

TITLE 62: MINING
CHAPTER I: DEPARTMENT OF NATURAL RESOURCES

PART 1784
UNDERGROUND MINING PERMIT APPLICATIONS--MINIMUM
REQUIREMENTS FOR RECLAMATION AND OPERATION PLAN

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AUTHORITY: Implementing and authorized by the Surface Coal Mining Land Conservation and Reclamation Act [225 ILCS 720].

SOURCE: Adopted at 4 Ill. Reg. 37, p. 1, effective June 1, 1982; amended at 6 Ill. Reg. 1, effective June 1, 1982; codified at 8 Ill. Reg. 9350; amended at 11 Ill. Reg. 8652, effective July 1, 1987; amended at 14 Ill. Reg. 11935, effective January 1, 1991; amended at 15 Ill. Reg. 17301, effective January 1, 1992; amended at 17 Ill. Reg. 11135, effective July 1, 1993; amended at 20 Ill. Reg. 2166, effective January 19, 1996; recodified from the Department of Mines and Minerals to the Department of Natural Resources at 22 Ill. Reg. 7712; amended at 24 Ill. Reg.

5998, effective March 21, 2000; amended at 26 Ill. Reg. 4410, effective March 6, 2002; amended at 27 Ill. Reg. 4678, effective February 26, 2003.

Section 1784.4 Responsibilities

- a) It is the responsibility of the applicant to provide to the Department 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 Department where specifically required in this Part.

Section 1784.5 Use of Existing Data

Permit applicants may comply with the requirements of this Part by reliance upon accurate data already in the possession of the applicant or the Illinois Department of Natural Resources (Department), through incorporating such data by reference into permit applications, provided that the incorporated information is made publicly available under Article II of the Surface Coal Mining Land Conservation and Reclamation Act (Ill. Rev. Stat. 1985, ch. 96 1/2, pars. 7902.01 - 7902.11) (State Act) and 62 Ill. Adm. Code 1773.

(Source: Amended at 11 Ill. Reg. 8652, effective July 1, 1987)

Section 1784.6 Use of Expert Opinion

Permit applicants may comply with this Part providing accurate descriptive and predictive information relating to geology, water quality and quantity for a particular permit area, based upon expert opinion extrapolation from known data on the geology, water quality and quantity of similar areas, rather than by the collection of new data for the particular site, provided that the data used by an expert are included within the permit application, the expert opinion is approved by the Department, and made available to the public for review and inspection.

Section 1784.11 Operation Plan: General Requirements

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

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- 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 62 Ill. Adm. Code 1817.133:
- 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 non-coal waste removal, handling, storage, transportation, and disposal areas and structures;
 - 5) Mine facilities; and
 - 6) Water pollution control facilities.

Section 1784.12 Operation Plan: Existing Structures

- 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 62 Ill. Adm. Code 1810 through 1828 or, if the structure does not meet the performance standards of 62 Ill. Adm. Code 1810 through 1828, a showing whether the structure meets the performance standards of 62 Ill. Adm. Code 280 - 300 (Interim Program Standards).
- 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 62 Ill. Adm. Code 1810 through 1828;
- 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 62 Ill. Adm. Code 1810 through 1828 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.

(Source: Amended at 11 Ill. Reg. 8652, effective July 1, 1987)

Section 1784.13 Reclamation Plan: General Requirements

- 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 3.01 through 4.11 of the State Act, 62 Ill. Adm. Code 1810 through 1828, and the environmental protection performance standards of the regulatory program. The plan shall include, at a minimum, all information required under Sections 1784.13 through 1784.26 provided that the Department considers Section 516(d) of the Surface Mining Control and Reclamation Act of 1977 (30 U.S.C. 1266(d)) (Federal Act), and thereby acknowledges that long-term reclamation activities cannot be planned in the same detail as reclamation activities which will take place in the near future.
- 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 62 Ill. Adm. Code 1800 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 62 Ill. Adm. Code 1817.102 through 1817.107;

