WEST VIRGINIA
SECRETARY OF STATE
JOE MANCHIN, III
ADMINISTRATIVE LAW DIVISION

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OFFICE WEST VIRGINIA
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Form #6

NOTICE OF FINAL FILING AND ADOPTION OF A LEGISLATIVE RULE AUTHORIZED BY THE WEST VIRGINIA LEGISLATURE

AGENCY: Dept. of Env. Protection Office of Mining and Reclamation TITLE NUMBER: 38

AMENDMENT TO AN EXISTING RULE: YES X NO ____

IF YES, SERIES NUMBER OF RULE BEING AMENDED: 3

TITLE OF RULE BEING AMENDED: Rules for Quarrying and REclamation

IF NO, SERIES NUMBER OF RULE BEING PROPOSED: ____

TITLE OF RULE BEING PROPOSED: ____

THE ABOVE RULE HAS BEEN AUTHORIZED BY THE WEST VIRGINIA LEGISLATURE.

AUTHORIZATION IS CITED IN (house or senate bill number) HB 2663

SECTION 64-3-1(o), PASSED ON April 14, 2001

THIS RULE IS FILED WITH THE SECRETARY OF STATE. THIS RULE BECOMES EFFECTIVE ON THE FOLLOWING DATE: August 1, 2001

Authorized Signature

$13.10

TITLE 38
LEGISLATIVE RULES
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF MINING AND RECLAMATION

SERIES 3
RULES FOR QUARRYING AND RECLAMATION

§38-3-1. General.

1.1. Scope. -- This Legislative rule establishes general and specific rules for quarrying and reclamation operations including requirements for definitions, permit application requirements and contents; bond and bond pooling fund; haulageways and transportation facilities; blasting; drainage system; method of operation; excess spoil disposal; revegetation and standards for evaluating vegetative cover; mapping, approved person, and markers; transfer or sale of permit rights; public hearings, annual Bonding Progress Report Map and permit renewals, permit modification; inspection and enforcement; final release of bond or bond pooling fund, final inspection report; state and federal compliance.

1.2. Authority. -- WV Code §22-1-3 and §22-4-1 et seq.

1.3. Filing Date. --

1.4. Effective Date. --

§38-3-2. Definitions.

Unless the context in which used clearly requires a different meaning, as used in this rule or as referred to in WV Code §22-4 as amended:

2.1. Acid-producing materials means mineral compounds which will, when acted upon by water and air, cause acids to form.

2.2. Acid-producing overburden or spoil means material that may cause spoil which upon chemical analysis, shows a pH of 5.5 or less.

2.3. Active operation means an operation where land is being disturbed or mineral is being removed or processed.

2.4. Approved person means any person approved by the director in accordance with subsection 11.6. of this rule.

2.5. Backfilling means to place spoil material back into an excavation.

2.6. Buffer Zone means an undisturbed border along or around a public road, stream, lake, public park, or public or private property.

2.7. Cut means an excavation made by excavating equipment to remove overburden or mineral.

2.8. Cut-fill means overburden removed from an elevated portion of a road or bench and deposited in a depressed portion in order to maintain a desired width or grade.

2.9. Deep mining or underground mining means quarrying where, except for the face-up and ancillary areas, mineral extraction occurs primarily underground using deep mining techniques and causing minimal disturbance of the surface.

2.10. Diversion ditch means a machine-made or natural waterway used for collecting water or a ditch designed to change the actual or normal course of water.

2.11. Downslope means that area between the lowest proposed mining related construction or excavation area and the adjacent valley floor.

2.12. Drainage plan or system means the proposed method of diversion, collection, treatment, and discharge of all waters within the affected drainage area, as defined by the approved permit.

2.13. Excess spoil means overburden or spoil not used for reclamation and placed in a location other than the pit.

2.14. Groundwater means the water occurring in the zone of saturation beneath the seasonal high water table, or any perched water zones.

2.15. Haulageway or haulroad means any road constructed, improved, or maintained by the operator which is used to transport mineral, overburden, equipment or spoil and is located within the permit area.

2.16. Highwall means the vertical or near vertical wall consisting of the exposed strata after excavating operations.

2.17. Infiltration means the flow or movement of surface water into the subsurface or ground water system.

2.18. Infrequently used access road means any road that is constructed for and used only to provide infrequent service to facilities used in support of quarrying, reclamation activities, or other limited use activities and is not required for the post-quarrying land use.

2.19. Monument means a permanent marker consisting of metal, concrete, or wood used to identify the boundary or entrance to the permit area.

2.20. Natural drainway means any watercourse or channel which carries water to the tributaries and rivers of the watershed. The United States Geological Survey classification of perennial or intermittent streams shall be considered as natural drainways.

2.21. Operation means the area where quarrying is being conducted.

2.22. Outer slope means the disturbed area extending from the outer edge of the quarry bench to the extreme lower limit of the disturbed land.

2.23. Overburden means the earth, rock and other materials lying in the natural state above a mineral deposit being quarried or removed.

2.24. Pit means that part of the quarrying operation from which the mineral is being actively removed or has been removed.

2.25. Pollution means any water discharge in violation of the National Pollution Discharge Elimination System permit or permit standards, or any other applicable water quality standards.

2.26. Processing means the crushing, sizing, screening, or washing of the mineral.

2.27. Regrade or grade means to change the contour of any surface by the use of leveling or grading equipment.

2.28. Screening means measures taken to minimize adverse impacts a quarry operation may have on aesthetics, the environment or the health, safety and welfare of the public.

2.29. Seepage water means any water entering the ground from the surface through capillary action, cracks, faults or any other natural modes of entry, and finding its way to the surface

again.

2.30. Serious violation means a violation, that after an informal conference on the assessment has been held, is rated at a seriousness level of eight (8) or higher.

2.31. Slope means the angle of repose from the horizontal plane of spoil banks or ridges of overburden material made in the quarrying operation; the angle of a hill or mountain. A gentle slope shall mean zero percent (0%) to ten percent (10%); moderate to steep slope shall mean ten percent (10%) to forty-five (45%); extremely steep slope shall mean forty-five (45%) and over.

2.32. Spoil means material of any nature other than topsoil which overlays the mineral being mined which is removed or displaced by excavating equipment, blasting or any other means; or material of any kind which is separated from the mineral being mined as undesirable to the current product.

2.33. Stabilize means to fix in place by mechanical or vegetative means, including, but not limited to, the planting of trees, grasses, vines, shrubs, or legumes.

2.34. Storm water means any water flowing over, around, or through the permitted area in response to a precipitation event. This includes all surface run off.

2.35. Surface water means that water, from whatever source, which is flowing on the surface of the ground.

2.36. Suspension of permit means an act of the director temporarily nullifying the validity of a permit insofar as the quarrying, processing and removal of minerals are concerned.

2.37. Technical Handbook means "The Technical Handbook of Standards and Specifications for Erosion and Sediment Control, Excess Spoil Disposal, Haulageways" for mining operations in West Virginia.

2.38. Water analyses means any water tests or analyses performed using the analytical procedures set forth in the most current edition of "Standard Methods for the Examination of Water and Wastewater".

§38-3-3. Permit Application Requirements and Contents

3.1. Advertisement.

3.1.a. Advertisement Information. -- Each advertisement shall contain at a minimum a clear and accurate location map of a scale and detail found in the West Virginia County Highway Map. The map size shall be at a minimum four inches (4") x four inches (4"). A north arrow and longitude and latitude lines shall be indicated on the map, and such lines shall cross at or near the center of the proposed permit area;

3.1.b. Certification of Publication. -- The advertisement and publication dates for all permit applications, permit renewal applications, applications for modification of a permit, and transfer assignment and sale of permits, shall be certified and notarized by the publishing newspaper. The certificate of publication shall be made a part of the application.

3.1.c. Readvertisement. -- After an application has been advertised in accordance with WV Code §22-4-6(b) and is determined by the director to have had a limited number of minor changes that do not significantly affect the health, safety or welfare of the public, the method of operation, the quarrying and reclamation plan, or the original advertisement, he or she may require one (1) additional advertisement to be published with a ten (10) day public comment period. Changes to the permit application which do significantly affect the health, safety or welfare of the public, the method of operation, the quarrying and reclamation plan or the original publication shall require a full readvertisement in accordance with WV Code §22-4-6(b).

3.1.d. Renotification. -- A renotification letter shall be sent to all commentors of a quarrying application when a determination has been made by the Director that full readvertisement is required.

3.2. QMA File Number. -- Prior to the publication of an advertisement for a quarrying permit in accordance with WV Code §22-4-6(b), the applicant shall submit a complete quarrying permit application and obtain a quarry mining application (QMA) file number. Each QMA number shall be valid for one year; provided, that the director may extend a QMA number beyond one year, if the applicant has diligently pursued the application. In order for a QMA number to be extended, the applicant must submit to the director a written request, which shall state the reason(s) and which shall demonstrate good cause for the extension.

3.3. Fees. -- The one thousand-dollar ($1,000) permit application fee shall be paid prior to the issuance of the QMA number. The one thousand-dollar ($1,000) fee for the original permit shall be paid prior to the issuance of the permit.

3.4. Fish and Wildlife Resources Information.

3.4.a. Each new permit application and major modification shall include fish and wildlife resource information for the permit area and adjacent area. The scope and level of detail for such information shall be determined by the director in consultation with state and federal agencies with responsibilities for fish and wildlife resources. If the director and the state and federal agencies determine that the operation will not adversely impact the fish and wildlife resources, no further assessment is required.

3.4.b. Endangered Species. - When the proposed quarrying operation will affect known threatened or endangered species of plants or animals or their critical habitats, the application shall describe control measures, management techniques, and monitoring methods to be employed in order to protect or enhance such species and habitats. Endangered or threatened species are as listed by the Secretary of Interior under the Endangered Species Act of 1973 (16 U.S.C. 1521 et seq.).

3.4.c. Notice to Governmental Agencies. -- Upon receipt of an application for a quarrying permit or major modification of an existing permit, the director shall notify all federal, state, or local government agencies with authority to issue permits and licenses applicable to the proposed quarrying operation including, as appropriate, the local U. S. Army Corps of Engineers District Engineer, state and federal fish and wildlife agencies, and the State Historic Preservation Officer.

3.4.d. Effect on Historic Places and Archaeological Sites. -- Where the proposed quarrying operation will adversely affect any publicly owned park, any place listed on the national register of historic places or archaeological sites, the director shall transmit to the federal, state or local agencies with jurisdiction over the park or historic place the applicable parts of the permit application, together with a request for the agency's approval or disapproval of the operation. Consideration and coordination of the permit review shall be in accordance with the National Historic Preservation Act of 1966 (16 U.S.C. 470 et seq.) and the Archaeological Resource Protection Act of 1979 (16 U.S.C. 470 et seq.). A permit for such operation shall have joint approval of all affected agencies. Failure of the agency to respond to the director's request within thirty days shall constitute approval.

3.5. Pre-quarrying Water Assessment.

3.5.a. Each new application for a quarrying permit shall contain a pre-quarrying water assessment. A water assessment shall also be required for a permit modification which has the potential to affect the hydrology in a manner which was not addressed in the original permit. The assessment shall be developed using base line information developed over a six-month sampling period. Sampling and analysis of surface and groundwater monitoring sites shall be established within or near the permit area and on adjacent areas in a manner that will best describe the hydrologic conditions of the permit application area. The pre-quarrying water assessment shall at a minimum include the following information:

3.5.a.1. The location of all sampling sites shown on the proposal or drainage map;

3.5.a.2. Water quality descriptions including information on total suspended solids, total dissolved solids, specific conductance, pH, acidity, alkalinity, sulfates, total iron, total manganese and aluminum; provided, that correlation data from other monitoring which does not include one or more of the above parameters may be accepted; provided further, that a limited number of validation samples may be required; and

3.5.a.3. Water quantity descriptions, variation, usage and/or the elevation of water in test wells.

3.6. Cross-Sections.

3.6.a. Typical cross-sections shall be prepared which illustrate the configuration of the permitted area before, during and after quarrying.

3.7 Consolidation of Permits.

3.7.a. Multiple permits which are consolidated under one all inclusive permit shall be assigned the permit number of the most recently issued permit.

3.7.b. The anniversary date of the most recently issued permit being consolidated shall become the new date for permit renewal and submission of the annual Bonding Progress Report Map.

3.7.c. Upon approval of a modification to consolidate permits, those permits which have been absorbed shall be eligible for immediate release.

3.8. Special Land Use.

3.8.a. With the approval of the landowner, the director may authorize the retention of drainage structures, roads, buildings or other structures after final bond release.

