

PART 784--UNDERGROUND MINING PERMIT APPLICATIONS--MINIMUM REQUIREMENTS FOR RECLAMATION AND OPERATION PLAN

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Authority: Pub. L. 95-87, 30 U.S.C. 1201 et seq., as amended; Sec. 115 of Pub. L. 98-146, 30 U.S.C. 1257; 16 U.S.C. 470 et seq.; and Pub. L. 100-34.

Sec. 784.1 Scope.

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This Part provides the minimum requirements for the Secretary's approval of regulatory program provisions for the mining operations and reclamation plans portions of applications for permits for underground mining activities, except to the extent that different requirements for those plans are established under Part 785 of this Chapter.

Sec. 784.2 Objectives.

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The objectives of this Part are to ensure that the regulatory authority is provided with comprehensive and reliable information on proposed underground mining activities, and to ensure that those activities are allowed to be conducted only in compliance with the Act, this Chapter, and the regulatory program.

Sec. 784.4 Responsibilities.

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(a) It is the responsibility of the applicant to provide to the regulatory authority all of the information required by this Part, except where specifically exempted in this Part.

(b) It is the responsibility of State and Federal governmental agencies to provide information to the regulatory authority where specifically required in this Part.

Sec. 784.10 Information collection.

FEDERAL REGISTER CITE: 60 FR 16722 (16748)
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(a) The collections of information contained in Part 784 have been approved by Office of Management and Budget under 44 U.S.C. 3501 et seq. and assigned clearance number 1029-0039. The information will be used to meet the requirements of 30 U.S.C. 1211(b), 1251, 1257, 1258, 1266, and 1309a. The obligation to respond is required to obtain a benefit.

(b) Public reporting burden for this information is estimated to average 513 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

Sec. 784.11 Operation plan: General requirements.

FEDERAL REGISTER CITE: 45 FR 51547 (51550)
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Each application shall contain a description of the mining operations proposed to be conducted during the life of the mine within the proposed permit area, including, at a minimum, the following:

(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 facility is necessary for postmining land use as specified in Section 817.133 of this Chapter.)

- (1) Dams, embankments, and other impoundments;
- (2) Overburden and topsoil handling and storage areas and structures;
- (3) Coal removal, handling, storage, cleaning, and transportation areas and structures;
- (4) Spoil, coal processing waste, mine development waste, and noncoal waste removal, handling, storage, transportation, and disposal areas and structures;
- (5) Mine facilities; and

(6) Water pollution control facilities.

Sec. 784.12 Operation plan: Existing structures.

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

The description shall include--

- (1) Location;
- (2) Plans of the structure which describe its current condition;
- (3) Approximate dates on which construction of the existing structure was begun and completed; and
- (4) A showing, including relevant monitoring data or other evidence, whether the structure meets the performance standards of Subchapter K (Permanent Program Standards) of this Chapter or, if the structure does not meet the performance standards of Subchapter K of this Chapter, a showing whether the structure meets the performance standards of Subchapter B (Interim Program Standards) of this Chapter.

(b) 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 surface coal mining and reclamation operation. The compliance plan shall include--

- (1) Design specifications for the modification or reconstruction of the structure to meet the design and performance standards of Subchapter K of this Chapter;
- (2) A construction schedule which shows dates for beginning and completing interim steps and final reconstruction;
- (3) Provisions for monitoring the structure during and after modification or reconstruction to ensure that the performance standards of Subchapter K of this Chapter are met; and
- (4) 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.

Sec. 784.13 Reclamation plan: General requirements.

FEDERAL REGISTER CITE: 48 FR 44777 (44780)

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EFFECTIVE DATE: 10/31/83

(a) Each application shall contain a plan for the reclamation of the lands within the proposed permit area, showing how the applicant will comply with Sections 515 and 516 of the Act, Subchapter K of this Chapter, and the environmental protection performance standards of the regulatory program. The plan shall include, at a minimum, all information required under Sections 784.13-784.26 of this Chapter.

