an aquifer which significantly ensures the hydrologic balance within the cumulative impact area; then monitoring of that stratum may be waived by the director.

**B. Surface water.**

(1) Surface water monitoring shall be conducted in accordance with the monitoring program submitted under Paragraph (4) of Subsection B of 19.8.9.907 NMAC and approved by the director. The director shall determine the nature of data, frequency of collection and reporting requirements. Monitoring shall:

(a) be adequate to measure accurately and record water quantity and quality of the discharges from the permit area;

(b) in all cases in which analytical results of the sample collections indicate noncompliance with the permit condition or applicable standard has occurred, result in the person who conducts the surface coal mining operations notifying the director within 5 days. Where a national pollutant discharge elimination system (NPDES) permit effluent limitation noncompliance has occurred, the person who conducts surface coal mining operations shall forward the analytic results concurrently with the written notice of noncompliance;

(c) Any sample results which indicate a permit violation will be reported immediately to the director and the operator shall immediately take the actions provided for in Subsection A of 19.8.11.1113 NMAC.

(d) A copy of the completed reporting form filed to meet NPDES permit requirements; or

(e) A letter identifying the state or federal government official with whom the reporting form was filed to meet NPDES permit requirements and the date of filing.

(2) Surface water monitoring shall proceed through mining and continue during reclamation until bond release. Consistent with Subparagraph (c) of Paragraph (3) of Subsection E of 19.8.20.2009 NMAC the director may modify the monitoring requirements, except those required by the NPDES permitting authority, including the parameters covered and sampling frequency if the operator demonstrates, using the monitoring data obtained under this paragraph, that:

(a) the operator has minimized disturbance to the hydrologic balance in the permit and adjacent areas and prevented material damage to the hydrologic balance outside the permit area; water quantity and quality are suitable to support approved postmining land uses; and the water rights of other users have been protected or replaced; or

(b) monitoring is no longer necessary to achieve the purposes set forth in the monitoring plan approved under Paragraph (4) of Subsection B of 19.8.9.907 NMAC.

(3) Equipment, structures, and other devices necessary to measure and sample accurately the quality and quantity of surface water discharges from the disturbed area shall be properly installed, maintained, and operated and shall be removed when no longer required.

(4) For point-source discharges, monitoring shall be conducted in accordance with 40 CFR Parts 122, 123 and 434 and as required by the national pollutant discharge elimination system permitting authority. [11-29-97; 19.8.20.2020 NMAC - Rn, 19 NMAC 8.2.20.2020, 9-29-2000]

**19.8.20.2021 HYDROLOGIC BALANCE: TRANSFER OF WELLS:**

**A.** An exploratory or monitoring well may be transferred by the person who conducts surface coal mining operations for further use as a water well with the prior approval of the director and with such approval as is otherwise required by the state engineer. That person and the surface owner of the lands where the well is located shall jointly submit a written request to the director for that approval.

**B.** Upon an approved transfer of a well, the transferee shall:

- (1) assume primary liability for damages to persons or property from the well;
- (2) plug the well when necessary, but in no case later than abandonment of the well; and
- (3) assume primary responsibility for compliance with 19.8.20.2001 through 2003 NMAC with respect to the well.

**C.** Upon an approved transfer of a well, the transferor shall be secondarily liable for the transferee's obligations under Subsection B of 19.8.20.2021 NMAC, until release of the bond or other equivalent guarantee required by 19.8.14 NMAC for the area in which the well is located.

[11-29-97; 19.8.20.2021 NMAC - Rn, 19 NMAC 8.2.20.2021, 9-29-2000]

**19.8.20.2022 HYDROLOGIC BALANCE: WATER RIGHTS AND REPLACEMENT:** Any person who conducts surface coal mining operations shall comply with any water replacement plan approved by the state engineer under the Mine Dewatering Act, and shall also comply with applicable statutes and regulations administered by the state engineer.

[11-29-97; 19.8.20.2022 NMAC - Rn, 19 NMAC 8.2.20.2022, 9-29-2000]

**19.8.20.2023 HYDROLOGIC BALANCE: DISCHARGE OF WATER INTO AN UNDERGROUND MINE:** Water from the surface or from an underground mine shall not be diverted or otherwise discharged into other underground mine workings, unless the person who conducts the surface coal mining operations demonstrates to the director that this will:

**A.** abate water pollution or otherwise eliminate public hazards resulting from surface coal mining operations; and

**B.** be discharged as a controlled flow, meeting the effluent limitations of 19.8.20.2010 NMAC for pH and total suspended solids, except that the pH and total suspended solid limitations may be exceeded, if approved by the director and is limited to:

- (1) coal processing waste;
- (2) fly ash from a coal-fired facility;
- (3) sludge from an acid mine drainage treatments facility;
- (4) flue gas desulfurization sludge;
- (5) inert materials used for stabilizing underground mines; or
- (6) underground mine development wastes.

**C.** in any event, the discharge from underground mines to surface waters will not cause, result in or contribute to a violation of applicable water quality standards or effluent limitations;

**D.** minimizes disturbance to the hydrologic balance; and

**E.** meets with the approval of the mine safety and health administration.

[11-29-97; 19.8.20.2023 NMAC - Rn, 19 NMAC 8.2.20.2023, 9-29-2000]

**19.8.20.2024 HYDROLOGIC BALANCE: POSTMINING REHABILITATION OF SEDIMENTATION PONDS, DIVERSIONS, IMPOUNDMENTS AND TREATMENT FACILITIES:** Before abandoning the permit area, the person who conducts the surface coal mining operations shall renovate all permanent sedimentation ponds, diversions, impoundments, and treatment facilities to meet criteria specified in the detailed design plan for the permanent structures and impoundments.

[11-29-97; 19.8.20.2024 NMAC - Rn, 19 NMAC 8.2.20.2024, 9-29-2000]

**19.8.20.2025 HYDROLOGIC BALANCE: STREAM BUFFER ZONES:**

**A.** No surface land within 100 feet of a perennial stream or a stream with a biological community determined according to Subsection C of 19.8.20.2025 NMAC shall be disturbed by surface coal mining operations

except in accordance with 19.8.20.2011 and 2012 NMAC, unless the director specifically authorizes surface coal mining operations closer to or through such a stream upon finding that:

(1) surface mining activities will not cause or contribute to the violation of applicable state or federal water quality standards, and will not adversely affect the water quantity and quality or other environmental resources of the stream; and

(2) if there will be a temporary or permanent stream-channel diversion, it will comply with 19.8.20.2011 and 2012 NMAC.

**B.** The area not to be disturbed shall be designated a buffer zone and marked as specified in 19.8.20.2000 NMAC.

**C.** A stream with a biological community shall be determined by the existence in the stream at any time of an assemblage of two or more species of arthropods or molluscan animal which are:

(1) adapted to flowing water for all or part of their life cycle;

(2) dependent upon a flowing water habitat;

(3) reproducing or can reasonably be expected to reproduce in the water body where they are found;

and

(4) longer than 2 millimeters at some stage of the part of their life cycle spent in the flowing water habitat.

[11-29-97; 19.8.20.2025 NMAC - Rn, 19 NMAC 8.2.20.2025, 9-29-2000]

#### **19.8.20.2026 HYDROLOGIC BALANCE: UNDERGROUND MINE ENTRY AND ACCESS DISCHARGES:**

**A.** Surface entries and accesses to underground workings, including adits and slopes, shall be located, designed, constructed, and utilized to prevent or control gravity discharge of water from the mine.

**B.** Gravity discharge of water from an underground mine, other than a drift mine subject to Subsection C of 19.8.20.2026 NMAC, may be allowed by the director, if it is demonstrated that:

(1) in the case of an untreated discharge:

(a) the discharge, without treatment, satisfies the water effluent limitations of 19.8.20.2010 NMAC and all applicable state and federal water quality standards; and

(b) that discharge will result in changes in the prevailing hydrologic balance that are minimal and approved postmining land uses will not be adversely affected; or

(2) in the case of a treated discharge:

(a) the discharge is conveyed to a treatment facility in the permit area in accordance with Subsection A of 19.8.20.2010 NMAC;

(b) all water from the underground mine discharged from the treatment facility meets the effluent limitations of 19.8.20.2010 NMAC and all other applicable state and federal statutes and regulations; and

(c) consistent maintenance of the treatment facility will occur throughout the anticipated period of gravity discharge.

**C.** Notwithstanding anything to the contrary in Subsections A and B of 19.8.20.2026 NMAC, for a drift mine first used after the implementation of the permanent state program and located in acid-producing or iron-producing coal seams, surface entries and accesses shall be located in such a manner as to prevent any gravity discharge from the mine.

[11-29-97; 19.8.20.2026 NMAC - Rn, 19 NMAC 8.2.20.2026, 9-29-2000; A, 12-31-2007]

**19.8.20.2027 COAL RECOVERY:** Surface coal mining operations shall be conducted so as to maximize the utilization and conservation of the coal while maintaining environmental integrity so that re-affecting the land in the future through surface mining operations is minimized.

[11-29-97; 19.8.20.2027 NMAC - Rn, 19 NMAC 8.2.20.2027, 9-29-2000]

#### **19.8.20.2028 USE OF EXPLOSIVES: GENERAL REQUIREMENTS:**

**A.** Each operator shall comply with all applicable state and federal laws in the use of explosives.

**B.** Blasts that use more than 5 lbs. of explosive or blasting agent shall be conducted according to the schedule required by 19.8.20.2030 NMAC.

**C.** Blasters.

(1) No later than twelve (12) months after the blaster certification program required by 19.8.33 NMAC of these regulations has been approved pursuant to 30 CFR Chapter VII, Subchapter C, all blasting operations in surface coal mining operations shall be conducted under the direction of a certified blaster. Before that

time, all such blasting operations shall be conducted by competent, experienced persons who understand the hazards involved.

(2) Certificates of blaster certification shall be carried by blasters or shall be on file at the permit area during blasting operations.

(3) A blaster and at least one other person shall be present at the firing of a blast.

(4) Any blaster who is responsible for conducting blasting operations at a blasting site shall:

(a) be familiar with the blasting plan and site-specific performance standards; and

(b) give direction and on-the-job training to persons who are not certified and who are assigned to the blasting crew or assist in the use of explosives.

**D. Blast design.**

(1) An anticipated blast design shall be submitted if blasting operations will be conducted within:

(a) 1,000 feet of any building used as a dwelling, public building, school, church, or community or institutional building outside the permit area; or

(b) 500 feet of an active or abandoned underground mine.

(2) The blast design may be presented as part of a permit application or at a time, before the blast, approved by the director.

(3) The blast design shall contain sketches of the drill patterns, delay periods, and decking and shall indicate the type and amount of explosives to be used, critical dimensions, and the location and general description of structures to be protected, as well as a discussion of design factors to be used, which protect the public and meet the applicable airblast, flyrock, and ground-vibration standards in 19.8.20.2032 NMAC.

(4) The blast design shall be prepared and signed by a certified blaster.

(5) The director may require changes to the design submitted.

[11-29-97; 19.8.20.2028 NMAC - Rn, 19 NMAC 8.2.20.2028, 9-29-2000]

#### **19.8.20.2029 USE OF EXPLOSIVES: PRE-BLASTING SURVEY:**

**A.** At least 30 days before initiation of blasting, the operator shall notify, in writing, all residents or owners of dwellings or other structures located within 1/2 mile of the permit area how to request a preblasting survey.

**B.** A resident or owner of a dwelling or structure with 1/2 mile of any part of the permit area may request a preblasting survey. This request shall be made, in writing, directly to the operator or to the director, who shall promptly notify the operator. The operator shall promptly conduct a preblasting survey of the dwelling or structure and promptly prepare a written report of the survey. An updated survey of any additions, modifications, or renovations shall be performed by the operator if requested by the resident or owner.

**C.** The operator shall determine the condition of the dwelling or structure and shall document any preblasting damage and other physical factors that could reasonably be affected by the blasting. Structures such as pipelines, cables, transmission lines, and cisterns, wells, and other water systems warrant special attention; however, the assessment of these structures may be limited to surface conditions and other readily available data.

**D.** The written report of the survey shall be signed by the person who conducted the survey. Copies of the report shall be promptly provided to the director and to the person requesting the survey. If the person requesting the survey disagrees with the contents and/or recommendations contained therein, he may submit to both the operator and the director a detailed description of the specific areas of disagreement.

**E.** Any surveys requested more than 10 days before the planned initiation of blasting shall be completed by the operator before the initiation of blasting.

[11-29-97; 19.8.20.2029 NMAC - Rn, 19 NMAC 8.2.20.2029, 9-29-2000]

#### **19.8.20.2030 USE OF EXPLOSIVES: BLASTING SCHEDULE:**

**A. General requirements.**

(1) The operator shall conduct blasting operations at times approved by the director and announced in the blasting schedule. The director may limit the area covered, timing, and sequence of blasting as listed in the schedule, if such limitations are necessary and reasonable in order to protect the public health and safety or welfare.

(2) All blasting shall be conducted between sunrise and sunset, unless nighttime blasting is approved by the director based upon a showing by the operator that the public will be protected from adverse noise and other impacts. The director may specify more restrictive time periods for blasting.

(3) Unscheduled blasts may be conducted only where public or operator health and safety so require and for emergency blasting actions. When an operator conducts an unscheduled blast, the operator, using audible



signals, shall notify residents within 1/2 mile of the blasting site and document the reason for the unscheduled blast in accordance with 19.8.20.2033 NMAC.

**B. Blasting schedule publication and distribution.**

(1) The operator shall publish the blasting schedule in a newspaper of general circulation in the locality of the blasting site at least 10 days, but not more than 30 days, before beginning a blasting program.

(2) The operator shall distribute copies of the schedule to local governments and public utilities and to each local residence within 1/2 mile of the proposed blasting site described in the schedule.

(3) The operator shall republish and redistribute the schedule at least every 12 months and revise and republish the schedule at least 10 days, but not more than 30 days, before blasting whenever the area covered by the schedule changes or actual time periods for blasting significantly differ from the prior announcement.

**C. Blasting schedule contents. The blasting schedule shall contain, at a minimum:**

(1) name, address, and telephone number of operator.

(2) identification of the specific areas in which blasting will take place;

(3) dates and time periods when explosives are to be detonated;

(4) methods to be used to control access to the blasting area; and

(5) type and patterns of audible warning and all-clear signals to be used before and after blasting.

