



Ohio Administrative Code

Rule 1501:13-4-14 Underground mining permit application requirements for reclamation and operations plans.

Effective: February 14, 2022

(A) Operation plan: general requirements.

(1) This rule shall apply only to underground mining operations.

(2) Each application shall contain a description of the mining operations proposed to be conducted during the life of the mine including:

(a) A narrative description of the type and method of coal mining procedures and proposed engineering techniques, anticipated annual and total production of coal, by tonnage, and the major equipment to be used for all aspects of those operations; and

(b) A narrative explaining the construction, modification, use, maintenance, and removal of the following facilities (unless retention of such facilities is necessary for postmining land use as specified in rule 1501:13-9-17 of the Administrative Code and is approved by the chief):

(i) Dams, embankments, and other impoundments;

(ii) Overburden and topsoil handling and storage areas and structures;

(iii) Coal removal, handling, storage, cleaning, and transportation areas and structures;

(iv) Spoil, coal processing, waste, and noncoal waste removal, handling, storage, transportation, and disposal areas and structures;

(v) Mine facilities; and

(vi) Water and air pollution control facilities.



(3) Each application shall contain the information required under Chapter 1501:13-4 of the Administrative Code for the proposed permit area in the detail necessary for the chief to determine the estimated cost of reclamation, pursuant to paragraph (B) of rule 1501:13-7-01 of the Administrative Code, if the reclamation has to be performed by the division of mineral resources management in the event of forfeiture of the performance security by the permittee. This estimate shall include:

(a) Operational detail sufficient to determine the greatest potential reclamation cost liability to the state; and

(b) Any other operational detail required by the chief that may affect the cost of reclamation by the division of mineral resources management in the event of forfeiture of the performance security by the permittee.

(B) Operation plan: existing structures.

(1) Each application shall contain a description of each existing structure proposed to be used in connection with or to facilitate the coal mining and reclamation operation. The description shall include:

(a) Location;

(b) Plans of the structure which describe its current condition;

(c) Approximate dates on which construction of the existing structure was begun and completed; and

(d) A showing, including relevant monitoring data or other evidence, of whether the structure meets the performance standards of rules 1501:13-8-01 to 1501:13-13-07 of the Administrative Code.

(2) Each application shall contain a compliance plan for each existing structure proposed to be modified or reconstructed for use in connection with or to facilitate the coal mining and reclamation operation. The compliance plan shall include:



- (a) Design specifications for the modification or reconstruction of the structure to meet the design and performance standards of rules 1501:13-8-01 to 1501:13-13-07 of the Administrative Code;
 - (b) A construction schedule which shows dates for beginning and completing interim steps and final reconstruction;
 - (c) Provisions for monitoring the structure during and after modification or reconstruction to ensure that the performance standards of rules 1501:13-8-01 to 1501:13-13-07 of the Administrative Code are met; and
 - (d) A showing that the risk of harm to the environment or to public health or safety is not significant during the period of modification or reconstruction.
- (C) Operation plan: blasting. If surface blasting incident to the underground mine operation is to be conducted, the application shall contain a blasting plan for the proposed permit area, explaining how the applicant intends to comply with the blasting requirements of rule 1501:13-9-06 of the Administrative Code and including the following:
- (1) Information setting forth the limitations the operator will meet with regard to ground vibration and airblast, the bases for those limitations, and the methods to be applied in controlling the adverse effects of blasting operations;
 - (2) Description of any system to be used to monitor compliance with the airblast and ground vibration limits established under paragraph (C)(1) of this rule, including the type, capability, and sensitivity of any blast-monitoring equipment and proposed procedures and locations of monitoring; and
 - (3) For blasting operations within five hundred feet of active underground mines, copies of the approvals given by the state and federal authorities concerned with the health and safety of underground miners.
- (D) Reclamation plan: general requirements.



(1) Each application shall contain a plan for describing reclamation of the lands within the proposed permit area, showing how the applicant will comply with the requirements of Chapter 1513. of the Revised Code and rules adopted thereunder. The plan shall include, at a minimum, all information required under paragraphs (D) to (R) of this rule.