(b) Each plan shall contain the following information for the proposed permit area:

- (1) A detailed timetable for the completion of each major step in the reclamation plan;
- (2) A detailed estimate of the cost of the reclamation of the proposed

operations required to be covered by a performance bond under Subchapter J of this Chapter, with supporting calculations for the estimates;

(3) A plan for 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 Sections 817.102-817.107 of this Chapter;

(4) A plan for removal, storage, and redistribution of topsoil, subsoil, and other material to meet the requirements of Section 817.22 of this Chapter. A demonstration of the suitability of topsoil substitutes or supplements under Section 817.22(b) of this Chapter shall be based upon analysis of the thickness of soil horizons, total depth, texture, percent coarse fragments, pH, and areal extent of the different kinds of soils. The regulatory authority 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;

(5) A plan for revegetation as required in Sections 817.111-817.116 of this Chapter, 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) Irrigation, if appropriate, and pest and disease control measures, if any;

(vi) Measures proposed to be used to determine the success of revegetation as required in Section 817.116 of this Chapter; and

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

(6) A description of the measures to be used to maximize the use and conservation of the coal resource as required in Section 817.59 of this Chapter;

(7) 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 Sections 817.89 and 817.102 of this Chapter and a description of the contingency plans which have been developed to preclude sustained combustion of such materials;

(8) 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 Sections 817.13-817.15 of this Chapter; and

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

Sec. 784.14 Hydrologic information.

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(a) Sampling and analysis. All water-quality analyses performed to meet the requirements of this Section shall be conducted according to the methodology in the 15th edition of "Standard Methods for the Examination of Water and Wastewater," which is incorporated by reference, or the methodology

in 40 CFR Parts 136 and 434. Water-quality sampling performed to meet the requirements of this Section shall be conducted according to either methodology listed above when feasible. "Standard Methods for the Examination of Water and Wastewater" is a joint publication of the American Public Health Association, the American Water Works Association, and the Water Pollution Control Federation and is available from the American Public Health Association, 1015 Fifteenth Street, NW., Washington, DC 20036. This document is also available for inspection at the Office of the Federal Register Information Center, Room 8301, 1100 L Street, NW., Washington, D.C.; at the Office of the OSM Administrative Record, U.S. Department of the Interior, Room 5315, 1100 L Street, NW., Washington, D.C.; at the OSM Eastern Technical Center, U.S. Department of the Interior, Building 10, Parkway Center, Pittsburgh, Pa.; and at the OSM Western Technical Center, U.S. Department of the Interior, Brooks Tower, 1020 15th Street, Denver, Colo. This incorporation by reference was approved by the Director of the Federal Register on October 26, 1983. This document is incorporated as it exists on the date of the approval, and a notice of any change in it will be published in the Federal Register.

(b) Baseline information. The application shall include the following baseline hydrologic information, and any additional information required by the regulatory authority.

(1) Ground-water information. The location and ownership for the permit and adjacent areas of existing wells, springs, and other ground-water resources, seasonal quality and quantity of ground water, and usage. Water-quality descriptions shall include, at a minimum, total dissolved solids or specific conductance corrected to 25oC, pH, total iron, and total manganese. Ground-water quantity descriptions shall include, at a minimum, approximate rates of discharge or usage and depth to the water in the coal seam, and each water-bearing stratum above and potentially impacted stratum below the coal seam.

(2) Surface-water information. The name, location, ownership, and description of all surface-water bodies such as streams, lakes, and impoundments, the location of any discharge into any surface-water body in the proposed permit and adjacent areas, and information on surface-water quality and quantity sufficient to demonstrate seasonal variation and water usage. Water-quality descriptions shall include, at a minimum, baseline information on total suspended solids, total dissolved solids or specific conductance corrected to 25oC, pH, total iron, and total manganese. Baseline acidity and alkalinity information shall be provided if there is a potential for acid drainage from the proposed mining operation. Water-quantity descriptions shall include, at a minimum, baseline information on seasonal flow rates.

(3) Supplemental information. If the determination of the probable hydrologic consequences (PHC) required by Paragraph (e) of this Section indicates that adverse impacts on or off the proposed permit area may occur to the hydrologic balance, or that acid-forming or toxic-forming material is present that may result in the contamination of ground-water or surface-water supplies, then information supplemental to that required under Paragraphs (b) (1) and (b)(2) of this Section shall be provided to evaluate such probable hydrologic consequences and to plan remedial and reclamation activities. Such supplemental information may be based upon drilling, aquifer tests, hydrogeologic analysis of the water-bearing strata, flood flows, or analysis of other water-quality or quantity characteristics.

(c) Baseline cumulative impact area information.

(1) Hydrologic and geologic information for the cumulative impact area necessary to assess the probable cumulative hydrologic impacts of the proposed

operation and all anticipated mining on surface- and ground-water systems as required by Paragraph (f) of this Section shall be provided to the regulatory authority if available from appropriate Federal or State agencies.

