Chapter 14

Exploration for Coal by Drilling

Section 1. Conducting Exploration by Drilling.

(a) Any discoverer conducting exploration by drilling within this State, shall do so in strict compliance with all the provisions of W.S. § 35-11-404 (2015) and this Chapter.

(b) The requirements of this Chapter shall apply to exploration by drilling within and outside of the permit area of a surface coal mining and reclamation operation. The requirements of this Chapter shall not apply to backfill wells or coal developmental drilling conducted within five hundred (500) feet of the active mine area.

(c) Prior to any coal exploration by drilling inside a permit area where the drilling is located five hundred (500) feet or more from the active mine area, the developer shall notify the Administrator and adjust the reclamation bond for the coal permit.

(d) Prior to any coal exploration by drilling outside of the permit area of a surface coal mining and reclamation operation, the discoverer shall provide a Drilling Notification and a reclamation bond acceptable to the Administrator.

(e) The Drilling Notification shall be in a form as specified by the Administrator and shall include:

(i) The approximate number and depth of holes to be drilled; and

(ii) A map showing the approximate hole locations within the exploration area.

(f) The Administrator shall review the notification and the bond and shall notify the discoverer in a timely manner, not to exceed sixty (60) day from receipt, whether the drilling is approved or additional information is required.

(g) For the purpose of this Chapter, the discoverer's hole completion and surface restoration plan is a report or information which, if made public, would divulge trade secrets. Upon request by the discoverer, the Director and Administrator shall consider this report or information confidential pursuant to W.S. § 35-11-1101 (2015). This shall be deemed a request to hold the information confidential only for five years unless the discoverer justifies a longer period of time.

Section 2. General Drill Hole Abandonment Requirements.

(a) All drill holes sunk for the purpose of conducting exploration, including those drilled within the permit area of a surface coal mining and reclamation operation, by drilling

shall be capped, sealed or plugged in the manner described hereinafter.

(b) Drill holes that have artesian flow of groundwater to the surface shall be plugged with cement-based sealant material, as specified and in the manner described below, to prevent fluid communication and adverse changes in water quality or quantity.

(i) When the underground pressure head producing flow is such that a counter pressure must be applied to force a sealant into the drill hole, this counter pressure shall be maintained for the length of time required for the cementing mixture to set.

(ii) The minimum time that must be allowed for materials containing cement to "set" shall be in accordance with ASTM C150 or API RP 10B.

(c) Drill holes that have encountered any groundwater or saturated stratum shall be sealed utilizing sealant materials and emplacement methods as prescribed hereinafter to prevent fluid communication and adverse changes in water quality or quantity.

(d) "Sealant materials" are materials that are stable, have low permeability (1×10^{-7} cm/sec or less) and possesses minimum shrinking properties such that they are optimal sealing materials for well plugging and drill hole abandonment. Used drilling muds are not acceptable.

(e) Sealant materials shall meet the technical requirements for making a proper seal, shall meet applicable recognized industry standards and shall be prepared according to manufacturer's directions for specific site requirements. The following are approved sealant materials:

(i) Neat Cement Slurry must consist of a mixture of Portland Cement and more than six (6) gallons of clean water per bag of cement (one (1) cubic foot or ninety-four (94) pounds);

(ii) Sand Cement Slurry must consist of a mixture of Portland Cement, sand and water in the proportion of not more than one (1) part by weight of sand to one (1) part of cement with not more than six (6) gallons of clean water per bag of cement (one (1) cubic foot or ninety-four (94) pounds);

(iii) Concrete Slurry must consist of a mixture of Portland Cement, sand and gravel aggregate and water in a proportion of not more than one (1) peart by weight of aggregate to one (1) part of cement with not more than six (6) gallons of clean water per bag of cement (one (1) cubic foot or ninety-four (94) pounds);

(iv) Cement/Bentonite Slurry must consist of a mixture of cement and bentonite in the proportion of not more than six and a half (6.5) gallons of water and three (3) to five (5) pounds of powdered bentonite per bag of cement (one (1) cubic foot or ninety-four (94) pounds);

(v) High Solids Bentonite Slurry means an inorganic mixture with a slurry

density of nine and four tenths (9.4) pounds per gallon (lbs/gal) minimum twenty percent (20%) by weight of solids bentonite, with polymers, water or other additives for the yield/rate control, which forms a low permeability seal (not greater than one (1) x 10^{-7} cm/sec) and is mixed to the manufacturer's specifications;

(vi) Nonslurry Bentonite must consist of chipped or pelletized bentonite varieties specifically designed to be used to seal drill holes; and

(vii) Abandonment Gel means a mixture of bentonite with polymers and other additives and water in the proportion of one (1) barrel of water to fifteen (15) pounds of abandonment material with a minimum slurry density of eight and six tenths (8.6) pounds per gallon (lbs/gal). Abandonment Gel used to seal boreholes shall meet the following specifications when using American Petroleum Institute Standard Procedures for Testing Drilling Fluids:

(A) Ten minute gel strength of at least twenty (20) pounds per one hundred (100) square feet (20 lbs/100 sq. ft.);

(B) Filtrate volume not to exceed thirteen and one half (13.5) cubic centimeters (cc); and

(C) Minimum Marsh Funnel viscosity of sixty (60) seconds per quart.