(2) Each plan shall contain, where appropriate, the following information for the proposed permit area:

(a) A detailed timetable for the completion of each major step in the reclamation plan;

(b) A plan for the backfilling, soil stabilization, compacting, and grading, with contour maps or cross sections that show the anticipated final surface configuration of the proposed permit area, in accordance with rule 1501:13-9-14 of the Administrative Code;

(c) A description of the removal, storage, and redistribution of the topsoil, subsoil, and other material to meet the requirements of rule 1501:13-9-03 of the Administrative Code. A demonstration of the suitability of topsoil substitutes or supplements under rule 1501:13-9-03 of the Administrative Code shall be based upon analysis of the thickness of soil horizons, total depth, texture, per cent coarse fragments, pH, and areal extent of the different kinds of soils. The chief may require other chemical and physical analyses, field-site trials, or greenhouse tests if determined to be necessary or desirable to demonstrate the suitability of the topsoil substitutes or supplements;

(d) A description of the revegetation as required in rule 1501:13-9-15 of the Administrative Code, including, but not limited to, descriptions of the:

(i) Schedule of revegetation;

(ii) Species and amounts per acre of seeds and seedlings to be used;

(iii) Methods to be used in planting and seeding;

(iv) Mulching techniques;



- (v) A soil testing plan for evaluation of the results of topsoil handling and reclamation procedures related to revegetation;

- (vi) Irrigation, if appropriate, and disease, pest and vermin control, if any; and

- (vii) The measures proposed to be used to determine the success of revegetation as required under rule 1501:13-9-15 of the Administrative Code;

- (e) A description of the measures to be used to maximize the use and conservation of the coal resources as required by rule 1501:13-9-05 of the Administrative Code;

- (f) A description of measures to be employed to ensure that all debris, acid-forming and toxic-forming materials and materials constituting a fire hazard are disposed of in accordance with paragraph (E) of rule 1501:13-9-09 and paragraph (J) of rule 1501:13-9-14 of the Administrative Code and a description of the contingency plans which have been developed to preclude sustained combustion of such materials;

- (g) A description, including appropriate cross sections and maps, of the measures to be used to seal or manage mine openings and to plug, case or manage exploration holes, other bore holes, wells, and other openings within the proposed permit area, in accordance with rule 1501:13-9-02 of the Administrative Code; and

- (h) A description of steps to be taken to comply with the requirements of the Clean Air Act (42 U.S.C. 7401 et seq.), the Clean Water Act (33 U.S.C. 1251 et seq.) and other applicable air and water quality laws and regulations and health and safety standards.

- (E) Reclamation plan: protection of hydrologic balance.

- (1) Each application shall contain a plan for the protection of the hydrologic balance. The plan shall be specific to the local hydrologic conditions and shall describe the measures to be taken during and after the proposed underground mining operations in accordance with rule 1501:13-9-04 of the Administrative Code to:



- (a) Minimize disturbance to the hydrologic balance within the permit and adjacent areas and to prevent material damage outside the permit area;
 - (b) Protect the rights of present users of surface and ground waters within the permit area and adjacent areas;
 - (c) Avoid acid or toxic drainage;
 - (d) Control surface-water drainage into, through, and out of the proposed permit area, pursuant to rule 1501:13-9-04 of the Administrative Code;
 - (e) Treat, when required under these rules, surface- and ground-water drainage from the area to be disturbed by the proposed underground mining surface operations, so as not to exceed quantitative limits on pollutants in discharges under paragraph (B) of rule 1501:13-9-04 of the Administrative Code;
 - (f) Prevent, to the extent possible using the best technology currently available, additional contributions of suspended solids to streamflow, or runoff outside the permit area. Vegetation may be determined by the chief to be the best technology currently available upon a demonstration by the permittee that the requirements of paragraphs (B)(1) to (B)(1)(b) of rule 1501:13-9-04 of the Administrative Code have been met. If the applicant proposes to make such a demonstration after vegetation is established and remove siltation structures sooner than two years after the last augmented seeding of a drainage area, the applicant shall state such intentions in the timetable and plans for removal of sediment control structures required by paragraph (H)(1)(b)(iv) or (H)(1)(c)(iv) of this rule;
 - (g) Address any potential adverse hydrologic consequences identified in the determination of probable hydrologic consequences under paragraph (E)(2) of this rule and include preventative and remedial measures; and
 - (h) Meet applicable federal and state water quality laws and regulations.
- (2) Determination of probable hydrologic consequences (PHC).



(a) The plan shall include a determination of the probable hydrologic consequences of the proposed underground mining operations on the proposed permit area and adjacent areas. This determination shall be based on baseline hydrologic, geologic and other information collected for the permit application with respect to the hydrologic regime, providing information on the quantity and quality of water in surface- and ground-water systems under seasonal conditions, including the contents of dissolved and total suspended solids, total iron, pH, and total manganese.

