

WEST VIRGINIA SURFACE MINING RECLAMATION REGULATIONS

Department of Natural Resources

Chapter 20-6
Series VII
(1978)

Observed 1983

Subject: Rules and regulations pertaining to areas disturbed by prospecting, surface mining operations, and surface effects of underground mining operations, particularly with regards to requirements for permit requirements, performance bonds, haulageways or access roads, blasting, protection of the hydrologic system, drainage system, method of operation, backfilling and regrading, postmining use of land, prime farmlands, revegetation, other mining operations on disturbed surface mined areas, surface mining other than coal, surface mining of limestone, sandstone and sand, modifications, and state and federal compliance and validity of regulations.

SECTION 1. GENERAL

1.01. Scope - These regulations establish general and specific rules for permits, for haulageways or access roads, for blasting, for protection of the hydrologic system, for drainage systems, for methods of operation, for postmining use of lands, for prime farmlands, for revegetation of lands disturbed by prospecting and surface mining operations, for other mining operations on surface mined areas, for surface mining other than coal, for bonds and permits, for quarries, for surface mining of limestone, sandstone and sand, for modifications, for state and federal compliance and for validity of regulations.

1.02. Authority - These regulations are issued under the authority of Article 6, Chapter 20, Code of West Virginia, as amended.

1.03. Effective Date - These regulations were promulgated on the 14th -

day of August, 1978. and become effective on the 14th day of August, 1978.

1.04. Filing Date - These regulations were filed in the Office of the Secretary of State on the 14th day of August, 1978.

SECTION 2. DEFINITIONS: UNLESS THE CONTEXT IN WHICH USED CLEARLY REQUIRES A DIFFERENT MEANING, AS USED IN THESE REGULATIONS OR AS REFERRED TO IN ARTICLE 6, CHAPTER 20, CODE OF WEST VIRGINIA, AS AMENDED:

2.01. Acidity shall mean the capacity of water to donate protons.

The symbol pH referring to the degrees of acidity or alkalinity. On this scale, pH of 1 is the strongest acid, pH of 14 is the strongest alkali, pH of 7 is neutral.

2.02. Acid mine drainage shall mean water with a pH of less than 6.0 discharged from active or abandoned mines and from areas affected by surface mining operations.

2.03. Acid-forming materials shall mean earth materials that contain sulfide mineral or other materials which may create acid drainage.

2.04. Acid-producing overburden shall mean material that may cause spoil which upon chemical analysis, show a pH of 4.0 or less. Seams commonly associated with such material may include, but not be limited to Waynesburg, Washington, Freeport, Sewickley, Redstone, Pittsburgh, Kittanning, Elk Lick, Peerless, No. 2 Gas, Upper Eagle, No. 5 Block and Stockton Lewiston.

2.05. Active surface mining operation shall mean an operation where land is being disturbed or mineral is being removed and where grade release has not been approved.

2.06. Approximate original contour shall mean that surface configuration achieved by backfilling and grading of the mined area so that the reclaimed area, including any terracing or access roads, closely resembles the general surface configuration of the land prior to mining and blends into and compliments the drainage pattern of the surrounding terrain.

2.07. Aquifer shall mean a zone stratum or group of strata that can store and transmit water in sufficient quantities for a specific use.

2.08. Auger mining shall mean mining of coal from an exposed vertical coal face by means of a power-driven boring machine which employs an auger to cut and remove the coal.

2.09. Backfill shall mean to place material back into an excavation and return the area to a predetermined slope.

2.10. Bench shall mean the result of surface mining operations where there is created a leveled surface of an excavated area measured horizontally at any point in the overburden, spoil or mineral between the base of the highwall and outer point of original fill bench; or a working base extending from the base of a highwall on which excavating equipment can set and operate.

2.11. Buffer zone shall mean an undisturbed border along or around an intermittent or perennial stream.

2.12. Coal refuse means any waste coal, rock shale, slurry, culm, gob, boney, slate, clay, and related materials associated with or near a coal seam, which are either brought above ground or otherwise removed from a mine in the process of mining coal, or which are separated from coal during the cleaning or preparation operations.

2.13. Completion of mining shall mean an operation where no mineral has been removed or overburden removed for a period of two consecutive months, unless the operator, within thirty (30) days of receipt of the director's notification declaring completion, submits sufficient evidence that the operation is in fact not completed.

2.14. Controlled placement shall mean the method of surface mining by which the site is prepared, and the overburden is removed, manipulated, and replaced by mechanical means in such a manner as to achieve and maintain stabilization in accordance with the approved pre-plan.

2.15. Cut shall mean an excavation made by excavating equipment to remove overburden in a single progressive line.

2.16. Cut-fill shall mean overburden or other material removed from an elevated portion of a road or bench and deposited in a depression in order to maintain a desired grade.

2.17. Design storm shall mean predicted rainfall of given intensity, frequency, and duration based on National Weather Service.

2.18. Director and/or his authorized agent shall mean the director of the Department of Natural Resources, deputy directors, the Chief of the Division of Reclamation, the Assistant Chiefs of the Division of Reclamation and all duly authorized surface mining reclamation supervisors, or inspectors and inspectors-in-training.

2.19. Disturbed areas shall mean those lands that have been affected by surface mining operations.

2.20. Diversion ditch shall mean a designed channel constructed for the purpose of collecting and transmitting surface runoff.

2.21. Downslope shall mean the land surface between the projected outcrop of the lowest coal seam being mined and the valley floor.

2.22. Drill bench shall mean the construction of a bench created for the purpose of setting up and operating drilling equipment and all roads and other disturbed areas incidental to such construction.

2.23. Ephemeral stream shall mean a stream which flows less than one month per year in direct response to precipitation.

2.24. Face-up shall mean the result of an excavation where a vertical or near vertical highwall is created that exposes the overburden and/or the mineral face.

2.25. Groundwater shall mean subsurface water at or below the water table occupying the saturation zone from which wells or springs are fed.

2.26. Haulageway or access road shall mean any road constructed, improved, maintained or used by the operator with exception of state owned roads.

2.27. Hydrologic balance shall mean the relationship between the quality and quantity of inflow storage and outflow in a hydrologic unit such as a drainage basin, aquifer, soilzone, lake, or reservoir. It encompasses the quantity and quality relationships between precipitation, runoff, evaporation, and the change in ground and surface water storage.

2.28. Intermittent stream shall mean a stream or portion of a stream that flows continuously for at least one month of the calendar year as a result of ground water discharge or surface runoff.

2.29. Inspection shall mean a visual review of prospecting, surface, or other mining operations to insure compliance with any applicable law or rules and regulations under jurisdiction of the director.

2.30. Leachate shall mean a liquid that has percolated through soil, rock, or waste and has extracted dissolved or suspended materials.

2.31. Lightly buffered stream shall mean any stream or its tributaries that contains less than 15 ppm methyl orange alkalinity (to pH 4.5) and a conductivity of less than 50 micro MHO.

2.32. Mine shall mean the shaft, slopes, drifts or inclines connected with excavations penetrating coal seams or strata and the surface structures or equipment connected therewith which contributes directly or indirectly to the mining, preparation or handling of coal.

2.33. Mineral face shall mean the exposed vertical cross-section of the natural coal seam or mineral deposit.

2.34. Mountaintop removal shall mean surface mining operations that remove entire coal seams running through the upper fraction of a mountain, ridge, or hill by removing all of the overburden and creating a level plateau or gently rolling contour with no highwalls remaining and where equal, higher and/or better land use is proposed.

2.35. Natural drainway shall mean any water course or channel which may carry water to the tributaries and rivers of the watershed.

2.36. Operation shall mean the permit area indicated on the approved map submitted by the operator, or an area where land is being disturbed or mineral is being removed.

2.37. Outer spoil or outer slope shall mean the disturbed area extending from the outer point of the bench to the extreme lower limit of the disturbed land.

2.38. Overburden or spoil shall mean the earth, rock and other materials lying in the natural state above a mineral deposit before or after excavation.

2.39. Peak runoff shall mean the maximum flow at a specified location resulting from a design storm.

2.40. Perennial stream shall mean a stream or portion of a stream that flows continuously.

2.41. Pit shall mean that part of the surface mining operation from which the mineral is being actively removed or where the mineral has been removed and not backfilled.

2.42. Pre-Inspection shall mean a preliminary survey and a field review by the director or his authorized agent of a pre-plan and the proposed area to be disturbed.

2.43. Pre-plan shall mean the total application submitted to the director including the application form, mining and reclamation plan, drainage plan, blasting plan, planting plan, maps, drawings, data, cross-sections, bonds and other information as may be required.

2.44. Prospecting shall mean the use of excavating equipment in an area not covered by a surface mining permit for the purpose of removing the overburden to determine the location, quantity or quality of a natural coal deposit, or to make feasibility studies, or for any other purpose.

2.45. Recharge capacity shall mean the ability of the soils and underlying materials to allow precipitation to infiltrate and reach the zone of saturation.

2.46. Reclamation shall mean the process of converting disturbed land to a stable form for productive use.

2.47. Reference area shall mean land units of varying size for the purpose of measuring ground cover, productivity and species diversity.

2.48. Sand shall mean individual rock or mineral fragments having a diameter less than 2.00 mm but greater than .02 mm.

2.49. Sediment shall mean solid material, both mineral and organic, that is in suspension, is being transported, or has been moved from its site of origin by air, water, gravity, or ice and has come to rest on the earth's surface.

2.50. Sediment control structure shall mean a barrier, dam, ditch, excavation or other structure placed in a suitable location to form a silt or sediment basin.

2.51. Sizeable quantity of water shall mean an accumulation of storm or any other water in excess of 5,000 cubic feet not provided for in the pre-plan.

2.52. Stoniness shall mean a characteristic of earth, overburden or spoil reflecting its relative proportion of sizeable aggregate content as apposed to its sand, silt, clay or rock fragment content.

2.53. Storm water shall mean any water flowing over or through the surface of the ground caused by precipitation; generally, surface runoff.

2.54. Structure shall mean but not be limited to gas lines, water lines, towers, airports and dams. This shall not include operational facilities of the surface mining operation.

2.55. Subsidence shall mean a sinking of a portion of the earth's surface resulting from underground removal of a mineral seam subsequent to failure of support structures.

2.56. Surface effect of underground mining operations shall mean surface mining operations where lands are disturbed including but not limited to roads, drainage systems, mine entry excavation, above-ground-work areas, such as tipples, coal processing facilities and other operating facilities; also waste work and spoil disposal areas and mine waste impoundments or embankments which are incident to mine openings or reopenings.

2.57. Surface mining operations shall mean surface disturbances and all activities necessary and incident to the removal of mineral and the reclamation of such operations.

2.58. Surface water shall mean water on the surface of the earth.

2.59. Toxic-forming materials shall mean earth materials or wastes which, if acted upon by air, water weathering, or microbiological processes, are likely to produce chemical or physical conditions in soils, air or water that are detrimental to the environment.

2.60. Toxic-mine drainage shall mean water that is discharged from active, abandoned and other areas affected by surface mining operations and which contains a substance which through chemical action or physical effects, is likely to kill, injure, or impair biota commonly present in the area that might be exposed to it.

2.61. Valley or head of hollow fills shall mean a controlled earth and rock fill across or through the head of a valley or hollow to form a stable, permanent storage space for excess surface mine overburden.

SECTION 3. PROSPECTING

3.01. Performance Bond Coverage - The amount of performance bond or its equivalent as provided in Section 7, Article 6, Chapter 20 of the Code of West Virginia, as amended, shall be five hundred dollars (\$500) per acre or any fraction thereof. Performance bond or its equivalent shall not be transferable as a credit to surface mining.

3.02. Notification of Approval or Disapproval - After review of the prospecting permit application and the reclamation plan for the area to be disturbed by prospecting, the director shall inform the applicant if they are approved or disapproved. If the application and plan are not acceptable, he shall set forth the reasons why they are not acceptable, and he may propose modifications, delete areas, or reject the permit on the basis of the reclamation plan or for other justifiable reasons set forth in the Code of West Virginia, as amended, and/or rules and regulations.

3.03. Reclamation Tax - No special reclamation tax, as outlined in Section 17 of Article 6, Chapter 20, Code of West Virginia, as amended, is required for a prospecting permit. However, if said permit is to be converted to a surface mining permit, the acreage disturbed by prospecting shall be included as a part of the total area to be assessed the special reclamation tax, as set forth in Section 17, Article 6, Chapter 20 of the Code of West Virginia, as amended.

3.04. Validity of Permit - A prospecting permit shall be valid for one year from its date of issue.

3.05. Governing Regulations - Prospecting and reclamation procedures may be governed by the following regulations of the Reclamation Commission.

- a. Section 5 - Haulageways or access roads;
- b. Section 6 - Blasting;

- c. Section 7 - Protection of the Hydrologic Balance;
- d. Section 8 - Drainage Systems;
- e. Section 9 - Method of Operation; and
- f. Section 12 - Revegetation.

3.06. Removal of Minerals - Minerals may be removed during prospecting operations for testing purposes only, and shall be limited to a maximum of two hundred fifty (250) tons for each permit area. Request for permission to remove greater amounts than two hundred fifty (250) tons of minerals shall be submitted to the director and may be approved at his discretion.

3.07. Bond Release - The performance bond or other securities accompanying a prospecting permit shall be released in the same manner as surface mining permit bonds.

SECTION 4. PERMIT REQUIREMENTS

4.01. Class III Legal Advertisement Requirements - Prior to the publication of the Class III Legal Advertisement for a surface mining permit, excluding underground opening approval, the following requirements shall be met:

- a. Upon filing of a surface mining permit application, proposal maps, reclamation plan and filing fee, a surface mining application (SMA) file number may be assigned. Surface mining application (SMA) file number assignments shall be valid for a period of time not to exceed 120 days from date of assignment.
- b. A clear and accurate location map shall be made a part of the legal advertisement. The map of a scale and detail found in the West Virginia General County Highway Map or the equivalent will be acceptable. Any significant landmarks, roads or streams shall be indicated on the location map. Longitude and latitude coordinates on the map shall cross at a perimeter marker.

4.02. Operator Reassignment - Should the applicant or operator designate, contract or otherwise assign the surface mining operation to others, prior written notification of the assignment and additional information as provided in Section 8, Article 6, Chapter 20 of the Code of West Virginia, as amended, shall be submitted and approved.

4.03. Approval of Person to Prepare a Reclamation and Mining Plan - Any person preparing a reclamation and mining plan and drainage system for the area of land to be disturbed as required by the provisions of Article 6, Chapter 20, Section 9 and 9A, Code of West Virginia, as amended, or by the regulations, shall first submit to the director a written resume of his past experience and training. A written test shall also be administered. On the

basis of the resume and written test, he shall be adjudged qualified or not as the case may be, and so notified by the director in writing. Should experience warrant, an approved person may be adjudged disqualified and so notified by the director in writing.

4.04. Scale for Reclamation Pre-plan Map - The scale required for all maps prepared for submission with an application for a surface mining permit or underground opening reclamation plan approval shall be as follows:

- a. Scale on a U. S. geological survey topographic 7.5-minute quadrangle shall be enlarged to 500 feet or less to the inch; and
- b. Scale on aerial photograph shall be 660 feet or less to the inch.

4.05. Scale for Drainage, Progress and Final Maps - The scale on the drainage, progress and final maps shall be of the same scale as the approved pre-plan map.

4.06. Scale Approval - Written permission from the director shall be required prior to the submission of maps drawn to any scale other than set forth by regulations.

4.07. Map Size - All maps and plans shall be submitted on standard print paper, 24 inches by 36 inches or less. If supplementary maps or plans are attached, match lines shall be used.

4.08. Color Code - A color code shall be used in preparing all maps to indicate critical features of the permit area as follows:

- a. Red shall indicate mineral to be removed;
- b. Yellow shall indicate the total disturbed land;
- c. Blue shall indicate water and drainage;
- d. Brown shall indicate special uses;
- e. Green shall indicate regrading; and
- f. Purple for adjacent mining permits.

4.09. Permanent Monument - A permanent monument shall be posted at all points of access from public roads and highways and at other suitable locations. The monument shall consist of a sign constructed of wood, metal, or other suitable material 2' x 3' mounted on a two-inch pipe driven three feet into the ground with four feet exposed. The sign shall clearly indicate the company name, permit numbers, business address and telephone number. Any suitable equivalent substitute may be approved.

4.10. Perimeter Marker - A two-inch (2") pipe shall 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 perimeter marker.

4.11. Buffer Zone Markers - Appropriate markers will be established along a buffer zone. Markers shall consist of metal or wooden stakes or other suitable devices or methods.