[11-29-97; 19.8.20.2030 NMAC - Rn, 19 NMAC 8.2.20.2030, 9-29-2000]

**19.8.20.2031 USE OF EXPLOSIVES: BLASTING SIGNS, WARNINGS AND ACCESS CONTROL:**

**A. Blasting signs.** Blasting signs shall meet the specifications of Subsections A and B of 19.8.20.2000 NMAC. The operator shall:

(1) conspicuously place signs reading "Blasting Area" along the edge of any blasting area that comes within 100 feet of any public road right-of-way, and at the point where any other road provides access to the blasting area; and

(2) at all entrances to the permit area from public roads or highways, place conspicuous signs which state "Warning! Explosives in Use," which clearly list and describe the meaning of the audible blast warning and all-clear signals that are in use, and which explain the marking of blasting areas and charged holes awaiting firing within the permit area.

**B. Warnings.** Warning and all-clear signals of different character or pattern, that are audible within a range of 1/2 mile from the point of the blast shall be given. Each person within the permit area and each person who resides or regularly works within 1/2 mile of the permit area shall be notified of the meaning of the signals in the blasting schedule.

**C. Access control.** Access within the blasting area shall be controlled to prevent presence of livestock or unauthorized persons during blasting and until an authorized representative of the operator has reasonably determined that:

(1) no unusual hazards, such as imminent slides or undetonated charges, exist; and

(2) access to and travel within the blasting area can be safely resumed.

[11-29-97; 19.8.20.2031 NMAC - Rn, 19 NMAC 8.2.20.2031, 9-29-2000]

**19.8.20.2032 USE OF EXPLOSIVES: CONTROL OF ADVERSE EFFECTS:**

**A. General requirements.** Blasting shall be conducted to prevent injury to persons, damage to public or private property outside the permit area, adverse impacts on any underground mine, and change in the course, channel, or availability of surface or ground water outside the permit area.

**B. Airblasts.**

(1) Limits.

(a) Airblast shall not exceed the maximum limits listed below at the location of any dwelling, public building, school, church, or community or institutional building outside the permit area, except as provided in Subsection E of 19.8.20.2032 NMAC.

<b>Lower frequency limit of measuring system, in Hz (<math>\pm</math> 3 dB)</b>	<b>Maximum Level, in dB</b>
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0.1 Hz or lower--flat response <sup>1</sup>	134 peak.
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2 Hz or lower--flat response	133 peak.
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6 Hz or lower--flat response	129 peak.
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C - weighted--slow response <sup>1</sup>	105 peak dBC.
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<sup>1</sup>Only when approved by the director.

(b) If necessary to prevent damage, the director shall specify lower maximum allowable airblast levels than those of Subparagraph (a) of Paragraph (1) of Subsection B of 19.8.20.2032 NMAC for use in the vicinity of a specific blasting operation.

(2) Monitoring.

(a) The operator shall conduct periodic monitoring to ensure compliance with the airblast standards. The director may require airblast measurement of any or all blasts and may specify the locations at which such measurements are taken.

(b) The measuring systems shall have an upper-end flat-frequency response of at least 200 Hz.

C. Flyrock. Flyrock travelling in the air or along the ground shall not be cast from the blasting site:

(1) more than one-half the distance to the nearest dwelling or other occupied structure;

(2) beyond the area of control required under Subsection C of 19.8.20.2031 NMAC; or

(3) beyond the permit boundary.

D. Ground vibration.

(1) General. In all blasting operations, except as otherwise authorized in Subsection E of 19.8.20.2032 NMAC, the maximum ground vibration shall not exceed the values approved in the blasting plan required under 19.8.9.902 NMAC. The maximum ground vibration for protected structures listed in Subparagraph (a) of Paragraph (2) of Subsection D of 19.8.20.2032 NMAC shall be established in accordance with either the maximum peak-particle-velocity limits of Paragraph (2) of Subsection D of 19.8.20.2032 NMAC, the scaled-distance equation of Paragraph (3) of Subsection D of 19.8.20.2032 NMAC, the blasting-level chart of Paragraph (4) of Subsection D of 19.8.20.2032 NMAC, or by the director under Paragraph (5) of Subsection D of 19.8.20.2032 NMAC. All structures in the vicinity of the blasting area, not listed in Subparagraph (a) of Paragraph (2) of Subsection D of 19.8.20.2032 NMAC, such as water towers, pipelines and other utilities, tunnels, dams, impoundments, and underground mines, shall be protected from damage by establishment of a maximum allowable limit on the ground vibration, submitted by the operator in the blasting plan and approved by the director.

(2) Maximum peak particle velocity.

(a) The maximum ground vibration shall not exceed the following limits at the location of any dwelling, public building, school, church, or community or institutional building outside the permit area:

<b>Distance (D) from the blasting site, in feet</b>	<b>Maximum allowable peak particle velocity factor (V max) for ground vibration, in inches/second<sup>1</sup></b>	<b>Scaled-distance factor to be applied without seismic monitoring<sup>2</sup> (Ds)</b>
0 to 300	1.25	50
301 to 5,000	1.00	55
5,000 and beyond	0.75	65

<sup>1</sup>Ground vibration shall be measured as the particle velocity. Particle velocity shall be recorded in three mutually perpendicular directions. The maximum allowable peak particle velocity shall apply to each of the three measurements.

<sup>2</sup>Applicable to the scaled-distance equation of Subparagraph (a) of Paragraph (3) of Subsection D of 19.8.20.2032 NMAC.

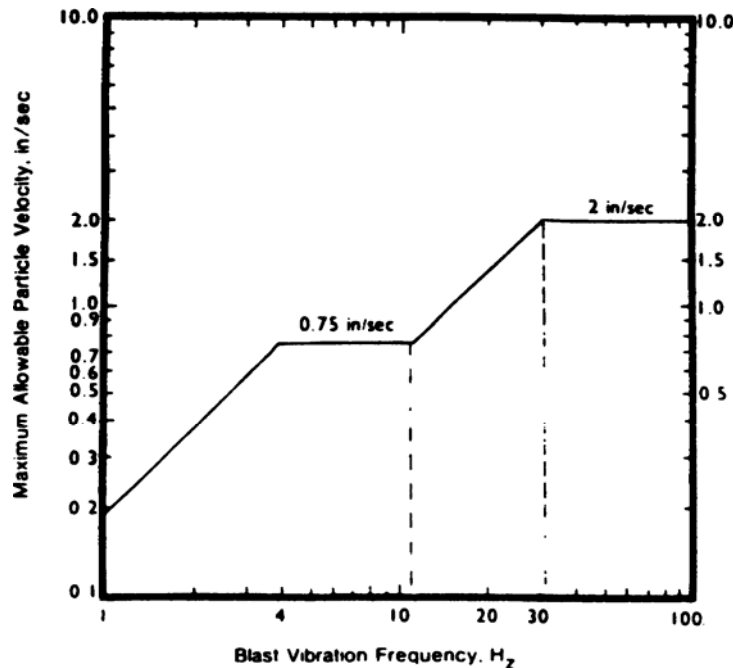
(b) A seismographic record shall be provided for each blast.

(3) Scaled-distance equation. An operator may use the scaled-distance equation,  $W=(D/Ds)^2$ , to determine the allowable charge weight of explosives to be detonated in any 8-millisecond period, without seismic monitoring; where W = the maximum weight of explosives, in pounds; D = the distance, in feet, from the blasting site to the nearest protected structure; and Ds = the scaled-distance factor, which may initially be approved by the director using the values for scaled-distance factor listed in Subparagraph (a) of Paragraph (2) of Subsection D of 19.8.20.2032 NMAC.

(a) The development of a modified scaled-distance factor may be authorized by the director on receipt of a written request by the operator, supported by seismographic records of blasting at the minesite. The modified scaled-distance factor shall be determined such that the particle velocity of the predicted ground vibration will not exceed the prescribed maximum allowable peak particle velocity of Subparagraph (a) of Paragraph (2) of Subsection D of 19.8.20.2032 NMAC, at a 95-percent confidence level.

(4) Blasting-level chart.

(a) An operator may use the ground-vibration limits in Figure 1 to determine the maximum allowance ground vibration.



**Figure 1. Alternative blasting level criteria.  
(Source: Modified from figure B-1,  
Bureau of Mines R18507)**

(b) If the Figure 1 limits are used, a seismographic record including both particle velocity and vibration-frequency levels shall be provided for each blast. The method for the analysis of the predominant frequency contained in the blasting records shall be approved by the director before application of this alternative blasting criterion.

(5) The maximum allowable ground vibration shall be reduced by the director beyond the limits otherwise provided by 19.8.20 NMAC, if determined necessary to provide damage protection.

(6) The director may require an operator to conduct seismic monitoring of any or all blasts or may specify the location at which the measurements are taken and the degree of detail necessary in the measurement.

**E.** The maximum airblast and ground-vibration standards of Subsections B and D of 19.8.20.2032 NMAC shall not apply at the following locations:

(1) at structures owned by the permittee and not leased to another person;

(2) at structures owned by the permittee and leased to another person, if a written waiver by the lessee is submitted to the director before blasting.

[11-29-97; 19.8.20.2032 NMAC - Rn, 19 NMAC 8.2.20.2032, 9-29-2000]

**19.8.20.2033 USE OF EXPLOSIVES: RECORDS OF BLASTING OPERATIONS:** The operator shall retain a record of all blasts for at least 3 years. Upon request, copies of these records shall be made available to the director and to the public for inspection. Such records shall contain the following data:

- A.** name of the operator conducting the blast;
- B.** location, date, and time of the blast;
- C.** name, signature, and certification number of the blaster conducting the blast;
- D.** identification, direction, and distance, in feet, from the nearest blast hole to the nearest dwelling, public building, school, church, community or institutional building outside the permit area, except those described in Subsection E of 19.8.20.2032 NMAC;
- E.** weather conditions, including those which may cause possible adverse blasting effects;
- F.** type of material blasted;
- G.** sketches of the blast pattern, including number of holes, burden, spacing, decks, and delay patterns;
- H.** diameter and depth of holes;

- I. types of explosives used;
- J. total weight of explosives used per hole;
- K. the maximum weight of explosives detonated in an 8-millisecond period;
- L. initiation system;
- M. type and length of stemming;
- N. mats or other protection used;
- O. seismographic and airblast records, if required, which shall include:
  - (1) type of instrument, sensitivity, and calibration signal or certification of annual calibration;
  - (2) exact location of instrument and the date, time, and distance from the blast;
  - (3) name of the person and firm taking the reading;
  - (4) name of the person and firm analyzing the seismographic record; and
  - (5) the vibration and/or airblast level recorded;
- P. reasons and conditions for each unscheduled blast.

[11-29-97; 19.8.20.2033 NMAC - Rn, 19 NMAC 8.2.20.2033, 9-29-2000]

**19.8.20.2034 DISPOSAL OF EXCESS SPOIL: GENERAL REQUIREMENTS:**

**A.** Spoil not required to achieve the approximate original contour within the area where overburden has been removed shall be hauled or conveyed to and placed in designated disposal areas within a permit area, if the disposal areas are authorized for such purposes in the approved permit application in accordance with 19.8.20.2034 through 2037 NMAC. The spoil shall be placed in a controlled manner to ensure:

- (1) that leachate and surface runoff from the fill will not degrade surface or ground waters or exceed the effluent limitations of 19.8.20.2010 NMAC;
- (2) stability of the fill; and
- (3) that the land mass designated as the disposal area is suitable for reclamation and revegetation compatible with the natural surroundings.

**B.** The fill shall be designed using recognized professional standards, certified by a qualified registered professional engineer, and approved by the director.

**C.** All vegetative and organic materials shall be removed from the disposal area and the topsoil to be used as topdressing shall be removed, segregated, and stored or replaced under 19.8.20.2004 through 2008 NMAC. If approved by the director, organic materials may be used as mulch or may be included in the topdressing to control erosion, promote growth of vegetation, or increase the moisture retention of the soil.

**D.** Slope protection shall be provided to minimize surface erosion at the site. Diversion design shall conform with the requirements of 19.8.20.2011 NMAC. All disturbed areas, including diversion ditches that are not rippedraped, shall be vegetated upon completion of construction.

**E.** The disposal areas shall be located on the most moderately sloping and naturally stable areas available as approved by the director. If such placement provides additional stability and prevents mass movement, fill materials suitable for disposal shall be placed upon or above a natural terrace, bench, or berm.

**F.** Excess spoil shall be transported and placed in a controlled manner in horizontal lifts not exceeding 4 feet in thickness; concurrently compacted as necessary to ensure mass stability and to prevent mass movement during and after construction; graded so that surface and subsurface drainage is compatible with the natural surroundings; and covered with topsoil or substitute material in accordance with 19.8.20.2007 NMAC. The director may approve a design which incorporates placement of excess spoil in horizontal lifts other than 4 feet in thickness when it is demonstrated by the operator and certified by a qualified registered professional engineer that the design will ensure the stability of the fill, will ensure a long-term static factor of 1.5, and will meet all other applicable requirements.

**G.** The final configuration of the fill must be suitable for postmining land uses approved in accordance with 19.8.20.2075 NMAC except that no depressions or impoundments shall be allowed on the completed fill unless approved by the director pursuant to Subsection C of 19.8.20.2055 NMAC.

**H.** Terraces may be utilized to control erosion and enhance stability if approved by the director and consistent with Subsection B of 19.8.20.2055 NMAC.

**I.** Where the pre-existing average slope in the disposal area exceeds 1v:2.8h (36 percent) or such lesser slope as may be designated by the director based on local conditions, the fill shall be designed and constructed using the services of a professional engineer who shall ensure stability of the fill and the foundation. Where the toe of the spoil rests on a downslope, stability analyses shall be performed in accordance with Subsection C of 19.8.9.909 NMAC to determine the size of rock toe buttresses and key-way cuts.

**J.** The fill shall be inspected for stability by a registered engineer or other qualified professional specialist experienced in the construction of earth and rockfill embankments at least quarterly throughout construction and during the following critical construction periods:

- (1) removal of all organic material and top-soil to be used as topdressing;
- (2) placement of underdrainage systems;
- (3) installation of surface drainage systems;
- (4) placement and compaction of fill materials; and
- (5) revegetation.

**K.** The qualified registered professional engineer shall provide the director a certified report within 2 weeks after each inspection that the fill has been constructed and maintained as specified in the design approved by the director. The report shall include appearances of instability, structure weakness, and other hazardous condition. A copy of the report shall be retained at the mine site.

