

WEST VIRGINIA ADMINISTRATIVE REGULATIONS

Department of Mines

Chapter 22-4

(1964)

GENERAL OUTLINE

Series III    Surface Mining

Section 1.    General

Section 2.    Regulations

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SERIES III 2

(1964)

Subject: Surface Mining

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Section 1. General

1.01 Scope. These regulations pertain to the authority and procedures of the Department of Mines with regard to the inspection of Surface Mining.

1.02 Authority. These regulations are issued under authority of Section 7, Article 2-a, Chapter 22, Code of West Virginia, as amended.

1.03 Effective Date. These regulations are promulgated on 8-12-64 and become effective 60 days thereafter.

1.04 Filing Date. These regulations were filed in the office of the Secretary of State on 8-12-64.

1.05 Certification. These regulations are certified authentic by the Director of the Department of Mines by certification number 1.

Section 2. Regulations

2.01. Excavating. To provide for the safety of persons within or at any surface mine, as defined in the Code, the excavating shall conform to the following:

(1) While excavating, the highwall bank shall be sloped as much as necessary to prevent or minimize the danger of slides. Overhanging ledges shall not be permitted and all loose material shall be scaled from the walls.

(2) At anytime upon observation, the highwall is cracked or shows movement, or the highwall has been weakened in any way, the area shall be made safe or section of the highwall shall be abandoned and dangered off.

(3) When box cuts are made, the spoil shall be moved back from face of cut far enough to prevent any material from rolling back into the pit and endangering the workman.

(4) Frequent examinations shall be made for evidence of slides or material that may slide or roll from spoil banks of highwall. Workman shall be especially alert for these hazards during freezing and thawing weather and during times of excessive rainfall.

(5) Men shall not be permitted to work where there is evidence of slides or loose material or under overhanging ledges until such danger has been removed.

(6) All trees endangering workmen shall be removed.

(7) Suitable warning should be given when bulldozers are shoving over and uprooting trees, and all workmen should be cleared from the vicinity.

(8) When surface mining is done at night, the pit in the vicinity of the work shall be well illuminated.

2.02      Drilling. To provide for the safety of persons within or at any surface mine, as defined in the Code, the drilling shall conform to the following:

(1) Where horizontal auger drills are used, the operator shall not leave the controls while the drill is in operation.

(2) Employees shall be required to keep in the clear of auger and drill stem while drill is in motion and shall not be permitted to pass under or step over a moving drill stem or auger.

(3) Where horizontal holes are drilled in highwall, drill crews shall make a careful inspection of the face of the highwall before drilling operations begin, and all loose material shall be removed before any other work is done. This is extremely important during freezing and thawing weather, also during rainy weather.

(4) When churn drills or vertical rotary drills are used, the driller shall not work under suspended tools. When collaring holes, inspecting or during any operation where tools are removed from the hole, the tools shall be lowered to the platform.

(5) Drillers shall block vertical drillholes before moving to new location. Vertical drillholes that remain open after blasting shall be protected to prevent persons falling into them.

(6) Drilling equipment shall be inspected daily and any defects shall be corrected promptly.

2.03        Explosives & Blasting. Ammonium nitrate shall be considered to be a blasting agent after it has been mixed with an organic material such as fuel oil, etc., providing, that none of the ingredients is classified as an explosive and, provided that, the mixture cannot be detonated by a No. 8 Test Blasting Cap under conditions specified for the cap sensitivity test in United States Bureau of Mines Information Circular 8179, and shall be subject to the following rules and regulations:

(1) Surface magazines other than those used for temporary storage shall be constructed of incombustible materials, be reasonably bullet proof and with no metal or sparking material exposed inside the magazine. Surface magazines shall be provided with doors constructed of at least one-fourth inch steel plate lined with a two-inch thickness of wood or the equivalent, properly screened ventilators, and with no openings except for entrances and ventilation, and shall be kept locked securely when unattended. The area for a distance of at least twenty-five feet in all directions shall be kept free of materials of a combustible nature; suitable warning signs shall be erected, so located that a bullet

passing directly through the face of the sign will not strike the magazine or magazines. The location of magazines shall be not less than two hundred feet from area of operation, haulways, occupied buildings or public roads unless barricaded.

(2) Magazines used for temporary storage of explosives and/or detonators shall be constructed in the form of stout wooden boxes, covered with not less than 24 gauge sheet iron with a hinged lid, a proper lock and be fire resistant. These boxes shall be kept securely locked when not in use. Only sufficient material for one day's work shall be kept in the temporary storage magazines.