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- 4) A plan for removal, storage, and redistribution of topsoil, subsoil, and other material to meet the requirements of 62 Ill. Adm. Code 1817.22. A demonstration of the suitability of topsoil substitutes or supplements under 62 Ill. Adm. Code 1817.22(b) shall be based upon analysis of the thickness of soil horizons, total depth, texture, percent of coarse fragments, pH, and areal extent of the different kinds of soils;
 - 5) A plan for revegetation as required in 62 Ill. Adm. Code 1817.111 through 1817.117, including, but not limited to, descriptions of the:
 - A) Schedule of revegetation;
 - B) Species and amounts per acre of seeds and seedlings to be used;
 - C) Methods to be used in planting and seeding;
 - D) Mulching techniques;
 - E) Irrigation, if appropriate, and pest and disease control measures, if any;
 - F) Measures proposed to be used to determine the success of revegetation as required in 62 Ill. Adm. Code 1817.116; and
 - G) 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 62 Ill. Adm. Code 1817.59;
 - 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 62 Ill. Adm. Code 1817.89 and 1817.102 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 62 Ill. Adm. Code 1817.13 through 1817.15; and

- 9) 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.

(Source: Amended at 11 Ill. Reg. 8652, effective July 1, 1987)

Section 1784.14 Hydrologic Information

- a) 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" (1980), which is incorporated by reference, or the methodology in 40 CFR 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" (1980) 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 15th Street, NW, Washington, D.C. 20036. This document is also available for inspection at the Department's Springfield office.
- b) The application shall contain the following baseline hydrologic information. When this information is insufficient for the Department to determine if adverse impacts may result to the hydrologic balance, additional information shall be required, such as but not limited to water supply contamination or diminution.
 - 1) Ground water information. The location and ownership for the permit, shadow and adjacent area of existing wells, springs, and other ground water resources, seasonal quality and quantity of ground water and usage.
 - A) Ground water quality descriptions shall include, at a minimum:
 - i) for the permit area and its adjacent area, pH, total dissolved solids, hardness, alkalinity, acidity, sulfates, total iron, total manganese and chlorides. The Department shall allow the measurement of specific conductance in lieu of total dissolved solids if the permittee develops site-specific relationships precisely correlating specific conductance to total dissolved solids for specific sites for all zones being monitored.
 - ii) for the shadow area and its adjacent area, pH, total dissolved solids, total iron and total manganese. The

Department shall allow the measurement of specific conductance in lieu of total dissolved solids if the permittee develops site-specific relationships precisely correlating specific conductance to total dissolved solids for specific sites for all zones being monitored.

- B) Ground water quantity descriptions for the permit, shadow and adjacent areas shall include, at a minimum, rates of discharge or usage and elevation of the potentiometric surface in the coal to be mined, in each water-bearing stratum above the coal to be mined, and in each water-bearing stratum which may be potentially impacted below the coal to be mined.
- 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.
- A) Water quality descriptions shall include, at a minimum, baseline information on pH, total suspended solids, total dissolved solids, alkalinity, acidity, sulfates, total iron, total manganese and chlorides. The Department shall allow the measurement of specific conductance in lieu of total dissolved solids if the permittee develops site-specific relationships precisely correlating specific conductance to total dissolved solids for specific sites for all surface water points being monitored.
 - B) Water quantity descriptions shall include, at a minimum, baseline information on seasonal flow rates.
- 3) If the determination of probable hydrologic consequences required by subsection (e) 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 or surface water supplies, then information supplemental to that required under subsections (b)(1) and (2) shall be provided to evaluate such probable hydrologic consequences and to plan remedial and reclamation activities. Such supplemental information shall be based upon drilling, hydrogeologic analyses of water-bearing strata, flood flows, or analysis of other water quality or quantity characteristics.
- c) Baseline cumulative impact area information.

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- 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 subsection (f) below shall be provided to the Department, if available from appropriate Federal or State agencies.
 - 2) If the information is not available from such agencies, then the applicant may gather and submit this information to the Department as part of the permit application.
 - 3) The permit shall not be approved until the necessary hydrologic and geologic information is available to the Department.
- d) The use of modeling techniques, interpolation or statistical techniques may be included as part of the permit application if such techniques will enhance the evaluation of hydrological impacts, but actual surface and ground water information may be required by the Department for the purposes of calibration of such models for each site even when such techniques are used.
- e) Determination of the probable hydrologic consequences (PHC).
- 1) The application shall contain a determination of the probable hydrologic consequences of the proposed operation on the proposed permit area, shadow area and adjacent area, with respect to the hydrologic regime and the quantity and quality of water in surface and ground water systems under all seasonal conditions, including the contents of dissolved and total suspended solids, total iron, pH, total manganese, and other parameters required by the Department if such parameters are necessary to assure an accurate determination of probable hydrologic consequences on a site-specific basis.
 - 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:
 - A) Whether adverse impacts may occur to the hydrologic balance;
 - B) Whether acid-forming or toxic-forming materials are present that could result in the contamination of surface-or ground-water supplies;
 - C) What impact the proposed operation will have on:

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- i) sediment yield from the disturbed areas;
 - ii) acidity, total suspended and dissolved solids, and other important water quality parameters of local impact;
 - iii) flooding or stream-flow alteration;
 - iv) ground-water and surface-water availability; and
 - v) other characteristics as required by the Department, based upon public comment and the Department's technical review; and
- D) Whether the underground mining activities conducted after January 19, 1996 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, shadow or adjacent areas.
- 4) An application for a permit revision shall be reviewed by the Department to determine whether a new or updated PHC determination shall be required.
- f) Cumulative hydrologic impact assessment.
- 1) The Department shall provide an assessment of the probable cumulative hydrologic impacts of the proposed operation and all anticipated mining upon surface and ground water systems in the cumulative impact area. This assessment shall be sufficient for purposes of permit approval, to determine whether the proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area. The Department shall allow the submittal of data and analyses by the permittee in accordance with subsection (c).
 - 2) An application for a permit revision shall be reviewed by the Department to determine whether a new or updated assessment shall be required.
- g) The application shall include a plan with maps and descriptions, indicating how the relevant requirements of 62 Ill. Adm. Code 1817, including 62 Ill. Adm. Code 1817.41 through 1817.43, will be met. The plan shall be specific to local hydrologic conditions. It shall contain steps to be taken during mining and reclamation, through bond release, to minimize disturbances to the hydrologic balance within the permit, shadow, and adjacent areas; to prevent material damage outside the permit area; to meet the 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; control drainage; restore approximate premining recharge capacity. The plan shall specifically address any potential adverse hydrologic consequences identified in subsection (e) and shall include preventative and remedial measures.

h) Ground water monitoring plan.

- 1) The application shall include a ground water monitoring plan based upon the determination of probable hydrologic consequences required under subsection (e) and the analyses 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 post-mining land uses and to the objectives for protection of the hydrologic balance set forth in subsection (g). 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 on the hydrologic balance. At a minimum, the parameters to be monitored shall include pH, total dissolved solids, hardness, alkalinity, acidity, sulfates, total iron, total manganese and water levels. The Department shall allow the measurement of specific conductance in lieu of total dissolved solids if the permittee develops site-specific relationships precisely correlating specific conductance to total dissolved solids for specific sites for all zones being monitored. Data shall be submitted to the Department every three months for each monitoring location. The Department may require additional monitoring, such as increased parameters or frequency, if it is determined that the existing or proposed monitoring program is not designed to detect adverse impacts to the hydrologic balance.
- 2) If an applicant can demonstrate by the use of the probable hydrologic consequences 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 Department.

i) Surface water monitoring plan.

- 1) The application shall include a surface water monitoring plan based upon the determination of probable hydrologic consequences required in subsection (e) and the analysis of all baseline hydrologic, geologic and

other information in the permit application. The plan shall provide for monitoring of parameters that relate to the suitability of the surface water for current and approved post-mining land uses, to the objectives for protection of the hydrologic balance as set forth in subsection (g), and to the effluent limitations in 40 CFR 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.
 - A) At all monitoring locations in the surface water bodies such as streams, lakes and impoundments, that are potentially impacted or into which water will be discharged and at upstream monitoring locations, pH, total dissolved solids, total suspended solids, alkalinity, acidity, sulfates, total iron, total manganese and flow shall be monitored. The Department shall allow the measurement of specific conductance in lieu of total dissolved solids if the permittee develops site-specific relationships precisely correlating specific conductance to total dissolved solids for specific sites for all locations being monitored.
 - B) For point-source discharges, monitoring shall be conducted in accordance with 40 CFR 122, 123 and 434 and as required by the Illinois Environmental Protection Agency (IEPA).
- 3) All surface water monitoring reports, including those required by the IEPA, shall be submitted to the Department every three months. The Department shall require additional monitoring if it is determined that the existing or proposed monitoring plan is not adequate to detect adverse impacts to the hydrologic balance.