4.12. Topsoil Markers - When topsoil or other vegetation supporting material is segregated and stockpiled, the stockpiled material shall be marked. Markers shall remain in place until the materials are removed.

4.13. Slope Measurements - The operator shall show on the map filed with the application for a permit the percent of slope of the original surface within each 200 foot interval along the contour of the operation. The first measurement is to be taken at the starting point of the operation. The flagged field measurements shall be made from the estimated cropline or proposed coal seams extending 100 lineal feet above and below or beyond the coal outcrop on the area to be disturbed. Where the original slope has been previously altered, slope measurements shall be taken above or below the dis-

turbance; whichever is more representative of the original slopes.

SECTION 5. HAULAGEWAYS OR ACCESS ROADS

5.01. Location - The centerline location of the proposed haulageways or access roads shall be identified on the site by visible markings at one hundred (100) foot intervals, at the time the reclamation and mining plan is pre-inspected and prior to commencement of construction. Pre-existing haulageways or access roads shall be exempted from this requirement.

5.02. Haulageway or Access Road Construction - All construction of haulageways or access roads shall conform to "controlled placement" as defined in 2.14. and described in Section 9B.02, Method of Operation. The grading of a haulageway or access road shall be such that:

- a. No sustained grade shall exceed 10%;
- b. The maximum pitch grade shall not exceed 15% for 300 feet;
- c. There shall not be more than 300 feet of maximum pitch grade for each 1,000 feet of road constructed; and
- d. The surface shall pitch toward the ditchline at the minimum rate of 1/2 inch per foot of surface width or crowned at the minimum rate of 1/2 inch per foot of surface width as measured from the centerline of the haulageway or access road.

5.03. Curves - The grade on switchback curves shall be reduced to less than the approach grade and should not be greater than ten percent (10%).

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

5.05. 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 culverts being spaced according to grade. Water shall be intercepted before reaching a switchback or fill and led off. All ditchlines shall be designed to pass a peak discharge capacity of a one-year, 24-hour precipitation event.

5.06. Culverts - Ditch relief culverts shall be installed wherever necessary to insure proper drainage of surface water beneath or through the haulageway or access road, according to the following provisions:

| a. Road Grade in Percent | Spacing of Culverts in Feet |
|--------------------------|-----------------------------|
| 0 - 5 | 300 - 800 |
| 6 - 10 | 200 - 300 |
| 11 - 15 | 100 - 200 |

- b. The culvert shall cross the haulageway or access road at a 30 degree angle downgrade with a minimum grade of 3% from inlet to outlet, except in intermittent or perennial streams where the pipe shall be straight and coincident with the normal flow;
- c. The inlet end shall be protected by a headwall of suitable material and the slope at the outlet end shall be protected with an apron of suitable material;
- d. The culvert shall be covered by compacted fill to a depth of one foot or half the culvert diameter, whichever is greater; and
- e. Design of culverts may be submitted where the aforementioned design criteria is not practical or necessary.

5.07. Culvert Openings - Culvert openings installed on haulageways or access roads shall not be less than one hundred (100) square inches in area, but, in any event, all culvert openings shall be adequate to carry storm runoff of a peak discharge capacity of a one-year, 24-hour precipitation event from the contributing watershed, and shall receive necessary maintenance to function properly at all times.

5.08. Stream Crossings - Culverts, bridges or other drainage structures shall be used to cross intermittent or perennial streams. Consideration shall be given to such factors as weather conditions, season of the year,

time period for construction, etc. with regard to using measures to minimize adverse effects to the water quality and stream channel. In no event shall the sediment load of the stream be significantly increased or the water quality be significantly decreased during the construction period. Water control structures shall be designed with a minimum discharge capacity capable of passing the runoff for a 10-year, 24-hour precipitation event from the contributing watershed.

5.09. Removal of Drainage Structures - No bridges, culverts, stream crossings, 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.

5.10. Seeding of Slopes - All disturbed area including fill and cut slopes, shall be seeded and mulched immediately after the construction of a haulageway or access road and maintained thereafter in accordance with Section 12 of these regulations.

5.11. Haulageway or Access Road Surfacing - Haulageways or access roads 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.

5.12. 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%).

5.13. Dust Control - All reasonable means shall be employed to control dust from the surface of haulageways or access roads.

5.14. Abandonment of Haulageways or Access Roads - Haulageways or access roads shall be abandoned in accordance with Section 9 of these regulations in addition to the following requirements:

- a. Upon abandonment of haulageways or access roads, every effort shall be made to prevent erosion by the use of culverts, water bars or other devices. Water bars of the ditch, earth berm or log type shall be installed according to the following table of spacings in terms of percent of haulageway or access road grade, prior to the abandonment.

| Percent of Haulageway | Spacing of Water Bars in Feet |
|-----------------------|-------------------------------|
| 2 | 250 |
| 5 | 135 |
| 10 | 80 |
| 15 | 60 |
| 20 | 45 |
| Above 20 | 25 |

- b. Upon abandonment of haulageways or access roads, they shall be seeded and mulched in accordance with Section 12 of these regulations.

5.15. Sediment Control - A sediment storage volume must be provided equal to 0.125 Ac/ft. for each acre of disturbed area or a lesser value as approved by the director.

5.16. Existing Haulageways or Access Roads - Where existing roads are to be used for access or haulage and it can be demonstrated that reconstruction to meet the above requirements would result in greater environmental harm and the drainage and sediment control requirements of this section can otherwise be met, the above requirements may be waived.

5.17. Infrequently Used Access Road Exemption - Access roads constructed for and used only to provide infrequent service to surface facilities such as ventilators, monitoring devices and sedimentation ponds shall be exempt from the requirements of sub-sections 5.02, 5.03, 5.04, 5.05, 5.06, 5.07, 5.08, 5.12, 5.13 and 5.15, provided adequate stabilization to control erosion is achieved through use of alternate measures. This exemption shall not apply should environmental harm in the form of additional contributions of suspended solids or erosion occur and in such instances the director may order that any or all of the requirements of Section 5 be met.

SECTION 6. BLASTING

6.01. Blasting Signs - If blasting is necessary to conduct surface mining operations, signs reading "Blasting Area" shall be displayed conspicuously at all approaches to the blasting site and along haulageways and access roads to the mining operation. The sign shall be two feet by three feet (2' x 3') reading "Blasting Area" and explaining the blasting warning and the all clear signals shall be posted at all entrances to the permit area.

6.02. Certified Blasting Personnel - All blasting operations shall be conducted by certified, trained and competent persons who possess the knowledge of hazards involved and have full knowledge of all local, state, and federal laws and regulations pertaining to explosives and use thereof. Certification by the Fire Marshall of the State of West Virginia shall be accepted as being valid.

6.03. Pre-blasting Survey - Requirements for a pre-blasting survey shall be governed by the following:

- a. On a request to the director by a resident or owner of a man-made dwelling or structure that is located within one-half mile of the permit area, the operator shall conduct a pre-blasting survey of the dwelling or structure and submit a report of the survey to the director.
- b. Personnel approved by the director shall conduct the survey to determine the condition of the dwelling or structure, and to document any pre-blasting damage and to document other physical factors that could reasonably be affected by the blasting. Assessments of structures such as pipes, cables, transmission lines, wells and other water systems shall be limited to surface conditions

and other readily available data. Special attention shall be given to the pre-blasting condition of wells and other water systems used for human, animal, or agricultural purposes and to the quantity and quality of the water.

- c. A written report of the survey shall be prepared and signed by the person or persons who conducted the survey. The report shall include recommendations of any special conditions or proposed adjustments to the blasting procedures which should be incorporated into the blasting plan to prevent damage. Copies of the report shall be provided to the person requesting the survey and to the director.

6.04. Public Notice of Blasting Operations - At least 10 days, but not more than 20 days before beginning blasting operations, the operator shall publish on a form supplied by the director, a schedule in a newspaper of general circulation in the county of the proposed site. Copies of the schedule shall be distributed by mail to local governments and public utilities and to each resident within one-half mile of the blasting sites described in the advertisement. The operator shall republish and redistribute the schedule by mail at least every three (3) months. Schedules shall not be so general as to cover all working hours but shall identify as accurately as possible the location of the blasting sites and the time periods when blasting will occur. The schedule shall contain at a minimum:

- a. Identification of the specific areas in which blasting will take place. The specific blasting areas described shall not be larger than 300 acres with a generally contiguous border;
- b. Dates and times when explosives are to be detonated shall be expressed in not more than 4-hour increments;

- c. Methods to be used to control access to the blasting area;
- d. Types of audible warnings and all clear signals to be used before and after blasting; and
- e. A description of possible emergency situations (defined in Section 6.05.).

6.05. Blasting Procedures - All blasting shall be conducted only during the daytime hours, defined as sunrise until sunset. (Based on public requests or other consideration, including the proximity to residential areas, the director may specify more restrictive time periods.) No blasting shall be conducted on Sunday.

Blasting may not be conducted at times different from those announced in the blasting schedule except in emergency situations where rain, lightning other atmospheric conditions, or operator or public safety requires unscheduled detonations.

6.06. Audible Blast Warning - Three (3) minutes prior to blasting, a warning signal audible to within a range of 1/2 mile from blast site will be given. This pre-blast warning shall consist of three (3) short blasts of five (5) seconds duration with five (5) seconds between each blast. One (1) long audible warning signal of twenty (20) seconds duration shall be the "all clear" signal.

6.07. Approaches to Area - All approaches to the blast area shall be guarded against unauthorized entry ten (10) minutes prior to and immediately after blasting.

6.08. Charged Holes - All charged holes awaiting firing for any reason shall be guarded and posted against unauthorized entry.

6.09. Air Blast Level Standard - A maximum air blast level of 128 decibel linear peak shall not be exceeded at any residence, building or

occupied structure within 1/2 mile of the blasting site other than operational facilities of the mine.

6.10. Blasting Prohibited - Except where lesser distances are approved by the director, blasting shall not be conducted within:

- a. 1,000 feet of any building used as a dwelling, school, church, hospital or nursing facility;
- b. 500 feet of facilities including, but not limited to, disposal wells, petroleum, or gas-storage facilities, municipal water-storage facilities, fluid-transmission pipelines, gas or oil-collection lines, or water and sewage lines;
- c. 500 feet of an underground mine not totally abandoned except with the concurrence of the Mining Safety and Health Administration; and
- d. The director may prohibit blasting on specific areas where it is deemed necessary for the protection of public or private property and general safety of the area.

6.11. Particle Velocity - A particle velocity of one (1) inch per second in any one of the three mutually perpendicular directions shall not be exceeded at the nearest residence, building, or structure, other than operational facilities of the mine. The mutually perpendicular directions are identified as transverse, vertical and longitudinal.

6.12. Maximum Weight of Explosive - The maximum weight of explosive to be detonated within any 8 millisecond period shall be determined by the formula $W = (D/60)^2$ where W represents the maximum weight of explosives, in pounds, that can be detonated in any 8 millisecond period, and D represents the distance, in feet, from the nearest point of blast to nearest residence, building or structure, other than operational facilities of the mine.

6.13. Seismograph Measurements - Where a seismograph is used to monitor the velocity of ground motion and the peak particle velocity limit of one (1) inch per second is not exceeded, the equation in Section 6.12. need not be used. However, if the equation is not being used, a seismograph record at the nearest structure to the blast site shall be obtained for every blast. The director may require a seismograph recording of any or all blasts.

6.14. Blast Record - A blasting log record book shall be kept current daily and is to be made available at the operation for inspection by the director and the public. These blasting log records are to include seismograph reports, shall be retained for three (3) years and should include as a minimum the following data:

- a. Name of permittee, operator, or other person conducting the blast;
- b. Location, date and time of blast;
- c. Name, signature and certification number of blaster-in-charge;
- d. Direction and distance, in feet, to nearest dwelling, school, church or commercial or institutional building neither owned nor leased by the operator;
- e. Weather conditions;
- f. Type of material blasted;
- g. Number of holes, burden, and spacing;
- h. Diameter and depth of holes;
- i. Types of explosives used;
- j. Total weight of explosives used;
- k. Maximum weight of explosives detonated within any 8 millisecond period;
- m. Method of firing and type of circuit;
- n. Type and length of stemming;
- o. If mats or other protections were used;

- p. Type of delay detonator used and delay periods used;
- q. Seismograph records, where required, including but not limited to;
 - 1. Seismograph reading, including exact location of seismograph and its distance from the blast;
 - 2. Name of person taking the seismograph reading;
 - 3. Name of person and firm analyzing the seismograph record, and;
- r. Shot location.

The format for the arrangement and the recording of items in the blasting log record book is to be on forms prescribed by the director.

6.15. Assessment - Any assessment as set forth in Section 11a, Article 6, Chapter 20 of the Code of West Virginia, as amended, shall be paid within ten (10) days after receipt of said assessment notice.

SECTION 7. PROTECTION OF THE HYDROLOGIC SYSTEM

7.01. Applicability - The operator shall plan and conduct surface mining operations to minimize disturbance to the prevailing hydrologic balance in order to prevent long-term adverse changes in the hydrologic balance, both on and off site, that could result from surface mining operations. Changes in water quality and quantity, in the depth to ground water, and in the location of surface water drainage channels shall be minimized such that the postmining land use of the disturbed land is not adversely affected and applicable federal and state statutes and regulations are not violated. The operator shall conduct operations so as to minimize water pollution and shall, where necessary, use treatment methods to control water pollution. The operator shall emphasize surface mining and reclamation practices that will prevent or minimize water pollution and changes in flows in preference to the use of water treatment facilities. Practices to control and minimize pollution include, but are not limited to, stabilizing disturbed areas through grading, diverting runoff, achieving quick growing stands of temporary vegetation, lining drainage channels with rock or vegetation, mulching, sealing acid-forming and toxic-forming materials, and selectively placing waste materials in backfill areas. If pollution can be controlled only by treatment, the permittee shall operate and maintain the necessary water treatment facilities for as long as treatment is required.

7A. Permit Requirements

7A.01. Site Analysis - Each application for a permit shall include cross-sections of the land to be affected with respect to the hydrologic balance including the actual area to be mined. These cross-sections may

be derived from core boring or other approved sources. These cross-sections are to be prepared and certified by a registered professional engineer or other approved person showing pertinent elevation and location of test borings or core samplings and depicting the following information:

- a. The nature and depth of the various strata of overburden;
- b. The location of subsurface water, if encountered, and its quality;
- c. The nature and thickness of any coal or rider seam;
- d. The nature of the stratum immediately beneath the coal seam to be mined;
- e. Mine openings to the surface;
- f. The location of aquifers;
- g. The estimated elevation of the water table;
- h. Where surface mining operations are to be conducted on critical streams, pre-mining overburden sampling and analysis shall be required. Sampling points shall be located on the drainage plan map. Where overburden analysis reflects toxic strata, a plan for handling and final placement for said strata shall be submitted. On critical streams where it can be documented or past mining experience has shown that surface mining will not result in significant acid production, pre-mining overburden analysis may not be required. Overburden and minesoil analysis shall be in accordance with standard procedures outlined in Environmental Protection Agency manual # 600/2-78-054 (Field and Laboratory Methods Applicable to Overburdens Minesoils) or other approved methods; and
- i. Such other information as the director may require.

7A.02. Surface Water Monitoring - The operator shall submit as part of the complete mining and reclamation pre-plan a surface water monitoring

program which meets the following requirements:

- a. Provides adequate data to describe the likely daily and seasonal variation in discharges from the disturbed area in terms of water flow, pH, total iron, total suspended solids and, if requested by the director, any other parameters characteristic of the discharge;
- b. Provides daily monitoring by rain gauges to measure normal and abnormal variations in precipitation;
- c. All water discharged from the permit area is to be monitored daily by the operator for total iron, pH and water flow and if required by the director, any other parameter. A written record of the testing dates and analytical data shall be kept current and made available for inspection at the operation;
- d. Provides a monthly report of all measurements to the director;
- e. In the event violations of permit conditions occur, the director shall be notified immediately after receipt of analytical results by the operator; and
- f. After disturbed areas have been regraded and seeded in accordance with these regulations, the operator shall monitor surface water flow and quality. Data from this monitoring shall be used to demonstrate that the quality and quantity of runoff without treatment will be consistent with the requirement of this section to minimize disturbance to the prevailing hydrologic balance and with the requirements of these regulations to attain the approved postmining land use. This data shall provide a basis for approval by the director for removal of water quality or flow control systems and for determining when the requirements of this section are met. A

one (1) year history of meeting effluent limitations shall be adequate for demonstrating that the water has stabilized to an acceptable level. The nature of data, frequency of collection and reporting requirements will be the same as that during the mining operation.