(2) If this information is not available from such agencies, then the applicant may gather and submit this information to the regulatory authority as part of the permit application.

(3) The permit shall not be approved until the necessary hydrologic and geologic information is available to the regulatory authority.

(d) Modeling. The use of modeling techniques, interpolation, or statistical techniques may be included as part of the permit application, but actual surface- and ground-water information may be required by the regulatory authority for each site even when such techniques are used.

(e) Probable hydrologic consequences determination. (1) The application shall contain a determination of the probable hydrologic consequences (PHC) of the proposed operation upon the quality and quantity of surface and ground water under seasonal flow conditions for the proposed permit and adjacent areas.

(2) The PHC determination shall be based on baseline hydrologic, geologic, and other information collected for the permit application and may include data statistically representative of the site.

(3) 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; and

(iii) 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 regulatory authority.

(iv) Whether the underground mining activities conducted after October 24, 1992 may result in contamination, diminution or interruption of a well or spring in existence at the time the permit application is submitted and used for domestic, drinking, or residential purposes within the permit or adjacent areas.

(4) An application for a permit revision shall be reviewed by the regulatory authority to determine whether a new or updated PHC shall be required.

(f) Cumulative hydrologic impact assessment.

(1) The regulatory authority shall provide an assessment of the probable cumulative hydrologic impacts (CHIA) of the proposed operation and all anticipated mining upon surface- and ground-water systems in the cumulative impact area. The CHIA shall be sufficient to determine, for purposes of permit approval, whether the proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area. The regulatory authority may allow the applicant to submit data and analyses relevant to the CHIA with the permit application.

(2) An application for a permit revision shall be reviewed by the regulatory authority to determine whether a new or updated CHIA shall be required.

(g) Hydrologic reclamation plan. The application shall include a plan, with maps and descriptions, indicating how the relevant requirements of Part 817 of this chapter, including Sections 817.41 to 817.43, will be met. The plan shall be specific to the local hydrologic conditions. It shall contain the steps to be taken during mining and reclamation through bond release to minimize

disturbance to the hydrologic balance within the permit and adjacent areas; to prevent material damage outside the permit area; and to meet applicable Federal and State water quality laws and regulations. The plan shall include the measures to be taken to: avoid acid or toxic drainage; prevent, to the extent possible using the best technology currently available, additional contributions of suspended solids to streamflow; provide water treatment facilities when needed; and control drainage. The plan shall specifically address any potential adverse hydrologic consequences identified in the PHC determination prepared under paragraph (e) of this section and shall include preventive and remedial measures.

(h) Ground-water monitoring plan. (1) The application shall include a ground-water monitoring plan based upon the PHC determination required under Paragraph (e) of this Section 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 (g) of this Section. 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, total dissolved solids or specific conductance corrected to 25oC, pH, total iron, total manganese, and water levels shall be monitored and data submitted to the regulatory authority at least every 3 months for each monitoring location. The regulatory authority may require additional monitoring.

(2) 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 cumulative impact area, then monitoring of that stratum may be waived by the regulatory authority.

(i) Surface-water monitoring plan. (1) The application shall include a surface-water monitoring plan based upon the PHC determination required under Paragraph (e) of this Section 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 (g) of this Section, as well as the effluent limitations found at 40 CFR Part 434.

(2) 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 streams, lakes, and impoundments that are potentially impacted or into which water will be discharged and at upstream monitoring locations, the total dissolved solids or specific conductance corrected to 25oC, 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 CFR Parts 122, 123, and 434 and as required by the National Pollutant Discharge Elimination System permitting authority.

(3) The monitoring reports shall be submitted to the regulatory authority every 3 months. The regulatory authority may require additional monitoring.

Sec. 784.15 Reclamation plan: Land use information.

FEDERAL REGISTER CITE: 59 FR 27932 (27938)
PUBLISHED DATE: 05/27/94
EFFECTIVE DATE: 06/27/94

(a) The plan shall contain a statement of the condition, capability, and productivity of the land within the proposed permit area, including:

(1) A map and supporting narrative of the uses of the land existing at the time of the filing of the application. If the premining use of the land was changed within 5 years before the anticipated date of beginning the proposed operations, the historic use of the land shall also be described. In the case of previously mined land, the use of the land prior to any mining shall also be described to the extent such information is available.