(Source: Amended at 26 Ill. Reg. 4410, effective March 6, 2002)

Section 1784.15 Reclamation Plan: Pre-Mining and Post-Mining Information

- a) Pre-mining information. The application 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 pre-mining use of the land was changed within five (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 subsection (a) above in conjunction with other environmental resources information required under this Part. The narrative shall provide analyses of:
 - A) 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
 - B) 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.
 - 3) An intensive soils map prepared to the specifications of the Natural Resources Conservation Service or a contoured aerial photo with a scale of not smaller than 1"=400' and contour interval of not greater than ten (10) feet.
- b) Post-mining information. 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 post-mining land use is to be achieved and the necessary support activities which may be needed to achieve the proposed land use;
 - 2) Where a land use different from the pre-mining land use is proposed, all materials needed for approval of the alternative use under 62 Ill. Adm. Code 1817.133; and
 - 3) The consideration given to making all of the proposed underground 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 from 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.

(Source: Amended at 20 Ill. Reg. 2166, effective January 19, 1996)

Section 1784.16 Reclamation Plan: Siltation Structures, Impoundments, Banks, Dams, and Embankments

- 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:
 - A) Be prepared by, or under the direction of, and sealed by a qualified registered professional engineer licensed under the Professional Engineering Practice Act of 1989 [225 ILCS 325] with assistance from experts in related fields such as land surveying, geology and landscape architecture;
 - B) Contain a description, map, and cross-section of the structure and its location;
 - C) Contain preliminary hydrologic and geologic information required to assess the hydrologic impact of the structure;
 - D) 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
 - E) 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 Department. The Department 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," 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). Each detailed design plan for a structure that meets or exceeds the size or other criteria of 30 CFR 77.216(a) shall:

- A) Be prepared by, or under the direction of, and sealed by a qualified registered professional engineer licensed under the Professional Engineering Practice Act of 1989 [225 ILCS 325] with assistance from experts in related fields such as geology, land surveying and landscape architecture;
 - B) Include any geotechnical investigation design and construction requirements for the structure;
 - C) Describe the operation and maintenance requirements for each structure; and
 - D) Describe the timetable and plans to remove each structure, if appropriate.
- 3) Each detailed design plan for a structure not included in subsection (a)(2) shall:
- A) Be prepared by, or under the direction of, and sealed by a qualified registered professional engineer licensed under the Professional Engineering Practice Act of 1989 [225 ILCS 325] with assistance from experts in related fields such as geology, land surveying, and landscape architecture;
 - B) Include any design and construction requirements for the structure, including any required technical investigation;
 - C) Describe the operation and maintenance requirements for each structure; and
 - D) Describe the timetable and plans to remove each structure, if appropriate.
- b) Siltation structures.
- 1) Siltation structures shall be designed in compliance with the requirements of 62 Ill. Adm. Code 1817.46. Any sedimentation pond or earthen structure which will remain on the proposed permit areas as a permanent

water impoundment shall also be designed to comply with the requirements of 62 Ill. Adm. Code 1817.49.

- 2) Each detailed plan shall, at a minimum, comply with the requirements of MSHA, 30 CFR 77.216-1 and 77.216-2.
- c) Permanent and temporary impoundments. Permanent and temporary impoundments shall be designed to comply with the detailed requirements of 62 Ill. Adm. Code 1817.49. Each plan shall comply with the requirements of 30 CFR 77.216-1 and 77.216-2.
- d) Coal processing waste banks. Coal processing waste banks shall be designed to comply with the requirements of 62 Ill. Adm. Code 1817.81 through 1817.84.
- e) Coal processing waste dams and embankments. Coal processing waste dams and embankments shall be designed to comply with the detailed requirements of 62 Ill. Adm. Code 1817.81 through 1817.84. Each plan shall comply with the requirements of MSHA, 30 CFR 77.216-1 and 77.216-2, 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 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, embankments, 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; and
 - 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 30 CFR 77.216(a), each detailed plan under subsections (b), (c), and (e) shall include a stability analysis of each 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.

- g) Submission of MSHA certification documents for a detailed design plan under this Section shall satisfy the requirements of this Section insofar as the MSHA informational design standard requirements are duplicative of the requirements of this Section.