**L.** The certified report on the drainage system and protective filters shall 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 shall be certified separately.

(1) Where 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 19.8.20.2037 NMAC, color photographs shall be taken of the underdrain as the underdrain system is being formed.

(2) The photographs accompanying each certified report shall 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.

**M.** Coal processing wastes shall not be disposed of in head-of-hollow or valley fills, and may only be disposed of in other excess spoil fills, if such waste is:

- (1) placed in accordance with 19.8.20.2042 NMAC;
- (2) demonstrated to be nontoxic and nonacid forming; and
- (3) demonstrated to be consistent with the design stability of the fill.

**N.** If the disposal area contains springs, natural or manmade water-courses, or wet-weather seeps, an underdrain system consisting of durable rock shall be constructed from the wet areas in a manner that prevents infiltration of the water into the spoil material. The underdrain system shall be protected by an adequate filter and shall be designed and constructed using standard geotechnical engineering methods.

**O.** The foundation and abutments of the fill shall be stable under all conditions of construction and operation. Sufficient foundation investigation and laboratory testing of foundation materials shall be performed in order to determine the design requirements for stability of the foundation. Analyses of foundation conditions shall include the effect of underground mine workings, if any, upon the stability of the structure.

**P.** Excess spoil may be returned to underground mine workings, but only in accordance with a disposal program approved by the director and MSHA upon the basis of a plan submitted under 19.8.9.917 NMAC. [11-29-97; 19.8.20.2034 NMAC - Rn, 19 NMAC 8.2.20.2034, 9-29-2000]

**19.8.20.2035 DISPOSAL OF EXCESS SPOIL: VALLEY FILLS:** Valley fills shall meet all of the requirements of 19.8.20.2034 NMAC and the additional requirements of 19.8.20 NMAC.

**A.** The fill shall be designed to attain a long-term static safety factor of 1.5 based upon data obtained from subsurface exploration, geotechnical testing, foundation design, and accepted engineering analyses.

**B.** Unless the director finds that a subdrainage system is not required for environmental protection, a subdrainage system for the fill shall be constructed in accordance with the following:

(1) A system of underdrains constructed of durable rock shall meet the requirements of Paragraph (4) of Subsection B of 19.8.20.2035 NMAC and:

- (a) be installed along the natural drainage system;
- (b) extend from the toe to the head of the fill; and
- (c) contain lateral drains to each area of potential drainage or seepage.

(2) A filter system to insure the proper functioning of the rock underdrain system shall be designed and constructed using standard geotechnical engineering methods.

(3) In constructing the underdrains, the rock size and size of the main underdrain will be designed to meet the conditions at the site as determined by data called for in Subsection A of 19.8.20.2035 NMAC. If site specific engineering design criteria are not submitted, the following criteria will be used. In constructing the underdrains, no more than 10 percent of the rock may be less than 12 inches in size and no single rock may be larger

than 25 percent of the width of the drain. Rock used in underdrains shall meet the requirements of Paragraph (4) of Subsection B of 19.8.20.2035 NMAC. The minimum size of the main underdrain shall be:

Total amount of fill material	Predominant type of fill material	Minimum size of drain, in feet	
		Width	Height
< 1,000,000 yd <sup>3</sup>	Sandstone	10	4
< 1,000,000 yd <sup>3</sup>	Shale	16	8
> 1,000,000 yd <sup>3</sup>	Sandstone	16	8
> 1,000,000 yd <sup>3</sup>	Shale	16	16

(4) Underdrains shall consist of nondegradable, non-acid or toxic forming rock such as natural sand and gravel, sandstone, limestone, or other durable rock that will not slake in water and will be free of coal, clay or shale.

C. Spoil shall be hauled or conveyed and placed in a controlled manner and concurrently compacted as specified by the director, in lifts no greater than 4 feet or less if required by the director to:

- (1) achieve the densities designed to ensure mass stability;
- (2) prevent mass movement;
- (3) avoid contamination of the rock underdrain or rock core; and
- (4) prevent formation of voids.

D. Surface water runoff from the area above the fill shall be diverted away from the fill and into stabilized diversion channels designed to pass safely the runoff from a 100-year, 6-hour precipitation event or larger event specified by the director. Surface runoff from the fill surface shall be diverted to stabilized channels off the fill which will safely pass the runoff from a 100 year, 6-hour precipitation event. Diversion design shall comply with the requirements of 19.8.20.2011 NMAC.

E. The tops of the fill and any terrace constructed to stabilize the face shall be graded no steeper than 1v:20h (5 percent). The vertical distance between terraces shall not exceed 50 feet.

F. Drainage shall not be directed over the outslope of the fill.

G. The outslope of the fill shall not exceed 1v:2h (50 percent). The director may require a flatter slope.

[11-29-97; 19.8.20.2035 NMAC - Rn, 19 NMAC 8.2.20.2035, 9-29-2000]

**19.8.20.2036 DISPOSAL OF EXCESS SPOIL: HEAD OF HOLLOW FILLS:** Disposal of spoil in the head-of-hollow fill shall meet all standards set forth in 19.8.20.2034 and 2035 NMAC and the additional requirements of 19.8.20 NMAC.

A. The fill shall be designed to completely fill the disposal site to the approximate elevation of the ridgeline. A rock-core chimney drain may be utilized instead of the subdrain and surface diversion system required for valley fills. If the crest of the fill is not approximately at the same elevation as the low point of the adjacent ridgeline, the fill must be designed as specified in 19.8.20.2035 NMAC, with diversion of runoff around the fill. A fill associated with contour mining and placed at or near the coal seam, and which does not exceed 250,000 cubic yards may use the rock-core chimney drain.

B. The alternative rock-core chimney drain system shall be designed and incorporated into the construction of head-of-hollow fills as follows:

(1) The fill shall have, along the vertical projection of the main buried stream channel or rill a vertical core of durable rock at least 16 feet thick which shall extend from the toe of the fill to the head of the fill, and from the base of the fill to the surface of the fill. A system of lateral rock underdrains shall connect this rock-core to each area of potential drainage or seepage in the disposal area. Rocks used in the rock-core and underdrains shall meet the requirements of Subsection B of 19.8.20.2035 NMAC.

(2) A filter system to ensure the proper functioning of the rock-core shall be designed and constructed using standard geotechnical engineering methods.

(3) The grading may drain surface water away from the outslope of the fill and toward the rock-core. The maximum slope of the top of the fill shall be 1v:33h (3 percent). Instead of the requirements of Subsection G of 19.8.20.2034 NMAC, a drainage pocket may be maintained at the head of the fill during and after construction, to intercept surface runoff and discharge the runoff through or over the rock drain, if stability of the fill is not impaired. In no case shall this pocket or sump have a potential for impounding more than 10,000 cubic feet of water. Terraces on the fill shall be graded with a 3- to 5- percent grade toward the fill and a 1- percent slope toward the rock-core.

C. Other drainage control systems that have been demonstrated to provide equivalent stability to the fill as described in Subsections A and B of 19.8.20.2036 NMAC may be approved by the director.

**D.** The drainage control system shall be capable of passing safely the runoff from a 100-year, 24-hour precipitation event, or larger event specified by the director.  
[11-29-97; 19.8.20.2036 NMAC - Rn, 19 NMAC 8.2.20.2036, 9-29-2000]

**19.8.20.2037 DISPOSAL OF EXCESS SPOIL: DURABLE ROCK FILLS:** In lieu of the requirements of 19.8.20.2035 and 2036 NMAC, the director may approve alternate methods of disposal of hard rock spoil, including fill placement by dumping in a single lift, on a site specific basis, provided the services of a registered professional engineer experienced in the design and construction of earth and rockfill embankments are utilized and provided the requirements of 19.8.20 NMAC and 19.8.20.2034 NMAC are met. For 19.8.20 NMAC, hard rock spoil shall be defined as rockfill consisting of at least 80 percent by volume of sandstone, limestone, or other rocks that do not slake in water. Resistance of the hard rock spoil to slaking shall be determined by using a slake index and slake durability tests approved by the director.

**A.** Spoil is to be transported and placed in a specified and controlled manner, which will ensure stability of the fill.

(1) The method of spoil placement shall be designed to ensure mass stability and prevent mass movement in accordance with the additional requirements of 19.8.20 NMAC.

(2) Loads of noncemented clay shale and/or clay spoil in the fill shall be mixed with hard rock spoil in a controlled manner to limit on a unit basis concentrations of noncemented clay shale and clay in the fill. Such materials shall comprise no more than 20 percent of the fill volume as determined by tests performed by a registered professional engineer and approved by the director.

**B.** Stability analyses.

(1) Stability analyses shall be made by the registered professional engineer. Parameters used in the stability analyses shall be based on adequate field reconnaissance, subsurface investigations, including borings and laboratory tests.

(2) The embankment which constitutes the valley fill or head-of-hollow fill shall be designed with the following factors of safety.

Case	Design Condition	Minimum Factor of Safety
I	End of construction	1.5
II	Earthquake	1.1

**C.** The design of a head-of-hollow fill shall include an internal drainage system to the extent necessary to ensure continued free drainage of anticipated seepage from precipitation and from springs or wet weather seeps.

(1) Anticipated discharge from springs and seeps and due to precipitation shall be based on records and/or field investigations to determine seasonal variation. The design of the internal drainage system shall be based on the maximum anticipated discharge.

(2) All granular material used for the drainage system shall be free of clay and consist of durable particles such as natural sands and gravel, sandstone, limestone or other durable rock which will not slake in water.

(3) The internal drain shall be protected by a properly designed filter system.

**D.** Surface water runoff from the areas adjacent to and above the fill shall not be allowed to flow onto the fill and shall be diverted into stabilized channels which are designed to pass safely the runoff from a 100-year, 24-hour precipitation event. Diversion design shall comply with the requirements of Subsection F of 19.8.20.2011 NMAC.

**E.** The top surface of the completed fill shall be graded such that the final slope after settlement will be no steeper than 1v:20h (5 percent) toward properly designed drainage channels in natural ground along the periphery of the fill. Surface runoff from the top surface of the fill shall not be allowed to flow over the outslope of the fill.

**F.** Surface runoff from the outslope of the fill shall be diverted off the fill to properly designed channels which will pass safely a 100-year, 24-hour precipitation event. Diversion design shall comply with the requirements of Subsection F of 19.8.20.2011 NMAC.

**G.** Terraces or other suitable controls, such as berms, contour furrows, or micro-depressions, shall be constructed on the outslope if required for control of erosion, or terraces for construction of roads included in the approved postmining land use plan. Terraces shall meet the following requirements:

(1) the slope of the outslope between terrace benches shall not exceed 1v:2h (50 percent);

(2) to control surface runoff, each terrace bench shall be graded to a slope of 1v:20h (5 percent) toward the embankment; runoff shall be collected by a ditch along the intersection of each terrace bench and the outslope;

(3) terrace ditches shall have a 5 percent slope toward the channels specified in Subsection F of 19.8.20.2037 NMAC, unless steeper slopes are necessary in conjunction with approved roads. [11-29-97; 19.8.20.2037 NMAC - Rn, 19 NMAC 8.2.20.2037, 9-29-2000; A, 12-31-2007]

**19.8.20.2038 PROTECTION OF UNDERGROUND MINING FROM SURFACE MINING ACTIVITIES:**

**A.** No surface coal mining activities shall be conducted closer than 500 feet to any point of either an active or abandoned underground mine, except to the extent that:

(1) the nature, timing, and sequences of the operations are jointly approved by the director, the mine safety and health administration, and the state mine inspector; and

(2) the activities result in improved resource recovery, abatement of water pollution, or elimination of hazards to the health and safety of the public.

**B.** Surface mining activities shall be designed to protect disturbed surface areas, including spoil disposal sites, so as not to endanger any present or future operations of either surface or underground mining activities.

[11-29-97; 19.8.20.2038 NMAC - Rn, 19 NMAC 8.2.20.2038, 9-29-2000]

**19.8.20.2039 COAL PROCESSING WASTE BANKS: GENERAL REQUIREMENTS:**

**A.** Coal processing waste banks shall be designed and constructed to meet the requirements of 30 CFR 77.214/77.215, and approved by the director.

**B.** All coal processing waste other than wastes to be disposed of in the mine workings or excavation, shall be hauled or conveyed and placed in new and existing disposal areas approved by the director for this purpose. These areas shall be within a permit area. The disposal area shall be designed, constructed and maintained:

(1) in accordance with 19.8.20.2034 and 2035 NMAC, 19.8.20 NMAC, and 19.8.20.2040 through 2045 NMAC; and

(2) to prevent combustion.

**C.** Coal processing waste materials from activities located outside a permit area, such as those activities at other mines or abandoned mine waste piles may be disposed of in the permit area only if approved by the director. Approval shall be based on a showing by the person who conducts surface coal mining operations in the permit area, using hydrologic, geotechnical, physical, and chemical analyses, that disposal of these materials does not:

(1) adversely affect water quality, water flow or vegetation;

(2) create public health hazards; or

(3) cause instability in the disposal areas.

[11-29-97; 19.8.20.2039 NMAC - Rn, 19 NMAC 8.2.20.2039, 9-29-2000]

**19.8.20.2040 COAL PROCESSING WASTE BANKS: SITE INSPECTION:**

**A.** All coal processing waste banks shall be inspected, on behalf of the person conducting surface coal mining operations, by a qualified registered professional engineer or other qualified professional specialist under the direction of the professional engineer.

(1) Such inspections shall be made at least quarterly throughout construction and during critical construction periods. Critical construction periods shall include at a minimum:

(a) foundation preparation including the removal of all organic material and topsoil;

(b) placement of underdrains and protective filters systems;

(c) installation of final surface drainage systems; and

(d) the final graded and revegetated facility. Regular inspections by the engineer or specialist

shall also be conducted during placement and compaction of coal processing waste materials. More frequent inspections shall be conducted if a danger of harm exists to the public health and safety or the environment. Inspections shall continue until the coal processing waste banks have been finally graded and revegetated or until a later time as required by the director.

(2) Inspections shall include such observations and tests as may be necessary to evaluate the potential hazard to human life and property, to ensure that all organic material and topsoil to be used as topdressing have been removed and that proper construction and maintenance are occurring in accordance with the plan submitted under 19.8.9 NMAC and approved by the director.



(3) The engineer or other approved inspector shall consider steepness of slopes, seepage, and other visible factor which could indicate potential failure, and the results of failure with respect to the threat to human life and property.