Semitrailer or full trailer vans used for highway or on-site transportation of the blasting agents are satisfactory for temporarily storing these materials, provided they are located according to the American Table of Distances with respect to inhabited buildings, passenger railroads and public highways. Trailers would be provided with substantial means for locking, and the trailer doors shall be kept locked, except during the time of placement and removal of stocks of blasting agents.

(3) Blasting caps and all electric detonators shall not be stored with other explosives; detonators shall be kept locked, separate and apart, from explosives.

(4) No more than the amount of explosives and detonators that are required for one series of shots shall be kept in the vicinity of the pit.

(5) No open lights or other source of flame shall be permitted under any circumstances in or around the storage magazines, nor shall employees smoke while handling explosives.

(6) Primers shall not be made up until the charge is ready to be inserted in the hole. All holes or series of holes containing electric detonators shall be fired immediately after being charged or no later than the end of the shift; provided, however; that if, for any reason, the holes cannot be fired immediately, all work shall cease within a radius of 500' of blast area, and work shall not commence again until the holes have finally been fired. Where Primacord only is used in the loading of the boreholes, this rule does not apply.

(7) All blasting, including preparation of charges and loading of holes, shall be done by a competent person.

(8) Explosives that have been frozen shall not be used. They shall be returned to the manufacturer or destroyed under supervision of manufacturer's representative. This primarily applies to dynamite.

(9) Tamping sticks or blocks shall be of wood or soft non-sparking materials. Explosives shall be detonated electrically and the detonator wires shall be shunted or short-circuited until immediately before connecting the lead wires with the source of current; provided, that Primacord or any similar blasting device - by means of which one or more blasts may be fired by the use of detonators attached thereto on the outside of the hole - may be used for blasting purposes and fired either by electric blasting cap or by fuse and cap.

(10) The person or persons who make connections to detonator wires shall make all other connections and finally fire the blast.

(11) The shot-firer shall make a thorough examination for misfires or other dangers following all blasts, before workmen are permitted to return to the vicinity.

(12) The shot firer shall wait 30 minutes before returning to a misfired shot, except when using an electric blasting cap, a five minute waiting period is sufficient.

(13) When a shot has misfired, extra precaution shall be taken in the recovery of the explosive and blasting cap.

(14) Shot firing cables shall be disconnected immediately from the blasting unit after each blast; the firing ends of the cable shall be shunted.

(15) No persons shall be permitted to return to the blasted area until dust has settled and area is cleared.

(16) Public highways and all entrances to the operation shall be barricaded and guarded by the operator in all cases where such highways or entrances to the operation are located within 1000' of any point where a blast is about to be fired. Notify homes in this area.

(17) No blasting shall be done so close to banks of a stream that the banks would be ruptured or broken permitting the water to enter the surface mining pit.

(18) Mud-capping will be permitted only where it would endanger the safety of the workmen to drill rock to be blasted.

(19) If mud-capping is necessary, a maximum of 10# of explosive may be used.

(20) When a blast is to be fired within 200' of a pipeline, the operator shall exercise such necessary caution as may be needed for the protection of the pipeline. The operator shall also notify the owner of said line and his intention to blast as here described, giving the description of the precautionary measures that will be taken.

(21) When a surface mine operation is close to an active deep mine, the surface mine operator shall give the superintendent and mine foreman of the deep mine at least 12 hours notice in advance of any contemplated blasting that may endanger the safety of persons employed in the deep mine. When a surface mine cuts into an active mine, the surface mine inspector of the District and the superintendent of the deep mine shall be notified before any blasting is done, and the mine inspector shall designate at what hours blasting shall be done.

(22) When a surface mine operation is close to an active Gas Well or where drilling is being conducted, the surface mine operator shall give the superintendent or foreman of Gas crew at least 12 hours notice in advance of such contemplated blasting that may endanger the safety of persons working in that area.

(23) Handling and use of explosives shall be discontinued during an electrical storm.

(24) Two (2) Way Radio equipment shall be turned off prior to the handling and use of electric detonators for a proposed shot. This rule does not apply to radios operating beyond the distances shown on following table:

<u>Transmitter Power(Watts)</u>	<u>Minimum Distance(Feet)</u>
5-25	100
25-50	150
50-100	220
100-150	350
250-500	450
500-1000	650

(This Table developed by the Institute of Makers of Explosives and listed in the Blasters' Handbook).