(b) The PHC determination shall include findings on:

(i) Whether adverse impacts may occur to the hydrologic balance;

(ii) Whether acid-forming or toxic-forming materials are present that could result in the contamination of surface- or ground-water supplies;

(iii) Whether the proposed operation may proximately result in contamination, diminution or interruption of an underground or surface source of water within the proposed permit or adjacent areas which is used for domestic, agricultural, industrial, or other legitimate purpose; and

(iv) What impact the proposed operation will have on:

(A) Sediment yield from the disturbed area;

(B) Acidity, total suspended and dissolved solids, and other important water quality parameters of local impact;

(C) Flooding or streamflow alteration;

(D) Ground-water and surface-water availability; and

(E) Other characteristics as required by the chief.

(c) An application for a permit revision shall be reviewed by the chief to determine whether a new or



updated PHC determination shall be required.

(3) Each plan shall contain a detailed description, with appropriate drawings, of permanent entry seals and downslope barriers designed to ensure stability under anticipated hydraulic heads developed while promoting mine inundation after mine closure for the proposed permit area.

(F) Ground-water and surface-water monitoring plans.

(1) Ground-water monitoring plan.

(a) The application shall include a ground-water monitoring plan based upon the PHC determination required under paragraph (E)(2) of this rule and the analysis of all baseline hydrologic, geologic and other information in the permit application. The plan shall provide for the monitoring of parameters that relate to the suitability of the ground water for current and approved postmining land uses and to the objectives for protection of the hydrologic balance set forth in paragraph (E)(1) of this rule. It shall identify the quantity and quality parameters to be monitored, sampling frequency, and site locations. It shall describe how the data may be used to determine the impacts of the operation upon the hydrologic balance. At a minimum, specific conductance corrected to twenty-five degrees centigrade, pH, total iron, total manganese, and water levels shall be monitored. Data resulting from monitoring shall be submitted to the chief pursuant to paragraph (N) of rule 1501:13-9-04 of the Administrative Code.

(b) If an applicant can demonstrate by the use of the PHC determination and other available information that a particular water-bearing stratum in the proposed permit and adjacent areas is not one which serves as an aquifer which significantly ensures the hydrologic balance within the general area, then monitoring of that stratum may be waived by the chief.

(2) Surface-water monitoring plan.

(a) The application shall include a surface-water monitoring plan based upon the PHC determination required under paragraph (E)(2) of this rule and the analysis of all baseline hydrologic, geologic, and other information in the permit application. The plan shall provide for the monitoring of parameters that relate to the suitability of the surface water for current and approved postmining land uses and to



the objectives for protection of the hydrologic balance as set forth in paragraph (E)(1) of this rule as well as the effluent limitations set forth in 40 C.F.R. part 434.

(b) The plan shall identify the surface-water quantity and quality parameters to be monitored, sampling frequency and site locations. It shall describe how the data may be used to determine the impacts of the operation upon the hydrologic balance.

(i) At all monitoring locations in the permit and adjacent areas, surface-water bodies such as streams, lakes and impoundments, that are potentially affected or into which water will be discharged, and at upstream monitoring locations, the specific conductance corrected to twenty-five degrees centigrade, total suspended solids, pH, total iron, total manganese, and flow shall be monitored.

(ii) For point-source discharges, monitoring shall be conducted in accordance with 40 C.F.R. parts 122, 123 and 434 and as required by the national pollutant discharge elimination system permitting authority.

(iii) Data resulting from this monitoring shall be submitted to the chief pursuant to paragraph (N) of rule 1501:13-9-04 of the Administrative Code.

(G) Reclamation plan: postmining land uses.

(1) Each application shall contain a plan for the postmining land use. The plan shall describe the proposed use following reclamation of the land within the proposed permit area, including a discussion of the utility and capacity of the reclaimed land to support a variety of alternative uses, and the relationship of the proposed use to existing land use polices and plans. This description shall explain:

(a) How the proposed postmining land use is to be achieved and the necessary support activities which may be needed to achieve the proposed land use; and

(b) When a land use different from the premining land use is proposed, all materials needed for approval of the alternatives used under these rules.



(2) The plan shall be accompanied by a copy of the comments concerning the proposed use by the legal or equitable owner of record of the surface of the proposed permit area and the state and local government agencies which would have to initiate, implement, approve, or authorize the proposed use of the land following reclamation.