(4) Where the plan submitted under 19.8.9 NMAC and approved by the director provides for a subdrainage in accordance with Subsection A of 19.8.20.2041 NMAC, inspections shall be made in accordance with Subsection K of 19.8.20.2034 NMAC.

(5) The qualified registered professional engineer shall provide a certified report to the director promptly after each inspection that the coal processing waste bank has been constructed and maintained as designed and in accordance with the approved plan and 19.8.20 NMAC. The report shall include appearances of instability, structural weakness, and other hazardous conditions.

**B.** If any inspection discloses that a potential hazard exists, the director shall be informed promptly of the finding and of the emergency procedures formulated for public protection and remedial action. If adequate procedures cannot be formulated or implemented, the director shall be notified immediately. The director shall then notify the appropriate emergency agencies that other emergency procedures are required to protect the public from the coal processing waste area.

[11-29-97; 19.8.20.2040 NMAC - Rn, 19 NMAC 8.2.20.2040, 9-29-2000]

**19.8.20.2041 COAL PROCESSING WASTE BANKS: WATER CONTROL MEASURES:**

**A.** Unless the operator demonstrates to the director that embankments can be constructed so as not to impose safety or environmental hazards, a properly designed subdrainage shall be provided, which shall:

- (1) intercept all ground water sources;
- (2) be protected by an adequate filter; and
- (3) be covered so as to protect against the entrance of surface water or leachate from the coal

processing waste.

**B.** All surface drainage from the area above the coal processing waste bank and from the crest and face of the waste disposal area shall be diverted, in accordance with Subsection D of 19.8.20.2035 NMAC.

**C.** Slope protection shall be provided to minimize surface erosion at the site. All disturbed areas, including diversion ditches that are not riprapped, shall be vegetated upon completion of construction.

**D.** All water discharged from a coal processing waste bank shall comply with 19.8.20.2009, 2010, 2013, 2014, 2020 and 2023 NMAC.

[11-29-97; 19.8.20.2041 NMAC - Rn, 19 NMAC 8.2.20.2041, 9-29-2000]

**19.8.20.2042 COAL PROCESSING WASTE BANKS: CONSTRUCTION REQUIREMENTS:**

**A.** Coal processing waste banks shall be constructed in compliance with 19.8.20.2034 and 2035 NMAC, depending on the location of the waste bank, except to the extent the requirements of those sections are specifically varied in 19.8.2042 NMAC.

**B.** Following grading of the coal processing waste bank the site shall be covered with a minimum of 4 feet of the best available non-toxic and non-combustible material in accordance with 19.8.20.2056 NMAC, topdressed in accordance with 19.8.20.2007 NMAC and in a manner that does not impede flow from subdrainage systems. The coal processing waste bank shall be revegetated in accordance with 19.8.20.2060 through 2066 NMAC. The director may allow less than 4 feet of cover material based on physical and chemical analyses which show that the requirements of 19.8.20.2060 through 2066 NMAC will be met.

[11-29-97; 19.8.20.2042 NMAC - Rn, 19 NMAC 8.2.20.2042, 9-29-2000]

**19.8.20.2043 COAL PROCESSING WASTE: BURNING:** Coal processing waste fires shall be extinguished by the person who conducts the surface coal mining operations, in accordance with a plan approved by the director and the mine safety and health administration. The plan shall contain, at a minimum, provisions to ensure that only those persons authorized by the operator, and who have an understanding of the procedures to be used, shall be involved in the extinguishing operations.

[11-29-97; 19.8.20.2043 NMAC - Rn, 19 NMAC 8.2.20.2043, 9-29-2000]

**19.8.20.2044 COAL PROCESSING WASTE: BURNED WASTE UTILIZATION:** Before any burned coal processing waste, other materials, or refuse is removed from a disposal area, approval shall be obtained from the director. A plan for the method of removal, with maps and appropriate drawings to illustrate the proposed sequence of the operation and method of compliance with 19.8.20 NMAC, shall be submitted to the director.

Consideration shall be given in the plan to potential hazards, which may be created by removal to persons working or living in the vicinity of the structure. The plan shall be certified by a qualified engineer.  
[11-29-97; 19.8.20.2044 NMAC - Rn, 19 NMAC 8.2.20.2044, 9-29-2000]

**19.8.20.2045 COAL PROCESSING WASTE: RETURN TO UNDERGROUND WORKINGS:** Coal processing waste may be returned to underground mine workings only in accordance with the waste disposal program approved by the director and MSHA under 19.8.9.917 NMAC.  
[11-29-97; 19.8.20.2045 NMAC - Rn, 19 NMAC 8.2.20.2045, 9-29-2000]

**19.8.20.2046 DISPOSAL OF NON-COAL WASTES:**

**A.** Non-coal wastes including, but not limited to, grease, lubricants, paints, flammable liquids, garbage, abandoned mining machinery, lumber and other combustibles shall be placed, stored or disposed of in a controlled manner in a designated portion of the permit area in accordance with 19.8.9.907, 19.8.20.2009, 2055, and 2056 NMAC. Placement, storage and disposal shall ensure that leachate and surface runoff do not degrade surface or ground water, fires are prevented, and that the area remains stable and suitable for reclamation and revegetation compatible with the natural surroundings.

**B.** Final disposal of non-coal wastes shall be in a designated disposal site in the permit area. Disposal sites shall be designed and constructed with appropriate water barriers on the bottom and sides of the designated site. Wastes shall be routinely compacted and covered to prevent combustion and wind-borne waste. When the disposal is completed, a minimum of 2 feet of soil cover shall be placed over the site, slopes stabilized, and revegetation accomplished in accordance with 19.8.20.2060 through 2066 NMAC. Operation of the disposal site shall be conducted in accordance with all local, state, and federal requirements.

**C.** At no time shall any non-coal waste material be deposited at refuse embankments or impoundment sites, nor shall any excavation for solid waste disposal be located within 8 feet of any coal outcrop or coal storage area.

**D.** Wastes produced by any operations other than coal mining operations which are disposed of inside the permit area shall be in compliance with Subsections A, B and C of 19.8.20.2046 NMAC and shall also be in compliance with the following:

(1) No wastes shall be imported into the permit area for the purpose of disposal without the approval of the director. The director shall specify procedures for the disposal of each type of such wastes; and

(2) The permittee shall demonstrate to the director that during the life of the mine and after mine closure the disposal of the waste material will not cause the standards of 20.6.2.3103 NMAC of the New Mexico water quality control commission regulations to be exceeded in ground water which has a pre-mining total dissolved concentration (TDS) of 10,000 mg/l or less except as provided for at Subsection D of 20.6.2.3109 NMAC.

**E.** Notwithstanding any other provision in 19.8.20 NMAC, any noncoal mine waste defined as "hazardous waste" under Section 3001 of the Resource Conservation and Recovery Act (RCRA) (Pub. L. 94-580, as amended) and 40 CFR Part 261 shall be handled in accordance with the requirements of Subtitle C and the Hazardous and Solid Waste Amendments (1984) of RCRA, with any implementing regulations, and with the New Mexico hazardous waste management regulations. If the facility becomes subject to RCRA through the treatment, storage and/or disposal of a noncoal hazardous waste, any solid waste at the facility, including exempt coal mine waste, also becomes subject to RCRA through HSWA.

[11-29-97; 19.8.20.2046 NMAC - Rn, 19 NMAC 8.2.20.2046, 9-29-2000]

**19.8.20.2047 COAL PROCESSING WASTE: DAMS AND EMBANKMENTS: GENERAL REQUIREMENTS:**

**A.** 19.8.20.2047 through 2049 NMAC apply to dams and embankments, constructed of coal processing waste, or intended to impound coal processing waste, whether they were completed before adoption of 19.8 NMAC or are intended to be completed thereafter.

**B.** Waste shall not be used in the construction of dams and embankments unless it has been demonstrated to the director that the stability of such a structure conforms with the requirements of Subsection A of 19.8.20.2049 NMAC. It shall also be demonstrated that the use of waste material shall not have a detrimental affect on downstream water quality or the environment due to acid seepage through the dam or embankment. All demonstrations shall be submitted to and approved by the director.

**C.** Dams and embankments constructed of coal processing waste or intended to impound coal processing waste shall not be retained permanently as part of approved postmining land use.

[11-29-97; 19.8.20.2047 NMAC - Rn, 19 NMAC 8.2.20.2047, 9-29-2000; A, 12-31-2007]

**19.8.20.2048 COAL PROCESSING WASTE: DAMS AND EMBANKMENTS: SITE PREPARATION:**

**A.** All trees, shrubs, grasses and other organic material shall be cleared and grubbed from the site, and all combustibles shall be removed in accordance with the requirements of 19.8.20 NMAC and

**B.** Surface drainage that may cause erosion to the embankment area or the embankment features, whether during construction or after completion, shall be diverted away from the embankment by diversion ditches that comply with the requirements of Subsections C, D, E, F and G of 19.8.20.2011 NMAC. Adequate outlets for discharge from these diversions shall be in accordance with 19.8.20.2015 NMAC. Diversions that are designed to divert drainage from the upstream area away from the impoundment area or from the surface of the facility that may cause instability or erosion of the impounding structure shall be designed to carry the peak runoff from a 100-year, 6-hour precipitation event. The diversion shall be maintained to prevent blockage, and the discharge shall be in accordance with 19.8.20.2015 NMAC. Sediment control measures shall be provided at the discharge of each diversion ditch before entry into natural watercourses in accordance with 19.8.20.2009 through 2014 NMAC. [11-29-97; 19.8.20.2048 NMAC - Rn, 19 NMAC 8.2.20.2048, 9-29-2000]

**19.8.20.2049 COAL PROCESSING WASTE: DAMS AND EMBANKMENTS: DESIGN AND CONSTRUCTION:**

**A.** The design of each dam and embankment constructed of coal processing waste or intended to impound such waste shall comply with the requirements of Subsections B through G of 19.8.20.2017 NMAC modified as follows:

(1) the maximum water elevation shall be that determined by the freeboard hydrograph criteria contained in the U.S. natural resources conservation service criteria referenced in 19.8.20.2017 NMAC;

(2) the dam and embankment shall have a minimum safety factor of 1.5 for the partial pool with steady seepage saturation conditions, and the seismic safety factor shall be at least 1.2;

(3) the dam or embankment foundation and abutments shall be designed to be stable under all conditions of construction and operation of the impoundment; sufficient foundation investigations and laboratory testing shall be performed to determine the safety factors of the dam or embankment for all loading conditions appearing in Paragraph (2) of Subsection A of 19.8.20.2049 NMAC or the publications referred to in 19.8.20.2017 NMAC and for all increments of construction.

**B.** Spillways and outlet works shall be designed to provide adequate protection against erosion and corrosion. Inlets shall be protected against blockage.

**C.** Dams or embankments constructed of, or impounding, coal processing waste shall be designed, constructed and maintained so that at least 90 percent of the water stored during the design precipitation event shall be removed within a 10 day period.

**D.** Each impounding structure constructed of coal processing waste or intended to impound coal processing waste that meets the criteria of 30 CFR 77.216(a) shall have sufficient spillway capacity to safely pass, adequate storage capacity to safely contain, or a combination of storage capacity and spillway capacity to safely control, the probable maximum precipitation of a 6-hour precipitation event, or greater event as specified by the director.

**E.** No impounding structure constructed of coal processing waste or intended to impound coal processing waste shall be retained as a permanent impoundment as part of the approved postmining land use. [11-29-97; 19.8.20.2049 NMAC - Rn, 19 NMAC 8.2.20.2049, 9-29-2000; A, 12-31-2007]

**19.8.20.2050 AIR RESOURCES PROTECTION:**

**A.** Fugitive dust. Each person who conducts surface coal mining operations shall plan and employ fugitive dust control measures as an integral part of site preparation, coal mining, and reclamation operations. The director shall approve the control measures appropriate for use in planning, according to applicable federal and state air quality standards, climate, existing air quality in the area affected by mining, and the available control technology.

**B.** Control measures. The fugitive dust control measures to be used, depending on applicable federal and state air quality standards, climate, existing air quality, size of the operation, and type of operation, shall include, as necessary, but not be limited, to:

(1) periodic watering of unpaved roads, with the minimum frequency of watering approved by the director;

(2) chemical stabilization of unpaved roads with proper application of nontoxic soil cement or dust palliatives;

- (3) paving of roads;
- (4) prompt removal of coal, rock, soil, and other dust-forming debris from roads and frequent scraping and compaction of unpaved roads to stabilize the road surface;
- (5) restricting the speed of vehicles to reduce fugitive dust caused by travel;
- (6) revegetating, mulching, or otherwise stabilizing the surface of all areas adjoining roads that are sources of fugitive dust;
- (7) restricting the travel of unauthorized vehicles on other than established roads;
- (8) enclosing, covering, watering, or otherwise treating loaded haul trucks and railroad cars, to reduce loss of material to wind and spillage;
- (9) substituting of conveyor systems for haul trucks and covering of conveyor systems when conveyed loads are subjected to wind erosion;
- (10) minimizing the area of disturbed land;
- (11) prompt revegetation of regraded lands;
- (12) use of alternatives for coal-hauling methods, restriction of dumping procedures, wetting of disturbed materials during handling, and compaction of disturbed areas;
- (13) planting of special windbreak vegetation at critical points in the permit area;
- (14) control of dust from drilling, using water sprays, hoods, dust collectors, or other controls;
- (15) restricting the areas to be blasted at any one time to reduce fugitive dust;
- (16) restricting activities causing fugitive dust during periods of air stagnation;
- (17) extinguishing any areas of burning or smoldering coal and periodically inspecting for burning areas whenever the potential for spontaneous combustion is high;
- (18) reducing the period of time between initially disturbing the soil and revegetating or other surface stabilization; and
- (19) restricting fugitive dust at spoil and coal transfer and loading points with water sprays, negative pressure systems and baghouse filters, chemicals, or other practices.

**C.** Additional measures. Where the director determines that application of fugitive dust control measures listed in Subsection B of 19.8.20.2050 NMAC is inadequate, the director may require additional measures and practices as necessary.