7A.03. Ground Water Monitoring - The operator shall submit as part of the complete mining and reclamation pre-plan a procedure for monitoring ground-water levels, infiltration rates, subsurface flow and storage characteristics, and the quality of ground water to determine the effect of surface mining operations on the recharge capacity of reclaimed lands and on the quantity and quality of water in ground water systems at the mine area and in associated off-site areas. When operations are conducted in such a manner that may affect the ground water system, ground water levels and ground water quality shall be periodically monitored using wells that can adequately reflect changes in ground water quantity and quality resulting from such operations. The director may require drilling and development of additional wells if needed to adequately monitor the ground water system.

7A.04. Water Sampling - Water tests for total iron, total hot acidity, total mineral acidity, total alkalinity, total aluminum, total manganese, total sulfate, dissolved solids, pH and suspended solids shall be taken before surface mining operations begin and the results of these tests will be shown in the pre-plan. The location for these preliminary tests will be:

- a. On natural drainways above proposed surface mining operations;
- b. On natural drainways below proposed surface mining operation at or near the affected drainage area boundary; and
- c. On natural drainways upstream from the mouth of natural drainways

affected by surface mining.

7B. Water Quality

7B.01. Acid and Toxic Materials - Drainage from acid-forming and toxic forming materials into ground and surface water shall be avoided by:

- a. Identifying, burying, blending, and treating where necessary, spoil or other materials that will be toxic to vegetation or that will adversely affect water quality. Such materials shall be disposed of in accordance with the provisions of Section 9.03;
- b. Preventing or removing water from contact with acid-forming or toxic-forming materials;
- c. Burying or otherwise treating toxic-forming materials from coal preparation plants no later than 90 days after the cessation of the filling of the disposal area. Burial or treatment shall be in accordance with Section 9.03.;
- d. Casing, sealing or otherwise managing boreholes, shafts, wells, and auger holes to prevent pollution of surface or ground water and to prevent mixing of ground waters of significantly different quality. All boreholes that are within the permit area but are outside the surface coal mining area or which extend beneath the coal to be mined and into water bearing strata shall be plugged permanently unless the boreholes have been approved for use in monitoring; and
- e. Taking such other actions as required by the director.

7B.02. Water Quality Control - All reasonable measures shall be taken to intercept all surface water by the use of diversions, culverts and drainage ditches or other methods to prevent water from entering the pit area. All water accumulation into the pit shall be removed at least once in a 24-hour

period unless otherwise approved by the director.

The water leaving the permit area will not lower the water quality of the river, stream or drainway into which it is discharged below the water quality standards established for such river, stream or drainway.

7B.03. Water Quality Standards - Discharges from areas disturbed by surface mining operations must meet all applicable federal and state laws and regulations. The monitoring frequency and minimum effluent limitations shall be governed by the standards set forth in the NPDES Program under the Federal Water Pollution Control Act as amended, 33 U.S.C. 466 et. seq. and the rules and regulations promulgated thereunder. In no event shall the discharge from the permit area have a pH of less than 6.0 or greater than 9.0 and the iron shall not exceed 7 parts/million.

7B.04. Treatment Facilities for Drainage from Surface Mine Operations - The Chief of the Division of Reclamation or his duly authorized agent shall conduct such investigation as it is deemed necessary and proper in order to determine whether or not any such permit should be granted or denied. In making such investigation and determination as to any such application, the Chief of the Division of Reclamation shall consult with the Chief of the Division of Water Resources. The Chief of the Division of Water Resources shall cooperate with and assist him in carrying out the duties imposed on him by the provisions of Article 5A, Section 5 (3) and Article 6, Chapter 20 of the Code of West Virginia, as amended, and the rules and regulations of the Reclamation Commission and the Water Resources Board. Such cooperation shall include, but not be limited to a written recommendation for the approval or disapproval of the permit and the reason or reasons for such recommendation.

7B.05. Treatment of Acid Water Surface Breakthrough - Treatment of

acid water surface breakthrough shall be as follows:

- a. Any surface breakthrough of water caused by the operator during the course of his operations shall be sampled immediately and analyzed for total iron, total suspended solids and pH and if requested by the director, any other parameter characteristics of the discharge. Such analysis shall be made by a competent water analyst or chemist. The original and at least one copy of such analysis shall be retained by the operator, two copies shall be submitted to the Chief of the Division of Reclamation;
- b. Should said analysis indicate the water to be acid with a pH of less than 6.0 and/or contains more than 7mg/l of iron, seals shall be immediately constructed. These seals shall either:
 1. prevent any air from entering the underground mine by way of the breakthrough; or
 2. prevent any air from entering the breakthrough while allowing the water to flow from the breakthrough; or
 3. seal the breakthrough of acid water so that it cannot flow. Such seals shall be constructed of stone, brick, block earth or similar impervious materials which are acid resistant. Any cement or concrete employed in the construction of these seals shall also be of an acid resistant, impervious type; and
- c. Alternate methods of sealing and/or treating acid water may be employed as they are developed and approved.

7C. Water Rights and Replacement

7C.01. Applicability - The operator shall replace the water supply of an owner of interest in such property who obtains all or part of his supply of water for domestic, agricultural, industrial, or other legitimate use from an underground or surface source where the owner of interest has estab-

lished that such supply has been affected by contamination, diminution or interruption resulting from the surface mining operation. The replacement of the water supply will not be required if the owner of interest waives the replacement thereof.

7D. Daily Monitoring Exception

7D.01. Applicability - The requirements of Section 7, sub-sections 7A.02 b and 7A.02 c shall not apply where an operator demonstrates by sufficient data that there is a reasonable expectation that a violation of federal or state water discharge permits will not occur. If such a violation occurs, then the director may require daily monitoring until it has been demonstrated to his satisfaction that the violation or pollution problem has been abated.

SECTION 8. DRAINAGE SYSTEM

8.01. Drainage Plan - There shall be submitted as part of the complete application and pre-plan for surface mining operations, a drainage plan which will show the proposed method of drainage on and away from the area of land to be disturbed. Said plan shall indicate the directional flow of water, constructed drainways, natural waterways used for drainage, streams or tributaries receiving or to receive this discharge, location and design of sediment control structures, location of all water test sites, treatment facilities and other data as may be required.

8.02. Sediment Control - Sediment control structures shall be constructed in appropriate locations in order to control sedimentation. All such structures shall meet the following requirements:

- a. All structures shall have the capacity to store 0.125 acre/ft. of sediment for each acre of disturbed area in the structures watershed; provided, however, that consideration may be given for reduced storage volume where the pre-plan reflects controlled placement, concurrent reclamation practices, use of on-site sediment control measures and access and availability of all structures for maintenance;
- b. This disturbed area will include all land affected by previous surface mining operations that are not presently stabilized and all land that will be disturbed throughout the life of the permit; and
- c. The structures shall be cleaned out when the sediment accumulation reaches 80% of the sediment storage volume required. Sediment removal shall be done in a manner that minimizes adverse effects on surface water due to its chemical and physical characteristics, on infiltration, on vegetation, and on surface and ground water

quality and in a manner consistent with the provisions of Section 9 (Abandonment Procedures for Sediment Control Structures) of the "Drainage Handbook for Surface Mining" published by the West Virginia Department of Natural Resources and hereby incorporated by reference.

8.03. Natural Drainways - Natural drainways in the area of land disturbed by surface mining and prospecting operations shall be kept free of overburden except where overburden placement has been approved. Overburden placement and haulageways across natural drainways shall be constructed so as not to affect the flow of the stream, or materially increase the sediment load and concentrations of toxic materials in the stream.

8.04. Intermittent or Perennial Stream - No land within 100 feet of an intermittent or perennial stream shall be disturbed by surface mining operations unless specifically authorized by the director. The area not to be disturbed shall be designated a buffer zone and marked accordingly.

8A. Constructed Drainways and Diversions

8A.01. Diversions Above Highwalls - All surface water which drains toward the pit shall be effectively intercepted on the uphill side of the highwall by diversion ditches and conveyed by approved channels or other approved means of discharge to natural drainways outside the disturbed area. The director may, in the exercise of his sound discretion, when not in conflict with Article 6, Chapter 20, Code of West Virginia, as amended, waive this regulation.

8A.02. Diversions on Benches - Diversions will be constructed on the excavated solid bench in order to carry off storm, surface or seepage water. The breaking point for diversions on the bench will fall at or near

the midpoint between natural or constructed drainways. In no case shall water be discharged over a spoil slope without adequate safeguards to prevent erosion. Removal of water from the bench shall be accomplished by use of adequate pipe, a rock riprap flume, asphalt or concrete chutes, by grading a channel to nonerosive rock, or by other approved methods.

8A.03. Diversions Below Spoil Slopes - All surface water draining off the spoil slopes, unless otherwise controlled, will be intercepted by suitable and adequate diversion ditches which will carry the water to an approved sediment control structure before discharge into a natural drainway. These diversions will be located within twenty-five (25) feet of the anticipated toe of the spoil slope. If, at any time, spoil material interferes with the flow of water in these diversions, that material shall be removed immediately. The director may, in the exercise of his sound discretion, when not in conflict with Article 6, Chapter 20, Code of West Virginia, as amended, waive this regulations.

8A.04. Temporary Diversions - Temporary diversion structures are those used during mining and reclamation. When no longer needed, these structures shall be removed and the area reclaimed. Temporary diversion structures shall be constructed to safely pass the peak runoff from a 1-year, 24-hour precipitation event, or larger event as specified by the director.

8A.05. Permanent Diversions - Permanent diversion structures are those approved diversion structures to be retained after mining and reclamation. Permanent diversion structures shall be constructed to safely pass the peak runoff from a 100-year, 24-hour precipitation event.

8A.06. Stream Channel Diversions - Flow from perennial and intermittent streams within the permit area may be diverted only when the diversions are approved by the director. When streamflow is to be diverted, the new stream channel shall be designed and constructed to meet the following requirements:

- a. The average stream gradient shall be maintained and the channel designed, constructed, and maintained to remain stable and to minimize additional contributions of suspended solids to streamflow;

- b. Channel bank, and flood plain configurations shall be adequate to safely pass the peak runoff of a 1-year, 24-hour precipitation event for temporary diversions and 100-year, 24-hour precipitation event for permanent diversions, or larger events if specified by the director; and
- c. When the stream affected supports a fishery habitat, measures to maintain or enhance the water quality and habitat shall be reflected in the approved stream channel diversion design.

8B. Seeding

8B.01. Seeding of Drainage System - All area disturbed in the installation of the drainage system shall be seeded and mulched immediately after construction in accordance with Section 12 of these regulations.

8C. Handbook

8C.01. Drainage Handbook for Surface Mining - The guidelines for plans, design criteria and construction specifications for drainage systems are to be found in the "Drainage Handbook for Surface Mining" published by the West Virginia Department of Natural Resources. This handbook is hereby incorporated by reference in its entirety; provided, however, that other plans, design criteria and construction specifications if approved by the director, may be used in place of those specified in the handbook.

8D. Drainage Certification

8D.01. Certification Responsibility - Certification that the drainage system was constructed and installed in accordance with the approved pre-plan shall be submitted by an approved Registered Professional Engineer or other approved person.

8D.02. Filing Certification - Prior to the beginning of surface mining operations in the affected watershed, the certification of the drainage system shall be filed on forms prescribed by the director.

8E. Abandonment Procedures

8E.01. Abandonment Procedures - The pre-plan shall reflect a procedure for abandoning sediment control structures prior to final bond release. These abandonment procedures may be waived if the structures are to be immediately utilized under another permit or the landowner agrees in writing that he will assume future responsibility for said structures.

SECTION 9. METHOD OF OPERATION

9.01. Operator Responsibility - In planning and executing surface mining operations, the operator shall have, at all time, proper regard for all backfilling and regrading requirements, imposed by Article 6, Chapter 20, Code of West Virginia, as amended, and all rules and regulations adopted pursuant thereto, and all provisions of the approved pre-plan.

9.02. Topsoiling or Other Material Suitable for the Post Mining Land Use - These materials shall be removed in a separate layer and distributed over the backfilled area, or if not utilized immediately, segregated and stockpiled in a separate location as specified in the pre-plan. Topsoil not immediately utilized shall be protected from wind and water erosion. Any material used for topsoiling must be capable of supporting and maintaining the approved post mining land use.

9.03. Treatment of Toxic Material - All exposed coal seams remaining after mining and any acid-forming, toxic-forming, combustible materials, or any other waste materials that are exposed, shall be covered with a minimum of four (4) feet 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. Where necessary to protect against upward migration of salts, exposure by erosion, to provide an adequate depth for plant growth, or to otherwise meet local

conditions, the director shall specify thicker amounts of cover using non-toxic material. 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.

9.04. Small Depressions - The requirement of this section to achieve approximate original contour does not prohibit construction of small depressions if they are approved by the director to minimize erosion, conserve soil moisture or promote revegetation. These depressions shall be compatible with the approved post-mining land use.

9.05. Bench Surface - The surface of the regraded bench shall be graded so as to permit the use of farm implements and machinery.

9.06. (Reserved)

9.07. Final Graded Slopes - Final graded slopes shall mean slopes backfilled and graded to eliminate the highwall which does not exceed the angle of repose or such lesser slope as is necessary to assure stability.

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

9.09. Regrading or Stabilizing Rills and Gullies - Any rills or gullies deeper than nine (9) inches forming in areas that have been regraded and the topsoil replaced but where vegetation has not yet been established will 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 postmining land use or may result in additional erosion and sedimentation.

9.10. Inactive Status - Inactive operation status will be considered for a period not to exceed one (1) year from date of approval providing that prior written approval is obtained from the director.

9.11. Keeping Operation Current - Grading, backfilling and water management practices as approved in the plans shall be kept current as follows:

- a. Should the operation include only stripping (no augering or high-wall mining), the grading and backfilling shall follow the mineral removal by a period not to exceed sixty (60) days or 3,000 linear feet.
- b. Should the operation include stripping and augering, the augering shall follow the stripping by a period not to exceed sixty (60) days, and the grading and backfilling shall follow the augering by not more than thirty (30) days or 1,000 linear feet.
- c. Should the operation include stripping and highwall mining, the highwall mining shall follow the stripping within sixty (60) days, or a reasonable time as prescribed by the director. Grading and backfilling shall follow the highwall mining by not more than thirty (30) days or 1,000 linear feet.
- d. Should the operation include only augering or highwall mining, the grading and backfilling shall follow the augering or highwall mining by a period not to exceed thirty (30) days or 1,000 linear feet.
- e. Should the particular site conditions or weather make adherence to these guidelines impractical the period of time or the distance required to be current may be reasonably extended.

9A. Requirements for Special Land Use Purposes

9A.01. Alternative Plans - Alternative plans for restoration of the disturbed area may be submitted to the director. If such restoration will be consistent with the purpose of Article 6, Chapter 20, Code of West Virginia, as amended, and if such plans are approved by the director and complied with within such time limits as may be determined by him as being reasonable for carrying out such plans, the backfilling and grading requirements heretofore contained, may be modified.

9A.02. Water Impoundments - Prior to the construction of an impounding area for the storage of water after mining, approval must be obtained from the director for such impoundment. The Division of Water Resources will cooperate with the Division of Reclamation in reviewing all portions of any plan for water impoundments as they relate to water quality and will give its recommendations therefore, to the Division of Reclamation. This plan will include but not be limited to the following:

- a. Location of the impounding area;

- b. Dimensions of the area as to capacity and depth (average, maximum and minimum);
- c. Plot plan of impoundment area;
- d. Source of water entering the impoundment;
- e. Quality of the water entering the impoundment;
- f. Quality of water leaving the impoundment and mechanism of discharge;
- g. Coal seam or seams mined or involved with impoundment;
- h. Chemical characteristics of the soils and underlying strata in the impoundment area as they relate to acid production;
- i. Safety aspects considered such as spillway overflow, emergency spillway, access to area; and
- j. Consent of the landowner for such impoundment with submission on specified forms.

9A.03. Sanitary Landfills - Where waste materials from a coal preparation or conversion facility or from other activities conducted outside the permit area such as municipal wastes, garbage, etc., are used for fill material, plans for such use shall be approved by the director. Such plans for sanitary landfills and/or solid waste disposal areas shall be accompanied by the written approval of the Division of Water Resources and where appropriate, the State Department of Health.

9B. Steep Slope Mining

9B.01. Applicability - On surface mining operations where the natural slope exceeds twenty degrees (20°), the provisions of this section in addition to other applicable provisions of these regulations, shall apply. On lesser slopes that require measures to protect the area from disturbance as determined by the director based on consideration of soils, climate, method

of operation, geology, and other regional characteristics, the provisions of this section, in addition to other applicable provisions of these regulations, shall also apply. These provisions do not apply where mining is done on a flat or gently rolling terrain with an occasional steep slope through which the mining proceeds and leaves a plain or predominately flat area.