2.04. Deep Mine Workings. To provide for the safety of persons within or at any surface mine adjacent to an abandoned or active deep mine, the operation shall conform to the following:

(1) The superintendent and mine foreman of any deep mine shall be notified immediately when a surface mine operation may in any way interfere with the safe operation of the active deep mine.

(2) Special precautions shall be taken to protect the employees where excavating is being done in the vicinity of an abandoned deep mine or portion thereof, which may contain a dangerous accumulation of water or gas.

(3) All cut-throughs into abandoned deep mine workings shall be immediately closed or fenced off and an approved danger sign placed on fencing. This sign shall serve as a warning for persons not to enter.

2.05        Equipment: To provide for the safety of persons within or at any surface mine, as defined in the Code, equipment shall be cared for and operated as follows:

(1) Operators of shovels, draglines or tractors shall not operate their equipment when any persons are of such proximity as to be endangered. The equipment shall be provided with efficient warning devices.

(2) Operators of surface mining equipment shall not swing dipper or bucket over passing haulage units.

(3) The dipper of the loading shovel shall be swung over the body of the truck and not over the cab.

(4) No person shall be allowed in cab or on the truck while a truck is being loaded with power shovel unless cab is shielded.

(5) Riding in a dipper or bucket shall be prohibited.

(6) Men shall keep out from under suspended dipper at all times.

(7) Surface mining and loading equipment shall be inspected daily.

(8) All ropes shall be securely attached to the drum and the dipper by at least four (4) suitable wire rope clips or properly wedged.

(9) Walkways and platforms on shovels and draglines shall be maintained in safe condition and shall be equipped with safe handrails.

(10) Men shall not be permitted to get on and off draglines, or shovels without notifying the operator.

(11) Men shall not be permitted in the immediate vicinity of shovels or draglines unless in the line of duty.

(12) The bulldozer operator shall at all times keep a reasonable safe distance from the edge of all verticle or abrupt excavations or fills.

(13) Equipment that revolves in an arc on a turntable shall have a minimum clearance of four (4) feet from the highwall or other obstructions.

(14) While greasing or doing repair work on a boom of a shovel or dragline, the boom shall be lowered to a position whereby the work can be done from the ground or the workmen shall use safety belts. This does not apply on shovels that are equipped with handrail or ladder.

(15) Dippers shall be lowered for repairs.

(16) All machinery shall be at a complete stop, or guarded to protect the oiler before greasing, oiling, or fueling.

(17) Operators of shovels or draglines shall sound a signal, such as a whistle, bell, or horn, before moving forward or backward, and all men not in the clear shall respond immediately.

(18) All gears and other moving parts shall be guarded.

(19) Operators shall not leave the cab of the crane without throwing the controls into the "off" position, likewise if the power should fail, controls shall be placed in the "off" position until orders are given to resume operation.

(20) Good housekeeping shall be practiced on shovels and draglines.

(21) Dump bodies of trucks shall be properly blocked when raised for any purpose except dumping of load.

(22) Equipment shall be maintained in safe condition.

2.06      Compressed Gases.    To provide for the safety of persons within or at any surface mine in the handling and use of compressed gases, the operation shall conform to the following:

(1) Empty oxygen and acetylene tanks or cylinders shall be marked "empty" and shall be removed from the mine promptly in proper containers. The valve protection caps shall be placed on all tanks or cylinders for which caps are provided when not in use and when being transported.

(2) No tanks or cylinders of "Compressed Gases" shall be transported with hoses and gauges attached thereto, unless they are properly shielded and protected from movement.

(3) All tanks or cylinders of "Compressed Gases" shall be clearly marked.

(4) Tanks or cylinders of "Compressed Gases" and their contents must be used solely for their intended purposes.

(5) Oxygen and acetylene tanks or cylinders of compressed gases shall be protected from power lines or energized electrical machinery or equipment. These tanks or cylinders shall be kept away from the place where the cutting is being done in order to prevent damage or accident and to prevent heat from affecting such tanks or cylinders.

(6) Any person using "Compressed Gas" in or about surface mines shall be provided with goggles or shields. Clothing of such persons shall be reasonably free of oil and grease.

(7) The person or persons assigned to use and work with compressed gases shall be properly trained and skilled in its use and shall be fully conversant with the danger of its misuse.