(Source: Amended at 24 Ill. Reg. 5998, effective March 21, 2000)

Section 1784.17 Protection of Public Parks and Historic Places

- 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 caused by surface mining related activities including, but not limited to, loss or destruction of historic artifacts and damage to historic structures or property; or
 - 2) If a person has valid existing rights, as determined under 62 Ill. Adm. Code 1761.16, or if joint agency approval is to be obtained under 62 Ill. Adm. Code 1761.17(d), to minimize adverse impacts.
- b) The Department, in consultation with the Illinois State Historic Preservation Agency, may require the applicant to protect historic or 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, taking into account mining plans and the amount of materials present, provided that the required measures are completed before the properties are affected by any mining operation. Appropriate mitigation and treatment measures for properties consisting of buried or surface deposits of archeological materials may include making the property available to any interested archeological investigators for study for a period of time that takes into account mining plans and the amount of materials present.

(Source: Amended at 27 Ill. Reg. 4678, effective February 26, 2003)

Section 1784.18 Relocation or Use of Public Roads

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 62 Ill. Adm. Code 1761.14, the applicant seeks to have the Department approve:

- a) Conducting the proposed surface activities of an underground mining operation within 100 feet measured horizontally 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, subject to State or local government approval.

(Source: Amended at 27 Ill. Reg. 4678, effective February 26, 2003)

Section 1784.19 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 surface operations and facilities, according to 62 Ill. Adm. Code 1817.71 through 1817.74. Each plan shall describe the geo-technical investigation, design, construction, operation, maintenance and removal, if appropriate, of the structures and be prepared according to 62 Ill. Adm. Code 1780.35.

Section 1784.20 Subsidence Control Plan

- a) Pre-subsidence survey. Each application must include:
 - 1) A map of the permit, shadow and adjacent areas at a scale of 1:12,000, or larger if determined necessary by the Department, showing the location and type of structures and renewable resource lands that subsidence may materially damage or for which the value of reasonably foreseeable use may be diminished by subsidence, and showing the location, depth 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.
- b) Subsidence control plan. No further information needs to be provided under this Section if the survey conducted under subsection (a) shows that: no structures or drinking, domestic, or residential water supplies or renewable resource lands exist; no material damage or diminution in value or reasonably foreseeable use of such structures or lands would occur; and no contamination, diminution, or interruption of such water supplies would occur as a result of mine subsidence;

and if the Department agrees with this conclusion. 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 Department 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 subsections (b)(4), (b)(5) and (b)(8)(A) 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, lithology of overlying and underlying strata, and geotechnical stability parameters that affect the likelihood of subsidence and subsidence related damage or potential underground mining impacts on ground water supplies;
- 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 62 Ill. Adm. Code 1817.121(c);
- 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:
 - A) Backstowing or backfilling of voids;
 - B) Leaving support pillars of coal;
 - C) Leaving areas in which no coal is removed, including a description of the overlying area to be protected by leaving coal in place;

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- D) Taking measures on the surface to prevent or minimize material damage or diminution in value of the surface; and
 - E) Geotechnical and engineering analysis of the mining geology and geometry, percent extraction and historic performance to substantiate a stable subsidence control plan;
- 6) A description of the anticipated effects of planned subsidence, if any;
 - 7) For those areas where unplanned subsidence is projected to be used, a description of procedures to determine the quantity and quality of drinking, domestic and residential water supplies in accordance with 62 Ill. Adm. Code 1817.121(a)(2), if impacts could reasonably be expected to cause material damage. The applicant may request an exemption from conducting surveys of drinking, domestic and residential water supplies required at 62 Ill. Adm. Code 1817.121(a)(2) if it can be demonstrated that material damage resulting from underground mining is not likely to occur. This demonstration shall be based on site specific geotechnical information, stability design and historical performance provided in subsection (b)(3) and (b)(5);
 - 8) For those areas where planned subsidence is projected to be used, provide:
 - A) a description of methods to be employed to minimize damage from planned subsidence to structures and facilities; 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;
 - B) a description of procedures to determine the condition of structures and facilities and the quantity and quality of drinking, domestic and residential water supplies in accordance with 62 Ill. Adm. Code 1817.121(a)(2), if impacts could reasonably be expected to cause material damage. The applicant may request an exemption from conducting structure condition surveys and/or surveys of drinking, domestic and residential water supplies required by 62 Ill. Adm. Code 1817.121(a)(2) if it can be demonstrated that material damage resulting from underground mining is not likely to occur. This demonstration shall be based on site specific geotechnical information, stability design and historical performance provided under subsections (b)(3) and (b)(6);

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- 9) A description of the measures to be taken in accordance with 62 Ill. Adm. Code 1817.41(j) and 1817.121(c) to replace adversely affected protected water supplies or to mitigate or remedy any subsidence related material damage to the land and protected structures. In conjunction with this requirement, the applicant shall:
- A) provide procedures to determine the existence and degree of material damage or diminution of value or foreseeable use of the surface, structures and facilities, or water quality and quantity. The procedures shall also address resolution of disputes between the landowner and the permittee over the existence, amount, level or degree of damage, such as third party arbitration; and
 - B) provide a plan for determining an appropriate present worth amount and describe how to resolve disputes between the landowner and the applicant over this amount, such as third party arbitration;
- 10) Other information specified by the Department as necessary to demonstrate that the operation will be conducted in accordance with 62 Ill. Adm. Code 1817.121.