3.8.b. With the approval of the landowner, the director may authorize, as a condition of a permit, the export of backfill material off the permitted area for beneficial purposes, or may authorize other beneficial uses of the operation, which are reasonable. Time limits shall be established for the completion of these special land uses. Drainage control may be required to minimize pollution.

§38-3-4. Bond and Bond Pooling Fund.

4.1. Operators who have operated for less than five (5) years under West Virginia mining laws shall post a performance bond for each acre previously disturbed and each acre proposed to be disturbed during the next ensuing year. The operator shall provide an estimate of the reclamation liability for the permit area based upon the proposed quarrying and reclamation plan. Documentation shall be provided to ensure that the bond provided is equal to or greater than the reclamation liability. For the purpose of this section, disturbed acres do not include reclaimed areas that meet the release requirements of section 17.1 of these rules. The minimum bond for each permit is ten thousand dollars ($10,000).

4.2. Operators or persons who have operated for five (5) or more years under West Virginia mining laws without a serious violation shall contribute to the bond pooling fund. For each permit, permittees contributing to the fund shall make an initial payment of fifty dollars ($50) for each acre or fraction thereof currently disturbed. For each acre or fraction thereof estimated to be newly disturbed during the next ensuing year, the payment shall be fifty dollars ($50). Thereafter, the permittee shall make an annual payment of twelve dollars and fifty cents ($12.50) for each disturbed acre or fraction thereof until the permittee has paid into the fund a total of one thousand dollars ($1,000) for each disturbed acre.

§38-3-5. Haulageways and Transportation Facilities.

5.1. General. -- Each permittee shall design, construct, utilize, and maintain roads, railroad loops, spurs, sidings, surface conveyor systems, chutes, aerial tram ways and other transportation facilities located outside the mineral extraction area, processing areas or excess spoil disposal areas to meet the requirements of this rule and to control or minimize erosion and siltation, air and water pollution, and to prevent damage to public or private property.

5.2. Plans. -- Typical sections showing width of road cut, fill slopes, surface material of the road, sediment control, a center line profile with grades, sumps, culvert pipe location and size, and other transportation facilities shall be included in the permit application. The design of haulageways located outside the mineral extraction area, processing areas or excess spoil disposal areas shall be certified by a qualified registered professional engineer, licensed land surveyor, or approved person as being in accordance with specifications of this rule.

5.3. Location Markings. -- The location of the proposed haulageway or other transportation facility shall be identified on the site by visible markings on one hundred foot (100') centers at the time the quarrying and reclamation plan is pre-inspected, and prior to commencement of construction. Existing roads are exempt from this requirement.

5.4. Grading. -- The grading of a haulageway shall be such that:

5.4.a. No sustained grade shall exceed ten percent (10%);

5.4.b. The maximum grade shall not exceed fifteen percent (15%) for three hundred foot (300');

5.4.c. There shall not be more than three hundred feet (300') of maximum grade for each one thousand feet (1,000') of road constructed;

5.4.d. The surface shall be sloped toward the ditch line at the minimum rate of one-half inch (1/2") per foot of surface width, or crowned at the minimum rate of one-half inch (1/2") per foot of surface width, as measured from the center line of the haulageway; and

5.4.e. The grade on switchback curves shall be reduced to less than the approach grade and shall not be greater than ten percent (10%).

5.5. Cut Slopes. -- Cut slopes shall not be more than 1:1 in soils or 1/4:1 in rock.

5.6. Ditches. -- A ditch shall be provided on both sides of a through-cut and on the inside shoulder of a cut-fill section, with ditch relief cross-drains being spaced according to grade. Water shall be intercepted before reaching a switchback or large fill and led off. Water on a fill or switchback shall be released below the fill, not over it. Ditchlines shall be designed to pass a one-year, twenty-four hour precipitation event.

5.7. Culverts. -- Ditch relief culverts shall be installed according to the following provisions:

5.7.a.

Road Grade in Percent:	Minimum Spacing between Culverts in Feet:
0 - 5	300 - 800
6 - 10	200 - 300
11 - 15	100 - 200

5.7.b. Culverts shall cross the haulageway at a thirty degree (30°) angle downgrade at a minimum slope of three percent (3%) or at a slope or angle approved by the director;

5.7.c. The inlet end shall be protected by a headwall of suitable material, and the outlet end shall be placed below the toe of the fill with an apron of suitable material provided for the outflow to spill on; and

5.7.d. The culvert shall be covered by compacted fill to depth of one foot (1') or half the culvert diameter, whichever is greater.

5.8. Culvert Openings. -- Culvert openings installed on haulageways should not be less than one hundred square inches (100") in area, but, in any event, all culvert openings shall be adequate to carry storm run off from the peak flow of a one (1)-year twenty-four (24) hour precipitation event and shall receive necessary maintenance to function properly at all times.

5.9. Natural Drainway. -- Minor alterations and relocations of natural drainways as shown on the quarrying and reclamation plan shall be permitted if the natural drainway will not be blocked, and if no damage is done to the natural drainway or to adjoining landowners.

5.10. Stream Crossings. -- Drainage structures, such as bridges, culverts, low-water crossings, or other structures

designed, constructed and maintained using current prudent engineering practices, shall be required in order to cross an intermittent or perennial stream channel. They shall be such so as not to affect the flow of the stream. Consideration shall be given to the time of year the stream is crossed and length of time the stream channel is used, but in no event, and under no condition shall the flow of the stream be affected or the sediment load of the stream increased during construction and/or use. These structures shall be capable of passing the peak flow for a ten (10)-year twenty-four (24) hour precipitation event from the contributing watershed.

5.11. Removal of Drainage Structures. -- No bridges, culverts, stream crossing, etc., necessary to provide access to the operation, may be removed until reclamation is completed and approved by the director. The same precautions as to water quality are to be taken during removal of drainage structures as those taken during construction and use.

5.12. Stabilization of Slopes. -- All fill and cut slopes shall be stabilized after the construction of a haulageway.

5.13. Haulageway Surfacing. -- Access roads, haulroads, processing areas, yards, storage areas, plant sites, and parking areas shall be stabilized with proper surface materials to prevent erosion. The material used to surface the haulageway shall be sufficiently durable for the anticipated volume of traffic, and the weight and speed of the vehicles using the road. Haulageways shall not be surfaced with any acid-producing or toxic material, or with any material which will produce a concentration of suspended solids in surface drainage.

5.14. Tolerance. -- All grades referred to in this section shall be subject to a tolerance of two percent (2%) grade. All linear measurements referred to in this section shall be subject to a tolerance of ten percent (10%) of measurement. All angles referred to in this section shall be measured from the horizontal and shall be subject to a tolerance of five percent (5%).

5.15. Mud and Debris on Public Roads. -- The deposition of mud and debris on public roads shall be minimized to the extent possible in order to prevent public nuisance.

5.16. Water Bars. -- Water bars of the ditch and earth berm or log type shall be installed according to the following table of spacing in terms of percent of road grade prior to the abandonment of a haulageway or infrequently used road. Spacing of water bars in Feet:

Percent of	Spacing of Water

Haulageway:	Bars in Feet:
2	250
5	135
10	80
15	60
20	45
Above 20	25

5.17. Dust Control. -- Reasonable means shall be employed to prevent loss of haulageway surface material in the form of dust.

5.18. Abandonment of Haulageway. -- Upon abandonment of a haulageway, the haulageway shall be seeded and every effort made to prevent erosion by means of culverts, water bars or other devices.

5.19. Infrequently Used Access Roads. -- Infrequently used access roads are exempt from subsection 5.4 of this rule.

5.20. Existing Haulageway or Access Roads. -- Where existing roads are to be used for access or haulage and it can be demonstrated that reconstruction to meet the designs and construction requirements of this section would result in greater environmental harm, subdivisions 5.4.a., 5.4.b., and 5.7.a. of this rule will not apply. Provided, however, that the sediment control requirements must otherwise be met.

5.21. Certification. -- Prior to being utilized, all haulroads located outside the mineral extraction area, processing areas or excess spoil disposal areas for which design criteria were approved as part of the permit shall be certified. Such certification shall affirm that construction was completed in accordance with the approved criteria, except as otherwise noted in the certification statement. Where the certification statement indicates a change from the design standards or construction requirements approved in the permit, such changes shall be documented in as-built plans. If as-built plans are submitted, the certification shall describe how and to what extent the construction deviates from the proposed design, and shall explain how and certify that the road shall meet rule standards. The certification shall be on forms approved by the director and signed by a qualified registered professional engineer, licensed land surveyor or approved person with experience in design and construction of roads.

§38-3-6. Blasting.

6.1. Requirements. -- Each operator shall comply with all applicable state and federal laws relating to the transportation,

storage, and use of explosives. The operator shall be responsible for all blasting operations including the transportation, storage and use of explosives within the permit area in accordance with the blasting plan.

6.2. Blasting Plan. -- Each application for a permit, where blasting is anticipated, shall include a blasting plan. The blasting plan shall explain how the applicant shall comply with the blasting requirements of WV Code §22-4, this rule, and the terms and conditions of the permit. This plan shall include, at a minimum, information setting forth the limitations the operator shall meet with regard to ground vibration and airblast, the basis for those limitations, and the methods to be applied in controlling the adverse effects of blasting operations.

6.3. Written Notification. -- At least thirty (30) days prior to blasting operations, written notification of blasting operations which detonate five (5) pounds or more of explosives at any given time, shall be delivered in person or by certified mail to each residence, and owners of protected structures, adjacent to any part of the proposed operation. A written receipt of delivery or the United States Postal Service certified receipt of notification shall be maintained with the blasting log. The notification shall contain at a minimum:

6.3.a. Name, address, telephone number, and an emergency contact phone number of the operator;

6.3.b. Identification of the specific areas in which blasting shall take place;

6.3.c. A general schedule when explosives are to be detonated; and

6.3.d. Types and patterns of audible warning, and all clear signals to be used before and after blasting.

6.4. Blast Record.

6.4.a. A blasting log book formatted in a manner prescribed by the director shall be kept current daily and made available at the permit site for inspection by the director, or upon written request, by the public.

6.4.b. The blasting log shall, in addition to the information required in WV Code §22-4-13(a)(5), contain the following information:

6.4.b.1. Name of permittee, operator, or other person conducting the blast;

6.4.b.2. Location of blast;

6.4.b.3. Name and certification number of blaster-in-charge;

6.4.b.4. Identification of nearest protected structure not owned or leased by the operator and direction and distance, in feet, to such structure;

6.4.b.5. Type of material blasted;

6.4.b.6. Burden and spacing;

6.4.b.7. Diameter and depth of holes;

6.4.b.8. Types of explosives used;

6.4.b.9. Weight of explosives used per hole;

6.4.b.10. Total weight of explosives used;

6.4.b.11. Maximum weight of explosives detonated within any eight (8) millisecond period;

6.4.b.12. Method of firing and type of circuit;

6.4.b.13. Type and length of stemming;

6.4.b.14. If mats or other protections were used;

6.4.b.15. Type of delay detonator used and delay periods used;

6.4.b.16. If a seismograph is used, Seismograph records and air blast records shall include but not be limited to:

6.4.b.16.A. Seismograph and air blast reading, including location, date, and time of reading and its distance from the blast;

6.4.b.16.B. Name of person and firm taking the readings;

6.4.b.16.C. Name of person and firm analyzing the record, where analysis is necessary; and

6.4.b.16.D. Type of instrument, serial number, sensitivity and calibration signal, and certification of annual calibration;

6.4.b.17. Sketch of delay pattern to include the entire blast pattern and all decks; and

6.4.b.18. Reasons and conditions for unscheduled blasts.

6.5. Blasting Procedures.

6.5.a. All blasting shall be conducted during daytime hours, between sunrise and sunset; provided, that the director may specify more restrictive time periods based on public requests or other consideration, including the proximity to residential areas. No blasting shall be conducted on Sunday. Provided, however, the director may grant approval of a request for Sunday blasting if the operator demonstrates to the satisfaction of the director that the blasting is necessary and there has been an opportunity for a public hearing. Blasting shall not be conducted at times different from those announced in the blasting schedule except in emergency situations where rain, lightning or other atmospheric conditions, or operator or public safety requires unscheduled detonations. Blasting shall be conducted in such a way so as 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 groundwater outside the permit area.

6.5.b. Safety Precautions.