9B.02. Downslope Placement - Spoil of debris including that from clearing and grubbing, shall not be placed on the downslope except as provided for in Section 9D. or 9E. of these regulations.

9B.03. Highwall Elimination - The highwall shall be eliminated and the disturbed area graded. Land above the highwall shall not be disturbed unless the director finds that the disturbance will facilitate compliance with the requirements of this section.

9B.04. Stabilization - The material used to backfill and eliminate the highwall shall be sufficiently compacted or otherwise mechanically stabilized so as to insure stability of the backfill. Woody materials may be buried in the backfilled area only when the burial does not cause or add to instability.

9C. Mountaintop Removal

9C.01. Applicability - Where the mountaintop removal technique is applied, the provisions of this section in addition to other applicable provisions of these regulations, shall apply.

9C.02. Outcrop Barrier - An outcrop barrier of sufficient width consisting of the toe of the lowest coal seam and its associated overburden shall be retained where necessary to prevent slides and erosion. Where no outcrop exists due to previous mining, this requirement will be waived.

9C.03. The Final Graded Slopes - The final graded top plateau slopes

on the mined area shall be less than 5 horizontal to 1 vertical so as to create a level plateau or gently rolling configuration and the out slopes of the plateau shall not exceed 2 horizontal to 1 vertical except where approved by the director, but in no case shall the minimum static safety factor be less than 1.5.

9C.04. Drainage - The resulting level or gently rolling contour shall be graded to drain inward from the out slope except at specific points where it drains over the out slope in protected channels.

9C.05. Post Mining Land Use - Where the mountain top removal method is applied, the lands must be returned to industrial, commercial, agricultural, or public use and the requirements of Section 10.04. must be met.

9D. Disposal of Spoil or Toxic Forming Materials by Methods Other Than Valley or Head-Of-Hollow Fills

9D.01. Applicability - Spoil or toxic forming materials not required to achieve the approximate original contour 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.

9D.02. Location of Disposal Sites - The disposal areas 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. Where possible, fill materials suitable for disposal shall be placed upon or above a natural terrace, bench, or berm, if such placement provides additional stability and prevents mass movement.

9D.03. Certification - Certification of the fill shall be as follows:

- a. The fill shall be designed using recognized professional standards and certified by an approved registered professional

engineer or other approved professional specialist;

- b. The fill shall be inspected for stability by an approved registered professional engineer or other approved professional specialist after completion of the first 50-foot lift, to assure removal of all organic material and topsoil, placement of under-drainage systems, and proper construction in accordance with the approved pre-plan. The approved registered professional engineer or other approved professional specialist, shall also provide a certified report upon completion of the fill that the fill has been constructed as designed in the approved pre-plan; and
- c. Where fills are placed on slopes less than twenty degrees (20°) a certification shall not be required.

9D.04. Stabilization - Where the slope in the disposal area exceeds 2.8 horizontal to 1 vertical (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 or toxic forming materials 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.

9D.05. 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 coarse rock. If no filter is designed for the under drain,

engineer or other approved professional specialist;

- b. The fill shall be inspected for stability by an approved registered professional engineer or other approved professional specialist after completion of the first 50-foot lift, to assure removal of all organic material and topsoil, placement of under-drainage systems, and proper construction in accordance with the approved pre-plan. The approved registered professional engineer or other approved professional specialist, shall also provide a certified report upon completion of the fill that the fill has been constructed as designed in the approved pre-plan; and
- c. Where fills are placed on slopes less than twenty degrees (20°) a certification shall not be required.

9D.04. Stabilization - Where the slope in the disposal area exceeds 2.8 horizontal to 1 vertical (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 or toxic forming materials 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.

9D.05. 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 coarse rock. If no filter is designed for the under drain,

spill to be disposed of in natural valleys must be placed in accordance with the following requirements.

9E.02. Location of Spoil Areas - The disposal areas 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. Where possible, fill materials suitable for disposal shall be placed upon or above a natural terrace, bench, or berm, if such placement provides additional stability and prevents mass movement.

9E.03. Certification - Certification of the fill shall be as follows:

- a. The fill shall be designed using recognized professional standards and certified by an approved registered professional engineer or other approved professional specialist; and
- b. The fill shall be inspected for stability by an approved registered professional engineer or other approved professional specialist after completion of the first 50-foot lift, to assure removal of all organic material and topsoil, placement of under-drainage systems, and proper construction in accordance with the approved pre-plan. The approved registered professional engineer or other approved professional specialist, shall also provide a certified report upon completion of the fill that the fill has been constructed as designed in the approved pre-plan.

9E.04. Stabilization - Where the slope in the disposal area exceeds 2.8 horizontal to 1 vertical (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 material is placed in the disposal area. Suitable organic ma-

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 sub-surface drainage to be compatible with the natural surroundings.

9E.05. 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 rock core in such a manner that infiltration of the water into the fill will be prevented. If springs, natural water courses 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.

9E.06. Construction - Construction of the fill shall be as follows:

- a. All areas upon which a valley fill is to be placed shall first be cleared progressively of all trees, brush, shrubs, and other organic material. This material shall be removed from the fill area. No more than 3.0 acres, excluding roadway for construction of fill, shall be cleared in the valley fill site until the first lift is completed;
- b. 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 16 feet in width and composed of rock with a minimum dimension of 12 inches. The rock core shall consist of no more than 10% fines as determined by visual inspection (fines being a material with a dimension of less than 12 inches);
- c. Depositing and compacting valley 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;

- d. The thickness of the layers shall not exceed four feet;
- e. 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 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 10,000 cubic feet;
- f. The outer slope shall be no steeper than 2 horizontal to 1 vertical. A minimum 20-foot wide bench shall be installed at a maximum of every 50 feet in vertical height of the fill with a 3% to 5% slope toward the fill area, normal to such, and a 1% slope toward the rock core; and
- g. When construction of each lift (maximum of every 50 feet 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 plan.

9E.07. Variance - Where it can be demonstrated that other design criteria are justified, certain requirements of this section may be waived. The basis for justification are, but not limited to, land use potential, inavailability of durable rock, and site stability.

9F. [Reserved]

SECTION 10. POSTMINING USE OF LAND

10.01. General - All disturbed areas shall be restored in a timely manner to conditions that are capable of supporting the uses which they were capable of supporting before any mining, or to a higher or better use achievable under criteria and procedures set forth in Section 10.04 of these regulations.

10.02. Determining Premining Use of Land - The premining uses of land to which the postmining land use is compared shall be those uses which the land previously supported if the land had not been previously mined and had been properly managed.

- a. The postmining land use for land that has been previously mined and not reclaimed, shall be judged on the basis of the highest and best use that can be achieved and is compatible with surrounding areas.
- b. The postmining land use for land that has received improper management shall be judged on the basis of the premining use of surrounding lands that have received proper management.
- c. If the premining use of the land was changed within five (5) years of the beginning of mining, the comparison of postmining use to premining use shall include a comparison with the historic use of the land as well as its use immediately preceding mining.

10.03. Land Use Categories - Land use is categorized in the following groups. Change from one to another land use category in premining to postmining constituted an alternate land use and the operator shall meet the requirements of Section 10.04 of the section and all other applicable sections of these rules and regulations.

- a. Heavy Industry - Manufacturing facilities, powerplants, airports

- or similar facilities.
- b. Light Industry and Commercial Services - Office buildings, stores, parking facilities, apartment houses, motels, hotels, or similar facilities.
 - c. Public Services - Schools, hospitals, churches, libraries, water-treatment facilities, solid waste disposal facilities, public parks and recreation facilities, major transmission lines, major pipelines, highways, underground and surface utilities, and other servicing structures and appurtenances.
 - d. Residential - Single - and multiple-family housing (other than apartment houses) with necessary support facilities. Support facilities may include commercial services incorporated in and comprising less than 5 percent of the total land area of housing capacity, associated open space, and minor vehicle parking and recreation facilities supporting the housing.
 - e. Cropland - Land used primarily for the production of cultivated and close-growing crops for harvest alone or in association with sod crops. Land used for facilities in support of farming operations are included.
 - f. Rangeland - Includes rangelands and forestlands which support a cover of herbaceous or scrubby vegetation suitable for grazing or browsing use.
 - g. Hayland or pasture - Land used primarily for the long-term production of adapted, domesticated forage plants to be grazed by livestock or cut and cured for livestock feed.
 - h. Forestland - Land with at least a 25 percent tree canopy or land at least 10 percent stocked by forest trees of any size, including

land formerly having had such tree cover and that will be naturally or artificially reforested.

- i. Impoundments of water - Land used for storing water for beneficial uses such as stock ponds, irrigation, fire protection, recreation, or water supply.
- j. Fish and wildlife habitat and recreation lands - Wetlands, fish and wildlife habitat, and areas managed primarily for fish and wildlife or recreation.
- k. Combined uses - Any appropriate combination of land uses where one land use is designated as the primary land use and one or more other land uses are designated as secondary land uses.

10.04. Criteria for Approving Alternative Postmining Use of Land - An alternative postmining land use shall be approved by the director after consultation with the landowner or the land-management agency having jurisdiction over state or federal lands. Proposals to remove an entire coal seam running through the upper fraction of a mountain, ridge, or hill by removing all of the overburden and creating a level plateau or gently rolling contour with no highwalls remaining, must also meet these criteria.

- a. The proposed land use is compatible with adjacent land use and, where applicable, with existing local, state or federal land use policies and plans. A written statement of the views of the authorities with statutory responsibilities for land use policies and plans shall accompany the request for approval. The permittee shall obtain any required approval of local, state or federal land management agencies, including any necessary zoning or other changes necessarily required for the final land use.

- b. Specific plans have been prepared which show the feasibility of the proposed land use as related to needs, projected land use trends, and markets and that include a schedule showing how the proposed use will be developed and achieved within a reasonable time after mining and be sustained. The director may require appropriate demonstrations to show that the planned procedures are feasible, reasonable, and integrated with mining and reclamation, and that the plans will result in successful reclamation.
- c. Provision of any necessary public facilities is assured as evidenced by letters of commitment from parties other than the permittee, as appropriate, to provide them in a manner compatible with the permittee's plans.
- d. Specific and feasible plans for financing attainment and maintenance of the postmining land use including letters of commitment from parties other than the permittee as appropriate, if the postmining land use is to be developed by such parties.
- e. The plans are designed under the general supervision of a registered professional engineer, or other appropriate professional, who will ensure that the plans conform to applicable accepted standards for adequate land stability, drainage, and vegetative cover, and aesthetic design appropriate for the postmining use of the site.
- f. The proposed use or uses will neither present actual or probable hazard to public health or safety nor will they pose any actual or probable threat of water flow diminution or pollution.
- g. The use or uses will not involve unreasonable delays in reclamation.
- h. Necessary approval of measures to prevent or mitigate adverse effects on fish and wildlife has been obtained from the director

and appropriate state and federal fish and wildlife management agencies.

- i. Proposals to change premining land uses of range, fish and wildlife habitat, forestland, hayland, or pasture to a postmining cropland use, where the cropland would require continuous maintenance such as seeding, plowing, cultivation, fertilization, or other similar practices to be practicable or to comply with applicable federal, state and local laws, shall be reviewed by the director to assure that:
 1. There is a firm written commitment by the operator or by the landowner or land manager to provide sufficient crop management after release of applicable performance bonds to assure that the proposed postmining cropland use remains practical and reasonable;
 2. There is sufficient water available and committed, to maintain crop production; and
 3. Topsoil quality and depth are shown to be sufficient to support the proposed use.
- j. The director has provided by public notice not less than 45 days nor more than 60 days for interested citizens and local, state and federal agencies to review and comment on the proposed land use.

SECTION 11. PRIME FARMLANDS

11.01. Applicability - Surface operations conducted on prime farmlands shall comply with all requirements set forth in Article 6, Chapter 20, Code of West Virginia, as amended, and all rules and regulations promulgated by the Reclamation Commission and in addition, must meet the special requirements of this section.

11.02. Identification of Prime Farmland - Prime Farmland shall be identified on the basis of soil surveys submitted by the applicant. The director also may require data on drainage, flood control, and subsurface water management.

The requirement for submission of soil surveys may be waived by the director if the applicant can demonstrate according to its procedure outlined in 11.03 of this section that no prime farmlands are involved. Soil surveys shall be conducted according to standards of the National Cooperative Soil Survey, which includes the procedures set forth in the U. S. Department of Agriculture Handbooks 436 (Soil Taxonomy) and 18 (Soil Survey).

11.03. Negative Determination of Prime Farmland - The land shall not be considered as prime farmland where the applicant can demonstrate one or more of the following situations:

- a. Lands within the proposed permit boundaries have been used for production of cultivated crops for less than 5 years out of 20 years preceding the date of the permit application;
- b. The slope of all land within the permit area is 10 percent or greater;
- c. Land within the permit area is not irrigated or naturally subirrigated, has no developed water supply that is dependable and of adequate quality, and the average annual precipitation is 14 inches

or less;

- d. Other factors exist, such as a very rocky surface, or the land is frequently flooded, which clearly places all land within the area outside the purview of prime farmland;
- e. A written notification based on scientific findings and soil surveys that land within the proposed mining area does not meet the applicability requirements for prime farmlands and is submitted to the director by a qualified person other than the applicant, and is approved by the director.

11.04. Plan for Restoration of Prime Farmland - The applicant shall submit to the director a plan for the mining and restoration of any prime farmland within the proposed permit boundaries. This plan shall be used by the director in judging the technological capability of the applicant to restore prime farmlands. This plan shall include:

- a. A description of the original undisturbed soil profile, as determined from a soil survey, showing the depth and thickness of each of the soil horizons that collectively constitute the root zone of the locally adapted crops and are to be removed, stored, and replaced;
- b. The proposed method and type of equipment to be used for removal, storage, and replacement of the soil in accordance with Section 11.05 of these regulations;
- c. The location of areas to be used for the separate stockpiling of the soil and plans for soil stabilization before redistribution;
- d. If applicable, documentation such as agricultural school studies or other scientific data from comparable areas that supports the use of other suitable material, instead of the A, B, or C soil

horizon, to obtain on the restored area equivalent or higher levels of yield as non-mined prime farmlands in the surrounding area under equivalent levels of management;

- e. Plans for seeding or cropping the final graded mine land and the conservation practices to control erosion and sedimentation during the first 12 months after regrading is completed. Proper adjustments for seasons must be made so that final graded land is not exposed to erosion during seasons when vegetation or conservation practices cannot be established due to weather conditions; and
- f. Available agricultural school studies, company data, or other scientific data for comparable areas that demonstrate that the applicant using his proposed method of reclamation will achieve, within a reasonable time, equivalent or higher levels of yield after mining as existed before mining.

11.05. Special Requirements - For all prime farmlands to be mined and reclaimed, the applicant shall meet the following special requirements.

- a. All soil horizons to be used in the reconstruction of the soil shall be removed before drilling, blasting, or mining to prevent contaminating the soil horizons with undesirable materials. Where removal of soil horizons result in erosion that may cause air and water pollution, the director shall specify methods of treatment to control erosion of exposed overburden. The operator shall:
 - 1. Remove separately the entire A horizon or other suitable soil materials which will create a final soil having an equal or greater productive capacity than that which existed prior to mining in a manner that prevents mixing or contamination with other material before replacement;

2. Remove separately the B horizon of the natural soil or a combination of B horizon and underlying C horizon or other suitable soil material that will create a reconstructed root zone of equal or greater productive capacity than that which existed prior to mining in a manner that prevents mixing or contamination with other material; and
 3. Remove separately the underlying C horizons or other strata, or a combination of such horizons or other strata to be used instead of the B horizon that are equal or greater thickness and that can be shown to be equal or more favorable for plant growth than the B horizon, and that when replaced will create in the reconstructed soil a final root zone of comparable depth and quality to that which existed in the natural soil.
- b. If stockpiling of soil horizons is allowed by the director in lieu of immediate replacement, the A horizon and B horizon must be stored separately from each other. The stockpiles must be placed within the permit area and where they will not be disturbed or exposed to excessive erosion by water or wind before the stockpiled horizons can be redistributed on terrain graded to final contour. Stockpiles in place for more than 30 days shall be protected from erosion.
 - c. Scarify the final graded land before the soil horizons are replaced.
 - d. Replace the material from the B horizon, or other suitable material specified in Section 11.04 (2) or 11.05 (3) of these regulations in such a manner as to avoid excessive compaction of overburden and to a thickness comparable to the root zone that existed in the soil before mining.