(2) A narrative of land capability and productivity, which analyzes the land-use description under paragraph (a) of this section in conjunction with other environmental resources information. The narrative shall provide analyses of:

(i) The capability of the land before any mining to support a variety of uses, giving consideration to soil and foundation characteristics, topography, vegetative cover, and the hydrology of the proposed permit area; and

(ii) The productivity of the proposed permit area before mining, expressed as average yield of food, fiber, forage, or wood products from such lands obtained under high levels of management. The productivity shall be determined by yield data or estimates for similar sites based on current data from the U.S. Department of Agriculture, State agricultural universities, or appropriate State natural resource or agricultural agencies.

(b) Each plan shall contain a detailed description of 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 policies and plans. This description shall explain:

(1) 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

(2) Where a land use different from the premining land use is proposed, all materials needed for approval of the alternative use under 30 CFR 817.133.

(3) The consideration which has been given to making all of the proposed surface mining activities consistent with surface owner plans and applicable State and local land use plans and programs.

(c) The description 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.

Sec. 784.16 Reclamation plan: Siltation structures, impoundments, banks, dams, and embankments.

FEDERAL REGISTER CITE: 59 FR 53022 (53028)
PUBLISHED DATE: 10/20/94
EFFECTIVE DATE: 11/21/94

(a) General. Each application shall include a general plan and a detailed design plan for each proposed siltation structure, water impoundment, and coal

processing waste bank, dam, or embankment within the proposed permit area.

(1) Each general plan shall--

(i) Be prepared by, or under the direction of, and certified by a qualified, registered, professional engineer, a professional geologist, or in any State which authorizes land surveyors to prepare and certify such plans, a qualified, registered, professional land surveyor with assistance from experts in related fields such as landscape architecture;

(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;

(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; and

(v) Contain a certification statement which includes a schedule setting forth the dates when any detailed design plans for structures that are not submitted with the general plan will be submitted to the regulatory authority. The regulatory authority shall have approved, in writing, the detailed design plan for a structure before construction of the structure begins.

(2) Impoundments meeting the Class B or C criteria for dams in the U.S. Department of Agriculture, Soil Conservation Service Technical Release No. 60 (210-VI-TR60, Oct. 1985), "Earth Dams and Reservoirs," Technical Release No. 60 (TR-60) shall comply with the requirements of this section for structures that meet or exceed the size or other criteria of the Mine Safety and Health Administration (MSHA). The technical release is hereby incorporated by reference. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from the National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, Virginia 22161, order No. PB 87-157509/AS. Copies can be inspected at the OSM Headquarters Office, Office of Surface Mining Reclamation and Enforcement, Administrative Record, Room 660, 800 North Capitol Street, Washington, DC or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC. Each detailed design plan for a structure that meets or exceeds the size or other criteria of MSHA, Sec. 77.216(a) of this chapter shall:

(i) Be prepared by, or under the direction of, and certified by a qualified registered professional engineer with assistance from experts in related fields such as geology, land surveying, and landscape architecture;

(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.

(3) Each detailed design plan for structures not included in paragraph (a) (2) of this section shall:

(i) Be prepared by, or under the direction of, and certified by a qualified, registered, professional engineer, or in any State which authorizes land surveyors to prepare and certify such plans, a qualified, registered, professional land surveyor, except that all coal processing waste dams and embankments covered by Sections 817.81-817.84 of this Chapter shall be certified by a qualified, registered, professional 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.

(b) Siltation structures. Siltation structures shall be designed in compliance with the requirements of Sec. 817.46 of this chapter.

(c) Permanent and temporary impoundments. (1) Permanent and temporary impoundments shall be designed to comply with the requirements of Sec. 817.49 of this chapter.

(2) Each plan for an impoundment meeting the size of other criteria of the Mine Safety and Health Administration shall comply with the requirements of Sec. 77.216-1 and 77.216-2 of this title. The plan required to be submitted to the District Manager of MSHA under Sec. 77.216 of this title shall be submitted to the regulatory authority as part of the permit application in accordance with paragraph (a) of this section.

(3) For impoundments not included in paragraph (a)(2) of this section the regulatory authority may establish through the State program approval process engineering design standards that ensure stability comparable to a 1.3 minimum static safety factor in lieu of engineering tests to establish compliance with the minimum static safety factor of 1.3 specified in Sec. 817.49(a)(4)(ii) of this chapter.

(d) Coal processing waste banks. Coal processing waste banks shall be designed to comply with the requirements of Sections 817.81-817.84 of this Chapter.

(e) Coal processing waste dams and embankments. Coal processing waste dams and embankments shall be designed to comply with the requirements of Sections 817.81-817.84 of this Chapter. Each plan shall comply with the requirements of the Mine Safety and Health Administration, Sections 77.216-1 and 77.216-2 of this Title, and 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 or engineering geologist, according to the following:

(1) The number, location, and depth of the 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.