6.5.b.1. Three (3) minutes prior to blasting, a warning signal audible to a range of one-half (1/2) mile from the blast site shall be given. This preblast warning shall consist of three (3) short warning signals of five (5) seconds duration with five (5) seconds between each signal. One (1) long warning signal of twenty (20) seconds duration shall be the "all clear" signal. Each person in the permit area, and each person who resides or regularly works within one-half (1/2) mile of the permit area, shall be notified of the meaning of these signals. The requirement of this paragraph may be waived by the director if adequate alternative warning and safety precautions can be substituted and are made a condition of the approved blasting plan;

6.5.b.2. All approaches to the blast area shall be protected against unauthorized entry prior to and immediately after blasting;

6.5.b.3. All charged holes shall be guarded and posted against unauthorized entry. No charged holes may be left unattended until fired; and

6.5.b.4. Flyrock, including blasted material, shall not be cast from the blasting site more than half way to the nearest protected structure and in no case beyond the bounds of the permit area.

6.5.c. Based upon the physical conditions at the site and when necessary to prevent injury to persons or damage to property, the director may require the operator to monitor air blast levels using an instrument with an upper-end, flat-frequency response of at least 200 Hz.

6.5.d. Blasting Signs. -- If blasting is necessary to conduct quarrying operations, the following signs and markers shall be required:

6.5.d.1. Warning signs shall be conspicuously displayed at all approaches to the blasting site, along haulageways and access roads to the mining operation, and at all entrances to the permit area. The sign shall at a minimum be two feet by three feet (2' x 3') reading "WARNING! Blasting Area" and explaining the blasting warning and the all clear signals; and

6.5.d.2. Where blasting operations shall be conducted within five hundred feet (500') of the outside right-of-way of a public road, signs reading "Blasting Area", shall be conspicuously placed along the perimeter of the blasting area.

6.5.e. The director may require a seismograph recording of any or all blasts based on the physical conditions of the site in order to prevent injury to persons or damage to property. At no time can the maximum ground vibration or airblast exceed the limits established in WV Code §22-4-13(a) (1), and 13(a)(2).

6.5.f. Based upon the physical conditions at the site and when necessary to prevent injury to persons or damage to property, the director may require the permittee to revise the blasting plan and resubmit it for review and approval.

6.5.g. The maximum airblast and ground-vibration limits as provided in WV Code §22-4-13(a)(1) and 13(a)(2) shall not apply at the following locations:

6.5.g.1. At structures owned by the permittee and not leased to another person; and

6.5.g.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.

6.5.g.3. At structures owned by a person other than the permittee if a written waiver is submitted to the director before blasting.

6.5.h. Regardless of whether the permittee chooses to use the scaled distance formula or to seismically monitor each blast, at no time, at any protected structure, may the peak particle velocity exceed the limits established for ground vibration or may the decibel level exceed that established in the approved blasting plan.

6.5.i. No blasting within five hundred feet (500') of an underground mine not totally abandoned shall be permitted except with the concurrence of the director, and the Mine Safety and Health Administration (MSHA). The permittee shall notify the operator of the underground mine of the proposal to blast and, if requested, shall provide a copy of the blasting plan. The director may prohibit blasting on specific areas where it is deemed necessary for the protection of public or private property, or the general welfare and safety of the public.

6.6. Preblast Survey.

6.6.a. The director shall review each pre-blast survey as to form and completeness only, and shall notify the operator of any deficiencies within fifteen (15) days.

6.6.b. Requirements for a preblast survey shall include the following:

6.6.b.1. Surveys shall be conducted and accepted as complete by the director before the planned initiation of blasting operations;

6.6.b.2. If a structure within the requisite area is added to or renovated subsequent to a preblast survey, a survey of such additions and/or renovation shall be performed upon written request of the resident or owner, and such survey must be performed within thirty (30) days of notification of the request;

6.6.b.3. Copies of the report shall be provided to the person requesting the survey and to the director;

6.6.b.4. Photographs and Videos used in the survey shall be of sufficient resolution to accurately depict the site conditions; and

6.6.b.5. Any person who receives a survey and who disagrees with the results of the survey, may submit a detailed description of the specific areas of disagreement.

6.7. Blasting Prohibited. -- The director or his authorized agent may prohibit blasting in specific areas of the permit where it is determined necessary for the general safety of the area.

6.8. Certified Blasting Personnel. -- Each person responsible for blasting operations shall be familiar with the blasting plan and blasting-related-performance standards for the operation at which they are working.

6.9. Assessment. -- Any assessment as set forth in WV Code §22-4-13 or §22-4-24 shall be assessed by the Department of Environmental Protection (DEP) designated assessment officer.

§38-3-7. Drainage System.

7.1. Drainage Plan. -- There shall be submitted with the application for a quarrying permit a drainage plan which shows the proposed method of drainage control on and away from the area of land to be disturbed. Said plan shall indicate the location of sediment control structures, the location of all water test sites, a description of treatment facilities, and all other data as may be required.

7.2. Natural Drainways. -- Natural drainways in the area of land disturbed by quarrying operations shall be kept free of overburden except where overburden placement has been approved. Such drainways shall be identified on the maps submitted with the application. Overburden placement and haulageways across natural drainways shall be constructed so as not to materially increase the sediment load in the stream.

7.3. Constructed Drainways.

7.3.a. Ditch Above Highwall. -- All surface water which drains into the pit may be effectively intercepted on the uphill side of the highwall by diversion ditches or other suitable and adequate drainage structures and conveyed by adequate channels or other suitable means of discharge to natural drainways outside the disturbed area.

7.3.b. Ditch on Bench. -- Drainage ditches or other suitable structures shall be constructed on the bench in order to carry off storm, surface or seepage water. The breaking point for ditches on the bench shall fall at or near the midpoint between natural or constructed drainways. In no case shall water be discharged over an unprotected spoil slope or across unprotected disturbed area. Removal of water from the bench shall be accomplished by use of adequate pipe, a rock riprap flume, asphalt or concrete chutes, or by grading a channel to non-erosive rock.

7.3.c. Ditch Below Spoil Slope. -- All surface water draining off the disturbed area shall be intercepted by suitable and adequate diversion ditches or berms which will carry the water to suitable drainage control structures before discharge into a natural drainway. These ditches shall be located as close as practicable to the anticipated disturbance. If at any time spoil material interferes with the flow of water in these ditches, that material shall be cleaned out immediately. The director may, in the exercise of his sound discretion, when not in conflict with WV Code §22-4, as amended, waive this rule.

7.4. Sediment.

7.4.a. Sediment Control. -- Drainage control structures shall be constructed in appropriate locations in order to control sedimentation. All such structures shall have a minimum capacity to store .125 acre-ft./acre of disturbed area in the watershed. This disturbed area shall include all land affected by previous operations that is not presently stabilized, and all land that will be affected within the component drainage area. Design criteria and construction specifications for embankment type sediment dams, excavated ponds, other water retarding structures and drainage control structures will be found in the Technical Handbook.

7.4.b. The director may consider approving a reduced storage factor for sediment control structures where the applicant has demonstrated a reasonable likelihood, and the director finds that effluent limitations will be met.

7.4.c All sediment control structures shall be cleaned to the original designed storage capacity when the sediment accumulation reaches sixty percent (60%) of design capacity. Sediment removed during the maintenance of drainage control structures shall be disposed of in a location approved by the director.

7.5. Drainage

7.5.a. Drainage Certification. -- Prior to disturbance in a component drainage area, the operator shall complete and certify the drainage and sediment control system in accordance with the approved permit. The certification shall be on forms approved by the director and signed by a qualified registered professional engineer, licensed land surveyor or an approved person.

7.5.b. As-Built Plans. -- Any deviations from the approved plan which result from unforeseen site specific circumstances arising during construction, shall be reflected in as-built plans submitted by the operator, and approved by the director immediately following construction. The as-built plans shall include the following:

7.5.b.1. The original design;

7.5.b.2. The extent of the changes; and

7.5.b.3. The reference points. If as-built plans are submitted, the certification shall

7.5.b.3.A. Describe how and to what extent the construction deviates from the proposed design; and

7.5.b.3.B. Explain how and certify that the drainage structure will meet the provisions of this rule.

7.6. Water Quality Control.

7.6.a. All reasonable measures shall be taken to intercept all undisturbed surface water to prevent water from entering the pit area by the use of the following:

7.6.a.1. Diversion ditches;

7.6.a.2. Culverts and drainage ditches; or

7.6.a.3. Other methods.

7.6.b. Pits may be used for temporary or auxiliary water storage and sediment control; provided however, that the pit storage does not contribute to water contamination as demonstrated by surface and ground water monitoring. Water accumulation in an active working pit shall be limited to those areas where it does not come into continual contact with loading or excavating equipment. Pits may also be used as permanent water impoundments if approved in the permit application as a part of the sediment control plan or reclamation plan.

7.6.c. All water discharges from the permit shall be monitored in accordance with the approved National Pollutant Discharge Elimination System (NPDES) permit issued to the operator and a written record of the testing dates and analytical data shall be kept current and made available for inspection. A compilation of the foregoing information shall be submitted to the director in accordance with the approved permit.

7.6.d. Any treatment works necessary to meet effluent limitations shall be approved by the director. Discharge from the permit area shall not in any case violate federal or state water quality standards or effluent limitations.

7.6.e. The monitoring frequency shall be governed by the standards set forth in the National Pollutant Discharge Elimination System program under the federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et. seq., and the rules and regulations promulgated thereunder.

7.6.f. Water tests shall be taken before quarrying operations begin, and the results of these tests shall be shown in the permit application. The location for these preliminary tests shall be:

7.6.f.1. On natural drainways above proposed quarrying operation; and

7.6.f.2. On natural drainways below proposed quarrying operations at or near the affected drainage area boundary.

7.7. Seeding of Drainage System. -- All areas disturbed in the installation of the drainage system shall be mechanically stabilized, or seeded and mulched after construction in accordance with section 10 of this rule.

§38-3-8. Method of Operation.

8.1. Operator Responsibility. -- In planning and executing quarrying operations, the operator shall have, at all times, proper regard for all requirements imposed by WV Code §22-4, as amended, all rules adopted pursuant thereto, and all provisions of the approved permit.

8.2. Topsoiling or Other Material Suitable for the Post Mining Land Use. - Topsoil or other suitable material necessary for reclamation and revegetation shall be removed in a separate layer and distributed over the backfilled or disturbed area, or if not

utilized immediately, segregated and stockpiled in a separate location as specified in the permit. Topsoil not immediately utilized shall be protected from wind and water erosion.

8.2.a. Any material used for topsoiling must be capable of supporting and maintaining the approved post quarrying land use. This determination of capability shall be based on the results of appropriate chemical and physical analysis of overburden and topsoil

8.3. Treatment of Toxic Material. -- Any acid-forming, toxic-forming, combustible materials, or any other waste materials that are exposed, shall be covered with a minimum of four feet (4') of nontoxic and noncombustible material; or test, treat, and blend material to provide materials suitable to prevent water pollution. If necessary, this material shall be treated to neutralize toxicity in order to prevent water pollution and sustained combustion and/or to minimize adverse effects on plant growth and land uses. 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.

8.3.a. The director shall specify thicker amounts of cover using non-toxic material where necessary to protect against the following:

8.3.a.1. Upward migration of salts;

8.3.a.2. Exposure by erosion;

8.3.a.3. To provide an adequate depth for plant growth; or

8.3.a.4. To otherwise meet local conditions.

8.4. Small Depressions. -- The requirement of this section to provide positive drainage does not prohibit construction of small depressions if they are approved by the director to minimize erosion, conserve soil moisture, benefit wildlife or promote revegetation. These depressions shall be compatible with the approved post-quarrying land use.

8.5. Backfilling. -- All available spoil material shall be used as necessary to backfill pit areas, to provide positive drainage and to achieve the reclamation as provided for in the approved reclamation plan. Excess spoil shall be placed in controlled fills or spoil piles in accordance with Section 9 of this rule. Spoil material that is approved to be placed in

permanent excess spoil disposal areas is not required to be used as backfill.

8.6. Grading Outer Spoil. -- All outer spoil shall be graded so as to blend into the adjoining undisturbed lands.

8.7. Regrading or Stabilizing Rills and Gullies. -- Any rills or gullies deeper than nine inches (9") inches forming in areas that have been regraded and the topsoil replaced but where vegetation has not yet been established shall be deemed unacceptable and any such rills or gullies shall be filled, graded, or otherwise stabilized and revegetated. Rills or gullies of lesser size shall also be stabilized if they will be disruptive to the approved post-quarrying land use or may result in additional erosion and sedimentation.

8.8. Inactive Status. -- Inactive status shall be considered for operations that have temporarily ceased for a specified period providing:

8.8.a. disturbed areas are stabilized;

8.8.b. drainage control is maintained, and

8.8.c. prior written approval is obtained from the director.