- e. Replace the A horizon or other suitable soil materials, which will create a final soil having an equal or greater productive capacity than existed prior to mining, as the final surface soil layer to the thickness of the original soil as determined in Section 11.05 (1) of these regulations in a manner that:
1. Prevents excess compaction of both the surface layer and underlying material and reduction of permeability to less than 0.06 inch per hour in the upper 20 inches of the reconstructed soil profile; and
 2. Protects the surface layer from wind and water erosion before it is seeded or planted.
- f. Apply nutrients and soil amendments as needed to establish quick vegetative growth.

SECTION 13. OTHER MINING OPERATIONS ON SURFACE MINED AREAS

13.01. Director's Approval - Reclamation plans for other mining operations to be carried out on a surface mined area on which the regrading, backfilling or revegetation have not been completed, shall require prior approval by the director.

13.02. Application Requirements - Application for approval of such reclamation plans shall be accompanied by the following:

- a. Application form to be prescribed by the director;
- b. A map of the surface mining permit area, showing the portion of land to be disturbed by the other mining operations, including haulageways or access roads;
- c. A performance bond or equivalent, as provided in Section 16, Article 6, Chapter 20, Code of West Virginia, as amended, the requirement for the first acre or fraction thereof of disturbed lands being one thousand dollars (\$1,000) and for each additional acre or fraction thereof disturbed land an additional one thousand dollars (\$1,000);
- d. Written permission for other mining operations from the owner of the surface rights and/or the owner of the mineral rights or the controlling parties of the same.

13.03. Applicability of Code and Regulations - All requirements for haulageways or access roads, drainage, blasting, backfilling, regrading, revegetation, and bond release procedures as set forth in Article 6, Chapter 20, Code of West Virginia, as amended, and all regulations of the Reclamation Commission shall apply with equal force to the reclamation of disturbed areas from other mining operations.

SECTION 14. SURFACE MINING OTHER THAN COAL

All requirements as set forth in Article 6, Chapter 20 of the Code of West Virginia, as amended, and all rules and regulations of the Reclamation Commission shall apply with equal force for the surface mining of clay, flagstone, gravel, manganese, shale, iron ore and any other metal or metallurgical ore.

SECTION 15. SURFACE MINING OF LIMESTONE, SANDSTONE AND SAND

All requirements as set forth in Article 6, Chapter 20, Code of West Virginia, as amended, excepting those covering bonding and reclamation and all rules and regulations of the Reclamation Commission with the exception noted, shall apply with equal force for the surface mining of limestone, sandstone and sand.

16.06. Mine Closure - Upon completion of mining, the director, Department of Mines shall certify to the director, Department of Natural Resources, approval for mine closure. The director, Department of Natural Resources, shall have jurisdiction and control of final restoration and reclamation of the surface effects of underground mining operations.

16.07. Surface Effects of Existing Underground Mining Operations - The surface effects of all active underground mining operations in existence prior to the effective date of these rules and regulations shall comply with all applicable requirements set forth in Chapter 22, Article 2, Section 63, Article 6, Chapter 20, Code of West Virginia, as amended, and all rules and regulations of the Reclamation Commission shall apply with the exception of Sections 4.01., 6. and 10.

SECTION 16. SURFACE EFFECTS OF UNDERGROUND MINING OPERATIONS

16.01. Applicability - Where surface mining operations are incident to a mine as defined in Chapter 22, Article 1, Code of West Virginia, as amended, all applicable requirements set forth in Chapter 22, Article 6, Section 63; Chapter 20, Article 6, Section 1 et. seq. of the Code of West Virginia, as amended; excepting Chapter 20, Article 6, Sections 8, 11a, 13, 13a, 17, 18, 18a 19, 20a, 20b and 31 shall apply. All rules and regulations promulgated pursuant to Chapter 20, Article 6 excepting Sections 4.01, 4.12, 6 and 10 shall apply.

16.02. Director's Approval - A reclamation plan for the surface effects of underground mining operations shall require written approval of the director prior to any surface disturbance.

16.03. Certification - The certification that the access roads or haulageways and the drainage systems were constructed and installed in accordance with the approved underground opening reclamation plan, shall be submitted to the director of the Department of Natural Resources by an approved registered professional engineer or other approved person prior to mine opening or reopening.

16.04. Notification - The director, Department of Natural Resources, shall notify the director, Department of Mines, of the satisfactory installation of all haulageways or access roads, drainage systems, and site preparations incident to the mine opening or reopening.

16.05. Bonding - Each operator who shall make application for an underground Opening Approval under Chapter 22, Article 2, Section 63, Code of West Virginia, as amended, shall at the time the approval plan is submitted furnish bonds in accordance with provisions of Chapter 20, Article 6, Section 16, Code of West Virginia, as amended.

SECTION 17. MODIFICATIONS

Should the director determine that modifications² are necessary because of geologic structure, topography, particular watershed or permit conditions, the director may at his discretion with the approval of the Reclamation Commission, make such modifications if the same are in conformity with Article 6, Chapter 20, Code of West Virginia, as amended.

SECTION 18. STATE AND FEDERAL COMPLIANCE

The issuance of a prospecting or surface mining permit pursuant to Article 6, Chapter 20, Code of West Virginia, as amended, and any rules and regulations 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.

SECTION 19. VALIDITY OF REGULATIONS

The various sections of these rules and regulations shall be construed as separable and severable and should any of the sections, sentences, clauses or parts thereof be construed and held unconstitutional or for any reason be invalid, the remaining sections of these rules and regulations shall not be thereby affected.

ERRATA

1. Page 19, Section 5.05.- Line 4, let changed to led
2. Page 30, Section 7A.02.(a) - Line 25, semi colon after discharge
3. Page 31, Section 7A.02.(d) - Line 6, semi colon after director
4. Page 41, Section 9.01. - Line 9, surface mining crossed out but should not be crossed out
5. Page 48, Section 9D.03.(b) - Line 11, and/or changed to or
6. Page 49, Section 9D.04.- Line 7, word covered changed to drained
7. Page 50, Section 9E.03.(a) - Line 26, and/or changed to or
8. Page 51, Section 9E.04. - Line 18, word covered changed to drained
9. Page 51, Section 9E.05. - Line 22, words under drains changed to rock core
10. Page 65, Section 12A.02. - Line 26, rock types changed to stoniness
11. Page 83, Section 14 - Line 5, manganes changed to manganese

FILED IN THE OFFICE OF

SECRETARY OF STATE
THIS DATE 8-14-78

WEST VIRGINIA SURFACE MINING RECLAMATION REGULATIONS

DEPARTMENT OF NATURAL RESOURCES

Chapter 20-6
Series VII
(1978)

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WEST VIRGINIA SURFACE MINING RECLAMATION REGULATIONS

Department of Natural Resources

Chapter 20-6
Series VII
(1978)

Subject: Rules and regulations pertaining to ~~the reclamation of~~ areas disturbed by prospecting, surface mining operations, and surface effects of underground mining operations, particularly with regards to requirements for ~~conversion~~, permit requirements, performance bonds, haulageways or access roads, blasting, protection of the hydrologic system, drainage system, method of operation, backfilling and regrading, postmining use of land, prime farmlands, revegetation, other mining operations on disturbed surface mined areas, quarries, surface mining other than coal, surface mining of limestone, sandstone and sand, modifications, and state and federal compliance and validity of regulations.

SECTION 1. GENERAL

1.01. Scope - These regulations establish general and specific rules for permits, conversion, for construction of haulageways or access roads, for blasting, for protection of the hydrologic system, for drainage systems, for methods of operation, backfilling and regrading, for postmining use of lands, for prime farmlands, for the revegetation of lands disturbed by prospecting and surface mining operations, for other mining operations on surface mined areas, for surface mining other than coal, for bonds and permits, for quarries, for surface mining of limestone, sandstone and sand, for modifications, for state and federal compliance and for validity of regulations.

1.02. Authority - These regulations are issued under the authority of Article 6, Chapter 20, Code of West Virginia, as amended.

1.03. Effective Date - These regulations were promulgated on the 14th day

2.06. Approximate original contour shall mean that surface configuration achieved by backfilling and grading of the mined area so that the reclaimed area, including any terracing or access roads, closely resembles the general surface configuration of the land prior to mining and blends into and compliments the drainage pattern of the surrounding terrain.

2.07. Aquifer shall mean a zone, stratum or group of strata that can store and transmit water in sufficient quantities for a specific use.

2.08. Auger mining shall mean mining of coal from an exposed vertical coal face by means of a mechanically power-driven boring machine which employs an auger to cut and remove the coal.

2.09. Backfill shall mean to place material back into an excavation and return the area to a predetermined slope.

~~2.08:--Base-of-highwall shall mean the intersection of the vertical plane with the horizontal plane at any point in the overburden, spoil, or mineral;~~

~~2.09:--Bench shall mean the result of surface mining in areas where the average slope or the original ground has an inclination of more than thirty per cent (30%) from the horizontal; being:--(a) the leveled surface of an excavated area measured horizontally at any point in the overburden, spoil, or mineral between the base of the highwall and outer point of original fill bench; or (b) a working base extending from the base of a highwall on which excavating equipment can set, move and operate;--~~

2.10. Bench shall mean the result of surface mining operations where there is created a leveled surface of an excavated area measured horizontally at any point in the overburden, spoil, or mineral between the base of the highwall and outer point of original fill bench; or a working base extending from the base of a highwall on which excavating equipment can set and operate.

~~2-10:--Bench-width shall mean the width of the bench as measured horizontally from the base of the highwall to the outer point of the original fill bench.~~

2.11. Buffer zone shall mean an undisturbed border along or around an intermittent or perennial stream, public road, cemetery or other such area designated for other public or private use.

2.12. Coal refuse means any waste coal, rock, shale, slurry, culm, gob, boney, slate, clay, and related materials associated with or near a coal seam, which are either brought above ground or otherwise removed from a mine in the process of mining coal, or which are separated from coal during the cleaning or preparation operations.

2.13. Completion of mining shall mean an operation where no mineral has been removed or overburden removed for a period of two consecutive months, unless the operator, within thirty (30) days of receipt of the director's notification declaring completion, submits sufficient evidence that the operation is in fact not completed.

~~2-12:--Contour surface mining shall mean the removal of overburden and the mining of a mineral that normally approaches the surface at approximately the same elevation; generally a contour bench resulting.~~

2.14. Controlled placement shall mean the method of surface mining by which the site is prepared, and the overburden is removed, manipulated, and replaced by mechanical means in such a manner as to achieve and maintain stabilization in accordance with the approved pre-plan.

2.15. Critical stream shall mean any stream or its tributaries that contains less than 15 ppm methyl orange alkalinity (to pH 4.5) and a conductivity of less than 50 micromho. Streams commonly associated with this characteristic, but not limited to include: North Branch of Potomac System - Stony River and Abrams Creek; Cheat River System - Muddy Creek, Roaring Creek,

Daughtery Creek, Elsey Run, Blackwater River, Red Run, Otter Creek, Elklick Run, Shavers Fork, and Red Creek; Monongahela River System - Whiteday Creek; Tygart River System - Three Forks, Sandy Creek, Teter Creek, Buckhannon River, Middle Fork River, Roaring Creek tributaries, and Mill Creek; Little Kanawha River System - Little Kanawha itself above Burnsville and all tributaries; Elk River System - Holly River, Laurel Creek, Sugar Creek of the Back Fork, Back Fork, Bergoo Creek, Leatherwood Creek, and Crooked Fork of Old Field Fork; Gauley River System - Middle Fork and Tea Creek of Williams River, Cranberry River, and Cherry River; and, Greenbrier River System - Hills Creek.

~~2.13:--Cross-drain shall mean a ditch constructed to carry away excessive drainage from a main collecting point or ditch.--~~

2.16. Cut shall mean an excavation made by excavating equipment to remove overburden in a single progressive line.

2.17. Cut-fill shall mean overburden or other material removed from an elevated portion of a road or bench and deposited in a depressed-portion depression in order to maintain a desired grade.

~~2.16:--Deep-mining-or-underground-mining shall mean removal of the mineral being mined without the disturbance of the surface as distinguished from surface mining.--~~

2.18. Design storm shall mean predicted rainfall of given intensity, frequency, and duration based on National Weather Service.

2.19. Director and/or his authorized agent shall mean the director of the Department of Natural Resources, deputy directors, the Chief of the Division of Reclamation, the Assistant Chiefs of the Division of Reclamation and all duly authorized surface mining reclamation supervisors, specialist or inspectors and inspectors-in-training.

2.20. Disturbed areas shall mean those lands that have been affected by surface mining operations.

~~2.18.--Diversi~~o~~n-ditch shall mean a machine-made waterway used for collecting ground water or a ditch designed to change the actual or normal course of ground and/or surface water.~~

2.21. Diversi~~o~~n ditch shall mean a designed channel constructed for the purpose of collecting and transmitting surface runoff.

2.22. Downslope shall mean the land surface between the projected outcrop of the lowest coal seam being mined and the valley floor.

~~2.19.--Drainage plan or system shall mean the proposed method of collection, treatment, and discharge of all waters within the affected drainage area, as defined by the approved pre-plan.~~

2.23. Drill bench shall mean the construction of a bench created for the purpose of setting up and operating drilling equipment and all roads and other disturbed areas incidental to such construction.

2.24. Ephemeral stream shall mean a stream which flows less than one month per year in direct response to precipitation.

2.25. Face-up shall mean the result of an excavation where a vertical or near vertical highwall is created that exposes the overburden and/or the mineral face.

~~2.20.--Field indicator shall mean any approved apparatus or equipment used in the field to measure pH, iron, turbidity or such other parameters as may be required.~~

~~2.21.--Fill bench shall mean that portion of a bench formed by spoil or overburden which has been deposited on or over the original slope.~~

2:22:--Georgia-type-V-Ditch shall mean a ditch for the collection and removal of ground and surface water; constructed on the solid bench area; with the opposing slopes being constructed in such a manner so as to permit the total area to be transversed by farm equipment.

2.26. Groundwater shall mean subsurface water at or below the water table occupying the saturation zone from which wells or springs are fed.

2.27. Haulageway or access road shall mean any road constructed, improved, maintained or used by the operator which ends at the pit or bench and which is located within the permit area; with the exception of state owned roads. A bench may serve as a haulageway; but a haulageway cannot serve as a bench.

2:24:--Highwall shall mean the vertical or near-vertical wall consisting of the exposed strata after excavating operations.

2.28. Hydrologic balance shall mean the relationship between the quality and quantity of inflow storage and outflow in a hydrologic unit such as a drainage basin, aquifer, soilzone, lake, or reservoir. It encompasses the quantity and quality relationships between precipitation, runoff, evaporation, and the change in ground and surface water storage.

2.29. Intermittent stream shall mean a stream or portion of a stream that flows continuously for at least one month of the calendar year as a result of ground water discharge or surface runoff.

2.30. Inspection shall mean a visual review of prospecting, surface, or other mining operations to insure compliance with any applicable law or rules and regulations under jurisdiction of the director.

2.31. Leachate shall mean a liquid that has percolated through soil, rock, or waste and has extracted dissolved or suspended materials.

2.32. Mine shall mean the shaft, slopes, drifts or inclines connected

with excavations penetrating coal seams or strata and the surface structures or equipment connected therewith which contributes directly or indirectly to the mining, preparation or handling of coal.

2.33. Mineral face shall mean the exposed vertical cross-section of the natural coal seam or mineral deposit. ~~being mined and generally forming the base of the highwall left by excavating operations in surface mining.~~

~~2.27. -- Monument shaft mean a permanent marker consisting of metal or wood used to identify the permit area being mined under a surface mining permit; consisting of a two-inch pipe driven three feet into the earth with a minimum of four feet exposed and a 2' x 3' sign affixed to the top of the pipe with company name and permit number permanently affixed. -- Any suitable equivalent substitute may be approved.~~

2.34. Mountaintop removal shall mean surface mining operations that remove entire coal seams running through the upper fraction of a mountain, ridge, or hill by removing all of the overburden and creating a level plateau or gently rolling contour with no highwalls remaining and where equal, higher and/or better land use is proposed.

2.35. Natural drainway shall mean any water course or channel which carries may carry 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.~~

2.36. Operation shall mean the permit area indicated on the approved map submitted by the operator, or an area where land is being disturbed or mineral is being removed.

2.37. Outer spoil or outer slope shall mean the disturbed area extending from the outer point of the bench to the extreme lower limit of the disturbed land.

2.38. Overburden or spoil shall mean the earth, rock and other materials

lying in the natural state above a mineral deposit before or after excavation.