**D.** Monitoring. Air monitoring equipment shall be installed and monitoring shall be conducted in accordance with the air monitoring plan required under 19.8.9.904 NMAC and approved by the director. [11-29-97; 19.8.20.2050 NMAC - Rn, 19 NMAC 8.2.20.2050, 9-29-2000; A, 12-31-2007]

**19.8.20.2051 PROTECTION OF FISH, WILDLIFE AND RELATED ENVIRONMENTAL VALUES:**

**A.** Any person conducting surface coal mining operations shall, to the extent possible using the best technology current available, minimize disturbances and adverse impacts of the operations on fish, wildlife, and related environmental values, and achieve enhancement of such resources where practicable.

**B.** No surface coal mining operations or reclamation shall be conducted which is likely to jeopardize the continued existence of endangered or threatened species listed either by the secretary of the U.S. department of the interior, or by the New Mexico game and fish department, or which are likely to result in the destruction or adverse modification of designated critical habitats of such species in violation of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.). The operator shall promptly report to the director any state- or federally-listed endangered or threatened species within the permit area of which the operator becomes aware. Upon notification, the director shall consult with appropriate state and federal fish and wildlife agencies, and, after consultation, shall identify whether, and under what conditions, the operator may proceed.

**C.** No surface coal mining operations or reclamation shall be conducted in a manner which would result in the unlawful taking of a bald or golden eagle, its nests, or any of its eggs. The operator shall promptly report to the director any golden or bald eagle nest within the permit area of which the operator becomes aware. Upon notification, the director shall consult with the U.S. fish and wildlife service and also, where appropriate, the state fish and wildlife agency, and after consultation shall identify whether, and under what conditions, the operator may proceed.

**D.** A person who conducts surface coal mining operations shall ensure that the design and construction of electric power lines and other transmission facilities used for or incidental to the surface coal mining operations on the permit areas are in accordance with the guidelines set forth in "environmental criteria for electric transmission system" (USDI, USDA (1970)), or in alternative guidance manuals approved by the director. Distribution lines shall be designed and constructed in accordance with REA bulletin 61-10, "powerline contacts by eagles and other large birds", or in alternative guidance manuals approved by the director.

**E.** Each person who conducts surface coal mining operations shall, to the extent possible using the best technology currently available:

(1) locate and operate haul and access roads so as to avoid or minimize impacts to important fish and wildlife species or other species protected by state or federal law;

(2) fence roadways where specified by the director to guide locally important wildlife to roadway underpasses or overpasses; construction of other necessary passageways may be required by the director; no new barrier shall be created in known and important wildlife migration routes;

(3) fence, cover, or use other appropriate methods to exclude wildlife from ponds which contain hazardous concentrations of toxic-forming materials;

(4) restore, enhance where practicable or avoid disturbance to habitats of unusually high value for fish and wildlife;

(5) restore, enhance where practicable, or maintain natural riparian vegetation on the banks of streams, lakes, and other wetland areas;

(6) afford protection to aquatic communities by avoiding stream channels as required in 19.8.20.2025 and 2070 NMAC or restoring stream channels as required in 19.8.20.2012 NMAC;

(7) not use persistent pesticides on the area during surface coal mining and reclamation operations, unless approved by the director;

(8) to the extent possible prevent, control, and suppress range, forest, and coal fires which are not approved by the director as part of a management plan;

(9) if fish and wildlife habitat is to be a primary or secondary postmining land use, the operator shall in addition to the requirements of 19.8.20.2060 through 2066 NMAC of these regulations:

(a) select plant species to be used on reclaimed areas, based on the following criteria:

(i) their proven nutritional value for fish life; and

(ii) their uses as cover for fish and wildlife; and

(iii) their ability to support and enhance fish and wildlife habitat after release of bonds;

and

(b) distribute plant groupings to maximize benefit to fish and wildlife; plants should be grouped and distributed in a manner which optimizes edge effect, cover and other benefits for fish and wildlife;

(10) where cropland is to be the alternative postmining land use and where appropriate for wildlife and crop management practices, intersperse the fields with trees, hedges or fence rows throughout the harvested area to break up large blocks of monoculture and to diversify habitat types for birds and other animals; wetlands shall be preserved or created rather than drained or otherwise permanently abolished; and

(11) where the primary land use is to be residential, public service, or industrial land use, intersperse reclaimed lands with greenbelt utilizing species of grass, shrubs and trees useful as food and cover for birds and small animals, unless such greenbelt are inconsistent with the approved postmining land use.

[11-29-97; 19.8.20.2051 NMAC - Rn, 19 NMAC 8.2.20.2051, 9-29-2000]

#### **19.8.20.2052 SLIDES AND OTHER DAMAGE:**

**A.** For surface mining activities, unless demonstrated to and approved by the director that equivalent stability can be obtained through other technology, an undisturbed natural barrier shall be provided beginning at the elevation of the lowest coal seam to be mined and extending from the outslope for such distance as may be determined by the director as is needed to assure stability. The barrier shall be retained in place to prevent slides and erosion.

**B.** At any time a slide occurs which may have a potential adverse affect on public property, health, safety, or the environment, the person who conducts the surface coal mining operations shall notify the director by the fastest available means and comply with any remedial measures required by the director.

[11-29-97; 19.8.20.2052 NMAC - Rn, 19 NMAC 8.2.20.2052, 9-29-2000]

**19.8.20.2053 CONTEMPORANEOUS RECLAMATION:** Reclamation efforts, including, but not limited to, backfilling, grading, topdressing replacement and revegetation, of all land that is disturbed by surface coal mining operations shall occur as contemporaneously as practicable with mining operations.

[11-29-97; 19.8.20.2053 NMAC - Rn, 19 NMAC 8.2.20.2053, 9-29-2000]

#### **19.8.20.2054 BACKFILLING AND GRADING: GENERAL REQUIREMENTS:**

**A.** Timing of backfilling and grading.

(1) Contour mining. Rough backfilling and grading shall follow coal removal by not more than 60 days or 1,500 linear feet. The director may grant additional time or distance for rough backfilling and grading if the permittee can demonstrate, on the basis of the materials submitted under Paragraph (3) of Subsection B of 19.8.9.906 NMAC, that additional time or distance is necessary.

(2) Open pit mining. Rough backfilling and grading shall occur in accordance with the time schedule approved by the director, on the basis of the materials submitted under Paragraph (3) of Subsection B of 19.8.9.906 NMAC, which shall establish in specific increments the period between removal of coal and completion of backfilling and grading.

(3) Strip mining. Rough backfilling and grading shall be completed within 180 days following coal removal and shall not be more than four spoil ridges behind the pit being worked, the spoil from the active pit being considered the first ridge. The director may grant additional time or distance for rough backfilling and grading if the permittee can, on the basis of the materials submitted under Paragraph (3) of Subsection B of 19.8.9.906 NMAC, that additional time or distance is necessary; and

(4) Surface areas disturbed incident to underground mining activities shall be backfilled and graded in accordance with the time schedule approved by the director as a condition of the permit.

(5) Final pit at completion of mining. Rough backfilling and grading shall occur in accordance with a time schedule approved by the director based on materials submitted under Paragraph (3) of Subsection B of 19.8.9.906 NMAC.

**B. Method for backfilling and grading.**

(1) Except as specifically exempted in 19.8.20 NMAC, all disturbed areas shall be returned to their approximate original contour. All spoil shall be transported, backfilled, compacted (where advisable to insure stability or to prevent leaching) and graded to eliminate all spoil piles, depressions and highwalls except:

(a) as provided for in Paragraph (2) of Subsection A of 19.8.20.2055 NMAC;

(b) if small depressions are needed in order to retain moisture to assist revegetation as authorized by the director pursuant to Subsection C of 19.8.20.2055 NMAC.

(2) Backfilled material shall be placed to minimize adverse effects on ground water, minimize off-site effects, and to support the approved postmining land use.

(3) The postmining graded slopes needed not be of uniform slope.

(4) Cut-and-fill terraces may be used only in those situations expressly identified in 19.8.20.2055 NMAC.

[11-29-97; A, 12-15-99; 19.8.20.2054 NMAC - Rn, 19 NMAC 8.2.20.2054, 9-29-2000]

**19.8.20.2055 BACKFILLING AND GRADING: GENERAL GRADING REQUIREMENTS:**

**A.** The final graded slopes shall not exceed in grade either the approximate premining slopes, or any lesser slopes approved by the director based on consideration of soil, climate, or other characteristics of the surrounding area. Postmining final graded slopes need not be uniform but shall approximate the general nature of the premining topography. The person who conducts surface coal mining operations shall, at a minimum:

(1) retain all overburden and spoil on the solid portion of existing or new benches; and

(2) backfill and grade to the most moderate slope possible, to eliminate the highwall which does not exceed either the angle of repose or such lesser slope as is necessary to achieve a minimum static safety factor of 1.3. In all cases the highwall shall be eliminated unless retention of portions of the highwall is approved by the director, if the operator demonstrates that:

(a) it will have a static safety factor of 1.3;

(b) it will not pose a hazard to persons or wildlife in the area;

(c) it will be backfilled to cover the uppermost minable coal seam to a minimum depth of 4 feet;

(d) the retained portion left standing shall not exceed pre-existing cliff lengths. However, the director may require shorter lengths.

(e) it is necessary to replace cliff type habitats that existed in the natural topography prior to mining; and

(f) the ends of the highwall portions left standing will be contoured into the surrounding topography with slopes of 3:1 or less. Retention of any portion of the highwall must be approved by the director.

(3) spoil, except excess spoil disposed of in accordance with 19.8.20.2034 through 2037 NMAC, shall be returned to the mined-out area.

(4) spoil and waste materials shall be compacted where advisable to ensure stability or to prevent leaching of toxic materials.

(5) spoil may be placed on the area outside the mind-out area in non-steep slope areas to restore the approximate original contour by blending the spoil into the surrounding terrain if the following requirements are met:

- (a) all vegetative and organic material shall be removed from the area.
- (b) the topsoil on the area shall be removed, segregated, stored and redistributed in accordance with 19.8.20.2005 through 2007 NMAC.
- (c) the spoil shall be backfilled and graded on the area in accordance with the requirements of 19.8.20 NMAC.

**B.** On approval by the director in order to conserve soil moisture, ensure stability, and control erosion on final graded slopes, cut-and-fill terraces may be allowed, if the terraces are compatible with the approved postmining land use and are appropriate substitutes for construction of lower grades on the reclaimed lands. The terraces shall meet the following requirements:

(1) The width of the individual terrace bench shall not exceed 20 feet, unless specifically approved by the director as necessary for stability, erosion control, or roads included in the approved postmining land use plan.

(2) The vertical distance between terraces shall be as specified by the director, to prevent excessive erosion and to provide long-term stability.

(3) The slope of the terrace outslope shall not exceed 1v:3h (33 1/3 percent). Outsoles which exceed 1v:3h (33 1/3 percent) may be approved if they provide adequate control over erosion and closely resemble the surface configuration of land prior to mining. In no case may highwalls be left as part of terraces.

(4) Culverts and underground rock drains shall be used on the terrace only when approved by the director.

**C.** Small depressions may be constructed, if they:

(1) are approved by the director to minimize erosion, conserve soil moisture, create or enhance wildlife habitat, or promote vegetation;

(2) do not restrict normal access; and

(3) are not inappropriate substitutes for lower grades on the reclaimed lands.

**D.** All surface coal mining operations on slopes averaging above 20 degrees, or on lesser slopes that the director defines as steep slopes shall meet the provisions of 19.8.26 NMAC.

**E.** All final grading preparation of overburden before replacement of topdressing and placement of topdressing, shall be done along the contour to minimize subsequent erosion and instability. If such grading, preparation, or placement along the contour is hazardous to equipment operators, then grading, preparation, or placement in a direction other than generally parallel to the contour may be used. In all cases, grading, preparation, or placement shall be conducted in a manner which minimizes erosion and provides a surface for replacement of topdressing which will minimize slippage.

**F.** Remining operations on previously mined areas that contain a preexisting highwall shall comply with the requirements of 19.8.20.2054 through 2058 NMAC, except as provided in 19.8.20 NMAC.

**G.** The requirements of Subsection A of 19.8.20.2055 NMAC requiring the elimination of highwalls shall not apply to remining operations where the volume of all reasonably available spoil is demonstrated in writing to the director to be insufficient to completely backfill the reaffected or enlarged highwall. The highwall shall be eliminated to the maximum extent technically practical in accordance with the following criteria:

(1) all spoil generated by the remining operation and any other reasonably available spoil shall be used to backfill the area; reasonably available spoil in the immediate vicinity of the remining operation shall be included within the permit area;

(2) the backfill shall be graded to a slope which is compatible with the approved postmining land use and which provides adequate drainage and long-term stability;

(3) any highwall remnant shall be stable and not pose a hazard to the public health and safety or to the environment; the operator shall demonstrate, to the satisfaction of the director, that the highwall remnant is stable;

(4) spoil placed on the outslope during previous mining operations shall not be disturbed if such disturbances will cause instability of the remaining spoil or otherwise increase the hazard to the public health and safety to the environment.

[11-29-97; 19.8.20.2055 NMAC - Rn, 19 NMAC 8.2.20.2055, 9-29-2000]

#### **19.8.20.2056 BACKFILLING AND GRADING: COVERING COAL AND ACID- AND TOXIC-FORMING MATERIALS:**

**A.** Exposed coal seams, acid- and toxic-forming materials, and combustible materials exposed, used, or produced during surface coal mining and reclamation operations shall be adequately covered with non-toxic and non-combustible materials, or treated, to control the impact on surface and ground water in accordance with 19.8.20.2009 NMAC to prevent sustained combustion, and to minimize adverse effects on plant growth and the approved postmining land use.

**B.** Where necessary to protect against adverse effects on plant growth and the approved post-mining land use from upward migration of salts, exposure by erosion, formation of acid or toxic seeps, to provide an adequate depth for plant growth, or otherwise to meet local conditions, the director shall specify thicker amounts of cover using non-toxic material, or special compaction and isolation from ground water contact.

**C.** Acid-forming or toxic-forming material shall not be buried or stored in proximity to a drainage course so as to cause or pose a threat of water pollution.

[11-29-97; 19.8.20.2056 NMAC - Rn, 19 NMAC 8.2.20.2056, 9-29-2000; A, 12-31-2007]

**19.8.20.2057 BACKFILLING AND GRADING: THIN OVERBURDEN:**

**A.** The provisions of 19.8.20.2057 NMAC apply only where the overburden thickness times the swell factor, plus the thickness of other available waste materials, is less than the combined thickness of the overburden and coal bed prior to removing the coal and only when surface mining activities cannot be carried out to comply with 19.8.20.2054 NMAC to achieve the approximate original contour.