8.8.d. The operator shall notify the director prior to starting or reactivating the operations.

8.8.e. Permits on which quarrying operations have not started are not required to obtain inactive status.

8.9. Keeping Operation Current. -- Grading, backfilling and water management practices shall be in accordance with the approved quarrying and reclamation plan. Should the particular site conditions or weather make adherence to these guidelines impractical, the director may reasonably extend the time or distance requirements of the plan.

8.10. Permanent Water Impoundments. -- Prior to the construction of a permanent impounding area for the storage of water after quarrying, approval must be obtained from the director for such impoundment. This plan shall include, but not be limited to the following:

8.10.a. Location of the impounding area;

8.10.b. Dimensions of the area as to capacity and depth

(average, maximum and minimum);

8.10.c. Plot plan of impoundment area;

8.10.d. Source of water entering the impoundment;

8.10.e. Quality of the water entering the impoundment;

8.10.f. Quality of water leaving the impoundment and mechanism of discharge;

8.10.g. Mineral or seams quarried or involved with impoundment;

8.10.h. Chemical characteristics of the soils and underlying strata in the impoundment area as they relate to acid production;

8.10.i. Safety aspects considered such as spillway overflow, emergency spillway, access to area; and

8.10.j. Consent of the landowner for such impoundment with submission on specified forms.

8.11. Backfilling and Regrading. -- All disturbed areas are to be reclaimed in accordance with the approved quarrying and reclamation plan. Land above the highwall shall not be disturbed unless the director finds that the disturbance will benefit the future land use of this site or facilitate compliance with the requirements of this section.

8.12. Stabilization. -- The material used to backfill, reduce, or eliminate a highwall shall be sufficiently compacted or otherwise mechanically stabilized so as to ensure stability of the backfill. Woody materials may be buried in the mineral extraction area only when the burial does not cause or add to water pollution or instability.

§38-3-9. Permanent Excess Spoil Disposal, Temporary Spoil Storage Areas.

9.1. Disposal of Excess Spoil in Side of Hill Fills. -- Excess spoil or material to be placed in permanent disposal sites shall be transported to and placed in a controlled manner in disposal areas other than the mine workings or excavation only if all the provisions of this section are met.

9.1.a. Location of Disposal Sites. - Permanent excess

spoil disposal areas shall be identified on the proposal map, shall be located within the permit area, and they must be approved by the director as suitable for construction of fills. The disposal area shall be located on the most moderate slopes and naturally stable areas available.

9.1.b. Certification. -- Certification of the fill shall be as follows:

9.1.b.1. The fill shall be designed using recognized professional standards and certified by an approved registered professional engineer; and

9.1.b.2. The fill shall be inspected for stability by an approved registered professional engineer after completion of the first fifty foot (50') lift, to assure the following requirements are met:

9.1.b.2.A. Removal of all organic material and topsoil;

9.1.b.2.B. Placement of under-drainage systems; and

9.1.b.2.C. Proper construction in accordance with the approved permit.

9.1.b.3 The approved registered professional engineer shall also provide a certified report upon completion of the fill that the fill has been constructed as designed in the approved permit.

9.1.b.4. Any deviations from the approved permit which result from unforeseen site specific circumstances arising during construction, shall be reflected in as-built plans submitted by the operator and approved by the director immediately following construction. The as-built plans shall include the following:

9.1.b.4.A. The original design;

9.1.b.4.B. The extent of the changes; and

9.1.b.4.C. The reference points.

9.1.b.4.C.1. If as built plans are submitted, the certification shall:

9.1.b.4.C.1.(a) Describe how and to what extent the construction deviates from the proposed design;

and

9.1.b.4.C.1.(b) Certify that the fill will meet all the requirements of this rule.

9.1.c. Stabilization. -- Where the slope in the disposal area exceeds 2.8 horizontal to one (1) vertical (thirty-six (36%) percent), or where necessary to achieve a static safety factor of 1.5, measures such as keyway cuts, rock toe buttresses or other techniques shall be used. All organic material shall be removed from the disposal area and the topsoil must be removed and segregated before the overburden is placed in the disposal area. Suitable organic material may be used as mulch or may be included in the topsoil. The spoil shall be transported and placed in a controlled manner, concurrently compacted as necessary to ensure long-term mass stability and prevent mass movement. The fill shall be drained and graded to allow surface and subsurface drainage to be compatible with the natural surroundings.

9.1.d. Drainage. -- The disposal area shall not contain springs, natural water courses or wet weather seeps unless lateral drains are constructed from the wet areas to the under drains in such a manner that infiltration of the water into the fill shall be prevented. The drains shall be designed and constructed of course rock. If no filter is designed for the under drain, sufficient capacity shall be provided to allow for partial plugging of the drain. No rock shall be used in under drains if it tends to disintegrate or if it is acid-forming or toxic-forming.

9.1.e. Construction. -- Construction of the fill shall be as follows:

9.1.e.1. All areas upon which the fill is to be placed shall first be progressively cleared of all trees, brush, and shrubs. This material shall be removed from the fill area;

9.1.e.2. Depositing and compacting the fill in layers shall begin at the toe of the fill. The layers shall be constructed approximately parallel with proposed finish grade. All material shall be deposited in uniform horizontal layers and compacted with haulage equipment;

9.1.e.3. The thickness of the layers shall not exceed four (4) feet;

9.1.e.4. The outer slope or face of the fill shall be regraded to be no steeper than two (2) horizontal to one (1) vertical (2:1) Provided, That constructed fill slopes may be steeper if they meet a static safety factor of one point five (1.5)

and are certified by a registered professional engineer. Benches shall be constructed on the fill at a maximum of every fifty feet (50') in vertical rise above the toe of the fill. The benches shall be no less than twenty feet (20') in width and slope toward the fill at a three (3) to five (5) percent grade and slope laterally at one (1) percent grade to discharge channels capable of passing the peak runoff for a one-hundred (100) year twenty-four (24) hour precipitation event; and

9.1.e.5. When construction of each lift (maximum of every fifty feet (50') in vertical height) of the fill is completed, topsoil or other suitable material which will support vegetation shall be spread over the completed slope and bench. The slopes and benches shall then be seeded and mulched immediately in accordance with the approved revegetation plans.

9.2. Disposal of Excess Spoil Materials in Valley Fills. -- Excess spoil or material to be placed in permanent overburden disposal sites shall be transported to and placed in a controlled manner; spoil to be disposed of in natural valleys must be placed in accordance with the following requirements:

9.2.a. Location of Excess Spoil Areas. - Permanent excess spoil disposal areas shall be identified on the proposal map, shall be within the permit area and they must be approved by the director as suitable for construction of fills. The disposal area shall be located on the most moderate slopes and naturally stable areas available.

9.2.b. Certification. -- Certification of the fill shall be as follows:

9.2.b.1. The fill shall be designed using recognized professional standards and certified by an approved registered professional engineer; and

9.2.b.2. The fill shall be inspected for stability by an approved registered professional engineer after completion of the first fifty foot (50') lift to assure the following requirements are met:

9.2.b.2.A. Removal of all organic material and topsoil;

9.2.b.2.B. Placement of under-drainage systems; and

9.2.b.2.C. Proper construction is in accordance with the approved permit.

9.2.b.3. The approved registered professional engineer shall also provide a certified report upon completion of the fill that the fill, has been constructed as designed in the approved permit.

9.2.b.4. Any deviations from the approved permit which result from unforeseen site specific circumstances arising during construction, shall be reflected in as-built plans submitted by the operator and approved by the director immediately following construction. The as-built plans shall include the following:

9.2.b.4.A. The original design;

9.2.b.4.B. The extent of the changes; and

9.2.b.4.C. The reference points.

9.2.b.4.C.1. If as built plans are submitted, the certification shall:

9.2.b.4.C.1. (a) Describe how and to what extent the construction deviates from the proposed design; and

9.2.b.4.C.1. (b) Certify that the fill will meet all the requirements of this rule.

9.2.c. Stabilization. -- Where the slope in the disposal area exceeds 2.8 horizontal to one (1) vertical (thirty-six percent (36%)) or where necessary to achieve a static safety factor of 1.5, measures such as keyway cuts, rock toe buttresses or other techniques shall be used. All organic material shall be removed from the disposal area and the topsoil must be removed and segregated before the overburden is placed in the disposal area. Suitable organic material may be used as mulch or may be included in the topsoil. The spoil shall be transported and placed in a controlled manner, concurrently compacted as necessary to insure long-term mass stability and prevent mass movement. The fill shall be drained and graded to allow surface and subsurface drainage to be compatible with the natural surroundings.

9.2.d. Drainage. -- The disposal area shall not contain springs, natural water courses or wet weather seeps unless lateral drains are constructed from the wet areas to the under drains in such a manner that infiltration of the water into the fill shall be prevented. If springs, natural watercourses or wet weather seeps are encountered, a system of under drains shall be constructed from each spring or seepage area as lateral drains to the rock core. If

no filter is designed for the under drain, sufficient capacity shall be provided to allow for partial plugging of the drain. No rock shall be used in under drains if it tends to disintegrate or if it is acid-forming or toxic-forming.

9.2.e. Construction. -- Construction of the fill shall be as follows:

9.2.e.1. All areas upon which the fill is to be placed shall first be progressively cleared of all trees, brush, and shrubs. This material shall be removed from the fill area. No more than three (3.0) acres, excluding roadway for construction of fill, shall be cleared in the valley fill site until the first lift is completed;

9.2.e.2. A rock core shall be progressively constructed as the layers are brought up through the valley fill. The rock core shall be a minimum of sixteen feet (16') in width and composed of rock with a minimum dimension of twelve inches (12"). The rock core shall consist of no more than ten percent (10%) fines as determined by visual inspection (fines being a material with a dimension of less than twelve inches) (12");

9.2.e.3. Depositing and compacting the fill in layers shall begin at the toe of the fill. The layers shall be constructed approximately parallel with proposed finish grade. All material shall be deposited in uniform horizontal layers and compacted with haulage equipment;

9.2.e.4. The thickness of the layers shall not exceed four feet (4');

9.2.e.5. During and after construction, the top of the fill shall be graded to drain back to the head of the fill on a slope no greater than three percent (3%). A drainage pocket shall be maintained at the head of the fill at all times to intercept surface runoff. Maximum size of the drainage pocket shall be ten thousand (10,000) cubic feet;

9.2.e.6. The outer slope or face of the fill shall be regraded to be no steeper than two (2) horizontal to one (1) vertical (2:1) Provided, That constructed fill slopes may be steeper if they meet a static safety factor of one point five (1.5) and are certified by a registered professional engineer. Benches shall be constructed on the fill at a maximum of every fifty feet (50') in vertical rise above the toe of the fill. The benches shall be no less than twenty feet (20') in width and slope toward the fill at a three (3) to five (5) percent grade and slope laterally at one (1) percent grade to discharge channels capable of

passing the peak runoff for a one-hundred (100) year twenty-four (24) hour precipitation event.

9.2.e.7. When construction of each lift (maximum of every fifty feet (50') in vertical height) of the valley fill is completed, topsoil or other suitable material which will support vegetation shall be spread over the completed slope and bench excluding the rock core. The completed slope and bench shall then be seeded and mulched immediately in accordance with the approved revegetation plans.

9.3. Disposal of Excess Spoil Material in Durable Rock Fills. -- The director may approve the design, construction, and use of a single lift fill consisting of at least eighty percent (80%) durable rock if it can be determined, based on information provided by the operator, that the following conditions exist:

9.3.a. Permanent excess disposal areas shall be identified on the proposal map, be within the permit area, and they must be approved by the director as suitable for construction of fills. The disposal area shall be located on the most moderate slopes and naturally stable areas available.

9.3.b. Geotechnical Information. -- Examination of core borings and the geologic column show that the overburden consists of durable sandstone, limestone, or other durable material in sufficient thickness and amounts to generate spoil material that is eighty percent (80%) or greater durable rock. Where the fill will contain non-cemented clay shale, clay spoil, or other nondurable material, such material must be mixed with durable rock in a controlled manner such than no more than twenty percent (20%) of the fill volume is not durable rock. Tests shall be performed by a qualified laboratory, and approved by the director to demonstrate that no more than twenty percent (20%) of the fill is not durable rock.

9.3.b.1. The durable rock shall not consist of acid-producing or toxic-forming material, will not slake in water, or will not degrade to soil material. For purposes of this paragraph only, soil material means material of which at least fifty percent (50%) is finer than 0.074 mm, which exhibits plasticity, and which meets the criteria for group symbol ML, CL, OL, MH, CH, or OH, as determined by the United Soil Classification System (ASTM D-2487).