2.39. Peak runoff shall mean the maximum flow at a specified location resulting from a design storm.

2.40. Perennial stream shall mean a stream or portion of a stream that flows continuously.

2.41. Pit shall mean that part of the surface mining operation from which the mineral is being actively removed or where the mineral has been removed and not backfilled.

2.42. Pre-inspection shall mean a preliminary survey and a field review by the director or his authorized agent of a pre-plan and the proposed area to be disturbed.

2.43. Pre-plan shall mean the total application submitted to the director including the application form, mining and reclamation plan, drainage plan, blasting plan, planting plan, maps, drawings, data, cross-sections, bonds, and other information as may be required.

2.44. Prospecting shall mean the use of drilling or excavating equipment in an area not covered by a surface mining permit for the purpose of removing-the-overburden-to-determine determining the location, quantity or quality of a natural coal deposit, or to make feasibility studies or for any other purpose.

2.45. Recharge capacity shall mean the ability of the soils and underlying materials to allow precipitation to infiltrate and reach the zone of saturation.

2.46. Reclamation shall mean the process of converting disturbed land to a stable form for productive use.

2.47. Reference area shall mean land units of varying size for the

purpose of measuring ground cover, productivity and species diversity.

2:35:--Regrade-or-grade-shall-mean-to-change-the-contour-of-any surface-by-the-use-of-leveling-or-grading-equipment.

2.48. Sand shall mean individual rock or mineral fragments having a diameter less than 2.00 mm but greater than .02 mm.

2.49. Sediment shall mean solid material, both mineral and organic, that is in suspension, is being transported, or has been moved from its site of origin by air, water, gravity, or ice and has come to rest on the earth's surface.

2.50. Sediment control structure shall mean a barrier, dam, ditch, excavation or other structure placed in a suitable location to form a silt or sediment basin.

2:36:--Seepage-water-shall-mean-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:

2.51. Sizeable quantity of water shall mean an accumulation of storm or any other water in excess of 5,000 cubic feet not provided for in the pre-plan.

2:37:--Slope-shall-mean-the-angle-of-repose-from-the-horizontal-plane-of-spoil-banks-or-ridges-of-overburden-material-made-in-the-surface-mining operation;-the-angle-of-a-hill-or-mountain:--A-gentle-slope-shall-mean-0%-to-10%;-moderate-to-steep-slope-shall-mean-10%-to-45%;-extremely-steep-slope-shall-mean-45%-and-over:

2:38:--Soil-shall-mean-any-earthen-material-excluding-bedrock.

2:39:--Solid-bench-shall-mean-that-portion-of-the-bench-surface-formed-by-earth-or-rock-strata-which-has-not-been-removed;-as-distinguished-from fill-bench.

2-40:--Spoil shall mean all overburden material removed or displaced by excavating equipment; blasting or any other means.

2-41:--Stabilize shall mean to settle; or fix in place by mechanical or vegetative means; including the planting of trees; grasses; vines; shrubs; or legumes.

2.52. Stoniness shall mean a characteristic of earth, overburden or spoil reflecting its relative proportion of sizeable aggregate content as opposed to its sand, loam; or fine aggregate silt, clay or rock fragment content. Sites too stony to hand plant with seedlings shall be classified as extremely stony; those having less stone but too much stone for tillage shall be classified as stony; tillable sites shall be classified as non-stony.

2.53. Storm water shall mean any water flowing over or through the surface of the ground caused by precipitation; generally, surface runoff.

2.54. Structure shall mean but not be limited to gas lines, water lines, utility lines, bridges, tunnels, active underground mines, public roads, towers, airports and dams. This shall not include operational facilities of the surface mining operation.

2.55. Subsidence shall mean a sinking of a portion of the earth's surface resulting from underground removal of a mineral seam subsequent to failure of support structures.

2.56. Surface effect of underground mining operations shall mean surface mining operations where lands are disturbed including but not limited to roads, drainage systems, mine entry excavation, above-ground-work areas, such as tipples, coal processing facilities and other operating facilities, also waste work and spoil disposal areas and mine waste impoundments or embankments which are incident to mine openings or reopenings.

2.57. Surface mining operations shall mean surface disturbances and

all activities necessary and incident to the removal of mineral and the reclamation of such operations.

2.58. Surface water shall mean water on the surface of the earth.

~~2.44:--Surface water shall mean that water; from whatever source; which is flowing on the surface of the ground;~~

~~2.45:--Suspension of permit shall mean an act of the director or the Reclamation Commission or an authorized agent of the director or Reclamation Commission with legal justification temporarily nullifying the validity of a permit insofar as the mining and removal of the mined minerals are concerned;~~

2.59. Toxic-forming materials shall mean earth materials or wastes which, if acted upon by air, water, weathering, or microbiological processes, are likely to produce chemical or physical conditions in soils, air or water that are detrimental to the environment.

2.60. Toxic mine drainage shall mean water that is discharged from active, abandoned and other areas affected by surface mining operations and which contains a substance which through chemical action or physical effects, is likely to kill, injure, or impair biota commonly present in the area that might be exposed to it.

2.61. Valley or head-of-hollow fills shall mean a controlled earth and rock fill across or through the head of a valley or hollow to form a stable, permanent storage space for excess surface mine overburden.

~~2.46:--Water analyses shall mean those water analyses performed by or for the operator using the analytical procedures set forth in Standard Methods; Thirteenth Edition; or employing such other field testing methods which have been approved by the Division of Water Resources.~~

~~SECTION 3:--CONVERSION~~

~~3.01:--Conversion--Any operator holding a valid surface mining permit~~

issued prior to the effective date of these regulations, shall within 60 days after the effective date thereof, convert such permit and the bond or other securities posted therefore to comply with all of the provisions of Article 6, Chapter 20, Code of West Virginia, as amended, and all rules and regulations promulgated thereunder, if mining operations are to continue after said date. -- The provisions of this regulation shall not be construed to require the regrading or replanting of any area where such work was satisfactorily performed and approved prior to the effective date of these regulations.

SECTION 3. PROSPECTING

3.01. Performance Bond Coverage - The amount of performance bond or its equivalent as provided in Section 7, Article 6, Chapter 20 of the Code of West Virginia, as amended, shall be five hundred dollars (\$500) per acre or any fraction thereof. Performance bond or its equivalent shall not be transferable as a credit to surface mining.

3.02. Notification of Approval or Disapproval - After review of the prospecting permit application and the reclamation plan for the area to be disturbed by prospecting, the director shall inform the applicant if they are approved or disapproved. If the application and plan are not acceptable, he shall set forth the reasons why they are not acceptable, and he may propose modifications, delete areas, or reject the permit on the basis of the reclamation plan or for other justifiable reasons set forth in the Code of West Virginia, as amended, and/or rules and regulations.

3.03. Reclamation Tax - No special reclamation tax, as outlined in Section 17 of Article 6, Chapter 20, Code of West Virginia, as amended, is required for a prospecting permit. However, if said permit is to be converted to a surface mining permit, the acreage disturbed by prospecting shall be included as a part of the total area to be assessed the special reclamation tax, as set forth in Section 17, Article 6, Chapter 20 of the Code of West

Virginia, as amended.

3.04. Validity of Permit - A prospecting permit shall be valid for one year from its date of issue.

3.05. Governing Regulations - Prospecting and reclamation procedures shall may be governed by the following regulations of the Reclamation Commission.

- a. Section 5 - Haulageways or access roads;
- b. Section 6 - Blasting;
- c. Section 7 - Protection of the Hydrologic Balance;
- d. Section 8 - Drainage Systems;
- e. Section 9 - Method of Operation; and
- f. Section 12 - ~~Revegetation and Standards for Evaluating Vegetative~~
Cover.

3.06. Removal of Minerals - Minerals may be removed during prospecting operations for testing purposes only, and shall be limited to a maximum of two hundred fifty (250) tons for each permit area. Request for permission to remove greater amounts than two hundred fifty (250) tons of minerals shall be submitted to the director and may be approved at his discretion.

3.07. Bond Release - The performance bond or other securities accompanying a prospecting permit shall be released in the same manner as surface mining permit bonds.

SECTION 4. PERMIT REQUIREMENTS

~~SECTION 4.01. BOND AND PERMIT REQUIREMENTS~~

4.01. Class III Legal Advertisement Requirements - Prior to the publication of the Class III Legal Advertisement for a surface mining permit, excluding underground opening approval, the following requirements shall be met:

- a. Upon filing of a surface mining permit application, proposal maps, reclamation plan and filing fee, a surface mining application (SMA) file number may be assigned. Surface mining application (SMA) file number assignments shall be valid for a period of time not to exceed 120 days from date of assignment.
- b. A clear and accurate location map shall be made a part of the legal advertisement. The map of a scale and detail found in the West Virginia General County Highway Map or the equivalent will be acceptable. Any significant landmarks, roads or streams shall be indicated on the location map. Longitude and latitude coordinates on the map shall cross at a perimeter marker.

4.02. Operator Reassignment - Should the applicant or operator designate, contract or otherwise assign the surface mining operation to others, prior written notification of the assignment and additional information as provided in Section 8, Article 6, Chapter 20 of the Code of West Virginia, as amended, shall be submitted and approved.

4.03. Approval of Person to Prepare a Complete Reclamation and Mining Plan - Any person preparing a complete reclamation and mining plan and drainage system for the area of land to be disturbed as required by the provisions of Article 6, Chapter 20, Section 9 and 9A, Code of West Virginia, as amended, or by the regulations, shall first submit to the director a written resume of his past experience and training. A written test shall also be administered. On the basis of the resume and written test, he shall be adjudged qualified or not as the case may be, and so notified by the director in writing. Should experience warrant, an approved person may be adjudged disqualified and so notified by the director in writing.

4.04. Scale for Reclamation Pre-plan Map - The scale required for all

maps prepared for submission with an application for a surface mining permit or underground opening reclamation plan approval shall be as follows:

~~a. Scale on a U. S. geological survey topographic 7.5-minute quadrangle shall be enlarged to approximately 660 feet to the inch;~~

a. Scale on a U. S. geological survey topographic 7.5-minute quadrangle shall be enlarged to 500 feet or less to the inch; and

b. Scale on aerial photograph shall be 660 feet or less to the inch;

~~d. Scale on the Progress, Alternative Plan and Final Maps shall be of the same scale of the approved pre-plan map.~~

4.05. Scale for Drainage, Progress and Final Maps - The scale on the drainage, progress and final maps shall be of the same scale as the approved pre-plan map.

4.06. Scale Approval - Written permission from the director shall be required prior to the submission of maps drawn to any scale other than set forth by regulations.

4.07. Map Size - All maps and plans shall be submitted on standard print paper, 24 inches by 36 inches or less. If supplementary maps or plans are attached, match lines shall be used.

4.08. Color Code - A color code shall be used in preparing all maps to indicate critical features of the permit area as follows:

- a. Red shall indicate mineral to be removed;
- b. Yellow shall indicate the total disturbed land;
- c. Blue shall indicate water and drainage;
- d. Brown shall indicate special uses;
- e. Green shall indicate regrading; and
- f. Purple for adjacent mining permits.

4.09. Permanent Monument - A permanent monument shall be posted at

all points of access from public roads and highways and at other suitable locations. The monument shall consist of a sign constructed of wood, metal, or other suitable material 2' x 3' mounted on a two-inch pipe driven three feet into the ground with four feet exposed. The sign shall clearly indicate the company name, permit numbers, business address and telephone number. Any suitable equivalent substitute may be approved.

4.10. Perimeter Marker Permit-or-End-of-Strip-Marker - A two-inch (2") pipe shall 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-marker-or-end-of-strip-marker perimeter marker.

4.11. Buffer Zone Markers - Appropriate markers will be established along a buffer zone. Markers shall consist of metal or wooden stakes or other suitable devices or methods.

4.12. Topsoil Markers - When topsoil or other vegetation supporting material is segregated and stockpiled, the stockpiled material shall be marked. Markers shall remain in place until the materials are removed.

4.13. Slope Measurements - The operator shall show on the map filed with the application for a permit the percent of slope of the original surface within each 200 foot interval along the contour of the operation. The first measurement is to be taken at the starting point of the operation. The flagged field measurements shall be made from the estimated cropline or proposed coal seams extending 100 lineal feet above and below or beyond the coal outcrop on the area to be disturbed. Where the original slope has been previously altered, slope measurements shall be taken above or below the disturbance; whichever is more representative of the original slopes.

~~notification of blasting shall be given by certified mail to all landowners within one thousand (1,000) feet of any part of the proposed operation. The United States Post Office Department certified receipt of notification shall be maintained with the blasting log.~~

6.02. Certified Blasting Personnel - All blasting operations shall be conducted by certified, trained and competent persons who possess the knowledge of hazards involved and have full knowledge of all local, state, and federal laws and regulations pertaining to explosives and use thereof. Certification by the Fire Marshall of the State of West Virginia shall be accepted as being valid.

6.03. Pre-blasting Survey - Requirements for a pre-blasting survey shall be governed by the following:

- a. On a request to the director by a resident or owner of a man-made dwelling or structure that is located within one-half mile of the permit area, the operator shall conduct a pre-blasting survey of the dwelling or structure and submit a report of the survey to the director.
- b. Personnel approved by the director shall conduct the survey to determine the condition of the dwelling or structure, and to document any pre-blasting damage and to document other physical factors that could reasonably be affected by the blasting. Assessments of structures such as pipes, cables, transmission lines, wells and other water systems shall be limited to surface conditions and other readily available data. Special attention shall be given to the pre-blasting condition of wells and other water systems used for human, animal, or agricultural purposes and to the quantity and quality of the water.
- c. A written report of the survey shall be prepared and signed by

the person or persons who conducted the survey. The report shall include recommendations of any special conditions or proposed adjustments to the blasting procedures which should be incorporated into the blasting plan to prevent damage. Copies of the report shall be provided to the person requesting the survey and to the director.

~~6.06:---Blasting-Warning---When-blasting-is-to-be-done-within-five-hundred (500)-feet-of-any-occupied-dwelling;-the-operator-or-his-authorized-representative-shall-notify-all-persons-involved-that-a-blast-is-to-be-detonated, stating-the-approximate-time-of-same:---A-minimum-of-one-hour-notification must-be-given-prior-to-detonation.~~

6.04. Public Notice of Blasting Operations - At least 10 days, but not more than 20 days before beginning blasting operations, the operator shall publish on a form supplied by the director, a schedule in a newspaper of general circulation in the county of the proposed site. Copies of the schedule shall be distributed by mail to local governments and public utilities and to each resident within one-half mile of the blasting sites described in the advertisement. The operator shall republish and redistribute the schedule by mail at least every three (3) months. Schedules shall not be so general as to cover all working hours but shall identify as accurately as possible the location of the blasting sites and the time periods when blasting will occur. The schedule shall contain at a minimum:

- a. Identification of the specific areas in which blasting will take place. The specific blasting areas described shall not be larger than 300 acres with a generally contiguous border;
- b. Dates and times when explosives are to be detonated shall be expressed in not more than 4-hour increments;

6.09. Air Blast Level Standard - A maximum air blast level of 128 decibel linear peak shall not be exceeded at any residence, building or occupied structure within 1/2 mile of the blasting site other than operational facilities of the mine.

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

6.10. Blasting Prohibited - Except where lesser distances are approved by the director, blasting shall not be conducted within:

- a. 1,000 feet of any building used as a dwelling, school, church, hospital or nursing facility;
- b. 500 feet of facilities including, but not limited to, disposal wells, petroleum, or gas-storage facilities, municipal water-storage facilities, fluid-transmission pipelines, gas or oil-collection lines, or water and sewage lines;
- c. 500 feet of an underground mine not totally abandoned except with the concurrence of the Mining Safety and Health Administration; and
- d. The director may prohibit blasting on specific areas where it is deemed necessary for the protection of public or private property and general safety of the area.

6.11. Particle Velocity - A particle velocity of one (1) inch per second in any one of the three mutually perpendicular directions shall not be exceeded at the nearest residence, building, or structure, other than operational facilities of the mine. The mutually perpendicular directions are identified as transverse, vertical and longitudinal.

6.12. Maximum Weight of Explosive - The maximum weight of explosive to be detonated within any 8 millisecond period shall be determined by the

formula $W = (D/60)^2$ where W represents the maximum weight of explosives, in pounds, that can be detonated in any 8 millisecond period, and D represents the distance, in feet, from the nearest point of blast to nearest residence, building or structure, other than operational facilities of the mine.