**B.** In surface mining activities carried out continuously in the same limited pit area for more than 1 year from the day coal-removal operations begin and where the volume of all available spoil and suitable waste materials over the permit area is demonstrated to be insufficient to achieve the approximate original contour of the lands disturbed, surface mining activities shall be conducted to meet, at a minimum, the following standards:

(1) haul or convey, backfill, and grade, using all available spoil and suitable waste materials from the entire mine area, to attain the lowest practicable stable grade, to achieve a static safety factor of 1.3, and to provide adequate drainage and long- term stability of the regraded areas and cover all acid-forming and toxic-forming materials.

(2) except as provided in Paragraph (2) of Subsection A of 19.8.20.2055 NMAC, eliminate highwalls by grading or backfilling to stable slopes not exceeding 1v:2h (50 percent), or such lesser slopes as the director may specify to reduce erosion, maintain the hydrologic balance, or allow the approved postmining land use.

(3) haul or convey, backfill, grade, and revegetate in accordance with 19.8.20.2060 through 2066 NMAC, to achieve an ecologically sound land use compatible with the prevailing use in unmined areas surrounding the permit area; and

(4) haul or convey, backfill, and grade, to ensure impoundments are constructed only where:

(a) it has been demonstrated to the director's satisfaction that all requirements of 19.8.20.2009 through 2024 NMAC have been met; and

(b) the impoundments have been approved by the director as suitable for the approved postmining land use and as meeting the requirements of 19.8.20 NMAC and all other applicable federal and state laws and regulations.

[11-29-97; 19.8.20.2057 NMAC - Rn, 19 NMAC 8.2.20.2057, 9-29-2000; A, 1-15-2002]

**19.8.20.2058 BACKFILLING AND GRADING: THICK OVERBURDEN:**

**A.** The provisions of 19.8.20.2058 NMAC apply only where the overburden thickness times the swell factor exceeds the combined thickness of the overburden and coal bed prior to removing the coal and only when surface mining activities cannot be carried out to comply with 19.8.20.2054 NMAC to achieve the approximate original contour.

**B.** In surface mining activities where the volume of spoil over the permit area is demonstrated to be more than sufficient to achieve the approximate original contour, surface mining activities shall be conducted to meet, at a minimum, the following standards:

(1) haul or convey, backfill, and grade all spoil and wastes, not required to achieve the approximate original contour of the permit area, to the lowest practicable grade, to achieve a static factor of safety of 1.3 and cover all acid-forming and other toxic- forming materials;

(2) haul or convey, backfill, and grade excess spoil and wastes only within the permit area and dispose of such materials in accordance with 19.8.20.2034 through 2037 NMAC;

(3) haul or convey, backfill, and grade excess spoil and wastes to maintain the hydrologic balance, in accordance with 19.8.20.2009 through 2025 NMAC and to provide long-term stability by preventing slides, erosion and water pollution;



(4) haul or convey, backfill, grade and revegetate wastes and excess spoil to achieve an ecologically sound land use approved by the director as compatible with the prevailing land uses in unmined areas surrounding the permit area;

(5) except as provided for in Paragraph (2) of Subsection A of 19.8.20.2055 NMAC and Paragraph (1) of Subsection B of 19.8.20.2053 NMAC, eliminate all highwalls and depressions by backfilling with spoil and suitable waste materials; and

(6) meet the revegetation requirements of 19.8.20.2060 through 2066 NMAC for all disturbed areas. [11-29-97; Rn, 19.8.20.2058 NMAC - 19 NMAC 8.2.20.2058, 9-29-2000; A, 1-15-2002]

**19.8.20.2059 REGRADING OR STABILIZING RILLS AND GULLIES:**

**A.** All exposed surface areas shall be protected and stabilized to effectively control erosion and air pollution attendant to erosion.

**B.** Rills and gullies, which form in areas that have been regraded and topsoiled and which either (1) disrupt the approved postmining land use or the re-establishment of the vegetative cover, or (2) cause or contribute to a violation of water quality standards for receiving streams shall be filled, regraded, or otherwise stabilized; topsoil shall be replaced; and the areas shall be reseeded or replanted.

**C.** If it can be demonstrated to the director through acceptable data, that erosion rates on the reclaimed and revegetated area are equal to or less than the erosion rates of surrounding undisturbed land under proper management of equal area, slope, soil type and depth, and that the rills and gullies will not affect compliance with all applicable parts of 19.8 NMAC, the director may waive the requirement of Subsection B of 19.8.20.2059 NMAC.

[11-29-97; 19.8.20.2059 NMAC - Rn, 19 NMAC 8.2.20.2059, 9-29-2000]

**19.8.20.2060 REVEGETATION: GENERAL REQUIREMENTS:**

**A.** Each person who conducts surface coal mining operations shall establish on all affected land a diverse, effective, and permanent vegetative cover of the same aspection native to the area of disturbed land or species that supports the approved postmining land use. For areas designated as prime farmland, the requirements of 19.8.24 NMAC shall apply.

**B.** All revegetation shall be in compliance with the plans submitted under 19.8.9.906 NMAC and 19.8.9.908 NMAC, as approved by the director in the permit, and carried out in a manner that encourages a prompt vegetative cover and recovery of productivity levels compatible with the approved postmining land use.

(1) All disturbed land, except water areas and surface areas of roads that are approved as a part of the postmining land use, shall be seeded or planted to achieve a permanent vegetative cover of the same aspection native to the area of disturbed land.

(2) The vegetative cover shall be capable of stabilizing the soil surface from erosion.

(3) Vegetative cover shall be considered of the same aspection when it consists of a mixture of species of equal or superior utility for the approved postmining land use, when compared with the utility of naturally occurring vegetation during each season of the year.

(4) If both the premining and postmining land uses are cropland, the reclaimed land shall have the capability of meeting or exceeding the pre-mining crop production.

**C.** The re-established plant species shall:

(1) be compatible with the approved postmining land use;

(2) have the same seasonal characteristics of growth as the original vegetation;

(3) be capable of self-regeneration and plant succession;

(4) be compatible with the plant and animal species of the area; and

(5) meet the requirements of applicable state and federal seed, poisonous and noxious plant, and introduced species laws or regulations.

[11-29-97; 19.8.20.2060 NMAC - Rn, 19 NMAC 8.2.20.2060, 9-29-2000]

**19.8.20.2061 REVEGETATION: USE OF INTRODUCED SPECIES:** Introduced species may be substituted for native species only if approved by the director under the following conditions:

**A.** after appropriate field trials have demonstrated that the introduced species are desirable and necessary to achieve the approved postmining land use;

**B.** the species are necessary to achieve a quick, temporary, and stabilizing cover that aids in controlling erosion; and measures to establish permanent vegetation are included in the approved plan submitted under Paragraph (3) of Subsection B of 19.8.9.906 and 19.8.9.908;

- C. introduced species must meet the requirements of Subsection C of 19.8.20.2060 NMAC;
  - D. the species meet the requirements of applicable state and federal seed, poisonous and noxious plant, and introduced species laws or regulations.
- [11-29-97; 19.8.20.2061 NMAC - Rn, 19 NMAC 8.2.20.2061, 9-29-2000]

**19.8.20.2062 REVEGETATION: TIMING:** Seeding and planting of disturbed areas shall be conducted during the first normal period for favorable planting conditions after final preparation. The normal period for favorable planting shall be that planting time generally accepted locally for the type of plant materials selected. When necessary to effectively control erosion, any disturbed area shall be seeded and planted, as contemporaneously as practicable with the completion of backfilling and grading, with a temporary cover of small grains, grasses, or legumes until a permanent cover is established.

[11-29-97; 19.8.20.2062 NMAC - Rn, 19 NMAC 8.2.20.2062, 9-29-2000]

**19.8.20.2063 REVEGETATION: MULCHING AND OTHER SOIL STABILIZING PRACTICES:**

- A. Suitable mulch and other soil stabilizing practices shall be used on all regraded and topdressed areas to control erosion, promote germination of seeds, or increase the moisture retention capacity of the soil. The director 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 19.8.20.2065 NMAC and do not cause or contribute to air or water pollution.
  - B. When required by the director mulches shall be mechanically or chemically anchored to the soil surface to assure effective protection of the soil and vegetation.
  - C. Annual grasses and grains may be use alone, as in situ mulch, or in conjunction with another mulch, when the director determines that they will provide adequate soil erosion control and will later be replaced by perennial species approved for the postmining land use.
  - D. Chemical soil stabilizers alone, or in combination with appropriate mulches, may be used in conjunction with vegetative covers approved for the postmining land use.
- [11-29-97; 19.8.20.2063 NMAC - Rn, 19 NMAC 8.2.20.2063, 9-29-2000]

**19.8.20.2064 REVEGETATION: GRAZING:** When the approved postmining land use is range or pasture land, the operator shall demonstrate to the director, that the reclaimed land has the capability of supporting livestock grazing at rates approximately equal to that for similar non-mined lands for at least two of the last four full years of liability required under Subsection B of 19.8.20.2065 NMAC.

[11-29-97; 19.8.20.2064 NMAC - Rn, 19 NMAC 8.2.20.2064 & A, 9-29-2000]

**19.8.20.2065 REVEGETATION: STANDARDS FOR SUCCESS:**

- A. Success of revegetation shall be measured by techniques identified in the director's "coal mine reclamation program vegetation standards", as approved by the director after consultation with appropriate state and federal agencies. Comparison of ground cover and productivity shall be made on the basis of reference areas or technical standards developed using an historic record of premining conditions.
- B. Liability period, ground cover and productivity standards, and normal husbandry practices.
  - (1) Ground cover and productivity of living plants on the revegetated area within the permit area shall be equal to the ground cover and productivity of living plants on the approved reference area or to technical standards developed in accordance with the "coal mine reclamation program vegetation standards", as approved by the director. The period of extended responsibility under the performance bond requirements of 19.8.14 NMAC begins after the last year of augmented seeding, fertilizing, irrigation, or other work, excluding husbandry practices that are approved by the director in accordance with Paragraph (6) of Subsection B of 19.8.20.2065 NMAC.
  - (2) In areas of more than 26.0 inches average annual precipitation, the period of liability under the performance bond requirements of 19.8.14 NMAC shall continue for not less than five full years. Ground cover and productivity shall equal or exceed the approved standard for two of the last four years of the responsibility period.
  - (3) In areas of less than or equal to 26.0 inches average annual precipitation, the period of liability under the performance bond requirements of 19.8.14 NMAC shall continue for not less than 10 full years. Ground cover and productivity shall equal the approved standard for at least two of the last four years, starting no sooner than year eight of the responsibility period.
  - (4) For purposes of Paragraphs (1), (2) and (3) of Subsection B of 19.8.20.2065 NMAC, the average annual precipitation can be determined either:

(a) by interpolation, using standard techniques, from mean annual precipitation map, page 97, "the national atlas of the United States", U.S. department of the interior, geological survey, 1970; or from "climatic atlas of the United States", U.S. department of commerce, national oceanic and atmospheric administration, 1974; or from long-term precipitation averages from climatological data, U.S. department of commerce, national oceanic and atmospheric administration; or from other official records; or

(b) based on at least 10 years of continuous and reliable precipitation records from stations located in or adjacent to the permit area.

(5) The ground cover and productivity of the revegetated area shall be considered equal if they are at least 90 percent of the ground cover and productivity of the reference area with 90 percent statistical confidence, or ground cover, productivity, or shrubland stocking are at least 90 percent of the standards developed under Subsection A of 19.8.20.2065 NMAC for an historic record. Exceptions may be authorized by the director under the following standards:

(a) for previously mined areas that were not reclaimed to the requirements of 19.8.20 NMAC, as a minimum the ground cover of living plants shall not be less than can be supported by the best available topdressing in the reaffected area, shall not be less than the ground cover existing before redisturbance, and shall be adequate to control erosion;

(b) for areas to be developed for industrial or residential use less than 2 years after regrading is completed, the ground cover of living plants shall not be less than required to control erosion; and

(c) for areas to be used for cropland, success in revegetation of cropland shall be determined on the basis of crop production from the mined area as compared to approved reference areas or other technical guidance procedures; crop production from the mined area shall be equal to or greater than that of the approved standard for two of the last four growing seasons of the 5 or 10 year liability period established in Paragraphs (1), (2) and (3) of Subsection B of 19.8.20.2065 NMAC, starting no sooner than year eight of the 10-year liability period; the applicable 5 or 10 year period of responsibility for revegetation shall commence at the date of initial planting of the crop being grown;

(d) on areas to be developed for fish and wildlife management, recreation, shelterbelts or forestland, success of vegetation shall be determined on the basis of tree, shrub, or half-shrub stocking and ground cover; the tree, shrub, or half-shrub stocking shall meet the standards described in 19.8.20.2066 NMAC; vegetative ground cover shall not be less than that required by the director under Subsections A and B of 19.8.20.2065 NMAC to meet the post mining land use; 19.8.20.2065 NMAC shall determine the responsibility period and the frequency of ground cover measurement.

(6) The director has the discretion to approve selective husbandry practices without extending the period of responsibility for revegetation success or bond liability. Husbandry practices are those activities that can be expected to continue as part of the post mining land use, and are employed within the region for unmined lands having land uses similar to the approved postmining land use of the disturbed area, to control disease, pest and vermin and appropriate pruning, reseeding, and transplanting activities. Practices may also be allowed that will not reduce the probability of permanent revegetative success if they are discontinued after the liability period expires. Any practice the director determines to be augmented seeding, fertilization or irrigation shall not be considered a husbandry practice.

C. The person who conducts surface coal mining operations shall:

(1) maintain any necessary fences and proper management practices; and

(2) conduct periodic measurements of vegetation, soils, and water prescribed or approved by the director, to identify conditions during the applicable period of liability specified in Subsection B of 19.8.20.2065 NMAC.

[11-29-97; A, 12-15-99; 19.8.20.2065 NMAC - Rn, 19 NMAC 8.2.20.2065 & A, 9-29-2000; A, 12-31-2007]

**19.8.20.2066 REVEGETATION: TREE AND SHRUB STOCKING:** 19.8.20.2066 NMAC sets forth forest resource conservation standards for reforestation operations to ensure that a cover of commercial tree species, noncommercial tree species, shrubs, or half-shrubs is established for the development of fish and wildlife habitat, recreation, shelterbelts or forestry after surface coal mining operations. Trees and shrubs used in determining the success of stocking and the adequacy of plant arrangement shall have utility for the approved postmining land use.