9.3.b.2. The toe of the fill shall rest on natural slopes no steeper than twenty percent (20%).

9.3.c. The fill shall be designed based on the results

of sufficient geotechnical investigations of the construction site. The investigation shall include such factors as geologic conditions, soil characteristics, depth to bedrock location of springs, seeps and groundwater flow, potential effects of subsidence and a description of materials to be placed in rock cores and drains.

9.3.d. The design and construction of all durable rock fills must be certified by a registered professional engineer experienced in design and construction of earth and rock embankments.

9.3.e. The foundation of the fill and the fill shall be designed to assure a long-term static safety factor of 1.5 or greater, and meet an earthquake safety factor of 1.1.

9.3.f. All areas upon which the fill is to be placed shall first be progressively cleared of all trees, brush, and shrubs which are above ground level; provided; that in critical foundation areas, including, but not limited to, the toe of the fill, seepage or underdrain areas, and downstream portions of the fill that provide resisting force against massive slope failure, all organic material both above and below that ground surface must be removed. This material shall be disposed of outside the fill area.

9.3.g. The underdrain system may be constructed simultaneously with excess spoil placement by natural segregation of dumped materials; provided, that the resulting underdrain system shall be capable of carrying anticipated seepage of water due to rainfall away from the excess spoil fill, and from seeps and other springs in the foundation of the disposal area, and the other requirements for drainage control shall be met. If the underdrain system is not constructed by natural segregation of dumped material, it shall be designed and constructed in accordance with subdivision 9.1.d. of this rule.

9.3.h. Surface water runoff from areas above and adjacent to the fill shall be diverted into properly designed and constructed stabilized diversion channels which have been designed using the best current technology to safely pass the peak runoff from a one hundred (100) year, twenty four (24) hour precipitation event. The channel shall be designed and constructed to ensure stability of the fill, control erosion, and minimize water infiltration into the fill.

9.3.i. The grade of the top surface of the completed fill shall not exceed five percent (5%) and shall slope toward the drainage channel.

9.3.j. The outer slope or face of the fill shall be regraded to be no steeper than two (2) horizontal to one (1) vertical (2:1) Provided, That constructed fill slopes may be steeper if they meet a static safety factor of one point five (1.5) and are certified by a registered professional engineer. Benches shall be constructed on the fill at a maximum of every fifty feet (50') in vertical rise above the toe of the fill. The benches shall be no less than twenty feet (20') in width and slope toward the fill at a three (3) to five (5) percent grade and slope laterally at one (1) percent grade to discharge channels capable of passing the peak runoff for a one-hundred (100) year twenty-four (24) hour precipitation event.

9.3.k. No permanent impoundments may be constructed on the completed fill except small depressions may be allowed if they are needed to retain moisture, minimize erosion, create and enhance wildlife habitat, or assist revegetation; and if they are not incompatible with the stability of the fill.

9.3.l. Notwithstanding any other provisions of this rule or terms and conditions of a permit to the contrary, additional storage capacity or sediment control measures may be required through permit revision if sediment removal performance of the structure(s) during operation and construction of the fill is found to be deficient to the point that significant non-compliance with applicable effluent limits or water quality standards results.

9.3.m. The following materials are hereby prohibited from being placed, deposited, or disposed of into a durable rock fill or durable rock fill area:

9.3.m.1. Surface soils, provided that such soils used to establish vegetation on the surface of the fill are not prohibited; provided, however, such soils may be placed in the fill if accounted for in design and construction as nondurable material, and such soils are not deposited in critical zones of the fill;

9.3.m.2. Mud, silt, or sediment cleaned or removed from mining pits, roadways, sediment control structures and/or other areas of the operation;

9.3.m.3. Vegetative or organic materials cleared or grubbed from the permit or other areas; and

9.3.m.4. Coal refuse.

9.3.n. Inspection and Certification of Durable Rock Fills. -- Certification of all durable rock fills shall be required

as follows:

9.3.n.1. The fill and appurtenant structures shall be designed in accordance with professional design standards, which meet the requirements of this subsection, and certified by a registered professional engineer experienced in the design of earth and rock fill embankments;

9.3.n.2. During construction, the fill shall be inspected quarterly for stability by a registered professional engineer experienced in the construction of earth or rock fills or other qualified professional specialist working under the direction of a professional engineer experienced in the construction of earth or rock fills. Regular inspections are also required during placement and compaction of fill materials and during critical construction periods such as foundation preparation, underdrain placement, installation of surface drainage systems, and construction of rock toe buttresses. Within two (2) weeks following completion of the inspections, a report certified by the registered professional engineer shall be submitted to the director. The certified report shall contain a statement that the fill is being constructed and maintained as designed in accordance with the approved plan and this rule. The report shall also note any instances of apparent instability, structural weaknesses, and other hazards. The report on the drainage system and protective filters shall include color photographs taken during and after construction, but before the underdrains are covered with excess spoil. Color photographs shall be of sufficient size and number to provide a relative scale and to clearly identify the site. If the underdrains are constructed in phases, each phase must be certified separately. If excess durable rock spoil is placed such that the underdrain system is constructed simultaneously with excess spoil placement by the natural segregation of dumped materials, color photographs of the underdrains must be taken as they are formed. All color photographs shall be of adequate size and number to provide a relative scale and to clearly identify the site. A copy of the certified report shall be maintained at the mine site;

9.3.n.3. After total completion of the fill, a certification form shall be completed and submitted to the director by the registered professional engineer overseeing construction of the fill; and

9.3.n.4. In addition to the requirements of subparagraph (2) of this paragraph, certification forms for durable rock fills shall be accompanied by the following:

9.3.n.4.A. A statement attesting that the fill contains no more than twenty percent (20%) non-durable material;

9.3.n.4.B. A statement attesting that foundation preparation is proceeding in accordance with the design plans;

9.3.n.4.C. A statement that prohibited materials are not being placed, deposited, or disposed of into the fill area; and

9.3.n.4.D. A statement that sediment control measures are constructed and being maintained in accordance with the approved design plans, and the terms and conditions of the permit.

9.3.n.4.E. Any deviations from the approved drainage plan which result from unforeseen site specific circumstances arising during construction, shall be reflected in as-built plans submitted by the operator and approved by the director immediately following construction. The as-built plans shall include the following:

9.3.n.4.E.1. The original design;

9.3.n.4.E.2. The extent of the changes; and

9.3.n.4.E.3. The reference points.

9.3.n.4.F. If as built plans are submitted, the certification shall:

9.3.n.4.F.1. Describe how and to what extent the construction deviates from the proposed design; and

9.3.n.4.F.2. Certify that the fill will meet all the requirements of this rule.

9.4. Disposal of Excess Spoil Material in Spoil Piles. -- Excess spoil being placed in permanent overburden disposal sites on natural ground with an original slope of less than twenty (20) degrees shall be transported to and placed in a controlled manner; spoil piles must be placed in accordance with the following requirements:

9.4.a. Location of Disposal Sites. - Permanent excess disposal areas shall be identified on the proposal map, be within the permit area, and they must be approved by the director as suitable for construction of spoil piles. The disposal area shall be located on the most moderate slopes and naturally stable areas

available.

9.4.b. Drainage. -- The disposal area shall not contain springs, natural water courses or wet weather seeps unless lateral drains are constructed from the wet areas to under drains in such a manner that infiltration of the water into the spoil pile shall be prevented. The drains shall be designed and constructed of coarse rock. If no filter is designed for an under drain, sufficient capacity shall be provided to allow for partial plugging of the drain. No rock shall be used in under drains if it tends to disintegrate or if it is acid-forming or toxic-forming.

9.4.c. Construction. -- Construction of the spoil pile shall be as follows:

9.4.c.1. All areas upon which the spoil pile is to be placed shall first be progressively cleared of all trees, brush, and shrubs. This material shall be removed from the area of the spoil pile;

9.4.c.2. All material shall be deposited in uniform horizontal layers and compacted with haulage equipment;

9.4.c.3. Unless waived by the director based upon a stability analysis of the spoil pile, the thickness of the layers shall not exceed four (4) feet; and

9.4.c.4. The outer slope or face of the spoil pile shall be regraded to be no steeper than two (2) horizontal to one (1) vertical (2:1) Provided; that constructed slopes may be steeper if they meet a static safety factor of one point five (1.5) and are certified quarterly during construction by a registered professional engineer. The spoil pile shall be considered dormant and shall not need to be certified during periods of inactivity that exceed ninety (90) days in length. Benches shall be constructed on the spoil pile at a maximum of every fifty feet (50') in vertical rise above the toe of the spoil pile. The benches shall be no less than twenty feet (20') in width, and slope toward the pile at a three (3) to five (5) percent grade, and slope laterally at one (1) percent grade to discharge channels design in accordance with section 7 of this rule; and

9.4.c.5. When construction of a spoil pile is completed, topsoil or other suitable material which will support vegetation shall be spread over the completed slopes and benches. The slopes and benches shall then be seeded and mulched immediately in accordance with the approved revegetation plans.

9.5. Temporary Spoil Storage Areas - Temporary spoil storage

areas must be approved by the director as suitable for construction of a fill. The storage area shall be located on the most moderate slopes and naturally stable areas available. Temporary spoil storage areas constructed on slopes steeper than twenty (20) degrees shall be designed using those same requirements as permanent excess spoil disposal sites.

9.6. Variance. -- Where it can be demonstrated that other design criteria are justified, certain requirements of this section may be waived. The basis for justification is, but not limited to, land use potential, access to mineral reserves, unavailability of durable rock, and site stability.

§38-3-10. Revegetation and Standards for Evaluating Vegetative Cover.

10.1. General Requirements. -- Each operator shall establish on all regraded areas and all other disturbed areas a diverse, effective and permanent vegetative cover of the same seasonal variety native to the area of disturbed land, or introduced species that are compatible with the approved postmining land use.

10.2. Objective in Revegetation. -- The objective in revegetation is to quickly establish a vegetative cover on all disturbed areas to minimize erosion, provide economic benefits, and restore aesthetic appeal. Plants that will give a quick permanent cover and enrich the soil shall be given priority. A temporary or permanent cover should be established by the end of the first growing season, and a permanent cover by the end of the second growing season. All plants shall be considered a tool in achieving stabilization and an appropriate land use objective.

10.3. Seeding and Planting.

10.3.a. Seasonal Feasibility. -- Appropriate vegetation shall be planted, seeded, aerial-seeded, or hydro-seeded in accordance with accepted agricultural and reforestation practices when the season is favorable for seed germination and plant survival, except as otherwise specified in this rule.

10.3.b. Minesoil Characteristics. -- Quarrying of minerals and removal of overburden results in minesoil which varies greatly in fertility, acidity and stoniness. These three (3) characteristics, together with steepness of slope, shall be used in determining characterization for the purpose of establishing vegetation. Premining overburden sampling and analysis or previous experience and correlation data, shall be submitted with the quarrying and reclamation plan for all acid-producing overburden or

minerals. The plan shall identify acid strata and provide planned handling and final placement for acid strata. Overburden analysis shall be in accordance with standard procedures outlined in Environmental Protection Agency Manual No. 600/2-78-054 (Field & Laboratory Methods Applicable to Overburdens and Minesoils), or other approved methods by the Division of Environmental Protection.

10.3.c. Function of Temporary Cover Crops. -- On areas where excessive erosion is likely to occur, rapid establishment of vegetative cover shall be required. Seeding of annuals and biennials on such areas shall be considered as a means for achieving temporary vegetative cover only and not acceptable in the achievement of permanent cover. See Table Five.

10.3.d. Development of Planting Plan. -- Planting plans shall be a part of the quarrying and reclamation plan. The plan, when appropriate, shall include the following information:

10.3.d.1. Tests for minesoil acidity, expressed as pH, shall be taken at points distributed uniformly over the disturbed area. Minesoil tests may be made with accepted field indicators or other approved techniques. Minesoils with chemical characteristics that could restrict vegetation establishment and growth shall be analyzed by an approved soils laboratory;

10.3.d.2. Treatment to neutralize acidity;

10.3.d.3. Mechanical seed bed preparation;

10.3.d.4. Rate and analysis of fertilization;

10.3.d.5. Rates and types of mulch;

10.3.d.6. Perennial vegetation including herbaceous and woody plants where appropriate, rate and species;

10.3.d.7. Areas to be planted or seeded to trees and shrub;

10.3.d.8. Land use objective; and

10.3.d.9. Maintenance schedule if appropriate.