(3) The plan shall describe the consideration which has been given to making all of the proposed coal mining operations consistent with surface owner plans and applicable state and local land use plans and programs.

(H) Reclamation plan: ponds, impoundments, banks, dams, and embankments.

(1) General requirements.

(a) Each application shall include a detailed design plan for each proposed siltation structure, water impoundment, and coal mine waste bank, dam, or embankment within the proposed permit area.

Each plan shall:

(i) Be prepared by, or under the direction of, and certified by an engineer;

(ii) Contain a description, map, and cross section of the structure and its location;

(iii) Contain preliminary hydrologic and geologic information required to assess the hydrologic impact of the structure; and

(iv) Contain a survey describing the potential effect on the structure from subsidence of the subsurface strata resulting from past underground mining operations if underground mining has occurred.

(b) Each detailed design plan for a structure that meets or exceeds the size or other criteria of MSHA, 30 C.F.R. 77.216(a), or meets the significant hazard potential or high hazard potential classification (formerly called class B or C) criteria for dams in the U.S department of agriculture, natural resources conservation service technical release TR-210-60, "Earth Dams and Reservoirs," March 2019, shall:



- (i) Be prepared by, or under the direction of, and certified by an engineer;
 - (ii) Include any geotechnical investigation, design, and construction requirements for the structure;
 - (iii) Describe the operation and maintenance requirements for each structure; and
 - (iv) Describe the timetable and plans to remove each structure, if appropriate. If the applicant proposes to demonstrate that vegetation is the best technology currently available and remove siltation structures sooner than two years after the last augmented seeding of the drainage area, include a statement of such intentions.
- (c) Each detailed design plan for a structure that does not meet the size or other criteria of paragraph (H)(1)(b) of this rule, shall:
- (i) Be prepared by, or under the direction of, and certified by an engineer;
 - (ii) Include any design and construction requirements for the structure including any required geotechnical information;
 - (iii) Describe the operation and maintenance requirements for each structure; and
 - (iv) Describe the timetable and plans to remove each structure, if appropriate. If the applicant proposes to demonstrate that vegetation is the best technology currently available and remove siltation structures sooner than two years after the last augmented seeding of the drainage area, include a statement of such intentions.
- (2) Impoundments.
- (a) Permanent and temporary impoundments shall be designed in compliance with the requirements of paragraph (H) of rule 1501:13-9-04 of the Administrative Code. The design of any impoundment shall be certified by an engineer experienced in impoundment design and construction. The certification statement shall state that the structure is designed to meet the requirements of paragraph



(H) of rule 1501:13-9-04 of the Administrative Code.

(b) Each design plan for an impoundment that meets or exceeds the size or other criteria of MSHA, 30 C.F.R. 77.216(a), shall contain the information required under 30 C.F.R. 77.216-2(a). The plan required to be submitted to the district manager of MSHA under 30 C.F.R. 77.216 shall also be submitted to the chief as part of the permit application.

(c) Impoundments not meeting the size or other criteria of paragraph (H)(1)(b) of this rule may be designed in compliance with the following design standards, in lieu of performance of engineering tests to demonstrate compliance with the 1.3 minimum static safety factor required in paragraph (H)(1)(c)(ii) of rule 1501:13-9-04 of the Administrative Code:

(i) The embankment foundation area shall be cleared of all organic matter and the entire foundation surface shall be scarified;

(ii) If the natural slope of the foundation as measured at right angles to the embankment center line is steeper than 10h:1v (ten per cent), the embankment shall be benched into the existing slope beginning at the embankment toe and then filled with compacted level lifts;

(iii) The embankment fill material shall be free of sod, large roots, other large vegetative matter, and coal processing waste;

(iv) The fill shall be brought up in horizontal layers of such thickness as required to facilitate compaction in accordance with prudent construction standards;

(v) The moisture content of the fill material shall be sufficient to secure proper compaction. (An indication of sufficient moisture content is that when kneaded by hand the soil should just form a ball which does not readily separate. The engineer may specify other methods of testing moisture content if appropriate). When it is necessary to use materials of varying texture and gradation, the more impervious material shall be placed in the upstream and center portions of the embankment and the more pervious material shall be placed in the downstream portion of the fill;

(vi) The embankment's combined upstream and downstream side slopes shall be no steeper than the



sum of 5h:1v, with neither slope steeper than 2h:1v. (Example: if downstream slope is 3h:1v, then upstream slope can be no steeper than 2h:1v. The minimum combined slope requirement of 5h:1v refers to the 3h and 2h added together.); and

(vii) The minimum top width of the embankment shall be $(h + 35)/5$, where "h" is the embankment height as measured from natural ground at the upstream toe to the top of the embankment.