(f) Sealant materials shall be emplaced in a manner that provides a water tight seal utilizing one of the following approved methods:

(i) By placing sealant materials by drill pipe, tremie pipe or similar device in an upward direction from the bottom of the drill hole to within approximately five (5) feet of the ground surface; or

(ii) By placing nonslurry bentonite from the bottom of the drill hole to within approximately five (5) feet of the ground surface. Nonslurry bentonite shall not be utilized unless the drill hole is four (4) inches or greater in diameter and less than five hundred (500) feet in depth and the material must be placed in such a manner that a bridge does not occur. Nonslurry bentonite may not be placed in more than three hundred (300) feet of standing liquid.

(g) For any drill hole that has been sealed with a sealant material, the discoverer responsible for sealing the drill hole shall;

(i) Measure the depth of the top of the sealant material column with the appropriate equipment after sufficient time (minimum of twenty-four (24) hours) has been allowed for the column of sealant materials to set up;

(ii) If the column of sealant material has dropped or fallen back, the discoverer shall continue to install sealant material until the top of the sealant material column remains at least fifty (50) feet above the top of the uppermost saturated groundwater stratum; and

(iii) Install uncontaminated fill material, drill cuttings or one of the approved sealant materials listed herein from the top of the sealant material column to within approximately five (5) feet of the ground surface.

(h) If a hole is drilled without the use of drilling fluids and the bottom of the hole is above the preexisting natural elevation of the uppermost saturated groundwater stratum, the drill hole shall be abandoned by completely backfilling from the bottom of the drill hole to the surface with uncontaminated earthen material or drill cuttings as a backfill material, this material should be emplaced in a manner to promote settling and compaction and to minimize voids caused by bridging. If the drill hole is backfilled to the natural ground surface with dry nonslurry materials, then no surface cap is necessary.

(i) All drill holes shall be backfilled to the surface with dry nonslurry materials or capped with a concreted cap set at least two (2) feet below the ground surface and then backfilled to the surface with native earthen materials to ensure the safety of people, livestock, fish and wildlife, and machinery in the area.

(j) Drill holes shall be capped or backfilled immediately after drilling and probing in accordance with W.S. §35-11-404(h) (2015). If it is necessary to temporarily delay the abandonment or keep the drill hole open for any reason, the drill hole must be securely covered with a temporary cap in a manner which will prevent injury to persons or animals. Drill holes shall not be left open for more than thirty (30) days without specific authorization from the Administrator.

(k) For inspection and verification purposes, each drill hole shall be marked with a temporary marker that clearly identifies the name of the discoverer and the hole number until bond release is authorized. Drill holes shall not be marked with rebar, metal pipe or metal posts which could pose a hazard to people, livestock, wildlife or machinery.

(l) The Administrator may approve other drill hole abandonment procedures and/or sealant materials at the request of the discoverer.

Section 3. Reclamation of Drill Sites and Affected Lands

(a) Drill sites and associated ancillary roads, as defined in Chapter 1 and 4 of these rules and regulations, shall be restored as nearly as possible to their original location.

(b) To the extent possible, all drilling fluids, drill cuttings and geologic samples shall be handled in the following manner:

(i) For those drill holes abandoned as per Subsection 2(h) of this chapter, remaining drill cuttings may be spread on the surface in such a manner as to prevent impairment of vegetation. Excess drilling mud and drill cuttings or any acid-forming or toxic materials uncovered during or created by exploration by drilling, including petroleum contaminated soils, shall be properly disposed of so as not to constitute a fire, health, or safety hazard during or after the exploration by drilling.

(ii) For all other drill holes: drilling fluids, drill cuttings and geologic samples shall be confined and buried below grade to the extent possible. Excess drilling mud and drill cuttings or any acid-forming or toxic materials uncovered during or created by exploration by drilling, including petroleum contaminated soils, shall be properly disposed of so as not to constitute a fire, health, or safety hazard during or after the exploration by drilling.