10.3.e. Concurrent Revegetation. -- Seeding shall be concurrent with the operation as quarrying and reclamation progresses. The final spring planting date shall be May fifteenth. The final fall planting date shall be September fifteenth. The director may establish alternate final planting dates for the spring and fall planting seasons based upon weather or other

conditions.

10.3.f. Plant Material Selection and Treatment.

10.3.f.1. Specifications. -- All planting plans for woody vegetation shall include provisions for herbaceous cover using a suitable mixture from Table One (1). The following specifications should govern the selection and establishment of seeds and plants used in the revegetation of surface minesoil and based upon the following capability class:

10.3.f.1.A. On favorable minesoil material, prepared for perennial cover crop use, non-stoney and with pH 5.5 or higher, one of the following mixtures should be used:

10.3.f.1.A.1. Seed mixtures one (1), two (2), three (3), four (4), or five (5) from Table one, of this rule should be applied where annual maintenance treatment is assured. Mixture four (4) should be applied where the graded portion of minesoil is to be used as a firebreak or occasionally as a haulageway;

10.3.f.1.A.2. Establishment of grass, legume or perennial grass cover crop shall require the following treatment:

10.3.f.1.A.2.(a) Inoculation of legume seed with proper strain;

10.3.f.1.A.2.(b) Triple inoculation rate if hydro-seeded;

10.3.f.1.A.2.(c) Protection of seeded minesoil area from grazing livestock;

10.3.f.1.A.2.(d) Application of lime to pH 6.0 for mixture four (4), to pH 6.5 to 7.0 for all other mixtures;

10.3.f.1.A.2.(e) Application of fertilizer shall be based on a minesoil test for lime, phosphorus, and potash from a soils lab or shall be a minimum of two-hundred (200) lbs./acre, ammonium nitrate and two-hundred (200) lbs./acre triple super phosphate or equivalent;

10.3.f.1.A.2.(f) Preparation of seed bed by harrowing, discing or other approved methods; and

10.3.f.1.A.2.(g) Completion of fall

seeding for legumes should be completed by September 1.

10.3.f.1.A.3. Maintenance of cover crop shall be carried out by the operator until the cover crop is adjudged by the director to be satisfactorily established and may require the following treatment:

10.3.f.1.A.3.(a) Maintain pH 6.5-7.0 for Mixture one (1);

10.3.f.1.A.3.(b) Maintain pH 6.0-6.5 for Mixture two (2), three (3), four (4), and six (6);

10.3.f.1.A.3.(c) Maintain pH 5.5-6.0 for Mixture four (4); and

10.3.f.1.A.3.(d) Top dress every two (2) years with four-hundred (400) lbs. per acre 0-20-20 for Mixture five (5).

10.3.f.1.B. On favorable minesoil material prepared for woodland and wildlife use, any one mixture from Table two (2) of this rule, along with proportions and treatment prescribed for it, should be selected for use in the direct seeding of herbaceous species and planting of trees and seedlings.

10.3.f.1.B.1. Establishment of plant growth for woodland cover on favorable minesoil material prepared for woodland and wildlife use should require the following:

10.3.f.1.B.1.(a) Spring planting of seedlings not later than May 1st and preferably before April 15th; and

10.3.f.1.B.1.(b) Spacing of shrubs and all trees in a pattern eight feet (8') by eight feet (8') apart of six hundred-eighty (680) trees per acre.

10.3.f.1.B.2. Establishment of crown vetch-rye grass or clover-tall Fescue mixtures for wildlife cover may be done in accordance with paragraph 10.3.f.1.A.2 of this rule.

10.3.f.1.C. On moderately favorable minesoil material, prepared for woodland and wildlife use, with pH 5.5 and above, graded but stoney, on moderate to steep slopes, non-stoney and stoney, one of the mixtures with specified proportion and treatment from Table three (3), of this rule should be used:

10.3.f.1.C.1. Over seeding on moderate to

steep slopes on tree planting sites shall be carried out on minesoil in order to prevent siltation, established ground cover and minimize erosion. Seed one of the mixtures from Table one (1); and

10.3.f.1.C.2. Establishment of plant growth shall require inoculation of legume seed with proper strain, and shall be protected from grazing by livestock. Triple inoculation rate if hydroseeding.

10.3.f.1.D. On favorable minesoil material prepared for woodland and wildlife use, which includes all extremely steep and/or stony minesoil, one of the mixtures with specified proportions and treatment from Table three (3) of this rule shall be used:

10.3.f.1.D.1. Establishment of plant growth should require:

10.3.f.1.D.1.(a) Broadcasting Mixture one (1) and three (3) before May 1st and frost seeding mixture two (2) by early March; and

10.3.f.1.D.1.(b) Black locust seed must be seventy percent (70%) or more viable. All legumes must be inoculated and must be protected from grazing by livestock. Triple inoculation rate if hydroseeding. Mixture No. one (1) of Table three (3), should be used for extremely stoney areas when tested acidity indicated a pH of 4.0 or better.

10.3.f.1.E. Other species of trees, shrubs, grasses, legumes or vines may be approved by the director.

10.3.g. Mulch Specifications. -- Mulch shall be used on all disturbed areas. Annual grains such as oats, rye, wheat, etc. may be used instead of mulch when it is shown to the satisfaction of the director that the substituted grains will provide adequate stability, and that they will be replaced by species approved for the post mining land use. Approved materials and minimum rates to be applied are as follows:

Material:	Rate/Acre:
Straw or hay	1 - 2 tons material may be anchored with asphalt emulsion or other techniques approved by the director.

Wood fiber or wood cellulose products	1,000 lbs.
Shredded Bark	50 cubic yards

10.3.h. Standards for Evaluating Vegetative Cover.

10.3.h.1 Final Planting Report. -- A planting report shall be prepared by the operator and filed with the director on the prescribed form upon application for a release of the bond or contributions to the Bond Pooling Fund. All planting reports shall be certified by the operator or by the party with which the operator contracted for planting.

10.3.h.2. Time for Inspection. -- The operator shall review all areas under permit prior to the recognized spring and fall planting seasons. The operator shall cause those areas deficient of vegetative cover to be retreated to establish a satisfactory stand of vegetation. For purposes of bond release, the vegetation must survive two (2) growing seasons or twenty-four (24) months and must meet the following standards:

10.3.h.2.A. Standards for Perennials. -- Standards for legumes and perennial grasses shall require at least an eighty percent (80%) ground cover. Substandard areas shall not exceed one-fourth (1/4) acre (100' X 100') in size nor total more than twenty percent (20%) of the area seeded.

10.3.h.2.B. Standards for Woody Plants with Perennials. -- Standards for woody plants with legumes and perennial grasses overseeded shall require a sixty percent (60%) establishment of ground cover of legumes and perennial grasses, and four hundred (400) trees (including volunteer tree species) and/or planted shrubs per acre, comprising a satisfactory vegetative ground cover as determined by the director. Substandard areas shall not exceed one-fourth (1/4) acre (100' X 100') in size not total more than twenty percent (20%) of the area seeded or planted.

10.3.h.2.C. For areas developed for industrial, commercial, residential or public use less than two (2) years after reclamation is completed, the requirements of subparagraph 10.3.h.2.A. and B. of this section do not apply. The ground cover of living plants shall not be less than required to control erosion. When the permittee has demonstrated that the proposed post quarrying land use will be accomplished, the director may release the bond or the operator's contributions to the bond pooling fund.

10.4. The permittee shall protect all vegetated areas from excessive grazing.

§38-3-11. Mapping, Approved Persons, and Markers.

11.1 Scale for Maps. -- The scale required for all maps and plans prepared for submission with an application for a quarrying permit shall be as follows:

11.1.a. Scale on a U.S. geological survey topographic seven point five (7.5) minute quadrangle shall be enlarged to five hundred feet (500') or less to the inch; and

11.1.b. Scale on aerial photographs shall be six hundred sixty feet (660') or less to the inch.

11.1.c. Written approval from the director shall be required prior to the submission of maps drawn to any scale other than those set forth by this rule.

11.2. Scale for Progress, Modification, Annual Bonding Progress Report and Final Maps. -- The scale required for progress, modification, Annual Progress Report and final maps shall be the same scale as the proposal and drainage map.

11.3. Location Map - All maps shall contain a clear and accurate location map of a scale and detail found on the West Virginia County Highway map.

11.4. Map Size. -- All maps and plans shall be submitted on standard print paper, twenty-four inches (24") by thirty-six inches (36") or less. If supplementary maps or plans are attached, match lines shall be used.

11.5. Color Code. -- A color code shall be used in preparing all maps to indicate critical features of the permit area as follows; provided, that drafted or computer generated graphic symbols or shading may be used in place of a color code, if a separate, uniquely identifiable, and clearly discernible symbol or shading is provided in place of each color as specified below, and if the symbols or shading are clearly defined on map legends and used consistently throughout the permit application, and in any subsequent permit modifications, progress maps, or other submittals relating to the permit:

11.5.a. Red shall indicate the mineral removal area;

11.5.b. Yellow shall indicate disturbed land not included in the mineral removal area;

11.5.c. Blue shall indicate water and drainage;

11.5.d. Brown shall indicate special uses;

11.5.e. Green shall indicate reclaimed areas; and

11.5.f. Purple shall be used to outline adjacent mining permits.

11.6. Approved Person. -- Any person preparing an annual Bonding Progress Report Map or certifying the construction of drainage control structures, haulageways, or preparing a reclamation and quarrying plan shall first submit to the director a written resume of their past experience and training. A written test may also be administrated. On the basis of such resume and/or written test, he or she shall be adjudged qualified or not as the case may be, and so notified by the director in writing. Approved person status may be revoked at the discretion of the director.

11.7. Permit or End of Quarry Marker. -- A two-inch (2") pipeshall be driven into the earth with a minimum of three feet (3') exposed to permanently mark the beginning and ending points of the area under permit. It shall be identified by painting the exposed portion of the pipe red. Any suitable substitute may be approved. The assigned permit number shall be permanently affixed to the permit or end of quarry marker.

11.8 Entry monuments shall be constructed of a two inch (2") pipe, concrete or wood post, with a minimum of four feet (4') exposed, and a two foot (2') X three foot (3') sign affixed with company name, address, phone number and permit number.. Permit or end of quarry monuments shall be set into the earth with a minimum of three feet (3') exposed, painted red, and shall mark the beginning and ending points of the area under permit. Suitable equivalent substitutes may be approved.

§38-3-12. Transfer or Sale of Permit Rights.

12.1. The director may grant written approval for the transfer or sale of a permit under the following terms and conditions:

12.1.a. Transfer of permits. -- When the interest of a permittee of any quarrying operation is sold, leased, assigned or

otherwise disposed of, the transferee shall file an application for transfer within thirty (30) days. The application for transfer or sale shall be set forth on forms prescribed by the director;

12.1.b. Approval of the application for transfer or sale of a permit may be granted upon a written finding by the director that the applicant shall conduct mining operations in accordance with the purposes and intent of the Act, this rule, and the terms and conditions of the permit. Such findings shall be based on information set forth in the application for transfer or sale, and any other information made available to the director. Such approval may be granted in advance of the close of the public comment period provided; that where information is made available to the director precludes approval, such approval shall be immediately withdrawn;

12.1.c. Each application for a transfer or sale of a permit shall contain a sworn statement as follows: "The information contained in this application is true and correct to the best of my knowledge and belief." Such statement shall be signed by a principal officer of the applicant and shall be notarized; and

12.1.d. Any person who, through whatever means, assumes ownership or control directly or indirectly of a quarrying operation must be eligible to receive a permit and shall become responsible for the correction of all outstanding unabated violations, unpaid fees or penalties for the operation.

§38-3-13. Public Hearings.

13.1. Public Hearing.

13.1.a. Any request for a public hearing for a new permit or major modification of a permit shall be in writing and received by the director before the close of the public comment period. The request shall identify the company name and QMA or permit number.

13.1.b. Those requesting the public hearing shall be notified, and the date, time, and location of the public hearing shall also be advertised by the director in a newspaper of general circulation in the county or counties in which any portion of the proposed permit area is located least one (1) week prior to the scheduled hearing date.

13.1.c. The director's authorized agent shall preside over the public hearing.

13.1.d. In the event all parties requesting the public hearing stipulate agreement prior to the hearing and withdraw their request, a hearing need not be held.