6.13. Seismograph Measurements - Where a seismograph is used to monitor the velocity of ground motion and the peak particle velocity limit of one (1) inch per second is not exceeded, the equation in Section 6.12. need not be used. However, if the equation is not being used, a seismograph record at the nearest structure to the blast site shall be obtained for every blast. The director may require a seismograph recording of any or all blasts.

6.14. Blast Record - All blasts other than secondary blasts will be located on working proposal maps and the corresponding blast numbers entered into the official blasting log record book. The blasting log record book shall be kept current daily and is to be made available at the operation for inspection by the director or upon request by the public. These blasting log records are to include seismograph reports, certificate of publication of schedule and shall be retained for three (3) years and should include as a minimum the following data:

- a. Name of permittee, operator, or other person conducting the blast;
- b. Location, date, and time of blast;
- c. Name, signature and certification number of blaster-in-charge;
- d. Direction and distance, in feet, to nearest dwelling, school, church or commercial or institutional building neither owned nor leased by the operator;
- e. Weather conditions;
- f. Type of material blasted;

- g. Number of holes, burden, and spacing;
- h. Diameter and depth of holes;
- i. Types of explosives used;
- j. Total weight of explosives used;
- k. Maximum weight of explosives detonated within any 8 millisecond period;
- l. Maximum number of holes detonated within any 8 millisecond period;
- m. Method of firing and type of circuit;
- n. Type and length of stemming;
- o. If mats or other protections were used;
- p. Type of delay detonator used and delay periods used;
- q. Seismograph records, where required including but not limited to;
 - 1. Seismograph reading, including exact location of seismograph and its distance from the blast;
 - 2. Name of person taking the seismograph reading;
 - 3. Name of person and firm analyzing the seismograph record; and
- r. Shot location.

The format for the arrangement and the recording of items in the blasting log record book is to be on forms prescribed by the director.

6.15. Assessment - Any assessment as set forth in Section 11a, Article 6, Chapter 20 of the Code of West Virginia, as amended, shall be paid within ten (10) days after receipt of said assessment notice.

SECTION 7. PROTECTION OF THE HYDROLOGIC SYSTEM

7.01. Applicability - The operator shall plan and conduct surface mining operations to minimize disturbance to the prevailing hydrologic balance in order to prevent long-term adverse changes in the hydrologic balance, both on and off site, that could result from surface mining opera-

tions. Changes in water quality and quantity, in the depth to ground water, and in the location of surface water drainage channels shall be minimized such that the postmining land use of the disturbed land is not adversely affected and applicable federal and state statutes and regulations are not violated. The operator shall conduct operations so as to minimize water pollution and shall, where necessary, use treatment methods to control water pollution. The operator shall emphasize surface mining and reclamation practices that will prevent or minimize water pollution and changes in flows in preference to the use of water treatment facilities. Practices to control and minimize pollution include, but are not limited to, stabilizing disturbed areas through grading, diverting runoff, achieving quick growing stands of temporary vegetation, lining drainage channels with rock or vegetation, mulching, sealing acid-forming and toxic-forming materials, and selectively placing waste materials in backfill areas. If pollution can be controlled only by treatment, the permittee shall operate and maintain the necessary water treatment facilities for as long as treatment is required.

7A. Permit Requirements

7A.01. Site Analysis - Each application for a permit shall include cross-sections of the land to be affected with respect to the hydrologic balance including the actual area to be mined. These cross-sections may be derived from core boring or other approved sources. These cross-sections are to be prepared and certified by a registered professional engineer or other approved person showing pertinent elevation and location of test borings or core samplings and depicting the following information:

- a. The nature and depth of the various strata of overburden;
- b. The location of subsurface water, if encountered, and its quality;
- c. The nature and thickness of any coal or rider seam;

- d. The nature of the stratum immediately beneath the coal seam to be mined;
- e. Mine openings to the surface;
- f. The location of aquifers;
- g. The estimated elevation of the water table;
- h. Where surface mining operations are to be conducted on critical streams, pre-mining overburden sampling and analysis shall be required. Sampling points shall be located on the drainage plan map. Where overburden analysis reflects toxic strata, a plan for handling and final placement for said strata shall be submitted. On critical streams where it can be documented or past mining experience has shown that surface mining will not result in significant acid production, pre-mining overburden analysis may not be required. Overburden and minesoil analysis shall be in accordance with standard procedures outlined in Environmental Protection Agency manual # 600/2-78-054 (Field and Laboratory Methods Applicable to Overburdens Minesoils) or other approved methods; and
- i. Such other information as the director may require.

7A.02. Surface Water Monitoring - The operator shall submit as part of the complete mining and reclamation pre-plan a surface water monitoring program which meets the following requirements:

- a. Provides adequate data to describe the likely daily and seasonal variation in discharges from the disturbed area in terms of water flow, pH, total iron, total suspended solids and, if requested by the director, any other parameters characteristic of the discharge
- b. Provides daily monitoring by rain gauges to measure normal and abnormal variations in precipitation;

- c. All water discharged from the permit area is to be monitored daily by the operator for total iron, pH and water flow and if required by the director, any other parameter. A written record of the testing dates and analytical data shall be kept current and made available for inspection at the operation;
- d. Provides a monthly report of all measurements to the director.
- e. In the event violations of permit conditions occur, the director shall be notified immediately after receipt of analytical results by the operator; and
- f. After disturbed areas have been regraded and seeded in accordance with these regulations, the operator shall monitor surface water flow and quality. Data from this monitoring shall be used to demonstrate that the quality and quantity of runoff without treatment will be consistent with the requirement of this section to minimize disturbance to the prevailing hydrologic balance and with the requirements of these regulations to attain the approved postmining land use. This data shall provide a basis for approval by the director for removal of water quality or flow control systems and for determining when the requirements of this section are met. A one (1) year history of meeting effluent limitations shall be adequate for demonstrating that the water has stabilized to an acceptable level. The nature of data, frequency of collection and reporting requirements will be the same as that during the mining operation.

7A.03. Ground Water Monitoring - The operator shall submit as part of the complete mining and reclamation pre-plan a procedure for monitoring ground-water levels, infiltration rates, subsurface flow and storage characteristics, and the quality of ground water to determine the effect of surface mining operations on the recharge capacity of reclaimed lands and on the

quantity and quality of water in ground water systems at the mine area and in associated off-site areas. When operations are conducted in such a manner that may affect the ground water system, ground water levels and ground water quality shall be periodically monitored using wells that can adequately reflect changes in ground water quantity and quality resulting from such operations. The director may require drilling and development of additional wells if needed to adequately monitor the ground water system.

7A.04. Water Sampling - Water tests for total iron, total hot acidity, total mineral acidity, total alkalinity, total aluminum, total manganese, total sulfate, dissolved solids, pH and suspended solids shall be taken before surface mining operations begin and the results of these tests will be shown in the pre-plan.-on-the-drainage-plan-map. The location for these preliminary tests will be:

- a. On natural drainways above proposed surface mining operations;
- b. On natural drainways below proposed surface mining operation at or near the affected drainage area boundary; and
- c. On natural drainways upstream from the mouth of natural drainways affected by surface mining.

7B. Water Quality

7B.01. Acid and Toxic Materials - Drainage from acid-forming and toxic-forming materials into ground and surface water shall be avoided by:

- a. Identifying, burying, blending, and treating where necessary, spoil or other materials that will be toxic to vegetation or that will adversely affect water quality. Such materials shall be disposed of in accordance with the provisions of Section 9.03;
- b. Preventing or removing water from contact with acid-forming or toxic-forming materials;

- c. Burying or otherwise treating toxic-forming materials from coal preparation plants no later than 90 days after the cessation of the filling of the disposal area. Burial or treatment shall be in accordance with Section 9.03.;
- d. Casing, sealing or otherwise managing boreholes, shafts, wells, and auger holes to prevent pollution of surface or ground water and to prevent mixing of ground waters of significantly different quality. All boreholes that are within the permit area but are outside the surface coal mining area or which extend beneath the coal to be mined and into water bearing strata shall be plugged permanently unless the boreholes have been approved for use in monitoring; and
- e. Taking such other actions as required by the director.

7B.02. Water Quality Control - All reasonable measures shall be taken to intercept all surface water by the use of diversions, culverts and drainage ditches or other methods to prevent water from entering the pit area. All water accumulation into the pit shall be removed as-rapidly-as-possible-with due-recognition-to-water-quality-requirements. at least once in a 24-hour period unless otherwise approved by the director. All-water-discharged-from-the-permit-area-is-to-be-monitored-daily-by-the-operator-and-a-written record-of-the-testing-dates-and-analytical-data-shall-be-kept-current-and made-available-for-inspection:--A-monthly-compilation-of-the-foregoing-information-will-be-submitted-monthly-to-the-Chief-of-the-Reclamation-Division. Any-treatment-works-necessary-to-meet-^Uadequate-treatment^U-shall-be-approved-by-the-Division-of-Water-Resources.

The water leaving the permit area will not lower the water quality of the river, stream or drainway into which it is discharged below the water quality standards established for such river, stream or drainway. ^{tn-generat}

shall include, but not be limited to a written recommendation ~~approving or disapproving the granting of the permit~~ for the approval or disapproval of the permit and the reason or reasons for such recommendation.

7B.05. Treatment of Acid Water Surface Breakthrough - Treatment of acid water surface breakthrough shall be as follows:

- a. Any surface breakthrough of water caused by the operator during the course of his operations shall be sampled immediately and analyzed for total iron content; ~~total acidity,~~ total suspended solids and pH and if requested by the director, any other parameter characteristics of the discharge. Such analysis shall be made by a competent water analyst or chemist. The original and at least one copy of such analysis shall be retained by the operator, one copy two copies shall be submitted to the director and one copy to the Chief of the Division of Water Resources Reclamation;
- b. Should said analysis indicate the water to be acid with a pH of less than ~~5.5~~ 6.0 and/or contains more than ~~10~~ 7mg/l of iron, seals shall be immediately constructed. These seals shall either:
 1. prevent any air from entering the underground mine by way of the breakthrough; or
 2. prevent any air from entering the breakthrough while allowing the water to flow from the breakthrough; or
 3. seal the breakthrough of acid water so that it cannot flow.

Such seals shall be constructed of stone, brick, block, earth or similar impervious materials which are acid resistant. Any cement or concrete employed in the construction of these seals shall also be of an acid resistant, impervious type; and

- c. Alternate methods of sealing and/or treating acid water may be employed as they are developed and approved.

8.02. Sediment Control - Sediment control structures shall be constructed in appropriate locations in order to control sedimentation. All such structures shall meet the following requirements:

- a. All structures shall have the capacity to store 0.125 acre/ft. of sediment for each acre of disturbed area in the structures watershed; provided, however, that consideration may be given for reduced storage volume where the pre-plan reflects controlled placement, concurrent reclamation practices, use of on-site sediment control measures and access and availability of all structures for maintenance;
- b. This disturbed area will include all land affected by previous surface mining operations that are not presently stabilized and all land that will be disturbed throughout the life of the permit; and
- c. The structures shall be cleaned out when the sediment accumulation reaches 60% of the design capacity, or as specified by the director. If required by the director, based upon an onsite inspection, the structure shall be cleaned out to 100% pool prior to grading release.

8.03. Natural Drainways - Natural drainways in the area of land disturbed by surface mining and prospecting 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. Surface mining operations will be prohibited 50 feet on either side of a natural drainway.~~ Overburden placement and haulageways across natural drainways shall be constructed so as not to affect the flow of the stream, or materially increase the sediment load and concentrations of toxic materials in the stream.

8.04. Intermittent or Perennial Stream - No land within 100 feet of an intermittent or perennial stream shall be disturbed by surface mining

director may, in the exercise of his sound discretion, when not in conflict with Article 6, Chapter 20, Code of West Virginia, as amended, waive this regulation.

8A.04. Temporary Diversions - Temporary diversion structures are those used during mining and reclamation. When no longer needed, these structures shall be removed and the area reclaimed. Temporary diversion structures shall be constructed to safely pass the peak runoff from a 1-year, 24-hour precipitation event, or larger event as specified by the director.

8A.05. Permanent Diversions - Permanent diversion structures are those approved diversion structures to be retained after mining and reclamation. Permanent diversion structures shall be constructed to safely pass the peak runoff from a 100 year, 24-hour precipitation event.

8A.06. Stream Channel Diversions - Flow from perennial and intermittent streams within the permit area may be diverted only when the diversions are approved by the director. When streamflow is to be diverted, the new stream channel shall be designed and constructed to meet the following requirements:

- a. The average stream gradient shall be maintained and the channel designed, constructed, and maintained to remain stable and to minimize additional contributions of suspended solids to stream-flow;
- b. Channel bank, and flood plain configurations shall be adequate to safely pass the peak runoff of a 1-year, 24-hour precipitation event for temporary diversions and 100 year, 24-hour precipitation event for permanent diversions, or larger events if specified by the director; and
- c. When the stream affected supports a fishery habitat, measures to maintain or enhance the water quality and habitat shall be re-

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. Where possible, fill materials suitable for disposal shall be placed upon or above a natural terrace, bench, or berm, if such placement provides additional stability and prevents mass movement.

9D.03. Certification - Certification of the fill shall be as follows:

- a. The fill shall be designed using recognized professional standards and certified by an approved registered professional engineer and/or other approved professional specialist;
- b. The fill shall be inspected for stability by an approved registered professional engineer or other approved professional specialist after completion of the first 50-foot lift, to assure removal of all organic material and topsoil, placement of under-drainage systems, and proper construction in accordance with the approved pre-plan. The approved registered professional engineer or other approved professional specialist, shall also provide a certified report upon completion of the fill that the fill has been constructed as designed in the approved pre-plan; and
- c. Where fills are placed on slopes less than twenty degrees (20°) a certification shall not be required.

9D.04. Stabilization - Where the slope in the disposal area exceeds 2.8 horizontal to 1 vertical (36 per cent) or where necessary to achieve a static safety factor of 1.5, measures such 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 or toxic forming materials 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 covered and graded to allow surface and sub-surface drainage to be compatible with the natural surroundings.

9D.05. 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.

9D.06. Construction - Construction of the fill shall be as follows:

- a. All areas upon which the fill is to be placed shall first be progressively cleared of all trees, brush, shrubs, and other organic material. This material shall be removed from the fill area;
- b. 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.
- c. The thickness of the layers shall not exceed four feet;
- d. The outer slope shall be no steeper than 2 horizontal to 1 vertical.

A 20-foot wide bench shall be installed at a maximum of every 50 feet in vertical height of the fill with a 3% to 5% slope toward the fill area, normal to such, and a 1% slope toward a rock rip-rap channel or natural drainway; and

- e. When construction of each lift (maximum of every 50 feet 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.

9E. Disposal of Spoil Materials in Valley or Head-of-Hollow Fills

9E.01. Applicability - Spoil not required to achieve the approximate original contour 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.

9E.02. Location of Spoil Areas - The disposal areas 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. Where possible, fill materials suitable for disposal shall be placed upon or above a natural terrace, bench, or berm, if such placement provides additional stability and prevents mass movement.

9E.03. Certification - Certification of the fill shall be as follows:

- a. The fill shall be designed using recognized professional standards and certified by an approved registered professional engineer and/or other approved professional specialist; and
- b. The fill shall be inspected for stability by an approved

registered professional engineer or other approved professional specialist after completion of the first 50-foot lift, to assure removal of all organic material and topsoil, placement of under-drainage systems, and proper construction in accordance with the approved pre-plan. The approved registered professional engineer or other approved professional specialist, shall also provide a certified report upon completion of the fill that the fill has been constructed as designed in the approved pre-plan.

9E.04. Stabilization - Where the slope in the disposal area exceeds 2.8 horizontal to 1 vertical (36 per cent) 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 material 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 covered and graded to allow surface and sub-surface drainage to be compatible with the natural surroundings.

9E.05. 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 will be prevented. If springs, natural water courses 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.

- 9E.06. Construction - Construction of the fill shall be as follows:
- a. All areas upon which a valley fill is to be placed shall first be cleared progressively of all trees, brush, shrubs, and other organic material. This material shall be removed from the fill area. No more than 3.0 acres, excluding roadway for construction of fill, shall be cleared in the valley fill site until the first lift is completed;
 - b. 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 16 feet in width and composed of rock with a minimum dimension of 12 inches. The rock core shall consist of no more than 10% fines as determined by visual inspection (fines being a material with a dimension of less than 12 inches);
 - c. Depositing and compacting valley 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;
 - d. The thickness of the layers shall not exceed four feet;
 - e. 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 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 10,000 cubic feet;
 - f. The outer slope shall be no steeper than 2 horizontal to 1 vertical.