(3) Siltation structures.

(a) Permanent and temporary siltation structures shall be designed in compliance with the requirements of paragraphs (G) and (H) of rule 1501:13-9-04 of the Administrative Code. The design of any siltation structure shall be certified by an engineer experienced in impoundment design and construction. The certification shall state that the structure is designed to meet the requirements of paragraphs (G) and (H) of rule 1501:13-9-04 of the Administrative Code.

(b) In addition to the requirements of paragraph (H)(1) of this rule, the plan shall include a determination of:

(i) The required sediment storage volume; and

(ii) The detention time provided by the pond.

(c) Each design plan for a siltation structure that meets or exceeds the size or other criteria of MSHA, 30 C.F.R. 77.216(a), shall contain the information required under 30 C.F.R. 77.216-2(a).

(4) Coal mine waste dams and embankments.

(a) Coal mine waste dams and embankments shall be designed to comply with the requirements of paragraphs (A) to (C) of rule 1501:13-9-09 and paragraph (H) of rule 1501:13-9-04 of the Administrative Code. The design of any coal mine waste dam or embankment shall be certified by an engineer experienced in design of similar earth and waste structures. The certification statement shall state that the structure is designed to meet the requirements of paragraphs (A) to (C) of rule 1501:13-9-09 and paragraph (H) of rule 1501:13-9-04 of the Administrative Code.



(b) Each plan shall contain the results of a geotechnical investigation of the proposed dam or embankment foundation area, to determine the structural competence of the foundation which will support the proposed dam or embankment structure and the impounded material. The geotechnical investigation shall be planned and supervised by an engineer, according to the following:

(i) The number, location, and depth of borings and test pits shall be determined using current, prudent engineering practice for the size of the dam or embankment, quantity of material to be impounded, and subsurface conditions;

(ii) The character of the overburden and bedrock, the proposed abutment sites, and any adverse geotechnical conditions which may affect the particular dam, embankment, or reservoir site shall be considered;

(iii) All springs, seepage, and ground-water flow observed or anticipated during wet periods in the area of the proposed dam or embankment shall be identified on each plan; and

(iv) Consideration shall be given to the possibility of mudflows, rock-debris falls, or other landslides into the dam, embankment, or impounded material.

(c) Each design plan for a coal mine waste dam or embankment that meets or exceeds the size or other criteria of MSHA, 30 C.F.R. 77.216(a), shall contain the information required under 30 C.F.R. 77.216-2(a).

(5) Coal mine waste banks. Coal mine waste banks shall be designed to comply with the requirements of paragraphs (A) to (C) of rule 1501:13-9-09 of the Administrative Code, and with the provisions regarding impoundments under paragraph (H) of rule 1501:13-9-04 of the Administrative Code. The design of any coal mine waste bank shall be certified by an engineer experienced in design of similar earth and waste structures. The certification shall state that the structure is designed to meet the requirements of paragraphs (A) to (C) of rule 1501:13-9-09 and paragraph (H) of rule 1501:13-9-04 of the Administrative Code using current, prudent engineering practices.

(6) If the structure meets or exceeds the size or other criteria of MSHA, 30 C.F.R. 77.216 (a), or



meets the significant hazard potential or high hazard potential classification (formerly called Class B or C) criteria for dams in the U.S department of agriculture, natural resources conservation service technical release TR-210-60, "Earth Dams and Reservoirs," March 2019, each plan under paragraphs (H)(2), (H)(3), and (H)(4) of this rule shall include a stability analysis of each structure. The stability analysis shall include, but not limited to, strength parameters, pore pressures, and long-term seepage conditions. The plan shall also contain a description of each engineering design assumption and calculation with a discussion of each alternative considered in selecting the specific design parameters and construction methods.

(7) For further information about natural resources conservation service technical release TR-210-60, which is incorporated by reference in paragraph (H) of this rule, see paragraph (H)(1)(a) of rule 1501:13-9-04 of the Administrative Code.