(2) 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.

(3) 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.

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

(f) If the structure meets the Class B or C criteria for dams in TR-60 or meets the size or other criteria of Sec. 77.216(a) of this chapter, each plan under paragraphs (b), (c), and (e) of this section shall include a stability analysis of the structure. The stability analysis shall include, but not be 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.

Sec. 784.17 Protection of public parks and historic places.

FEDERAL REGISTER CITE: 52 FR 4243 (4265)
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(a) For any publicly owned parks or any places listed on the National Register of Historic Places that may be adversely affected by the proposed operation, each plan shall describe the measures to be used.

(1) To prevent adverse impacts, or

(2) If valid existing rights exist or joint agency approval is to be obtained under Sec. 761.12(f) of this chapter, to minimize impacts.

(b) The regulatory authority may require the applicant to protect historic and archeological properties listed on or eligible for listing on the National Register of Historic Places 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.

Sec. 784.18 Relocation or use of public roads.

FEDERAL REGISTER CITE: 44 FR 14902 (15368)
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Each application shall describe, with appropriate maps and cross sections, the measures to be used to ensure that the interests of the public and landowners affected are protected if, under Section 761.12(d) of this Chapter, the applicant seeks to have the regulatory authority approve_

(a) Conducting the proposed underground mining activities within 100 feet of the right-of-way line of any public road, except where mine access or haul roads join that right-of-way; or

(b) Relocating a public road.

Sec. 784.19 Underground development waste.

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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 surface operations and facilities, according to Sections 817.71-817.74 of this Chapter. Each plan shall describe the geotechnical investigation, design, construction, operation, maintenance, and removal, if appropriate, of the structures and be prepared according to Section 780.35 of this Chapter.

Sec. 784.20 Subsidence control plan.

FEDERAL REGISTER CITE: 60 FR 16722 (16748)
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(a) Pre-subsidence survey. Each application must include:

(1) A map of the permit and adjacent areas at a scale of 1:12,000, or larger if determined necessary by the regulatory authority, showing the location and type of structures and renewable resource lands that subsidence may materially damage or for which the value or reasonably foreseeable use may be diminished by subsidence, and showing the location and type of drinking, domestic, and residential water supplies that could be contaminated, diminished, or interrupted by subsidence.

(2) A narrative indicating whether subsidence, if it occurred, could cause material damage to or diminish the value or reasonably foreseeable use of such structures or renewable resource lands or could contaminate, diminish, or interrupt drinking, domestic, or residential water supplies.

(3) A survey of the condition of all non-commercial buildings or occupied residential dwellings and structures related thereto, that may be materially damaged or for which the reasonably foreseeable use may be diminished by subsidence, within the area encompassed by the applicable angle of draw; as well as a survey of the quantity and quality of all drinking, domestic, and residential water supplies within the permit area and adjacent area that could be contaminated, diminished, or interrupted by subsidence. If the applicant cannot make this survey because the owner will not allow access to the site, the applicant will notify the owner, in writing, of the effect that denial of access will have as described in Sec. 817.121(c)(4) of this chapter. The applicant must pay for any technical assessment or engineering evaluation used to determine the pre-mining condition or value of such non-commercial buildings or occupied residential dwellings and structures related thereto and the quantity and quality of drinking, domestic, or residential water supplies. The applicant must provide copies of the survey and any technical assessment or engineering evaluation to the property owner and regulatory authority.

(b) Subsidence control plan. If the survey conducted under paragraph (a) of this section shows that no structures, or drinking, domestic, or residential water supplies, or renewable resource lands exist, or that no material damage or diminution in value or reasonably foreseeable use of such structures or lands, and no contamination, diminution, or interruption of such water supplies would occur as a result of mine subsidence, and if the regulatory authority agrees with this conclusion, no further information need be provided under this section. If the survey shows that structures, renewable resource lands, or water supplies exist and that subsidence could cause material damage or diminution in value or reasonably foreseeable use, or contamination, diminution, or interruption of protected water supplies, or if the regulatory authority determines that damage, diminution in value or foreseeable use, or contamination, diminution, or interruption could occur, the application must include a subsidence control plan that contains the following information:

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

(2) A map of the underground workings that describes the location and extent of the areas in which planned-subsidence mining methods will be used and that identifies all areas where the measures described in paragraphs (b) (4), (b)(5), and (b)(7) of this section will be taken to prevent or minimize subsidence and subsidence-related damage; and, when applicable, to correct subsidence-related material damage;