A minimum 20-foot wide bench shall be installed at a maximum of every 50 feet in vertical height of the fill with a 3% to 5% slope toward the fill area, normal to such, and a 1% slope toward the rock core; and

g. When construction of each lift (maximum of every 50 feet 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 plan.

9E.07. Variance - Where it can be demonstrated that other design criteria are justified, certain requirements of this section may be waived. The basis for justification are, but not limited to, land use potential, in-availability of durable rock, and site stability.

8A.--Contour-Surface-Mining

8A.01.--Fill-Bench--No-fill-bench-shall-be-produced-on-slopes-of-more-than-sixty-five-per-cent-(65%),-except-for-the-construction-of-haulageways,-and-such-haulageways-shall-not-exceed-thirty-five-(35)-feet-in-width.--Where-the-original-slope-exceeds-sixty-five-per-cent-(65%)-and-a-fill-bench-is-produced-for-a-haulageway,-no-mineral-shall-be-removed-by-any-method.

8A.02.--Final-Bench-Slope--The-bench-portion-of-the-restored-area-shall-be-sloped-toward-the-reduced-highwall.--In-all-areas-where-auger-ing-or-deep-mining-is-evident,-a-Georgia-Type-V-Ditch-shall-be-required.

8A.03.--Georgia-Type-V-Ditch--In-all-areas-where-lands-will-be-used-in-production-of-annual-crops-or-more-intensive-use-is-made,-a-Georgia-Type-V-Ditch-backfill-shall-be-required.--The-distance-of-the-ditch-from-the-high-wall-should-be-directly-proportional-to-the-original-height-of-the-highwall.

The ditch shall be constructed on the solid bench. The outside spoil shall be graded in a finished unsettled slope of not more than ten percent (10%) in the direction of the highwall.

8A-04. Drainage -- Diversion ditches or terraces that will reduce the velocity and control the surface runoff on long uninterrupted slopes, shall be constructed in the final grading whenever required by the director.

8A-06. Covering the Pit -- A minimum of four (4) feet of material suitable for vegetative growth shall be placed over the pit area and over any toxic or acid producing material previously placed in the pit. In the event there is sufficient material available, additional material suitable for vegetative growth shall be placed over the pit area over and above the minimum four (4) feet required.

8A-07. Highwall Access Roads -- All areas disturbed in the construction of highwall access roads shall be seeded during the first planting and/or seeding season after construction in accordance with Section 9 of these regulations. Standards for haulageway abandonment shall apply in accordance with 5.16 of these regulations.

8A-10. Multiple Seam Mining -- Multiple seam mining shall mean all seams of mineral requested to be surface mined on any one given application; provided that the maximum separation between the elevation of the lower seam requested and the uppermost seam requested does not exceed one hundred fifty (150) vertical feet in vertical rise.

a. -- Overburden from the seam being mined shall not extend beyond one-half of the solid bench on the seam below.

b. -- The lower seam shall be mined in advance of the seam above.

c. -- Regrading shall be completed according to the rules and regulations on each seam prior to mining any other seam indicated in the application.

8B. -- Area Surface Mining

8B.01. -- Drainage -- Diversion ditches or terraces that will reduce the velocity and control the surface runoff on long uninterrupted slopes, shall be constructed in the final grading whenever required by the director.

8B.04. -- Debris and Rocks -- The final surface of the regraded area shall be graded so as to permit the use of farm implements and machinery.

8B.02. -- Area Surface Mining -- The grading and backfilling shall not be more than two spoil ridges behind the pit being worked, the spoil from this pit being considered the first ridge. -- All backfilling and grading shall be completed within ninety (90) days after completion of an operation or a prolonged suspension of work in the area. -- Maximum linear feet of open pit shall not exceed 3,000 feet.

8B.03. -- Weather Conditions -- Should weather conditions make grading impractical, the period of time required to be current may be reasonably extended.

SECTION 10. POSTMINING USE OF LAND

10.01. General - All disturbed areas shall be restored in a timely manner to conditions that are capable of supporting the uses which they were capable of supporting before any mining, or to a higher or better use achievable under criteria and procedures set forth in Section 10.04 of these regulations.

10.02. Determining Premining Use of Land - The premining uses of land to which the postmining land use is compared shall be those uses which the land previously supported if the land had not been previously mined and had been properly managed.

a. The postmining land use for land that has been previously mined and

not reclaimed, shall be judged on the basis of the highest and best use that can be achieved and is compatible with surrounding areas.

- b. The postmining land use for land that has received improper management shall be judged on the basis of the premining use of surrounding lands that have received proper management.
- c. If the premining use of the land was changed within five (5) years of the beginning of mining, the comparison of postmining use to premining use shall include a comparison with the historic use of the land as well as its use immediately preceding mining.

10.03. Land Use Categories - Land use is categorized in the following groups. Change from one to another land use category in premining to postmining constituted an alternate land use and the operator shall meet the requirements of Section 10.04 of this section and all other applicable sections of these rules and regulations.

- a. Heavy Industry - Manufacturing facilities, powerplants, airports or similar facilities.
- b. Light Industry and Commercial Services - Office buildings, stores, parking facilities, apartment houses, motels, hotels, or similar facilities.
- c. Public Services - Schools, hospitals, churches, libraries, water-treatment facilities, solid waste disposal facilities, public parks and recreation facilities, major transmission lines, major pipelines, highways, underground and surface utilities, and other servicing structures and appurtenances.
- d. Residential- Single- and multiple-family housing (other than apartment houses) with necessary support facilities. Support facilities may include commercial services incorporated in and com-

- prising less than 5 percent of the total land area of housing capacity, associated open space, and minor vehicle parking and recreation facilities supporting the housing.
- e. Cropland - Land used primarily for the production of cultivated and close-growing crops for harvest alone or in association with sod crops. Land used for facilities in support of farming operations are included.
- f. Rangeland - Includes rangelands and forestlands which support a cover of herbaceous or scrubby vegetation suitable for grazing or browsing use.
- g. Hayland or pasture - Land used primarily for the long-term production of adapted, domesticated forage plants to be grazed by livestock or cut and cured for livestock feed.
- h. Forestland - Land with at least a 25 percent tree canopy or land at least 10 percent stocked by forest trees of any size, including land formerly having had such tree cover and that will be naturally or artificially reforested.
- i. Impoundments of water - Land used for storing water for beneficial uses such as stock ponds, irrigation, fire protection, recreation, or water supply.
- j. Fish and wildlife habitat and recreation lands - Wetlands, fish and wildlife habitat, and areas managed primarily for fish and wildlife or recreation.
- k. Combined uses - Any appropriate combination of land uses where one land use is designated as the primary land use and one or more other land uses are designated as secondary land uses.

10.04. Criteria for Approving Alternative Postmining Use of Land - An alternative postmining land use shall be approved by the director after consultation with the landowner or the land-management agency having jurisdiction over state or federal lands. Proposals to remove an entire coal seam running through the upper fraction of a mountain, ridge, or hill by removing all of the overburden and creating a level plateau or gently rolling contour with no highwalls remaining, must also meet these criteria.

- a. The proposed land use is compatible with adjacent land use and, where applicable, with existing local, state or federal land use policies and plans. A written statement of the views of the authorities with statutory responsibilities for land use policies and plans shall accompany the request for approval. The permittee shall obtain any required approval of local, state or federal land management agencies, including any necessary zoning or other changes necessarily required for the final land use.
- b. Specific plans have been prepared which show the feasibility of the proposed land use as related to needs, projected land use trends, and markets and that include a schedule showing how the proposed use will be developed and achieved within a reasonable time after mining and be sustained. The director may require appropriate demonstrations to show that the planned procedures are feasible, reasonable, and integrated with mining and reclamation, and that the plans will result in successful reclamation.
- c. Provision of any necessary public facilities is assured as evidenced by letters of commitment from parties other than the permittee, as appropriate, to provide them in a manner compatible with the permittee's plans.

- d. Specific and feasible plans for financing attainment and maintenance of the postmining land use including letters of commitment from parties other than the permittee as appropriate, if the postmining land use is to be developed by such parties.
- e. The plans are designed under the general supervision of a registered professional engineer, or other appropriate professional, who will ensure that the plans conform to applicable accepted standards for adequate land stability, drainage, and vegetative cover, and aesthetic design appropriate for the postmining use of the site.
- f. The proposed use or uses will neither present actual or probable hazard to public health or safety nor will they pose any actual or probable threat of water flow diminution or pollution.
- g. The use or uses will not involve unreasonable delays in reclamation.
- h. Necessary approval of measures to prevent or mitigate adverse effects on fish and wildlife has been obtained from the director and appropriate state and federal fish and wildlife management agencies.
- i. Proposals to change premining land uses of range, fish and wildlife habitat, forestland, hayland, or pasture to a postmining cropland use, where the cropland would require continuous maintenance such as seeding, plowing, cultivation, fertilization, or other similar practices to be practicable or to comply with applicable federal, state and local laws, shall be reviewed by the director to assure that:
 - 1. There is a firm written commitment by the operator or by the landowner or land manager to provide sufficient crop management after release of applicable performance bonds to assure that the

12D.04. Standards for Woody Plants with Perennials - Standards for woody plants with legumes and perennial grasses overseeded shall require a sixty per cent (60%) establishment of ground cover of legumes and perennial grasses, and ~~a sixty per cent (60%) survival of woody plants~~ 400 trees (included volunteer tree species) and/or planted shrubs per acre, comprising a satisfactory vegetative ground cover as determined by the director. Bare Substandard areas shall not exceed one-fourth (1/4) acre (100' x 100') in size nor total more than twenty per cent (20%) of the area seeded or planted. The ground cover of living plants on the revegetated area shall be equal to the ground cover of living plants of the approved reference area for a minimum of two growing seasons. The ground cover shall not be considered equal if it is less than ninety per cent (90%) of the ground cover of the reference area for any significant portion of the mined area.

~~9E:07:--Revegetation-Evaluation-Report---A-revegetation-evaluative-report shall be prepared and filed during the second complete growing season:--Following inspection to confirm that the above evaluative standards have been complied with; the director may cause the remainder of bonds to be released.~~

12D.05. Final Inspection Report - In no instance shall the official vegetative cover evaluation be carried out until the planting and seeding concerned has survived two growing seasons or a minimum of 18 months. A final inspection report shall be prepared and filed following inspection to determine that the above evaluative standards have been complied with. If acceptable, the director may then cause the remainder of the bonds to be released.

SECTION-9

TABLE-ONE

STRIP-MINE-SPOIL-CLASSIFICATION

| <u>TYPE-OF-SPOIL</u> | <u>GENTLY SLOPING</u> | <u>MODERATE-TO STEEP-SLOPE</u> | <u>EXTREMELY STEEP-SLOPE</u> |
|----------------------------|-----------------------|--------------------------------|------------------------------|
| Group-1---pH-5.5-and-above | | | |
| Non-stony | Vt-s-8 | Vtt-s-3 | Vttt-s-3 |
| Stony | Vtt-s-3 | Vtt-s-3 | Vttt-s-3 |
| Extremely-stony | Vttt-s-3 | Vttt-s-3 | Vttt-s-3 |
| Group-2---pH-4.0---5.5- | | | |
| Non-stony | Vtt-s-3 | Vtt-s-3 | Vttt-s-3 |
| Stony | Vtt-s-3 | Vtt-s-3 | Vttt-s-3 |
| Extremely-stony | Vttt-s-3 | Vttt-s-3 | Vttt-s-3 |
| Group-3---pH-below-4.0 | Vttt-s-3 | Vttt-s-3 | Vttt-s-3 |

SECTION 12

TABLE FOUR

*APPROVED MIXTURES FOR WATERWAYS, DIVERSIONS
DRAINAGE STRUCTURES, HAULAGEWAYS, HIGHWALL ACCESS, ETC.

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

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

* Application of fertilizer shall be based on soil test results from a soils
laboratory. Without a soil test, apply a minimum of 200 lbs. ammonium
nitrate and 200 lbs. triple super phosphate. Equivalent amounts of nitro-
gen and phosphorus fertilizer is acceptable.

SECTION 13. OTHER MINING OPERATIONS ON SURFACE MINED AREAS

13.01. Director's Approval - Reclamation plans for other mining operations to be carried out on a surface mined area on which the regrading, backfilling or revegetation have not been completed, shall require prior approval by the director.

13.02. Application Requirements - Application for approval of such reclamation plans shall be accompanied by the following:

- a. Application form to be prescribed by the director;
- b. A map of the surface mining permit area, showing the portion of land to be disturbed by the other mining operations, including haulageways or access roads;
- c. A performance bond or equivalent, as provided in Section 16, Article 6, Chapter 20, Code of West Virginia, as amended, the requirement for the first acre or fraction thereof of disturbed lands being one thousand dollars (\$1,000) and for each additional acre or fraction thereof disturbed land an additional one thousand dollars (\$1,000);
- d. Written permission for other mining operations from the owner of the surface rights and/or the owner of the mineral rights or the controlling parties of the same.

13.03. Applicability of Code and Regulations - All requirements for haulageways or access roads, drainage, blasting, backfilling regrading, revegetation, and bond release procedures as set forth in Article 6, Chapter 20, Code of West Virginia, as amended, and ~~in Sections 8 and 9 of the~~ all regulations of the Reclamation Commission shall apply with equal force to the reclamation of disturbed areas from other mining operations.

SECTION 14. SURFACE MINING OTHER THAN COAL

All requirements as set forth in Article 6, Chapter 20 of the Code of West Virginia, as amended, and all rules and regulations of the Reclamation Commission shall apply with equal force for the surface mining of clay, flagstone, gravel, manganes, shale, iron ore and any other metal or metallurgical ore.

SECTION 15. SURFACE MINING OF LIMESTONE, SANDSTONE AND SAND

All requirements as set forth in Article 6, Chapter 20 Code of West Virginia, as amended, excepting those covering bonding and reclamation and all rules and regulations of the Reclamation Commission with the exception noted, shall apply with equal force for the surface mining of limestone, sandstone and sand.

SECTION 16. SURFACE EFFECTS OF UNDERGROUND MINING OPERATIONS

16.01. Applicability - Where surface mining operations are incident to a mine as defined in Chapter 22, Article 1, Code of West Virginia, as amended, all applicable requirements set forth in Chapter 22, Article 2, Section 63 and Article 6, Chapter 20, Code of West Virginia, as amended, and all rules and regulations of the Reclamation Commission shall apply with the exception of Sections 4.01., 6 and 10.

16.02. Director's Approval - A reclamation plan for the surface effects of underground mining operations shall require written approval of the director prior to any surface disturbance.

16.03. Certification - The certification that the access roads or haulageways and the drainage systems were constructed and installed in accordance with the approved underground opening reclamation plan, shall be submitted to the director of the Department of Natural Resources by an

approved registered professional engineer or other approved person prior to mine opening or reopening.

16.04. Notification - The director, Department of Natural Resources, shall notify the director, Department of Mines, of the satisfactory installation of all haulageways or access roads, drainage systems, and site preparations incident to the mine opening or reopening.

16.05. Bonding - Each operator who shall make application for an Underground Opening Approval under Chapter 22, Article 2, Section 63, Code of West Virginia, as amended, shall at the time the approval plan is submitted furnish bonds in accordance with provisions of Chapter 20, Article 6, Section 16, Code of West Virginia, as amended.

16.06. Mine Closure - Upon completion of mining, the director, Department of Mines shall certify to the director, Department of Natural Resources, approval for mine closure. The director, Department of Natural Resources, shall have jurisdiction and control of final restoration and reclamation of the surface effects of underground mining operations.

16.07. Surface Effects of Existing Underground Mining Operations - The surface effects of all active underground mining operations in existence prior to the effective date of these rules and regulations shall comply with all applicable requirements set forth in Chapter 22, Article 2, Section 63, and Article 6, Chapter 20, Code of West Virginia, as amended, and all rules and regulations of the Reclamation Commission shall apply with the exception of Sections 4.01., 6. and 10.

SECTION 17. MODIFICATIONS

Should the director determine that modifications are necessary because of geologic structure, topography, particular watershed or permit conditions, the director may at his discretion with the approval of the Reclamation Commission,

make such modifications if the same are in conformity with Article 6, Chapter 20, Code of West Virginia, as amended.

SECTION 18. STATE AND FEDERAL COMPLIANCE

The issuance of a prospecting or surface mining permit pursuant to Article 6, Chapter 20, Code of West Virginia, as amended, and any rules and regulations 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.

SECTION 19. VALIDITY OF REGULATIONS

The various sections of these rules and regulations shall be construed as seperable and severable and should any of the sections, sentences, clauses or parts thereof be construed and held unconstitutional or for any reason be invalid, the remaining sections of these rules and regulations shall not be thereby affected.