

**DEPARTMENT OF MINES, MINERALS AND ENERGY  
DIVISION OF MINED LAND RECLAMATION**

**GUIDANCE MEMORANDUM<sup>1</sup> No. 11-05**

**Issue Date: June 13, 2005**

**Subject: Ground Control Plan**

On February 10, 2005, the Governor signed into law House Bill 2573, which included significant changes to Section 45.1-161.287 of the Coal Mine Safety Laws of Virginia. The Chief of the Department of Mines, Minerals and Energy's Division of Mines (DM) must now approve ground control plans for all mines.

The ground control plan must ensure the safety of persons –

- in residences or other occupied buildings;
- working or traveling on any roadways; and
- in any other area where persons congregate, work, or travel that may be affected by blasting or falling, sliding, or other uncontrolled movement of material.

The plan must address how residents or occupants of buildings located down the slope from active workings will be notified when ground disturbing activities will take place above them and what protective actions will be taken to ensure their safety.

The permittee will not have to submit a separate plan to each division. A single copy of the plan should be addressed to the Chief of DM and the Acting Division Director of the Division of Mined Land Reclamation (DMLR).

DM and DMLR will jointly review the ground control plans. Assigned inspectors from each division, as well as designated technical personnel, will evaluate the ground control plan for each permit. Once approved, the ground control plan will become a part of the DMLR permit and will be enforceable as a permit condition.

This guidance memorandum provides a generic ground control plan developed by the DM and the DMLR for surface mine operations. Surface mine permittees may

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<sup>1</sup> This Memorandum is to be considered a guideline issued under the authority of § 45.1-230.A1 of the Code of Virginia which reads:

"In addition to the adoption of regulations under this chapter, the Director may at his discretion issue or distribute to the public interpretative, advisory or procedural bulletins or guidelines pertaining to permit applications or to matters reasonably related thereto without following any of the procedures set forth in the Administrative Process Act (§ 2.2-4000 et seq.). The materials shall be clearly designated as to their nature, shall be solely for purposes of public information and education, and shall not have the force of regulations under this chapter or under any other provision of this Code."

choose to pattern their own plans after this generic plan or submit one of their own design.

Any plan submitted must address each requirement detailed in the generic ground control plan, in particular those pertaining to working in “red zones<sup>2</sup>”. Maps should be submitted in “*dwg*” format to facilitate review.

Red zones, integral parts of the ground control plan, must be shown on the surface mine map that the permittee must submit with the ground control plan. The updated map must meet the requirements of Section 45.1-161.64 of the Coal Mine Safety Laws of Virginia, as amended. The permittee should make his own determination of the location of the red zones; however, DM and DMLR will jointly evaluate the plan and red zone designations for adequacy.

Should the permittee or his representative have any questions or problems developing the ground control plan, please contact the assigned DM mine inspector or call a DM roof control specialist at Big Stone Gap (276 523-8229) or Keen Mountain (276 498-4553). Should you have any questions regarding road classifications, please contact the DMLR’s Reclamation Services Manager (276 523-8197).

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<sup>2</sup> Red zones, as defined by the generic plan, are work areas that represent a potential hazard to the public.

**Generic Ground Control Plan**

**Cover Letter:**

**From:** \_\_\_\_\_ Provide company name, mine name, business address, city, state, zip code, and date.

**Address to:** Chief, Division of Mines  
and  
Acting Division Director, Division of Mined Land Reclamation  
P. O. Box 900  
Big Stone Gap, VA 24219

**Subject:** Ground Control Plan, **Company Name, Mine Name,** Mine Index No. \_\_\_\_, MSHA No. \_\_\_\_, DMLR Coal Surface Mining Permit No. \_\_\_\_\_

In compliance with Section 45.1-161.287.A of the Coal Mine Safety Laws of Virginia, as amended, the following Ground Control Plan is submitted for the above referenced mine.