(I) Diversions. Each application shall contain descriptions, including maps and cross sections, of stream channel diversions and other diversions to be constructed within the proposed permit area to achieve compliance with paragraphs (D) and (F) of rule 1501:13-9-04 of the Administrative Code.

(J) Protection of public parks and historic places.

(1) For any publicly owned parks or any places listed on the "National Register of Historic Places," administered by the national parks service, U.S. department of the interior, that may be adversely affected by the proposed operation, each application shall describe the measures to be used:

(a) To prevent adverse impacts; or

(b) If valid existing rights exist or joint agency approval is to be obtained under paragraph (E) of rule 1501:13-3-04 of the Administrative Code to minimize adverse impacts. The website for the "National Register of Historic Places" for Ohio sites is www.nationalregisterofhistoricplaces.com/oh/state.html.

(2) The chief may require the applicant to protect historic or archeological properties listed on or eligible for listing on the "National Register of Historic Places," as referenced in paragraph (J)(1) of this rule, through appropriate mitigation and treatment measures. Appropriate mitigation and



treatment measures may be required to be taken after permit issuance provided that the required measures are completed before the properties are affected by any mining operation.

(K) Relocation or use of public roads. Each application shall describe the measures to be used to ensure that the interests of the public and landowners affected are protected if, under paragraph (C) of rule 1501:13-3-04 of the Administrative Code, the applicant seeks to have the chief approve:

(1) Conducting the proposed coal mining operation within one hundred feet of the right-of-way line of any public road, except where mine access or haul roads join that right-of-way; or

(2) Relocating a public road.

(L) Transportation facilities.

(1) Each application shall contain a detailed description of each road, conveyor, or rail system to be constructed, used, or maintained within the proposed permit area. The description shall include a map, appropriate cross sections, and the following:

(a) Specifications for each road width, road gradient, road surface, road cut, fill embankment, culvert, bridge, drainage ditch, and drainage structure;

(b) A description of measures to be taken to obtain approval of the chief for alteration or relocation of a natural drainageway under rule 1501:13-10-01 of the Administrative Code;

(c) A description of measures, other than use of a rock headwall, to be taken to protect the inlet end of a ditch relief culvert, for approval by the chief under rule 1501:13-10-01 of the Administrative Code;

(d) Drawings and specifications for each proposed ford of perennial or intermittent streams outside the mined-out area that is used as a temporary route, as necessary for approval of the ford by the chief in accordance with paragraph (D)(1) of rule 1501:13-10-01 of the Administrative Code; and

(e) A description of plans to remove and reclaim each road that would not be retained under an



approved postmining land use, and the schedule for this removal and reclamation.

(2) Primary road embankments may be designed in compliance with the following design standards, in lieu of performance of engineering tests to demonstrate compliance with the 1.3 minimum static safety factor required in paragraph (G)(3) of rule 1501:13-10-01 of the Administrative Code:

(a) The embankment foundation area shall be cleared of all organic matter and the entire foundation surface shall be scarified;

(b) If the natural slope of the foundation as measured at right angles to the roadway center line is steeper than 8h:1v, the embankment shall be benched into the existing slope beginning at the embankment toe and then filled with compacted level lifts;

(c) The embankment fill material shall be free of sod, large roots, other large vegetative matter, and coal processing waste;

(d) The fill shall be brought up in horizontal layers of such thickness as required to facilitate compaction in accordance with prudent construction standards;

(e) The moisture content of the fill material shall be sufficient to secure proper compaction;

(f) The side slopes of the embankment shall be no steeper than 2h:1v;

(g) Embankments with upstream and downstream slopes shall have a minimum top width of $(h + 35)/5$, where "h" is the embankment height as measured from natural ground at the upstream toe to the top of the embankment;

(h) Hillside embankments shall have a minimum top width adequate for the intended use; and

(i) Culverts shall be placed such that the embankment, as defined in rule 1501:13-1-02 of the Administrative Code, will not impound water for an extended period of time.

(M) Subsidence control plan.



(1) The application shall include, for the shadow area, the most recent available U.S. geologic survey 7.5-minute topographic map showing:

(a) The extent of underground workings proposed for the term of the permit, including existing works that will continue to be used under the permit, all shown on a year-by-year basis;

(b) Those parts of the proposed underground workings from which there will be full coal recovery;

(c) The angle of draw for the workings described in paragraphs (M)(1)(a) and (M)(1)(b) of this rule;
and

(d) Those areas in which measures will be taken to prevent or minimize subsidence and subsidence-related damage.