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

(4) A description of the 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 Sec. 817.121(c) of this chapter;

(5) 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, such as, but not limited to:

(i) Backstowing or backfilling of 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 coal in place; and

(iv) Taking measures on the surface to prevent or minimize material damage or diminution in value of the surface;

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

(7) For those areas where planned subsidence is projected to be used, a description of methods to be employed to minimize damage from planned subsidence to non-commercial buildings and occupied residential dwellings and structures related thereto; or the written consent of the owner of the structure or facility that minimization measures not be taken; or, unless the anticipated damage would constitute a threat to health or safety, a demonstration that the costs of minimizing damage exceed the anticipated costs of repair;

(8) A description of the measures to be taken in accordance with Secs. 817.41(j) and 817.121(c) of this chapter to replace adversely affected protected water supplies or to mitigate or remedy any subsidence-related material damage to the land and protected structures; and

(9) Other information specified by the regulatory authority as necessary to demonstrate that the operation will be conducted in accordance with Sec. 817.121 of this chapter.

Sec. 784.21 Fish and wildlife information.

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EFFECTIVE DATE: 01/11/88

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

(1) The scope and level of detail for such information shall be determined by the regulatory authority 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 (b) of this section.

(2) 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 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.

(b) 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. This description shall --

(1) Be consistent with the requirements of Sec. 817.97 of this chapter;

(2) Apply, at a minimum, to species and habitats identified under paragraph (a) of this section; and (3) Include --

(i) 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

(ii) Enhancement [Ed. note: should read "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 placement of perches and nest boxes. Where the plan does not include enhancement measures, a statement shall be given explaining why enhancement is not practicable.

(c) Fish and Wildlife Service Review. Upon request, the regulatory authority shall provide the resource information required under paragraph (a) of this section and the protection and enhancement plan required under paragraph (b) of this section 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 10 days of receipt of the request from the Service.

Sec. 784.22 Geologic information.

FEDERAL REGISTER CITE: 48 FR 43955 (43989)

PUBLISHED DATE: 09/26/83

EFFECTIVE DATE: 10/26/83

(a) General. Each application shall include geologic information in sufficient detail to assist in--

(1) Determining the probable hydrologic consequences of the operation upon the quality and quantity of surface and ground water in the permit and adjacent areas, including the extent to which surface- and ground-water monitoring is necessary;

(2) Determining all potentially acid- or toxic-forming strata down to and including the stratum immediately below the coal seam to be mined;

(3) Determining whether reclamation as required by this Chapter can be accomplished and whether the proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area; and

(4) Preparing the subsidence control plan under Section 784.20 of this Chapter.

(b) Geologic information shall include, at a minimum, the following:

(1) A description of the geology of the proposed permit and adjacent areas down to and including the deeper of either the stratum immediately below the lowest coal seam to be mined or any aquifer below the lowest coal seam to be mined which may be adversely impacted by mining. This description shall include the areal and structural geology of the permit and adjacent areas, and

other parameters which influence the required reclamation and it shall also show how the areal and structural geology may affect the occurrence, availability, movement, quantity, and quality of potentially impacted surface and ground water. It shall be based on--

(i) The cross Sections, maps, and plans required by Section 783.25 of this Chapter;

(ii) The information obtained under Paragraphs (b)(2), (b)(3), and (c) of this Section; and

(iii) Geologic literature and practices.

(2) For any portion of a permit area in which the strata down to the coal seam to be mined will be removed or are already exposed, samples shall be collected and analyzed from test borings; drill cores; or fresh, unweathered, uncontaminated samples from rock outcrops down to and including the deeper of either the stratum immediately below the lowest coal seam to be mined or any aquifer below the lowest coal seam to be mined which may be adversely impacted by mining. The analyses shall result in the following:

(i) Logs showing the lithologic characteristics including physical properties and thickness of each stratum and location of ground water where occurring;

(ii) Chemical analyses identifying those strata that may contain acid- or toxic-forming, or alkalinity-producing materials and to determine their content, except that the regulatory authority may find that the analysis for alkalinity-producing material is unnecessary; and

(iii) Chemical analysis of the coal seam for acid- or toxic-forming materials, including the total sulfur and pyritic sulfur, except that the regulatory authority may find that the analysis of pyritic sulfur content is unnecessary.