(8) Only an approved type of spark-lighter shall be used for lighting torches. The use of matches, cigarette lighters, electric arcs to light or relight a torch is prohibited.

(9) The oxygen or acetylene hose lines, gauges and the like shall be maintained in safe operating condition.

(10) Compressed Gases shall not be used under direct pressure from tanks or cylinders but must be used under reduced pressures not exceeding that recommended by the manufacturer.

(11) When oxygen or acetylene cutting or burning is being done, a suitable fire extinguisher shall be kept on hand and ready for use.

(12) Neither oxygen nor acetylene shall be used near oil, grease or fine coal dust unless such oil, grease or fine coal is adequately cleaned and made inert by use of rock dust or the area where such work is done is thoroughly wetted.

(13) Tests for leaks on hose and valves or gauges shall be made only with soft brush and soapy water or soap suds.

(14) A suitable wrench designed for compressed tanks shall be in the possession of the person authorized to use the equipment.

2.07      Electricity. To provide for the safety of persons within or at any surface mine in the use of electricity, the operation shall conform to the following:

(1) When machinery is being operated or being moved under power lines a safe interval shall be maintained between the farthest reaching point of such equipment and said power lines.

(2) Employers shall furnish suitable insulating gloves to employees performing work that requires them to come in contact with electrical equipment involving shock hazards.

(3) All electrical apparatus and conductors shall be sufficient in size and power for work they may be called to do. They shall be adequately guarded, and so installed, worked and maintained as to

reduce danger from accidental shock or fire to the minimum; they shall be of such construction and so worked that rise in temperature caused by ordinary working will not damage the insulating material.

(4) Transformers shall be properly installed a minimum of 8 feet above ground or fenced and danger signs displayed.

(5) Transformers shall be installed in such a manner that they do not present a fire hazard.

(6) Transformers shall be properly grounded.

(7) Electrical equipment shall be:

a. Maintained clean and orderly

b. Equipped with effective grounds on frames, casings and on control boxes

c. Each circuit shall be properly protected by circuit breakers or equivalent protective devices.

(8) Insulation mats shall be in front of all switchboards and switches.

2.08 Ramps, Tipples, and Cleaning Plants. To provide for the safety of persons within or at any surface mine, ramps, tipples, and cleaning plants shall conform to the following:

(1) Guard rails shall be established on both sides of coal loading docks.

(2) All walkways and stairs shall have hand rails.

(3) All ladders shall be securely fastened. Permanent ladders

more than 10' in height shall be provided with backguard.

(4) Elevated platforms, floor openings and runways shall be provided with toeboards.

(5) Openings in floor or ground shall be covered or guarded.

(6) Platforms, stairways and runways shall be kept clear of stumbling and slipping hazards and maintained in good repair.

(7) Both sides of ramp shall be provided with rubbing boards of ample dimensions and they shall be securely anchored.

(8) An adequate dumping block at least 8" high shall be installed at all dumping points, excluding stockpiles.

(9) In dusty locations, electric motors, switches, lighting fixtures and controls shall be protected by dust-tight construction. This does not apply to Quarry operations.

(10) Structures shall be kept free of coal dust accumulations.

(11) Welding or cutting with arc of flame shall not be done in dusty atmosphere or dusty locations and fire fighting equipment shall be readily available during such operations.

(12) Good housekeeping shall be maintained in and around buildings and yards--such practices include cleanliness, orderly storage of materials, removal of possible sources of injury, such as stumble hazards, protruding nails, broken glass and falling and rolling materials.

(13) Lights shall be provided as needed in or on surface structures.

2.09      Fire Protection.    To provide adequate fire protection in or around any surface mine it is required that there be compliance with the following:

- (1) Fire extinguishers of correct type and ample capacity shall be kept on each piece of mobile equipment and in all buildings.
- (2) Flammable liquids, such as oils, greases, gasoline and such other like materials, shall be stored in buildings, compartments, or closed containers used for this purpose only.
- (3) Smoking and use of open lights are prohibited in all places in which flammable materials are stored and in other places where there is a fire hazard.
- (4) The storage of surplus gasoline, oil, or other fuels, other than that which is in the fuel tank, shall be prohibited on any piece of equipment, except for diesel equipment using gasoline starting engines. In this instance one extra gallon of gasoline in an approved safety can (flash arresting screen with self-closing lid) may be stored on the equipment securely fastened in a specific location on the equipment out of the way of moving objects.
- (5) Flammable liquids shall not be used to clean machinery.