(2) The application shall include an inventory which shall show whether structures or renewable resource lands exist within the proposed permit and adjacent areas and whether subsidence, if it occurred, could cause material damage or diminution of the reasonably foreseeable use of such structures or renewable resource lands. If the inventory shows that no such structures or renewable resource lands exist or no such material damage or diminution could be caused in the event of mine subsidence, and if the chief agrees with such conclusion, no further information need be provided in the application under paragraphs (M)(2)(a) to (M)(2)(e) of this rule. In the event the inventory shows that such structures or renewable resource lands exist, and that subsidence could cause material damage or diminution of value or foreseeable use of such structures or renewable resource lands, or if the chief determines that such material damage or diminution could occur, the application shall include a subsidence control plan which shall contain the following information:

(a) A description of the method of coal removal, such as longwall, room-and-pillar removal, hydraulic mining, or other extraction methods, including the size, sequence, and timing for the development of underground workings;

(b) A map of the shadow area which describes the location and extent of areas in which planned-subsidence mining methods will be used and which includes all areas where the measures described



in paragraphs (M)(2)(d) and (M)(2)(e) of this rule will be taken to prevent or minimize subsidence and subsidence-related damage; and, where appropriate, to correct subsidence-related material damage;

(c) A description of the physical conditions, such as depth of cover, seam thickness, and lithology, which affect the likelihood or extent of subsidence and subsidence-related damage;

(d) A description of monitoring, if any, needed to determine the commencement and degree of subsidence so that, when appropriate, other measures can be taken to prevent, reduce, or correct material damage in accordance with rule 1501:13-12-03 of the Administrative Code;

(e) Except for those areas where planned subsidence is projected to be used, a detailed description of the subsidence control measures that will be taken to prevent or minimize subsidence and subsidence-related damage, including such measures as:

(i) Backstowing or backfilling voids;

(ii) Leaving support pillars of coal;

(iii) Leaving areas in which no coal is removed, including a description of the overlying area to be protected by leaving the coal in place; and

(iv) Taking measures on the surface to prevent material damage or lessening of the value or reasonably foreseeable use of the surface;

(f) A description of the anticipated effects of planned subsidence, if any;

(g) A general description of the measures to be taken, in accordance with rule 1501:13-12-03 of the Administrative Code, to mitigate or remedy any subsidence-related damage to or diminution in value or reasonably foreseeable use of:

(i) The land; or



(ii) Structures, buildings, features, or facilities to the extent required pursuant to rule 1501:13-12-03 of the Administrative Code; and

(h) Other information required by the chief as necessary to demonstrate that the operation will be conducted in accordance with the performance standards of rule 1501:13-12-03 of the Administrative Code for subsidence control.

(N) Return of coal mine wastes to abandoned underground workings.

(1) Each application shall contain a plan for the return of coal mine wastes to abandoned underground workings. The plan shall describe the design, operation and maintenance of any proposed coal processing waste disposal facility, including flow diagrams and any other necessary drawings and maps, for the approval of the chief and MSHA under paragraph (A)(7) of rule 1501:13-9-09 of the Administrative Code.

(2) The plan shall describe the source and quality of waste to be stowed, area to be backfilled, per cent of the mine void to be filled, method of constructing underground retaining walls, influence of the backfilling operation on active underground mine operations, surface area to be supported by the backfill, and the anticipated occurrence of surface effects following backfilling.

(3) The applicant shall describe the source of the hydraulic transport mediums, method of dewatering the placed backfill, retainment of water underground, treatment of water if released to surface streams, and the effect on the hydrologic regime.

(4) The plan shall describe each permanent monitoring well to be located in the backfilled area, the stratum underlying the mined coal, and gradient from the backfilled area.

(5) The requirements of paragraphs (N)(1) to (N)(4) of this rule shall also apply to pneumatic backfilling operations, except where the operations are exempted by the chief from requirements specifying hydrologic monitoring.

(O) Underground development waste. Each plan shall contain descriptions, including appropriate maps and cross section drawings, of the proposed disposal methods and sites for placing



underground development waste and excess spoil generated at surface areas affected by underground mining surface operations and facilities according to rule 1501:13-9-07 of the Administrative Code. Each plan shall describe the geotechnical investigation, design, construction, operation, maintenance, and removal, if appropriate, of the structures and be prepared according to paragraph (P) of this rule.