\_\_\_\_\_  
**Name**  
**Title**

**Ground Control Plan Template:**

**1. General Information:**

_____ Company Name	_____ Mine Name or Number	
_____ MSHA Number	_____ DMLR Permit No.	_____ Mine Index Number

**2. Auger/Highwall Miner General Information (if applicable):**

_____ Company Name	_____ Mine Name or Number
_____ MSHA Number	_____ Mine Index Number

**3. Type of Operation (check all that apply):**

Surface Mine     Auger     Highwall Miner     Face up for Deep Mine

**4. Seams to be Mined:**

<u>Seam</u>	<u>Comments</u>
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Attach a sketch showing a cross section of the highwall, coal seams being mined, bench widths, highwall angle, safety benches, and other pertinent information.

**5. Tree removal**

- a. Highwalls, including existing highwalls, will be cleared of all trees, brush, and loose material that create a hazard to workers.
- b. Persons having to work in close proximity to the top of a highwall to remove trees, brush, or loose material will be secured by a harness/belt and rope (or similar device) or work will be done utilizing equipment designed to do such work.
- c. Trees that need to be removed that have a potential to contact energized power lines will be removed in a manner that does not expose workers to contact with such lines. This may include using cables, ropes, or de-energizing the electrical power from the lines. The owner of the power line will be notified prior to work being performed and in the event of any damage to the power line.

**6. Highwall and Spoil Banks**

- a. Pit widths will be designed in such a manner to allow for safe operation of all the equipment used in the pit.
- b. The highwall will be sloped back at least \_\_\_ degrees<sup>3</sup> past the vertical. Existing highwalls and pre-split highwalls are exempt from this standard.
- c. Loose material will be removed, using appropriate equipment, from the highwall as it is exposed.
- d. Safety benches and other no less effective control measures will be used where the highwall is susceptible to material sloughing.

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<sup>3</sup> Recommend at least 5 degrees.

- e. Equipment operated where there are hazards from highwalls will have adequate protection from falling material.
- f. When a drill or other equipment must operate at the base of a highwall, the operator will, where practical, position the drill so that the cab is not located directly against the wall.
- g. Operating equipment near highwalls and spoil banks, such as loading haulers, will be performed in a manner so that the equipment operator is positioned in the safest location.
- h. Spoil banks will be moved in a manner that does not create an overhang that exposes workers to hazards from falling or sliding material. Dozers or other equipment will be used to break down the upper portion of spoil banks in order to prevent overhangs and other hazards.
- i. Spoil banks adjacent to all active mining pits, where equipment and men are exposed, will be constructed on a safe slope and in such a manner to protect persons from falling or sliding material. Where spoil banks become so steep that hazardous conditions exist for equipment and men working under them, action will be taken immediately to correct the hazardous condition.
- j. The surface foreman will examine highwalls and spoil banks for hazardous conditions prior to maintenance personnel and other personnel, such as blasters, surveyors, or coal samplers entering the assigned work area near a highwall or spoil bank.

## **7. Roadways**

- a. Haul roads, including roads used for the removal of coal from pits, to the extent possible, will be constructed a safe distance away from highwalls, to minimize exposure to falling or sliding materials.
- b. Roadways that are exposed to upslope dumping or pushing of material will be protected by effective means to ensure the safety of vehicles traveling on the roadway.
- c. Spoil banks adjacent to active roads will be maintained in such a manner to protect persons from hazardous conditions.

## **8. Mine Map**

- a. A map will be maintained at the mine site showing residences and other occupied buildings, and public or private roads that may be affected by mining activities.
- b. The map will be kept up to date with temporary notations to indicate updates of gas wells, gas lines, and other potentially mine affected changes.

- c. All red zone areas (work areas that represent a potential hazard to the public safety) of the operation will be clearly identified or marked on the map by highlighting or other no less effective means.
- d. The surface mine map will be updated every six months and certified by a registered professional engineer or certified land surveyor.
- e. All foremen will be familiar with the contents of the map, the outer perimeter boundaries of the permit area, and the red zones.