2.10        Protective Clothing.    In order that employees be accorded all possible protection, clothing shall be in accordance with the following:

- (1) All persons shall wear protective (hard) hats.
- (2) All persons shall wear protective foot wear while on duty around the mine.
- (3) All persons around the mine shall wear approved-type goggles or shields where there is a hazard from flying particles.
- (4) Welders and helpers shall use proper shields or goggles to protect their eyes.
- (5) Protective gloves shall be worn when material which may injure the hands is handled; however, gauntlet cuff gloves shall not be worn around moving equipment.
- (6) Men exposed to dust, fumes, and mist inhalation hazards shall wear permissible respiratory equipment, unless adequate dust collectors or water is provided.
- (7) Men working around machinery shall wear snug fitting clothing.

2.11        Car Droppers.    Car droppers shall comply with the following:

- (1) All car droppers should be provided with safety belts, and shall have belts attached to person and car at all times when on brake platform.

2.12        First Aid.    Surface mines shall maintain an adequate supply of First Aid equipment as follows:

(1)    Each mine shall have an adequate supply of first aid equipment. Such supplies shall be provided at strategic locations. The first aid supplies shall be encased in suitable sanitary receptacles designed to be reasonably dust-tight and moisture proof and shall be available for use by all persons employed at the mine. In addition to the material in the cases, blankets and properly constructed stretchers in good condition shall be provided.

2.13        Haulage.    To provide for the safety of persons within or at any surface mine, haulage shall be in accordance with the following:

(1)    Traffic directions which differ from standard highway practice shall be posted on signs along the haulage roads at strategic points in letters at least two inches high.

(2)    Safety equipment on trucks shall be maintained to the standards set for highway equipment.

2.14        Auger Mining.    To provide for the safety of persons within or at any surface mine, auger mining shall be pursued in accordance with the following:

(1)    Auger holes shall be protected against entry by unauthorized persons.

(2) If after, or during drilling, the operator intends to deep mine, a minimum of 200 feet of solid coal stratum between auger holes shall be left for that purpose.

(3) No person or persons shall enter an auger hole until a qualified employee has determined by recognized means of detection whether the air within the hole is of good quality and does not contain methane or is deficient in oxygen. The examiner should wear a lifeline that extends to the hands of a person on the surface.

(4) Persons entering an auger hole should examine and test its walls for danger from falling materials. Any hazardous conditions found should be corrected immediately or before any other work is done; otherwise, the hole should be vacated and a suitable danger board placed across its entrance.

(5) Open lights and smoking material are prohibited in open auger holes.

(6) "NO SMOKING" signs shall be posted in close proximity where auger holes are being drilled.

(7) Auger mining should not be done in proximity to active underground workings unless the work is coordinated with the underground plan of workings. Auger holes should not be drilled so as to:

- (a) Disrupt the ventilation systems of active underground mines.
- (b) Create inundation hazards to active underground mines.

(c) Cause damage to the roof and ribs of active and underground roadways.

(8) Auger holes should not intersect underground mine workings known to contain or suspected to contain dangerous quantities of impounded water, except to dewater such areas under controlled conditions and then only after all necessary precautions have been taken to safeguard life and property.

(9) When auger holes first penetrate abandoned or mines-out underground workings, and as frequently thereafter as these workings are penetrated, a qualified employee should determine, by recognized means of detection, whether or not methane or oxygen-deficient air is present or is being emitted in dangerous quantities.

(10) Auger-mining equipment should not be operated in the vicinity of auger holes emitting dangerous quantities of methane or oxygen-deficient air until the atmosphere has been rendered harmless.

(11) The operator should not leave the controls while the auger is being operated.

(12) Persons should keep clear of the auger train while it is moving and should not pass under or over an auger train, except where suitable crossing facilities are provided.

(13) Persons should keep clear of auger sections being swung into position.

(14) Where practicable, no persons, including the auger machine operator should be in a direct line with the boreholes during mining operations in case explosive gas or dust is ignited by the auger.

(15) Internal-combustion engines in the vicinity of auger holes should be stopped while auger holes are being inspected.

(16) Combustible materials, dinner pails, or other supplies should not be stored in auger holes.

(17) Partitions of coal between auger holes should not be recovered by other methods of mining without the approval of the Director of the Department of Mines.