(P) Disposal of excess spoil.

(1) Each application shall contain descriptions, including appropriate maps and cross section drawings, of the proposed disposal site and design of the spoil disposal structures according to rule 1501:13-9-07 of the Administrative Code. These plans shall describe the geotechnical investigation, design, construction, operation, maintenance, and removal, if appropriate, of the site and structures.

(2) Each application shall contain the results of a geotechnical investigation of the proposed disposal site, including the following:

(a) The character of bedrock and any adverse geologic conditions in the disposal area;

(b) A survey identifying all springs, seepage, and ground-water flow observed or anticipated during wet periods in the area of the disposal site;

(c) A survey of the potential effects of subsidence of the subsurface strata due to past and future mining operations;

(d) A technical description of the rock materials to be utilized in the construction of those disposal structures containing rock chimney cores or underlain by a rock drainage blanket; and

(e) A stability analysis including, but not limited to, strength parameters, pore pressures and long-term seepage conditions. These data shall be accompanied by a description of all engineering design assumptions and calculations and the alternatives considered in selecting the specific design specifications and methods.

(3) If, under paragraph (D) of rule 1501:13-9-07 of the Administrative Code, rock-toe buttresses or keyway cuts are required, the application shall include the following:



(a) The number, location, and depth of borings or test pits. The number, location, and depth shall be determined with respect to the size of the spoil disposal structure and sub-surface conditions; and

(b) Engineering specifications utilized to design the rock-toe buttresses or keyway cuts which shall be determined in accordance with paragraph (P)(2)(e) of this rule.

(Q) Air pollution control plan. For all underground mining surface operations, the application shall contain an air pollution control plan in order to address fugitive dust resulting from erosion. The plan shall include the following:

(1) An air quality monitoring program, if required by the chief, to provide sufficient data to evaluate the effectiveness of the fugitive dust control practices under paragraph (Q)(2) of this rule to comply with applicable federal and state air quality standards; and

(2) A plan for fugitive dust control practices.

(R) Fish and wildlife plan.

(1) Resource information. Each application shall include fish and wildlife resource information for the permit area and adjacent area.

(a) The scope and level of detail for such information shall be determined by the chief in consultation with state and federal agencies with responsibilities for fish and wildlife and shall be sufficient to design the protection and enhancement plan required under paragraph (R)(2) of this rule.

(b) Site-specific resource information necessary to address the respective species or habitats shall be required when the permit area or adjacent area is likely to include:

(i) Listed or proposed endangered or threatened species of plants or animals or their critical habitats listed by the secretary of the interior under the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.), or those species or habitats protected by similar state statutes;



(ii) Habitats of unusually high value for fish and wildlife such as important streams, wetlands, riparian areas, cliffs supporting raptors, areas offering special shelter or protection, migration routes, or reproduction and wintering areas; or

(iii) Other species or habitats identified through agency consultation as requiring special protection under state or federal law.

(2) Protection and enhancement plan. Each application shall include a description of how, to the extent possible using the best technology currently available, the operator will minimize disturbances and adverse impacts on fish and wildlife and related environmental values, including compliance with the Endangered Species Act, during the surface coal mining and reclamation operations and how enhancement of these resources will be achieved where practicable.

(a) This description shall:

(i) Be consistent with the requirements of rule 1501:13-9-11 of the Administrative Code;

(ii) Apply, at a minimum, to species and habitats identified under paragraph (R)(1) of this rule;

(iii) Include protective measures that will be used during the active mining phase of operation. Such measures may include the establishment of buffer zones, the selective location and special design of haul roads and powerlines, and the monitoring of surface water quality and quantity; and

(iv) Include enhancement measures that will be used during the reclamation and postmining phase of operation to develop aquatic and terrestrial habitat. Such measures may include restoration of streams and other wetlands, retention of ponds and impoundments, establishment of vegetation for wildlife food and cover, and the replacement of perches and nest boxes. Where the plan does not include enhancement measures, a statement shall be given explaining why enhancement is not practicable.

(3) Fish and wildlife service review. Upon request, the chief shall provide the resource information required under paragraph (R)(1) of this rule and the protection and enhancement plan required under paragraph (R)(2) of this rule to the U.S. department of the interior, fish and wildlife service regional



or field office for their review. This information shall be provided within ten days of receipt of the request from the service.

(S) For dates of federal rules and federal laws referenced in this rule, see rule 1501:13-1-14 of the Administrative Code.