(Source: Amended at 24 Ill. Reg. 5998, effective March 21, 2000)

Section 1784.21 Fish and Wildlife Plan

- 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 Department 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 subsection (b).
 - A) Prior to initiating such studies, the applicant shall contact the Department to determine, in accordance with subsection (B), what fish and wildlife resources information will be required.
 - B) The Department shall determine the level of detail and the areas of such studies according to:
 - i) Published data and other pertinent unpublished information;

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- ii) Site-specific information obtained by the applicant; and
 - iii) Written guidance obtained from agencies consulted.
 - 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:
 - A) 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 the Illinois Endangered Species Protection Act, Ill. Rev. Stat. 1989, ch. 8, par. 331 et seq.;
 - B) 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
 - C) Other species or habitats identified through agency consultation as requiring special protection under the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.) or the Illinois Endangered Species Protection Act (Ill. Rev. Stat. 1989, ch. 8, par. 331 et seq.), or other applicable 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 62 Ill. Adm. Code 1817.97;
 - 2) Apply, at a minimum, to species and habitats identified under subsection (a); and
 - 3) Include --
 - A) 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

- B) 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.
- c) Fish and Wildlife Service review. Upon request, the Department shall provide the resource information required under subsection (a) and the protection and enhancement plan required under subsection (b) 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.

(Source: Amended at 15 Ill. Reg. 17301, effective January 1, 1992)

Section 1784.22 Geologic Information

- a) 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, shadow 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 lowest coal seam to be mined;
 - 3) Determining whether required reclamation 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 62 Ill. Adm. Code 1784.20.
- b) Geologic information shall include, at a minimum:
 - 1) A description of the geology of the proposed permit, shadow 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. The description shall include the areal and structural geology of the permit, shadow and adjacent areas, and other parameters which influence the required reclamation and the occurrence, availability, movement, quality and quantity of potentially impacted surface and ground waters. It shall be based on:

- A) The cross-sections, maps and plans required by 62 Ill. Adm. Code 1783.25;
 - B) The information obtained under subsections (b)(2), (b)(3) and (c); and
 - C) 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:
- A) Logs showing the lithologic characteristics including physical properties and thickness of each stratum and location of ground water where occurring;
 - B) Chemical analyses identifying those strata that may contain acid- or toxic-forming or alkalinity-producing materials and to determine their content except that the Department may find that the analysis for alkalinity - producing materials is not necessary to assure protection to the hydrologic balance; and
 - C) Chemical analyses of the coal seam for acid- or toxic-forming materials, including total sulfur and pyritic sulfur, except that the Department may find that the analysis of pyritic sulfur is unnecessary to assure protection to the hydrologic balance.
- 3) For lands within the permit, shadow 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:

- A) Logs of drill holes showing the lithologic characteristics, including the physical properties and thickness of each stratum that may be impacted, and location of ground water where occurring;
 - B) 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;
 - C) Chemical analyses of the coal seam for acid- or toxic-forming materials, including the total sulfur and pyritic sulfur, except that the Department may find that the analysis of pyritic sulfur content is unnecessary to determine whether adverse impacts will occur to the hydrologic balance; and
 - D) For room-and-pillar mining operations, the thickness and engineering properties of clays or soft rocks 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 62 Ill. Adm. Code 1817, the Department shall require the collection, analysis and description of geologic information in addition to that required by subsection (b).
- d) An applicant may request the Department to waive in whole or in part the requirements of subsections (b)(2) and (b)(3). The waiver shall be granted only if the Department finds in writing that the collection and analysis of such data is unnecessary because other information having equal value or effect is available to the Department in a satisfactory form.