A. At a minimum, at the time of final bond release, at least 80 percent of all trees and shrubs used to determine revegetation success has been in place for at least 60 percent of the applicable minimum period of responsibility.

B. Stocking, i.e., the number of stems per unit area, will be determined using the following criteria:

(1) root crown or root sprouts more than 1 foot in height shall count as one toward meeting the stocking requirements; where multiple stems occur only the tallest stem will be counted;

(2) a countable tree or shrub means a tree that can be used in calculating the degree of stocking under the following criteria:

- (a) the tree or shrub shall be in place at least 2 growing seasons;
- (b) the tree or shrub shall be alive and healthy; and
- (c) the tree or shrub shall have at least one-third of its length in live crown;

(3) rock areas, which replace similar natural features, permanent road and surface water drainage ways on the revegetated area shall not require stocking.

**C.** The following are the minimum performance standards for areas where commercial forest land is the approved postmining land use:

(1) the area shall have a minimum stocking of trees or shrubs as determined by the state forester on a permit specific basis;

(2) a minimum of 75 percent of countable trees or shrubs shall be commercial tree species;

(3) the number of trees or shrubs and the ground cover shall be determined using procedures described in Subparagraph (d) of Paragraph (5) of Subsection B of 19.8.20.2065 NMAC and Subsection B of 19.8.20.2066 NMAC and the sampling methods approved by the director;

(4) upon expiration of the 5 or 10 year responsibility period and at the time of request for bond release, each permittee shall provide documentation showing that the stocking of trees and shrubs and the groundcover on the revegetated area satisfies 19.8.20.2065 and 2066 NMAC.

**D.** The following are the minimum performance standards for areas where woody plants are used for wildlife management, recreation, shelter belts, or forest uses other than commercial forest land:

(1) an inventory of trees, half-shrubs and shrubs shall be conducted to comply with 19.8.8.808 NMAC and 19.8.20.2060 NMAC according to methods approved by the director after consultation with and approval by the state forester and the department of game and fish; this inventory shall contain, but not be limited to:

- (a) site quality;
- (b) stand size;
- (c) stand condition;
- (d) site and species relations; and
- (e) appropriate forest land utilization considerations.

(2) the stocking of trees, half-shrubs, shrubs, and the ground cover established on the revegetated area shall approximate the inventory pursuant to Subparagraph (d) of Paragraph (5) of Subsection B of 19.8.20.2065 NMAC and Paragraph (1) of Subsection D of 19.8.20.2066 NMAC and shall utilize local and regional recommendations regarding species composition, spacing and planting arrangement and shall be approved the director in consultation with and approval of the appropriate state agency responsible for the administration of forestry and wildlife programs, on a permit specific basis;

(3) upon expiration of the 5 or 10 year responsibility period and at the time of request for bond release, each permittee shall provide documentation showing that:

(a) the woody plants established on the revegetated site are equal to or greater than 90 percent of the stocking of live woody plants of the same life form ascertained pursuant to Subsection B of 19.8.20.2066 NMAC with 90 percent statistical confidence, using an appropriate (parametric or nonparametric) one-tail test with a 10 percent alpha error; and

(b) the groundcover on the revegetated area satisfies Subparagraph (d) of Paragraph (5) of Subsection B of 19.8.20.2065 NMAC; species diversity, aspection and regenerative capacity of the vegetation of the revegetated area shall be evaluated on the basis of the results which could reasonably be expected using the revegetation methods described in the mining and reclamation plan.

[11-29-97; 19.8.20.2066 NMAC - Rn, 19 NMAC 8.2.20.2066, 9-29-2000; A, 12-31-2007]

#### **19.8.20.2067 SUBSIDENCE CONTROL: GENERAL REQUIREMENTS:**

**A.** The permittee must either adopt measures consistent with known technology that prevent subsidence from causing material damage to the extent technologically and economically feasible, maximize mine stability, and maintain the value and reasonably foreseeable use of surface lands or adopt mining technology that provides for planned subsidence in a predictable and controlled manner.

**B.** If a permittee employs mining technology that provides for planned subsidence in a predictable and controlled manner, the permittee must take necessary and prudent measures, consistent with the mining method employed, to minimize material damage to the extent technologically and economically feasible to non-commercial

buildings and occupied residential dwellings and structures related thereto except that measures required to minimize material damage to such structures are not required if:

- (a) the permittee has the written consent of their owners, or;
- (b) unless the anticipated damage would constitute a threat to health or safety, the costs of such measures exceed the anticipated costs of repair.

C. Nothing in 19.8.20 NMAC prohibits the standard method of room-and-pillar mining.

D. The person engaged in underground mining activities shall comply with all provisions of the subsidence control plan prepared pursuant to 19.8.9.918 NMAC and approved by the director.

[11-29-97; 19.8.20.2067 NMAC - Rn, 19 NMAC 8.2.20.2067, 9-29-2000]

**19.8.20.2068 SUBSIDENCE CONTROL: PUBLIC NOTICE:** The mining schedule shall be distributed by mail to all owners of property and residents residing within the permit area above the underground workings and adjacent areas. Each such person shall be notified by mail at least six months prior to mining beneath his property or residence. The notification shall contain, at a minimum:

- A. identification of specific areas in which mining will take place;
- B. dates that specific areas will be undermined; and
- C. the location or locations where the operator's subsidence control plan may be examined.

[11-29-97; 19.8.20.2068 NMAC - Rn, 19 NMAC 8.2.20.2068, 9-29-2000; A, 12-31-2007]

**19.8.20.2069 SUBSIDENCE CONTROL: SURFACE OWNER PROTECTION:**

A. The permittee must correct any material damage resulting from subsidence caused to surface lands, to the extent technologically and economically feasible, by restoring the land to a condition capable of maintaining the value and reasonably foreseeable uses that it was capable of supporting before subsidence damage.

B. The permittee must promptly replace any drinking, domestic or residential water supply that is contaminated, diminished or interrupted by underground mining activities conducted after October 24, 1992, if the affected well or spring was in existence before the date the regulatory authority received the permit application for the activities causing the loss, contamination or interruption. The baseline hydrologic information required in 19.8.9.907 NMAC will be used to determine the impact of mining activities upon the water supply.

C. The permittee must promptly repair, or compensate the owner for, material damage resulting from subsidence caused to any non-commercial building or occupied residential dwelling or associated structures that existed at the time of mining. If repair option is selected, the permittee must fully rehabilitate, restore or replace the damaged structure. If compensation is selected, the permittee must compensate the owner of the damaged structure for the full amount of the decrease in value resulting from the subsidence-related damage. The permittee may provide compensation by the purchase, before mining, of a non-cancelable premium-prepaid insurance policy. The requirements of Subsection C of 19.8.20.2069 NMAC apply only to subsidence-related damage caused by underground mining activities conducted after October 24, 1992.

D. The permittee must, to the extent required under applicable provisions of state law, either correct material damage resulting from subsidence caused to any structures or facilities not protected by Subsection C of 19.8.20.2069 NMAC by repairing the damage or compensate the owner of the structures or facilities for the full amount of the decrease in value resulting from the subsidence. Repair of damage includes rehabilitation, restoration, or replacement of damaged structures or facilities. Compensation may be accomplished by the purchase before mining of a non-cancelable premium-prepaid insurance policy.

[11-29-97; 19.8.20.2069 NMAC - Rn, 19 NMAC 8.2.20.2069, 9-29-2000]

**19.8.20.2070 SUBSIDENCE CONTROL: REBUTTAL PRESUMPTION OF CAUSATION FOR DAMAGE FROM SUBSIDENCE:**

A. If damage to any non-commercial building or occupied residential dwelling or associated structure occurs as a result of earth movement within an area determined by projecting a specified angle of draw from the outermost boundary of any underground mine workings to the surface of the land, a rebuttal presumption exists that the permittee caused the damage. The presumption will normally apply to a 30 degree angle of draw. A state regulatory authority may amend its program to apply the presumption to a different angle of draw if the regulatory authority shows in writing that the angle has a more reasonable basis than the 30 degree angle of draw, based on geotechnical analysis of the factors affecting potential surface impacts of underground coal mining operations.

B. A permittee or permit applicant may request that the presumption apply to a different angle of draw. The director may approve a request to vary from the 30-degree angle of draw based on a site-specific analysis submitted by an applicant. To establish a site-specific angle of draw, an applicant must demonstrate and the director

must determine in writing that the proposed angle of draw has a more reasonable basis than the standard in Subsection A of 19.8.20.2070 NMAC, based on a site-specific geotechnical analysis of the potential surface impacts of the mining operation.

**C.** If the permittee was denied access to the land or property for the purpose of conducting the pre-subsidence survey in accordance with Subsection A of 19.8.9.918 NMAC, no rebuttal presumption will exist.

**D.** The presumption will be rebutted if, for example, the evidence establishes that:

(1) the damage predated the mining in question;

(2) the damage was proximately caused by some other factor or factors and was not proximately caused by subsidence; or,

(3) the damage occurred outside the surface area within which subsidence was actually caused by the mining in question.

**E.** In any determination whether damage to protected structures was caused by subsidence from underground mining, all relevant and reasonably available information will be considered by the regulatory authority.

[11-29-97; N, 12-15-99; 19.8.20.2070 NMAC - Rn, 19 NMAC 8.2.20.2070, 9-29-2000]

#### **19.8.20.2071 SUBSIDENCE CONTROL: BUFFER ZONES:**

**A.** Underground mining activities shall not be conducted beneath or adjacent to any perennial stream or impoundment having a storage volume of 20 acre-feet or more, unless the director, on the basis of detailed subsurface information, determines that subsidence will not cause material damage, or a reduction in a reasonably foreseeable use, to streams, water bodies and associated structures. If subsidence causes material damage, then measures will be taken to the extent technologically and economically feasible to correct the damage and to prevent additional subsidence from occurring. The director may suspend the underground mining until the subsidence control plan is modified to ensure prevention of further material damage to such features or facilities.

**B.** Underground mining activities beneath any aquifer, perennial stream or water body that serves as a significant source of water supply to a public water system shall be conducted so as to avoid disruption of the aquifer and consequent exchange of ground water between the aquifer and other strata. The director will prohibit mining in the vicinity of the aquifer or limit the percentage of coal extraction to protect the aquifer and other water supply, unless a finding can be made, based on detailed documentation, that subsidence will not cause material damage to, or reduce the reasonably foreseeable use of these features.

**C.** Underground mining activities shall not be conducted beneath or in close proximity to any public buildings, including but not limited to churches, schools, hospitals, courthouses and government offices, unless the director, on the basis of detailed subsurface information, determines that subsidence from those activities will not cause material damage, or reduce a reasonably foreseeable use, to these structures and specifically authorizes the mining activities.

**D.** The director shall suspend underground coal mining under urbanized areas, cities, towns, and communities and adjacent to industrial or commercial buildings, major impoundments or perennial streams, if imminent danger is found to inhabitants of urbanized areas, cities, towns or communities.

[11-29-97; Rn, 19 NMAC 8.2.20.2070, 12-15-99; 19.8.20.2071 NMAC - Rn, 19 NMAC 8.2.20.2071 & A, 9-29-2000]

#### **19.8.20.2072 SUBSIDENCE CONTROL: ADJUSTMENT OF BOND AMOUNT FOR SUBSIDENCE DAMAGE:**

**A.** When subsidence-related material damage occurs to land, structures or facilities, or contamination, diminution, or interruption to a water supply protected under Subsections A through D of 19.8.20.2069 NMAC, the director must require the permittee to obtain additional performance bond in the amount of the estimated cost of the repairs if the permittee will be repairing, or in the amount of the decrease in value if the permittee will be compensating the owner, or in the amount of the estimated cost to replace the protected water supply if the permittee will be replacing the water supply, until the repair, compensation, or replacement is completed. If repair, compensation, or replacement is completed within 90 days of the occurrence of damage, no additional bond is required. The regulatory authority may extend the 90-day time frame, but not to exceed one year, if the permittee demonstrates and the regulatory authority finds in writing that subsidence is not complete, that not all probable subsidence-related material damage has occurred to lands or protected structures, or that not all reasonably anticipated changes have occurred affecting the protected water supply, and that therefore it would be unreasonable to complete within 90 days the repair of the subsidence-related material damage to lands or protected structures, or the replacement of protected water supply.

**B.** [Reserved]

[11-29-97; N, 12-15-99; 19.8.20.2072 NMAC - Rn, 19 NMAC 8.2.20.2072, 9-29-2000]

**19.8.20.2073 CESSATION OF OPERATIONS: TEMPORARY:**

**A.** Each person who conducts surface coal mining operations shall effectively secure surface facilities and support and maintain any surface access openings to underground operations in areas in which there are no current operations, but in which operations are to be resumed under an approved permit. Temporary abandonment shall not relieve a person of his obligation to comply with any provisions of the approved permit.

**B.** Before temporary cessation of mining and reclamation operations for a period of thirty days or more, or as soon as it is known that a temporary cessation will extend beyond 30 days, persons who conduct surface coal mining operations shall submit to the director a notice of intention to cease or abandon mining and reclamation operations. This notice shall include a statement of the exact number of acres, and for underground mines the horizontal and vertical extent of subsurface strata which will have been affected in the permit area, prior to such temporary cessation, the extent and kind of reclamation of those areas which will have been accomplished and identification of the backfilling, regrading, revegetation, environmental monitoring, underground opening closures, and water treatment activities that will continue in the temporary cessation.

**C.** At the director's discretion, the permittee may be directed to take other reasonable actions consistent with 19.8 NMAC to ensure the protection of public safety and the environment while the operation is under temporary cessation.

**D.** No temporary cessation of mining and reclamation operations shall extend beyond the current permit term, unless the director approves an extension of the temporary cessation during the permit renewal process conducted in accordance with 19.8.13 NMAC.

**E.** To continue under a temporary cessation beyond an existing permit term, the permittee must demonstrate that the mining operation has a reasonable expectation of continuing operations.

**F.** A temporary cessation may not be used to justify a lengthy delay to final reclamation or to preserve facilities beyond what may be considered appropriate for its use in association with an existing permit.