(c) To the extent possible, any surface preparation of the drill site shall be accomplished in a manner consistent with Chapter 4, Section 2(b), Land Quality Coal Rules and Regulations.

(d) To the extent possible, topsoil removal and stockpiling shall precede any excavation within the drill site and associated ancillary roads in a manner consistent with Chapter 4, Section 2(c) and 2(j), Land Quality Coal Rules and Regulations.

(e) To the extent possible, the discoverer shall reestablish the vegetative cover where vegetation has been removed or destroyed within the drill site and associated ancillary roads by seeding, planting, transplanting, or by other adequate methods in a manner consistent with Chapter 4, Section 2(d) and 2(i), Land Quality Coal Rules and Regulations.

(f) All lands, including ancillary roads or terrain damaged in gaining access to or clearing the site, or lands whose natural state has been substantially disturbed as a result of the exploration by drilling, shall be restored as nearly as possible to their original condition, including reseeding if grass or other crop was destroyed.

Section 4. Bond.

(a) In order to assure and secure performance of the discoverer's obligations, each discoverer shall agree to post a bond for each exploration area. The amount of the bond shall be computed in accordance with the established engineering principles, for accomplishing proper drill hole abandonment and surface restoration in accordance with the standards set out in this Chapter.

(b) The bond amount for any drill holes or any portion of the exploration area may be reduced when the discoverer demonstrates to the satisfaction of the Administrator that drill hole abandonment has been accomplished in accordance with the standards set out in this Chapter. The amount by which the bond is reduced may be returned to the discoverer or applied towards additional drilling. The bond for any drill sites or any portion of the exploration area may be released when reclamation has been completed and the Administrator finds that vegetation has been reestablished. All bonds shall be signed by the discoverer as principal, by a good and sufficient corporate surety licensed to do business in the State, and be made payable to the State of Wyoming.

(c) In lieu of a bond, the discoverer may deposit federally insured certificates of deposit payable to the Department of Environmental Quality, cash or government securities or all three.

(d) The Administrator may accept the bond of the discoverer itself without separate surety when the discoverer demonstrates to the satisfaction of the Administrator substantial compliance with the applicable provisions of Chapter 11, Land Quality Coal Rules and Regulations.

Section 5. Termination and Report of Operations.

(a) Within 12 months after compliance with 3(a) and sufficient compliance with 3(b) and (c) so that full compliance can be predicted by the Administrator, the discoverer shall comply with the reporting requirements of W.S. § 35-11-404(e) or (f) (2015). After receipt of such report, the Administrator shall have one year to inspect and evaluate the hole completion and surface restoration work and make a determination of whether to release the bond to the discoverer or institute forfeiture proceedings.

(b) Forfeiture proceedings and release of bonds shall be according to the procedure set forth in W.S. §§ 35-11-421 through 35-11-423 (2015); substituting therein "discoverer" for "operator"; "surface restoration" for "reclamation" and "exploration by drilling" for "surface mining".

(c) Failure to so inspect and evaluate shall constitute a decision by the Administrator that the discoverer has complied with this Chapter for release of bond purposes only. This one-year limitation shall not be construed to alter or affect W. S. § 35-11-404(k) - (n) (2015), or any other rights of action against the discoverer granted pursuant to the statutory provisions of the Wyoming Environmental Quality Act.

Section 6. Exceptions.

This Chapter shall not apply to holes drilled for the purpose of conducting oil and gas exploration operations. Specific exceptions from certain requirements of this Chapter shall also be preserved in accordance with W.S. § 35-11-404(g) and (h) (2015).

Section 7. Installation of Wells for Collection of Baseline Information.

(a) Construction of wells may be authorized by the Administrator under a Drilling Notification for the purpose of collecting groundwater baseline data in preparation of a mine permit application.

(b) Prior to installation, the discoverer is encouraged, but not required, to submit a plan for review by the Administrator that describes the location and completion details of each proposed well. The Administrator shall review the plan and respond within thirty (30) days.

(c) Wells shall be permitted in accordance with the requirements of the State Engineer's Office, in accordance with W. S. §35-11-404(c)(iv) (2015).

(d) Provisions shall be made such that each well is secured to prevent contaminant entry.

(e) Adequate bond shall be provided to assure that all wells are properly plugged and sealed and the sites restored.

(f) Well plugging and sealing and site reclamation shall follow the procedures outlined in Sections 2 and 3. Well casing shall be cut off at least two (2) feet below ground surface and any pump and associated appurtenances removed as applicable, before the well is plugged and sealed.

(g) Well abandonment reports shall be filed with the Administrator and the State Engineer's Office within twelve (12) months of abandonment.