## 9. Working In or Around Red Zones

- a. Warning signs, flagging, or other no less effective means will be used to mark work areas that are designated red zones. The method used to mark these work areas will be distinctively different from other warnings and markings utilized at the mine site.
- b. Berms, fencing, or other barrier protection will be used to contain materials that could potentially move down the slope from red zones. In locations where berms, fencing, or other barrier protection cannot be used or is not practical, spotters will be used to control work such that all material is prevented from rolling, slipping, or sliding down slope. **No work will be performed in red zones without these precautions in place and employed.**
- c. Work activity in red zone areas will be conducted in a safe manner using proper equipment for the work being performed.
- d. Residents or occupants of other buildings down the slope from red zones will be notified by personal contact or by written notice conspicuously attached to the residence or building at least three hours and no more than 24 hours prior to beginning such work. This notification is to include the type of work that is planned, the length of time the work is expected to last, and the safety measures that will be used. A record of the notification will be recorded in the on-shift report of the mine or a record book (designated for that purpose) and be maintained at the mine site.
- e. When blasting in red zone areas, blasting procedures will be modified such as reducing poundage, reducing the number of shots, reducing the depth and size of drill holes, changing the free face direction, using electronic detonation, or implementing other measures to control the potential for damage.
  - i. Such safety measures taken when blasting in red zone areas will be documented in the blasting logbook.
  - ii. Residents affected by blasting in red zone areas will be given notification of the blast at least three hours and no more than 24 hours prior to the blast. This notification is to include the planned blasting activities, the safety measures that will be used, blasting signals, and precautions the residents should take. **(NOTE: These**

**measures will be in addition to the permit's standard blasting notification/signals.)**

- iii. Notification of residents will be documented in the blaster's logbook or a record book (designated for that purpose) that shall be maintained at the mine site.

## **10. Auger/highwall miner operation**

- a. Type of Auger/Highwall Miner:
- b. Diameter/Width:
- c. Maximum Cut Depth:
- d. Minimum Web Width:
- e. If a hazardous condition exists in an area being augered or mined, the condition shall be corrected or the machine moved to a safe location.
- f. Should a work area become fogged in or if other weather conditions exist to the degree that the highwall cannot be safely evaluated and monitored, work shall cease in that area or be moved to a safe area.
- g. When augering where auger holes may mine together, especially on points, extra precautions will be taken to leave the size of webbing adequate to prevent caving.
- h. Attach sketch(es) to show the details of the auger/highwall miner operation.

## **11. Training/Documentation**

- a. The contents of the plan and the mine map will be reviewed with all newly employed miners. The surface foreman will ensure that all newly employed miners are familiar with the contents of the plan prior to allowing them to work.
- b. The contents of the plan and the mine map will be reviewed with all miners immediately after approval and during annual re-training.
- c. The applicable contents of the plan will be reviewed with all employees immediately prior to starting work in red zones. The surface foreman will ensure that the employees are aware of the red zones and are familiar with the requirements of the plan and the contents of the mine map.
- d. A record of the training required under this section will be maintained at the mine and be open for inspection for a period of one year. A record of the training required under paragraphs "a" and "b" of this section will be recorded on the MSHA 5023 form by checking the "other" box and indicating the type of training provided. A record of training required by paragraph "c" of this section will be recorded in the on-shift book or other

equivalent record of the mine, as well as include the names of the employees receiving the training.

## **12. Management Control**

- a. The surface foreman is responsible and accountable for the implementation of the ground control plan.
- b. The surface foreman will ensure that work assignments and necessary precautions for red zone work is clearly communicated to all affected miners.
- c. The surface foreman will provide direct monitoring and evaluation to ensure that effective control of work in the red zones is maintained in accordance with the ground control plan.
- d. The person countersigning the on-shift report of the surface foreman will ensure that records reflect compliance with any record required by the plan and that any hazardous conditions recorded have been promptly corrected.
- e. Should a situation arise where the mine management cannot comply with the contents of this plan, the surface foreman will consult with appropriate company management to seek alternative methods that offer an equal or greater level of safety. It is understood that the Chief of the DM must approve any variance from this plan.