(Source: Amended at 11 Ill. Reg. 8652, effective July 1, 1987)

Section 1784.23 Operation Plan: Maps and Plans

Each application shall contain maps, plans, and cross-sections of the proposed permit and adjacent areas 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 operations, and any change in a facility or feature to be caused by the proposed operations, if the facility or feature was shown under 62 Ill. Adm. Code 1783.24 and 1783.25;
- 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 62 Ill. Adm. Code 1800;
 - 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 explosive storage and handling facility;
 - 10) Location of each sedimentation pond, permanent water impoundment, coal processing waste bank, and coal processing waste dam and embankment, in accordance with Section 1784.16 and disposal areas for underground development waste and excess spoil, in accordance with Section 1784.19;
 - 11) Each profile, at cross-sections specified by the Department, 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 1784.16(a)(2), 1784.16(a)(3), 1784.19, and 62 Ill. Adm. Code 1817.71(b), 1817.74(c) and 1817.81(c), cross-sections, maps and plans required under subsections (b)(4), (5), (6), (10) and (11) shall be prepared by, or under the direction of, and sealed by a qualified registered professional engineer licensed under The Illinois Professional Engineering Act (Ill. Rev. Stat. 1985, ch. 111, pars. 5101 - 5137), a qualified registered structural engineer

licensed under The Illinois Structural Engineering Act (Ill. Rev. Stat. 1985, ch. 111, pars. 6501 - 6530), or a qualified registered professional land surveyor licensed under The Illinois Land Surveyors Act (Ill. Rev. Stat. 1985, ch. 111, pars. 3201 - 3234), with assistance from experts in related fields such as geology and landscape architecture.

(Source: Amended at 11 Ill. Reg. 8652, effective July 1, 1987)

Section 1784.24 Transportation Facilities

- a) Each application shall contain a detailed description of each road, conveyor, and 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:
 - 1) Specifications for each road width, road gradient, road surface, road cut, fill embankment, culvert, bridge, drainage ditch, and drainage structure;
 - 2) A report of appropriate geotechnical analysis, where approval of the Department is required for alternative specifications or for steep cut slopes under 62 Ill. Adm. Code 1817.150;
 - 3) A description of each measure to be taken to obtain approval of the Department for alteration or relocation of a natural drainageway under 62 Ill. Adm. Code 1817.150;
 - 4) 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 Department under 62 Ill. Adm. Code 1817.150;
 - 5) The drawings and specifications for each proposed ford of a perennial or intermittent stream that is used as a temporary route, as necessary for approval of the ford by the Department in accordance with 62 Ill. Adm. Code 1817.151(c)(2);
 - 6) A general description of each road, conveyor, or rail system to be constructed, used, or maintained within the proposed permit area;
 - 7) A description of the plans to remove and reclaim each road that would not be retained under an approved post-mining 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 as meeting the requirements of 62 Ill. Adm. Code 1817.150

and 1817.151 in accordance with prudent engineering practices. The professional engineer shall be experienced in the design and construction of roads, as evidenced by the placement of a registered professional engineer's seal on the certification.

(Source: Amended at 15 Ill. Reg. 17301, effective January 1, 1992)

Section 1784.25 Return of Coal Processing Waste to Abandoned Underground Workings

- 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 Department and MSHA under 62 Ill. Adm. Code 1817.81(f).
- 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 subsections (a), (b), (c), and (d) shall also apply to pneumatic backfilling operations, except where the operations are exempted by the Department from requirements specifying hydrologic monitoring.
- f) This plan is required only if the applicant intends to return coal processing wastes to abandoned underground workings.

(Source: Amended at 11 Ill. Reg. 8652, effective July 1, 1987)

Section 1784.26 Air Pollution Control Plan

For all surface operations associated with underground mining activities, the application shall contain a plan for fugitive dust control practices, as required under 62 Ill. Adm. Code 1817.95.

(Source: Added at 11 Ill. Reg. 8652, effective July 1, 1987)

Section 1784.27 Rehabilitation of Siltation Structures, Diversions, Impoundments, and Treatment Facilities (Repealed)

(Source: Repealed at 17 Ill. Reg. 11031, effective July 1, 1993)

Section 1784.29 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 62 Ill. Adm. Code 1817.43.

(Source: Added at 11 Ill. Reg. 8652, effective July 1, 1987)

Section 1784.30 Support Facilities

Each applicant for an underground coal mining and reclamation operations 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 62 Ill. Adm. Code 1817.181 for each facility.

(Source: Amended at 15 Ill. Reg. 17301, effective January 1, 1992)