§38-3-14. Annual Bonding Progress Report Map and Permit renewals

14.1. Annual Bonding Progress Report Map. - At least thirty days prior to the anniversary date of the permit issuance, the permittee shall provide the director a Bonding Progress Report Map showing, with a reasonable degree of accuracy, the acreage of land currently disturbed, the acreage of land which is reclaimed and the estimated acres of land to be newly disturbed during the next ensuing year. The map shall be prepared by a registered professional engineer, licensed land surveyor, or an approved person and the accuracy verified by the director. Aerial photographs may be substituted if all of the information required by this paragraph can be accurately shown. The map or aerial photograph shall be used by the director to compute bond or bond pooling fund adjustments. For the purpose of this section "reclaimed" quarry land means those areas which meet bond release requirements. When no additional land has been disturbed by operations during the preceding year and the prior annual Bonding Progress Report Map or aerial photograph is still up to date, in lieu of the map, the operator may provide a signed statement regarding the status of the operation to the director.

14.2. Permit Renewal - Each quarrying and reclamation plan shall be reviewed at the time of permit renewal to ensure compliance with the requirements of WV Code §22-4, this rule, and permit conditions. Consideration should be given to those areas which were permitted, but not disturbed prior to the effective date of this rule in allowing reasonable time to bring these areas into compliance. Areas that were permitted, disturbed, and properly stabilized prior to the effective date of this rule will not be required to be reaffected.

14.3. After the effective date of WV Code §22-4, all permits shall be renewed on the anniversary date of the permit issuance for a period of five (5) years.

14.4. Each request for a permit renewal shall be submitted on forms prescribed by the director and shall contain a sworn statement as follows: "The information contained in this application is true and correct to the best of my knowledge and belief.", and shall be signed by a principal officer of the applicant and shall be notarized.

14.5. Each renewal application shall include four (4) copies of a progress map prepared consistent with the provisions of

WV Code §22-4-18 (g). This map shall serve as the Annual Bonding Progress Report Map for that year. The map shall reflect all previous permit modifications, shall indicate the acres permitted, disturbed, and reclaimed and shall become the new map of record.

§38- 3-15. Permit Modifications.

15.1. Each request for a permit modification shall be submitted on forms prescribed by the director which shall be signed by a principal officer of the applicant.

15.2. The director may require reasonable modifications to mining permits where such modifications are necessary to assure compliance with the Act and this rule; provided, that the director shall notify the permittee that such modifications are necessary and shall provide a reasonable time for compliance.

§38-3-16. Inspection and Enforcement.

16.1. Inspection Frequencies. -- The director shall inspect each active operation at least once every calendar quarter. Operations with approved inactive status shall be inspected at least once every six (6) months. More inspections may be conducted as necessary to ensure compliance.

16.2. Compliance Conference. -- A permittee may request an on-site compliance conference to review the status of any condition or practice at any quarrying or reclamation operation. Any compliance conference shall not constitute an inspection within the meaning of W. Va. Code §22-4-24 and this section. The director may accept or refuse any request to conduct a compliance conference. If accepted, an authorized representative of the director shall conduct the compliance conference, and shall review conditions and/or practices at the operation in order to advise whether any conditions and/or practices has a potential to become a violation of the Act, this rule or any applicable permit condition. Neither the holding of a compliance conference or any opinion given by the authorized representative of the director at a conference shall affect:

16.2.a. Any rights or obligations of the director or the permittee with respect to any enforcement action, whether prior or subsequent to the compliance conference; or

16.2.b. The validity of any enforcement action taken with respect to any condition or practice reviewed at the compliance conference.

16.3. Notice of non-compliances. -- When, on the basis of an inspection carried out pursuant to subsection 16.1 of this section, the director determines that a quarrying or reclamation operation is in violation of any of the requirements of the Act, this rule, or the terms and conditions of the permit, a notice of non-compliance may be issued. Each day of noncompliance constitutes a separate violation.

16.3.a. Notice Procedures. -- A notice of non-compliance shall be in writing signed by the Director and shall set forth with reasonable specificity:

16.3.a.1. The nature of the violation;

16.3.a.2. The remedial action required, which may include interim steps;

16.3.a.3. A reasonable time for abatement, which may include time for accomplishment of interim steps, but in no case shall the initial abatement period be in excess of thirty (30) days; and

16.3.a.4. A reasonable description of the portion of the quarrying or reclamation operation to which it applies.

16.3.b. Extension of Abatement Period -- The director may extend the time set for abatement or for accomplishment of an interim step if the failure to meet the time previously set was not caused by lack of diligence on the part of the operator.

16.3.c. Termination -- The Director shall terminate a notice of non-compliance by written notice to the permittee when he or she determines that all violations listed in the notice of non-compliance have been abated. Notices of non-compliance shall not be terminated or vacated because of the operator's inability to comply with the terms of abatement.

16.4. Cessation Order for Failure to Abate -- The director may issue a Cessation Order suspending the permit or portion of the permit for failure of the operator to abate a notice of non-compliance within the time specified.

16.5. Cessation Order for Imminent and Substantial Harm -- The director may issue a Cessation Order whenever he or she finds that an ongoing operation is causing or is likely to cause imminent and substantial harm to the environment, public safety or public health.

16.6. Cessation of Operations -- Any cessation order issued by the director, shall order the operation or a portion of the operation to cease and shall remain in effect until the non-compliance has been abated or until modified, vacated, or terminated by the director or the Surface Mine Board or by a court.

16.7. Remedial Measures -- In any cessation order, the director shall determine the appropriate remedial measures to be taken to abate the violation in the most expeditious manner possible and shall set forth these measures, and the time by which abatement shall be accomplished in the order.

16.8. Consent Agreement. -- When the permittee demonstrates that sufficient resources are available to him or her to abate the violation(s), the director may enter into a consent agreement.

16.9. Quarrying Without a Permit -- Quarrying operations conducted by any person without a valid permit constitutes a condition or practice which causes or can reasonably be expected to cause imminent and substantial harm to the environment, public safety, or public health.

16.10. Permittee Responsibility. -- Violations by any persons conducting quarrying operations on behalf of the permittee shall be attributed to the permittee, unless the permittee establishes that they were acts of deliberate sabotage.

16.11. Civil Penalty Determinations.

16.11.a. Violation Assessments. -- The director shall review each notice of non-compliance or order, and determine whether or not a civil penalty will be assessed and the amount of the penalty. The director for each notice of non-compliance or order may assess a separate civil penalty for each day of the violation, beginning with the date of issuance of a notice of non-compliance or order to the date of abatement of the violation. In determining whether or not to assess a separate daily civil penalty and determine the amount of the civil penalty, the director shall consider those factors specified in WV Code §22-4-24(e), and subsection 16.13 of this rule, and may consider the extent to which the operator may have gained any economic benefit as a result of a failure to comply. Any notice of non-compliance which continued unabated for two (2) or more days after the initial abatement period, and received a civil penalty assessment of three thousand five hundred dollars ($3,500) or more, shall be assessed the penalty amount for a minimum of two (2) separate days. The determination as to whether or not to assess a civil penalty, if the amount is less than one thousand dollars ($1,000), will be at the discretion of the director. Notices of non-compliance with a

seriousness rating of four (4) or greater shall be assessed regardless of the amount. Termination of a notice of non-compliance shall not affect the right of the director to assess a civil penalty for those violations.

16.12. Procedure for Assessing Civil Penalties.

16.12.a. Assessment Officer -- Duties. For the purposes of this section, the assessment officer shall not determine the proposed penalty assessment until such time as the director has caused an inspection of the violation to be conducted, and the findings of that inspection are submitted to the assessment officer in writing. The director must conduct the inspection of the violation within the first fifteen (15) days after the notice or order was served. The assessment officer may continue conferences, conduct investigations, and interview witnesses as necessary.

16.12.b. Determination of Civil Penalty Amounts. -- Civil penalty amounts for notices of non-compliance or order shall be determined in accordance with the factors specified in WV Code §22-4-24(e), and the numerical point system in subsection 16.13 of this section. Within fifteen (15) days of service of a notice of non-compliance or order, the person to whom it was issued may submit written information about the violation to the director, and to the inspector who issued the notice of non-compliance or order.

16.12.c. Notice of Assessment. -- The director shall provide a copy of the proposed assessment and the accompanying worksheet to the operator by certified mail within thirty (30) days of the date of the issuance of a notice or order. If the mail is tendered at the address of the person set forth in the permit application, or at any address at which that person is in fact located, and he or she refuses to accept delivery of or to collect such mail, the requirements of this paragraph shall be deemed to have been complied with upon such tender. Failure by the director to serve any proposed assessment within thirty (30) days shall not be grounds for dismissal of all or part of such assessment, unless the person against whom the proposed penalty has been assessed proves actual prejudice as a result of the delay and makes a timely objection to the delay. An objection shall be timely only if made in the normal course of administrative review. The operator may, within twenty (20) days of receipt of notice of assessment, request an informal assessment conference to allow the Assessment Officer to consider the fact of violation and the amount of penalty. The director shall also give notice including any worksheet, in person or by certified mail, to the operator of any penalty adjustment as a result of an informal conference within thirty (30) days following the date of the conference. The reasons for reassessment shall be documented in the file by the assessment officer. The

director shall consider any information submitted by the director, the operator or any affected party in determining the facts surrounding the violation, and the amount of the penalty. Unless a conference has been requested, the director shall review and if necessary reassess any penalty considering facts which were not reasonably available on the date of issuance of the proposed assessment because of the length of the abatement period. The director shall serve a copy of any such reassessment and of the worksheet showing the computation of the reassessment within thirty (30) days after the date the violation is abated.

16.12.d. Notice of Informal Assessment Conference. - The operator shall be notified of the time and place of the informal assessment conference at least five days prior to the conference date. The time and place of an informal assessment conference shall be posted at the nearest Department of Environmental Protection regional office to the operation. Any person shall have the right to attend and participate in the conference. Any person, other than the operator and Department of Environmental Protection representatives, may submit in writing at the time of the conference a request to present evidence concerning the violation(s) being conferenced. Such request shall be granted by the assessment officer if it is determined that the person or persons have been affected by the violation. Should problems arise due to scheduling, the assessment officer may continue the conference to a later time and/or date as the assessment officer deems necessary to honor other scheduled conferences.

16.12.e. Informal Conference. -- An informal conference on the assessment or reassessment must be scheduled within sixty (60) days of the receipt of a request from the affected operator. Failure to hold an informal conference in the time limits specified in this subsection will not be considered as grounds for dismissal of the assessment, unless the operator proves actual prejudice and makes timely objection to the delay. The assessment officer shall consider all relevant information on the violation, including information which may be provided by the director, the operator or any affected party. Within thirty (30) days after the conference is held the assessment officer shall either:

16.12.e.1. Vacate the non-compliance and penalty;

16.12.e.2. Settle the issue, in which case a settlement agreement shall be prepared and signed by the assessment officer on behalf of the director and by the person assessed;

16.12.e.3. Affirm, raise, lower, or vacate the penalty; or

16.12.e.4. Terminate the conference when it is determined that the issues cannot be resolved or that the person assessed is not diligently working toward resolution of the issues.

16.12.f. Settlement Agreement. -- If a settlement agreement is entered into, the person assessed will be deemed to have waived all rights to further review of the non-compliance or penalty in question, except as otherwise expressly provided for in the settlement agreement. The settlement agreement shall contain a clause to this effect. If full payment of the amount specified in the settlement agreement is not received by the director within the time period specified in the agreement, the director may enforce the agreement or rescind it and affirm, raise, lower or vacate the penalty within thirty (30) days from the date of the rescission.

16.12.g. Rules of Evidence. -- At formal review proceedings pursuant to WV Code §22-4-25, no evidence as to any statement made by one party at a conference shall be introduced as evidence by another party, or may be used to impeach a witness.

16.12.h. Escrow. -- If a person requests an administrative or judicial review of a proposed assessment, the proposed penalty assessment shall continue to be held in escrow until completion of the administrative or judicial review.

16.12.i. Penalty Adjustment. -- When an administrative or judicial review of a civil penalty order results in an order increasing the penalty, the person to whom the notice or order was issued shall pay the amount of the increase within thirty (30) days after the order is received.

16.12.j. Mitigation. -- Unless caused by lack of diligence, inability to comply may be considered in mitigation of the amount of civil penalty.

16.12.k. In Kind Assessment. - The director may accept in kind assessment by reclamation of an abandoned quarry site in lieu of cash payment of civil administrative penalties. The site to be reclaimed shall be approved by the director. The cost of reclamation must be determined by the director to equal or exceed the amount of civil penalty owed. If the cost of reclamation is less that the amount of civil penalties owed, the balance shall be collected pursuant to WV Code 22-4-24.

16.13. Assessment Rates.

16.13.a. History of Violations. -- History of previous violations is an accounting of all notices of non-compliance and orders that were written on the subject operation in the previous

twelve (12) months. Notices of non-compliance and orders which were withdrawn or vacated shall not be included in the accounting. The dollar amount to be assessed shall be determined by multiplying the number of non-compliances by a factor of one hundred (100).