[11-29-97; Rn, 19 NMAC 8.2.20.2071, 12-15-99; 19.8.20.2073 NMAC - Rn, 19 NMAC 8.2.20.2073, 9-29-2000; A, 7-30-2004]

**19.8.20.2074 CESSATION OF OPERATIONS: PERMANENT:**

**A.** Persons who cease surface coal mining operations permanently shall close or backfill or otherwise permanently reclaim all affected areas, in accordance with 19.8.2074 NMAC and the permit approved by the director.

**B.** All underground openings, equipment, structures, or other facilities not required for monitoring, unless approved by the director as suitable for the postmining land use or environmental monitoring, shall be removed and the affected land reclaimed.

**C.** [Reserved]

**D.** [Reserved]

**E.** [Reserved]

**F.** [Reserved]

[11-29-97; Rn, 19 NMAC 8.2.20.2072, 12-15-99; 19.8.20.2074 NMAC - Rn, 19 NMAC 8.2.20.2074, 9-29-2000]

**19.8.20.2075 POSTMINING LAND USE:**

**A.** General. All surface land areas affected shall be restored in a timely manner:

(1) to conditions that are capable of supporting the uses which they were capable of supporting before any mining; or

(2) to higher or better uses achievable under criteria and procedures of 19.8.2075 NMAC.

**B.** Determining premining use of land. The premining uses of land to which the postmining land use is compared shall be those uses which the land previously supported, if the land had not been previously mined and had been properly managed.

(1) The postmining land use for land that has been previously mined and not reclaimed shall be judged on the basis of a use which the land was capable of supporting prior to all previous mining, that is compatible with the surrounding areas.

(2) The postmining land use for land that has received improper management shall be judged on the basis of the premining use of surrounding lands that have received proper management.

(3) If the premining use of the land was changed within 5 years of the beginning of mining, the comparison of postmining use to premining use shall include a comparison with the historic use of the land as well as its use immediately preceding mining.

C. Prior to the release of lands from the permit area in accordance with 19.8.14.1413 NMAC, the permit area shall be restored in a timely manner, either to conditions capable of supporting the uses they were capable of supporting before any mining or to conditions capable of supporting approved alternative land uses. Alternative land uses may be approved by the director after consultation with the landowner or the land management agency having jurisdiction over the land if the following criteria are met:

(1) The proposed postmining land use is compatible with adjacent land use and, where applicable, with existing local, state, or federal land use policies and plans. A written statement of the views of the authorities with statutory responsibilities for land use policies and plans shall be submitted to the director no less than 60 days prior to the proposed land use change. Any required approval including any necessary zoning or other changes required for land use by local, state or federal land management agencies is obtained and remains valid throughout the surface coal mining operations.

(2) Specific plans are prepared and submitted to the director which show the feasibility of the postmining land use as related to projected land use trends and markets and that include a schedule showing how the proposed use will be developed and achieved within a reasonable time after mining and will be sustained. The director may require appropriate demonstrations to show that the planned procedures are feasible, reasonable, and integrated with mining and reclamation, and that the plans will result in successful reclamation.

(3) Provisions of any necessary public facilities shall be ensured as evidenced by letters of commitment from parties other than the person who conducts surface coal mining operations, as appropriate, to provide the public facilities in a manner compatible with the plans submitted under 19.8.9.908 NMAC. The letters shall be submitted to the director no less than 60 days prior to the proposed land use change.

(4) Specific and feasible plans are submitted to the director which show that financing, attainment and maintenance of the postmining land use are feasible.

(5) Plans for the postmining land use are designed under the general supervision of a registered professional engineer or other appropriate professional who will ensure that the plans conform to applicable accepted standards for adequate land stability, drainage, vegetative cover, and aesthetic design appropriate for the postmining use of the site.

(6) The proposed use will neither present actual or probable hazard to public health or safety nor will it pose any actual or probable threat of water flow diminution or pollution.

(7) The use will not involve unreasonable delays in reclamation.

(8) Necessary approval of measures to prevent or mitigate adverse effects on fish, wildlife and related environmental values and threatened or endangered plants is obtained from the director, and appropriate state and federal fish and wildlife management agencies have been provided a 60-day period in which to review the plan.

(9) Proposals to change premining land uses of range, fish and wildlife habitat, forest land, hayland, or pasture to a postmining cropland use, where the cropland would require continuous maintenance such as seeding, plowing, cultivation, fertilization, or other similar practices to be practicable or to comply with applicable federal, state and local laws are reviewed by the director to ensure that:

- (a) there is sufficient water available and committed to maintain crop production; and
- (b) topdressing quality and depth are sufficient to support the proposed use.

D. [Reserved]

E. [Reserved]

[11-29-97; Rn, 19 NMAC 8.2.20.2073, 12-15-99; 19.8.20.2075 NMAC - Rn, 19 NMAC 8.2.20.2075, 9-29-2000]

#### **19.8.20.2076 ROADS: GENERAL:**

A. Road classification system.

(1) Each road shall be classified as either a primary road or an ancillary road.

(2) A primary road is any road which is:

(a) used for transporting coal or spoil, except for the portions of those roads located within coal spoil and coal processing waste disposal areas;

(b) frequently used for access or other purposes for a period in excess of six (6) months, with the exception of those roads the sole surface coal mining operation use of which is for exploration purposes; or

(c) to be retained for an approved postmining land use.

(3) An ancillary road is any road not classified as a primary road



**B.** Performance standards. Roads shall be located, designed, constructed, reconstructed, used, maintained and reclaimed so as to:

- (1) control or prevent erosion, siltation and the air pollution attendant to erosion by vegetating or otherwise stabilizing all exposed surfaces in accordance with current, prudent engineering practice;
- (2) control or prevent damage to fish, wildlife or their habitat and related environmental values;
- (3) control or prevent additional contributions of suspended solids to stream flow or runoff outside the permit area;
- (4) neither cause nor contribute to, directly or indirectly, the violation of state or federal water quality standards applicable to receiving waters;
- (5) minimize the diminution to or degradation of the quality or quantity of surface and ground-water systems;
- (6) refrain from significantly altering the normal flow of water in streambeds or drainage channels;
- (7) prevent or control damage to public or private property; and
- (8) use nonacid- or nontoxic-forming substances in road surfacing.

**C.** Design and construction limits and establishment of design criteria. To ensure environmental protection and safety appropriate for their planned duration and use, including consideration of the type and size of equipment used, the design and construction or reconstruction of roads shall incorporate appropriate limits for grade, width, surface materials, surface drainage control, culvert placement, culvert size, and any necessary design criteria established by the director.

**D.** Location.

- (1) No part of any road shall be located in the channel of an intermittent or perennial stream unless specifically approved by the director in accordance with 19.8.20.2009 through 2012, and 2025 NMAC.
- (2) Roads shall be located to minimize downstream sedimentation and flooding.

**E.** Maintenance.

- (1) A road shall be maintained throughout its life to meet the performance standards of 19.8.20 NMAC and any additional criteria specified by the director.
- (2) A road damaged by a catastrophic event, such as a flood or earthquake, shall be repaired as soon as practical after the damage has occurred.

**F.** Reclamation. A road not to be retained for use under an approved postmining land use shall be reclaimed immediately after it is no longer needed for mining and reclamation operations, including:

- (1) closing the road to traffic;
- (2) removing all bridges and culverts;
- (3) restoring the natural drainage patterns;
- (4) reshaping all cut and fill slopes to be compatible with the postmining land use and to complement the drainage pattern, of the surrounding terrain, and
- (5) scarifying or ripping the roadbed; replacing topsoil or substitute material; and revegetating disturbed surfaces in accordance with 19.8.20.2005 through 2008 and 2060 through 2066 NMAC.
- (6) removing or otherwise disposing of road surfacing materials that are incompatible with the postmining land use and revegetation requirements; and
- (7) protecting the natural drainage patterns by installing dikes or cross drains as necessary to control surface runoff and erosion.

[11-29-97; Rn, 19 NMAC 8.2.20.2074, 12-15-99; 19.8.20.2076 NMAC - Rn, 19 NMAC 8.2.20.2076, 9-29-2000]

**19.8.20.2077 PRIMARY ROADS:** Primary roads shall meet the requirements of 19.8.20.2076 NMAC and the additional requirements of 19.8.20.2077 NMAC.

**A.** Certification. The design and construction or reconstruction of primary roads shall be certified by a qualified registered professional engineer as meeting:

- (1) the requirements of 19.8.20.2076 NMAC;
- (2) current, prudent engineering practices; and
- (3) any design criteria established by the director; and
- (4) shall include a statement that the road has been constructed or reconstructed as designed and in accordance with the approved plan; and
- (5) at a minimum, a static factor of safety of 1.3 for all embankments.

**B.** Location.

- (1) To minimize erosion, a primary road is to be located, insofar as practical, on the most stable available surfaces.

(2) Stream fords of perennial or intermittent streams by primary roads are prohibited unless they are specifically approved by the director as temporary routes during periods of road construction.

**C. Drainage control.**

(1) Each primary road shall be designed, constructed or reconstructed, and maintained to have adequate drainage control, using structures such as, but not limited to, bridges, ditches, cross drains, and ditch relief drains. The drainage control system described in Paragraphs (1) through (6) of Subsection C of 19.8.20.2077 NMAC shall be designed to pass the peak runoff safely from a 10-year, 6-hour precipitation event or such greater event as may be specified by the director.

(2) Drainage pipes and culverts shall be constructed and maintained to avoid plugging or collapse and erosion at inlets and outlets.

(3) Drainage ditches shall be designed and maintained to prevent uncontrolled drainage over the road surface and embankment. Trash racks and debris basins shall be installed in the drainage ditches where debris from the drainage area may impair the functions of drainage and sediment control structures.

(4) Culverts shall be designed, installed, and maintained to sustain the vertical soil pressure, the passive resistance of the foundation, and the weight of vehicles using the road.

(5) Natural stream channels shall not be altered or relocated without the prior approval of the director in accordance with 19.8.20.2009 - 2012 and 2025 NMAC.

(6) Except as provided in Paragraph (2) of Subsection B of 19.8.20.2077 NMAC, structures for perennial or intermittent stream channel crossings shall be made using bridges, culverts, low-water crossings, or other structures designed, constructed, and maintained using current, prudent engineering practices. Low water crossings shall be designed, constructed, and maintained to prevent erosion of the structure or streambed and additional contributions of suspended solids to streamflow.

**D. Surfacing.** The surfacing of primary roads shall be rock, crushed gravel, asphalt, or other material approved by the director as being sufficiently durable for the anticipated volume of traffic and the weight and speed of vehicles using the road.

**E. Maintenance.** Routine maintenance for primary roads shall include repairs to the road surface, blading, filling potholes, and replacing surfacing material. It shall also include, as necessary, revegetation, brush removal, and minor reconstruction of road segments.

[11-29-97; Rn, 19 NMAC 8.2.20.2075, 12-15-99; 19.8.20.2077 NMAC - Rn, 19 NMAC 8.2.20.2077, 9-29-2000]

**19.8.20.2078 OTHER TRANSPORTATION FACILITIES:** Railroad loops, spurs, sidings, surface conveyor systems, chutes, aerial tramways, or other transportation facilities shall be designed, constructed or reconstructed, and maintained and the area restored, to:

**A.** prevent, to the extent possible using the best technology currently available:

(1) damage to fish, wildlife, and related environmental values; and

(2) additional contributions of suspended solids to streamflow or runoff outside the permit area. Any such contributions shall not be in excess of limitations of state or federal law;

**B.** control and minimize diminution or degradation of water quality and quantity;

**C.** control and minimize erosion and siltation;

**D.** control and minimize air pollution; and

**E.** prevent damage to public or private property.

[11-29-97; Rn, 19 NMAC 8.2.20.2076, 12-15-99; 19.8.20.2078 NMAC - Rn, 19 NMAC 8.2.20.2078, 9-29-2000]

**19.8.20.2079 SUPPORT FACILITIES AND UTILITY INSTALLATIONS:**

**A.** Support facilities required for, or used incidentally to, the operation of the mine, including, but not limited to, mine buildings, coal loading facilities at, or near, the mine site, coal storage facilities, equipment storage facilities, fuel storage facilities, chemical and lubricant storage facilities, fan buildings, hoist buildings, preparation plants, sheds, shops, and other buildings, shall be designed, constructed or reconstructed, and located to prevent or control erosion and siltation, water pollution and damage to public or private property. Support facilities shall be designed, constructed or reconstructed, maintained, and used in a manner which prevents to the extent possible using the best technology currently available damage to fish, wildlife, and related environmental values and additional contributions of suspended solids to streamflow outside the permit area. Any such contributions shall not be in excess of limitations of state or federal law.

**B.** All surface coal mining operations shall be conducted in a manner which minimizes damage, destruction, or disruption of services provided by oil, gas, and water wells, oil, gas, and coal-slurry pipelines;

railroads; electric and telephone lines; and water and sewage lines which pass over, under or through the permit area, unless otherwise approved by the owner of those facilities and the director.  
[11-29-97; Rn, 19 NMAC 8.2.20.2077, 12-15-99; 19.8.20.2079 NMAC - Rn, 19 NMAC 8.2.20.2079, 9-29-2000]

**HISTORY OF 19.8.20 NMAC:**

**Pre-NMAC History:**

The material in Part 20 was derived from that previously filed with the State Records Center and Archives under: SB 73-1 Regulations of the State of New Mexico Coal Surfacemining Commission, filed 1-10-73 and its amendment filed 8-4-76

SB 78-1 (Rule 78-1) Regulations of the State of New Mexico Coal Surfacemining Commission, filed 8-31-78

SB 79-1 (Rule 79-1) New Mexico Coal Surfacemining Regulations, filed 7-11-79

CSMC Rule 80-1 (Rule 80-1) Surface Coal Mining Regulations, filed 9-24-80; and all amendments to CSMC Rule 80-1, filed 7-29-82, 11-10-83, 3-5-84, 7-19-84, filed 8-6-84, 8-23-84, 3-28-89, 6-15-90, 9-18-90, 2-15-91, 5-8-91, 8-26-91, 10-4-91, 7-28-92, 1-25-93, 11-1-94, 3-10-95, 4-12-95, 12-21-95.

**Other History:**

Renumbered and reformatted CSMC 80-1 (filed 9-24-80), to 19 NMAC 8.2 Coal Surface Mining, effective 11-29-97.

Renumbered 19 NMAC 8.2 Subpart 20 Performance Standards - Surface Coal Mining Operations (filed 11-13-97), to 19.8.20 NMAC Performance Standards - Surface Coal Mining Operations, effective 09-29-2000.