(3) For lands within the permit and adjacent areas where the strata above the coal seam to be mined will not be removed, samples shall be collected and analyzed from test borings or drill cores to provide the following data:

(i) Logs of drill holes showing the lithologic characteristics, including physical properties and thickness of each stratum that may be impacted, and location of ground water where occurring;

(ii) Chemical analyses for acid- or toxic-forming or alkalinity-producing materials and their content in the strata immediately above and below the coal seam to be mined;

(iii) Chemical analyses of the coal seam for acid- or toxic-forming materials, including the total sulfur and pyritic sulfur, except that the regulatory authority may find that the analysis of pyrite sulfur content is unnecessary; and

(iv) For standard room-and-pillar mining operations, the thickness and engineering properties of clays or soft rock such as clay shale, if any, in the stratum immediately above and below each coal seam to be mined.

(c) If determined to be necessary to protect the hydrologic balance, to minimize or prevent subsidence, or to meet the performance standards of this Chapter, the regulatory authority may require the collection, analysis, and description of geologic information in addition to that required by Paragraph (b) of this Section.

(d) An applicant may request the regulatory authority to waive in whole or in part the requirements of Paragraphs (b)(2) and (b)(3) of this Section. The waiver may be granted only if the regulatory authority finds in writing that the collection and analysis of such data are unnecessary because other information having equal value or effect is available to the regulatory authority in a satisfactory form.

Sec. 784.23 Operation plan: Maps and plans.

FEDERAL REGISTER CITE: 56 FR 65612 (65634)

PUBLISHED DATE: 12/17/91

EFFECTIVE DATE: 01/16/92

Each application shall contain maps and plans as follows:

(a) The maps, plans, and cross sections shall show the underground mining activities to be conducted, the lands to be affected throughout the operation, and any change in a facility or feature to be caused by the proposed operations, if the facility or feature was shown under Sections 783.24-783.25 of this Chapter.

(b) The following shall be shown for the proposed permit area:

- (1) Buildings, utility corridors, and facilities to be used;
 - (2) The area of land to be affected within the proposed permit area, according to the sequence of mining and reclamation;
 - (3) Each area of land for which a performance bond or other equivalent guarantee will be posted under Subchapter J of this Chapter;
 - (4) Each coal storage, cleaning, and loading area;
 - (5) Each topsoil, spoil, coal preparation waste, underground development waste, and noncoal waste storage area;
 - (6) Each water diversion, collection, conveyance, treatment, storage and discharge facility to be used;
 - (7) Each source of waste and each waste disposal facility relating to coal processing or pollution control;
 - (8) Each facility to be used to protect and enhance fish and wildlife related environmental values;
 - (9) Each explosives storage and handling facility;
 - (10) Location of each sedimentation pond, permanent water impoundment, coal processing waste bank, and coal processing water dam and embankment, in accordance with Section 784.16 of this Chapter and disposal areas for underground development waste and excess spoil, in accordance with Section 784.19 of this Chapter;
 - (11) Each profile, at cross sections specified by the regulatory authority, of the anticipated final surface configuration to be achieved for the affected areas;
 - (12) Location of each water and subsidence monitoring point; and
 - (13) Location of each facility that will remain on the proposed permit area as a permanent feature, after the completion of underground mining activities.
- (c) Except as provided in Sections 784.16(a)(2), 784.16(a)(3), 784.19, 817.71(b), 817.73(c), 817.74(c), and 817.81(c) of this Chapter, cross sections, maps, and plans required under Paragraphs (b)(4), (5), (6), (10), and (11) of this Section shall be prepared by, or under the direction of, and certified by a qualified, registered, professional engineer, a professional geologist, or in any State which authorizes land surveyors to prepare and certify such cross sections, maps, and plans, a qualified, registered, professional land surveyor, with assistance from experts in related fields such as landscape architecture.

Sec. 784.24 Road systems.

FEDERAL REGISTER CITE: 53 FR 45190 (45211)

PUBLISHED DATE: 11/08/88

EFFECTIVE DATE: 12/08/88

(a) Plans and drawings. Each applicant for an underground coal mining and reclamation permit shall submit plans and drawings for each road, as defined in Sec. 701.5 of this chapter, to be constructed, used, or maintained within the proposed permit area. The plans and drawings shall --

(1) Include a map, appropriate cross sections, design drawings, and specifications for road widths, gradients, surfacing materials, cuts, fill embankments, culverts, bridges, drainage ditches, low-water crossings, and drainage structures;