16.13.b. Seriousness of the Violation.

1-2 Violation is of an administrative nature resulting in no harm or danger to the environment or public; or the standard is violated to such a minor degree that environmental harm or public danger will not result.

3-4 Violation results in potential or actual harm or danger remaining in the permit area; or in the case where the impact extends beyond the permit area; can be demonstrated that potential danger or harm or will not result.

5-6 Violation extends beyond the permit area and results in a minor degree of potential or actual harm or impact on the public.

7-8 Violation can reasonably be expected to result in an imminent and substantial harm to the environment public safety or public health. A violation which initially has a seriousness rating of seven (7) or higher is one which must be a cessation order, as set forth in subdivision 16.5 of this rule.

9-10 Violation extends beyond the permit area and results in a significant degree of environmental harm or danger to the public.

Rating	0	1	2	3	4	5
Dollar Amount	-	100	200	400	600	900

Rating	6	7	8	9	10
Dollar Amount	1200	1600	2100	2700	3500

16.13.c. Operator Negligence.

0 This violation is considered beyond the control of the operator or his employees, and no negligence can be attributed to this violation.

1-2 This violation was a result of an oversight on the part of the operator, and may have been avoided if more conscientious effort and/or reasonable care were given.

3-4 This violation was obvious, and/or no action was taken by the operator to prevent the problem.

5-6 The operator failed to adequately respond to previous written instructions of the inspector to prevent this event.

7-8 The operator had been officially notified, in writing, of this problem, and did not make any effort at correcting the problem.

Rating	0	1	2	3	4
Dollar Amount	0	100	225	350	475

Rating	5	6	7	8
Dollar Amount	600	725	875	1000

16.13.d. Operator's Good Faith.

Good faith percentage shall not include a history of non-compliances in the amount. Good faith percentage shall be rounded to the nearest dollar amount.

0 Operator failed to take appropriate remedial action. Notice of non-compliance has been modified to a cessation order.

1-2 Operator took prompt, but insufficient remedial action to fully abate the violation within the required abatement period. Abatement period was extended for just cause. Remedial action was completed prior to the end of the extended abatement period.

3-4 Operator took prompt remedial action and worked diligently to abate the violation. Conditions beyond the operator's control prevented full abatement, and required that the abatement period be extended for just cause. Abatement of the violation was accomplished before the end of the extended abatement period.

5-6 Operator initiated remedial action immediately and expended all reasonable efforts to abate the violation. Violation was abated before the end of the original abatement period.

7-8 Operator was already taking remedial action at the time the violation was noted, and expended exemplary effort in abating the violation before the end of the original abatement period.

Rating	0	1	2	3	4
%	0%	5%	10%	15%	20%

Rating	5	6	7	8
%	25%	30%	35%	40%

16.13.e. Determination of Penalty Amount.

Seriousness of Violations $_____

Operator Negligence + $_____

Subtotal $_____

Less Good Faith % - $_____

Sub Total $_____

History of Violations + $_____

Total $_____

§38-3-17. Final Release of Bond or Bond Pooling Fund, Final Inspection Report.

17.1. Upon completion of the required reclamation, and after the requirements of the permit have been fully complied with, the permittee shall submit to the director a request for release of the bond or contributions to the bond pooling fund. In no instance shall the request for release be made until the vegetation meets the appropriate evaluation standards in section 10 of this rule.

17.2. The release request shall be on forms prescribed by and furnished by the director.

17.2.a The request for release shall include the following:

17.2.a.1. Accurate final map(s)or aerial photograph(s) in accordance with Section 11 of this rule;

17.2.a.2. Appropriate requests for special land use;

17.2.a.3. A certificate of publication of a Class 1 legal advertisement; and

17.2.a.4. Proof of notification to the surface owner(s).

17.3. A final inspection report shall be prepared and filed following inspection to determine that the operation is in compliance with this rule, the appropriate permit requirements, reclamation and revegetation standards, and that any untreated water discharged from the permit area is in compliance with WV Code §22-11. If acceptable, the director may then cause the permit increment or the permit and the corresponding bond or contributions to the Bond Pooling Fund to be released. Quarry areas that were disturbed prior to June 8, 2000 are exempt from reclamation requirements on those areas, unless otherwise specified.

17.4. Upon approval of a modification to consolidate permits, those permits which have been absorbed shall be eligible for immediate release.

§38-3-18. State and Federal Compliance.

The issuance of quarrying permit pursuant to WV Code §22-4, as amended, and any rules promulgated thereunder authorizes the operations covered by said permit, but does not release the permit holder from any other legal duties imposed by the laws of this state or these United States.

TABLE ONE

[1, 3] USE: HAY, PASTURE OR OTHER WHERE HERBACAOUS COVER IS DESIRED

1.	Alfalfa	20 lbs.
	Orchard grass	10 lbs.
	Tall Fescue	15 lbs.
2.	Birdsfoot Trefoil	10 lbs.
	Tall Fescue	15 lbs.
3.	Birdsfoot Trefoil	10 lbs.
	Orchard grass	10 lbs.
4.	Orchard grass	20 lbs.
	Red Top	3 lbs.
5.	Crown Vetch	15 lbs.
	Tall Fescue	20 lbs.
	[2]Weeping Lovegrass	3 lbs.
6.	Crown Vetch	15 lbs.
	Rye Grass	15 lbs.
	[2]Weeping Lovegrass	3 lbs.

[1]APPROVED SEED MIXTURES FOR OVER SEEDING TREE AND SHRUB SEEDLINGS

7.	Tall Fescue	30 lbs.
	Birdsfoot Trefoil	15 lbs.
8.	Tall Fescue	20 lbs.
	Rye Grass	10 lbs.
	Birdsfoot Trefoil	15 lbs.
9.	Tall Fescue	20 lbs.
	[2]Weeping Lovegrass	3 lbs.
	Birdsfoot Trefoil	15 lbs.

FOR ELEVATIONS ABOVE 2500

10.	Tall Fescue	20 lbs.
	Red Top	4 lbs.
11.	Tall Fescue	20 lbs.
	[2]Weeping Lovegrass	3 lbs.
12.	Tall Fescue	20 lbs.
	Sweet Clover	10 lbs.

[1]Establishment of vegetation includes liming pH range 5.5-7.0. Application of fertilizer shall be based on soil test results from a soil laboratory. Without a soil test, apply 600 lbs. 10-20-10 or equivalent, and protection from grazing during the seedling state.

[2] Red Top may be substituted for Weeping Lovegrass for late summer and fall seedings at a rate of 3 lbs. per acre.

[3] On areas that will be used as pasture or hayland, timothy, perennial rye grass, red top, smooth brome or other appropriate species may be substituted for tall fescue.

TABLE TWO

APPROVED WOODLAND PLANT MIXTURES
(Nursery Grown Seedlings)

1.	Black Locust (below 3000') White Pine	Plant in bands 6 rows or more in width Black Locust not to exceed 50%.
2.	Black Locust (below 3000') Virginia Pine	Plant in bands 6 rows or more wide Black Locust not to exceed more than 50%.
3.	Scotch Pine White Pine Red Pine (above 2000') Virginia Pine (below 2500')	Use mixture of two or more if available Plant in bands 6 rows or more.
4.	Black Locust (below 3000') Tulip Poplar (below 3000') Sycamore (below 2500') Red Oak	Use up to one-half locust with one or more of hardwood species. Plant in bands 6 or more rows in each species.
5.	Autumn Olive and adapted pine or hardwoods	Where owner's interest is wildlife improvement, plant in bands of 3 to 6 rows preferable with pines or in blocks of one-fourth acre spaced 600' apart.
6.	European Black Alder (below (2500) Sycamore Indigo Bush Autumn Olive	Use these plants where protection from grazing is impractical or protection will not be maintained. For wildlife habitat improvement use 3 to 6 row bands where two or more species are planted.
7.	European Black Alder	Use European Black Alder where pH is near 5.5.
8.	Black Locust	Use only on steep erodible outslopes.
9.	Sweet Crab Apple[1] Washington Hawthorne[1]	On bench of areas where owners primary' interest is wildlife habitat improvement, plant in clumps of 12 spaced 10' to 12' apart. Clumps should be spaced 200' to 300' apart, planted in between with pine, Indigo Bush or Autumn Olive.
10.	Blackberry[1]	Plant on bench spaced 6 x 6 in blocks 100 plants per block.
11.	Grey Dogwood[1] Silky Cornell[1]	On bench near water impoundments spaced 8 x 8.

[1]Should be planted only on the more favorable sites. Preferably a north or northeastern aspect with a pH of 5.5 or above.

TABLE THREE

[1]APPROVED MIXTURES
HERBACEOUS AND WOODY SPECIES FOR DIRECT SEEDING

1.	Tall Fescue	30 lbs.	
	Birdsfoot Trefoil	15 lbs.	
	Black Locust[2]	3 lbs.	
2.	Tall Fescue	20 lbs.	
	Rye Grass	10 lbs.	
	Birdsfoot Trefoil	15 lbs.	
	Black Locust[2]	3 lbs.	
3.	Tall Fescue	20 lbs.	
	Weeping Lovegrass	3 lbs.	
	Birdsfoot Trefoil	15 lbs.	
	Black Locust[2]	3 lbs.	
4.	Orchard grass	30 lbs.	Better suited to higher
	Birdsfoot Trefoil	10 lbs.	elevations above 2500'
	Black Locust[2]	3 lbs.	
5.	Orchard grass	20 lbs.	Better suited to higher
	Red Top	3 lbs.	elevations to 2500'
	Birdsfoot Trefoil	10 lbs.	
	Black Locust[2]	3 lbs.	

[1]Application of fertilizer shall be based on soil testing results from a soils laboratory. Without a soil test, apply a minimum of 600 lbs. per acre of 10-20-10 or 10-20-20. Equivalent amounts of nitrogen and phosphorus is acceptable.

[2]Black Locust seed may be omitted on the bench areas or where erosion is not a serious problem, or at elevations above 2000', 1/4 lb./acre Virginia Pine; 1/4 lb/acre White Pine, and 3 lbs./acre Japonica Intermedia may be substituted for Black Locust.

TABLE FOUR

[1]APPROVED MIXTURES FOR WATERWAYS, DIVERSIONS
DRAINAGE STRUCTURES, HAULAGEWAYS, HIGHWALL ACCESS, ETC.

1.	Tall Fescue	50 lbs.
	Birdsfoot Trefoil	10 lbs.
	Red Top	3 lbs.
2.	Perennial Rye Grass	20 lbs.
	Tall Fescue	30 lbs.
	Birdsfoot Trefoil	3 lbs.
3.	Tall Fescue	40 lbs
	Crown Vetch	15 lbs.
	Red Top	3 lbs.
4.	Tall Fescue	50 lbs.
	Crown Vetch	15 lbs.
5.	Tall Fescue	30 lbs.
	Reed Canarygrass	20 lbs.
	Red Top	3 lbs.

NOTE: Weeping lovegrass at 3 lbs. per acre may be substituted for Red Top for spring and early summer seedlings on well drained areas.

[1]Application of fertilizer shall be based on soil test results from a soils laboratory. Without a soil test, apply a minimum of 600 lbs. per acre of 10-20-10 or 10-20-20. Equivalent amounts of nitrogen and phosphorus fertilizer is acceptable.

TABLE FIVE

[1]ANNUAL AND BIENNIAL COVER CROPS FOR TEMPORARY COVER

- Grasses -	Suggested Rates of Application - Pounds In Acres	Seeding Season
Balbo Rye	30 - 60	Fall
Abruzzi Rye	30 - 60	Fall
Wheat	30 - 60	Fall
Oats	30 - 60	Fall
Japanese Millet	10 - 15	Summer
Millets - German, Foxtail	10 - 15	Summer
Sudan Grass - Sorghum Hybrid	10 - 20	Summer
Pearl Millet	10 - 20	Summer
Sudan Grass	10 - 20	Summer
Annual Rye Grass	10 - 15	Spring or Fall
- Legumes -		
Kobe Lespedeza	5 - 10	Summer
Korean Lespedeza	5 - 10	Summer
Hairy Vetch	20 - 40	Fall
Sweet Clover	10 - 20	Summer
- Forbs -		
Buckwheat	30 - 60	Summer

[1]Application of fertilizer shall be based on soil test results from a soils laboratory. Without a soil test, apply a minimum of 600 lbs. per acre of 10-20-10 or 10-20-20. Equivalent amounts of nitrogen and phosphorus fertilizer is acceptable.