(2) Contain the drawings and specifications of each proposed road that is located in the channel of an intermittent or perennial stream, as necessary for approval of the road by the regulatory authority in accordance with Sec. 817.150(d)(1) of this chapter;

(3) Contain the drawings and specifications for each proposed ford of perennial or intermittent streams that is used as a temporary route, as necessary for approval of the ford by the regulatory authority in accordance with Sec. 817.151(c)(2) of this chapter;

(4) Contain a description of measures to be taken to obtain approval of the regulatory authority for alteration or relocation of a natural stream channel under Sec. 817.151(d)(5) of this chapter;

(5) Contain the drawings and specifications for each low-water crossing of perennial or intermittent stream channels so that the regulatory authority can maximize the protection of the stream in accordance with Sec. 817.151(d)(6) of this chapter; and

(6) Describe the 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.

(b) Primary road certification. The plans and drawings for each primary road shall be prepared by, or under the direction of, and certified by a qualified registered professional engineer, or in any State which authorizes land surveyors to certify the design of primary roads a qualified registered professional land surveyor, experienced in the design and construction of roads, as meeting the requirements of this chapter; current, prudent engineering practices; and any design criteria established by the regulatory authority.

(c) Standard design plans. The regulatory authority may establish engineering design standards for primary roads through the State program approval process, in lieu of engineering tests, to establish compliance with the minimum static safety factor of 1.3 for all embankments specified in Sec. 817.151(b) of this chapter.

Sec. 784.25 Return of coal processing waste to abandoned underground workings.

FEDERAL REGISTER CITE: 48 FR 44777 (44780)

PUBLISHED DATE: 09/30/83

EFFECTIVE DATE: 10/31/83

(a) Each 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 regulatory authority and the Mine Safety and Health Administration under Section 817.81(f) of this Chapter.

(b) Each plan shall describe the source and quality of waste to be stowed, area to be backfilled, percent 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.

(c) 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.

(d) 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.

(e) The requirements of Paragraphs (a), (b), (c), and (d) of this Section shall also apply to pneumatic backfilling operations, except where the operations are exempted by the regulatory authority from requirements specifying hydrologic monitoring.

Sec. 784.26 Air pollution control plan.

FEDERAL REGISTER CITE: 44 FR 49673 (49678)

PUBLISHED DATE: 08/24/79

EFFECTIVE DATE: 04/12/79

For all surface operations associated with underground mining activities, the application shall contain an air pollution control plan which includes the following:

(a) An air quality monitoring program, if required by the regulatory authority, to provide sufficient data to evaluate the effectiveness of the fugitive dust control practices, under Paragraph (b) of this Section to comply with applicable Federal and State air quality standards; and

(b) A plan for fugitive dust control practices, as required under Section 817.95 of this Chapter.

Sec. 784.29 Diversions.

FEDERAL REGISTER CITE: 48 FR 43955 (43989)

PUBLISHED DATE: 09/26/83

EFFECTIVE DATE: 10/26/83

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 Section 817.43 of this Chapter.

Sec. 784.30 Support facilities.

FEDERAL REGISTER CITE: 53 FR 45190 (45211)

PUBLISHED DATE: 11/08/88

EFFECTIVE DATE: 12/08/88

Each applicant for an underground coal mining and reclamation permit shall submit a description, plans, and drawings for each support facility to be constructed, used, or maintained within the proposed permit area. The plans and drawings shall include a map, appropriate cross sections, design drawings, and specifications sufficient to demonstrate compliance with Sec. 817.181 of this chapter for each facility.

Sec. 784.200 Interpretive rules related to general performance standards.

FEDERAL REGISTER CITE: 48 FR 44777 (44780)
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EFFECTIVE DATE: 10/31/83

The following interpretation of rules promulgated in Part 784 of this Chapter have been adopted by the Office of Surface Mining Reclamation and Enforcement.

(a) Interpretation of Section 784.15: Reclamation plan: Postmining land uses.

(1) The requirements of Section 784.15(a)(2) of this Chapter, for approval of an alternative postmining land use, may be met by requesting approval through the permit revision procedures of Section 774.13 of this Chapter rather than requesting such approval in the original permit application. The original permit application, however, must demonstrate that the land will be returned to its premining land use capability as required by Section 817.133(a) of this Chapter.

An application for a permit revision of this type, (1) must be submitted in accordance with the filing deadlines of Section 774.13 of this Chapter, (2) shall constitute a significant alternation from the mining operations contemplated by the original permit, and (3) shall be subject to the requirements of Parts 773 and 775 of this Chapter.