



1 ENERGY AND ENVIRONMENT CABINET
2 Department for Energy Development and Independence
3 Division of Oil and Gas Conservation
4 (Amendment)

5 805 KAR 1:140. Directional and horizontal wells.

6 RELATES TO: KRS 353.520

7 STATUTORY AUTHORITY: KRS [~~Chapter 13A,~~] 353.540, 353.550

8 NECESSITY, FUNCTION, AND CONFORMITY: KRS 353.550 requires the Department
9 for Natural Resources to regulate the drilling and casing of all wells and filing of all downhole
10 surveys. This administrative regulation identifies the requirements for permitting directional and
11 horizontal wells.

12 Section 1. Definitions. [~~The definitions in KRS 353.510 and the following additional~~
13 ~~definitions shall apply to this administrative regulation:~~]

14 (1) "Abnormal pressure" means a reservoir pressure that exceeds the hydrostatic pressure of
15 fresh water extending from the reservoir to the surface.

16 (2) "Annulus" means the space between two (2) strings of casing or between a string of
17 casing and the bore hole wall.

18 (3) "Blow-out preventer (BOP)" means a device installed on the surface or intermediate
19 casing to prevent the escape of pressure either in the annulus between casing and drill pipe or in the
20 open hole without drill pipe and which is used during drilling operations.

21 (4) "Casing [~~(casing string)~~]" means steel tubes or pipes installed in a well.

1 (5) "Cement" means hydraulic cement properly mixed with water or with additives
2 approved by the director, and which is used to fill the annulus of casing string [~~string(s)~~] or to plug
3 the well.

4 (6) "Deep well" means any well drilled and completed below the depth of 4000 feet or, in
5 the case of a well located east of longitude line eighty-four (84) degrees thirty (30) minutes, a well
6 drilled and completed at a depth below 4000 feet or below the base of the lowest member of the
7 Devonian Brown Shale, whichever is deeper.

8 (7) "DES" means the State Disaster and Emergency Services Office [~~under authority of the~~
9 ~~Department of Military Affairs in Frankfort, Kentucky, with regional offices throughout the~~
10 ~~Commonwealth~~].

11 (8) "Directional and horizontal drilling" means the science of directing a well bore along a
12 predetermined course to a target [~~target~~] located a given distance from the vertical.

13 (9) "Directional survey" is defined by KRS 353.010(8). [~~means a survey taken while~~
14 ~~drilling using continuous measuring technology or a survey made through drill tools at such~~
15 ~~intervals to accurately determine the location of the deviated well bore.~~]

16 (10) "Intermediate casing" means one (1) or more strings of pipes installed in a well in
17 addition to the surface casing in which each string is smaller in diameter than the previous.

18 (11) "Intersection length" means the horizontal distance between the point at which the
19 well penetrates the top of the intended formation and the end point within that formation.

20 (12) "Long casing string" means the last casing installed in a well to be used for production
21 or injection purposes.

22 (13) "Measured depth" means the total depth measured in the well from the surface.

1 (14) "Surface casing" means the first and largest diameter casing installed in a well and its
2 primary uses are to make the bore hold stand up and to protect the fresh water zones.

3 (15) "True vertical depth" means the depth of the well from any point in the well being
4 measured to the surface of the ground above the point being measured.

5 (16) "Zone" means a layer of strata capable of producing or receiving fluids.

6 Section 2. Information Submittal. (1) Prior to drilling a directional or horizontal well, the
7 operator shall submit the following information:

8 (a) [(1)] An application form ED 1, for a permit to drill the well, with a cover letter from
9 the operator making a request for drilling the horizontal or directional well. [~~The application for
10 permit form ED 1 revised March 3, 1990, is filed and incorporated herein by reference. Copies of
11 this form may be obtained from the Department for Natural Resources, 1025 Capital Center Drive,
12 Suite 201, P.O. Box 2244, Frankfort, Kentucky 40602 2244, Monday through Friday, 8 a.m. to
13 4:30 p.m. A bond as required in KRS 353.590(5) and an application fee of \$100 shall be submitted
14 with the application.]~~

15 (b) [(2)] Three (3) copies of a location plat satisfying the requirements of 805 KAR 1:030
16 (plan view), in addition to the following requirements:

17 1. [(a)] The surface location and proposed target formation with their respective "Carter
18 Coordinates".

19 2. [(b)] The proposed course of the well.

20 3. [(c)] The identification of the intersection length of the proposed well and the proposed
21 producing formation(s). To avoid any conflicts with the spacing requirements, a dashed line shall
22 be drawn around the intersection length with regard to the spacing requirements in KRS 353.610

1 or, for deep wells, 805 KAR 1:100 and KRS 353.651 and 353.652. This distance shall be clearly
2 shown in feet.

3 (c) A bond as required in KRS 353.590(5); and

4 (d) An application fee of \$300.

5 (2)(a) [(3)] In addition to the plan view required in this section, the operator shall submit
6 three (3) copies of a plat which shows a vertical cross-section view of the area to be drilled by the
7 well. (b) This cross-section shall be prepared from the proposed "predrill hole" directional survey
8 compiled by the contractor responsible for the directional control mechanism and certified as
9 required by 805 KAR 1:030, Sections 2 and 7(1)(k) [6(11)].

10 (c) The cross-section shall include the area from the well site to the target made through the
11 proposed course of the well.

12 (d) The surface shall be located as zero in reference to the depth and the lateral distance
13 from the well site and true vertical depths shall be shown for all of the following:

14 1. The kick-off point or selected depth at which the deviation is started;

15 2. The known coal seams to be intersected;

16 3. The producing interval;

17 4. The proposed producing formation; and

18 5. The proposed target.

19 ~~[(a) The kick-off point or selected depth at which the deviation is started.~~

20 ~~(b) The known coal seams to be intersected.~~

21 ~~(c) The producing interval(s).~~

22 ~~(d) The proposed producing formation(s).~~

23 ~~(e) The proposed target.]~~

1 (3) [(4)] When the permit is issued, the operator shall provide verbal or written notice to the
2 department field inspector at least forty-eight (48) hours in advance of the commencement of
3 drilling operations.

4 (4) [(5)] Once the well has been drilled and completed, the following shall be submitted
5 within ten (10) days from the date of completion.

6 (a) Three (3) copies of an amended plan view of the well location plat required in
7 paragraph (b) 1., 2., and 3. of subsection (1) [subsection (2)(a), (b), and (c) of this section], with the
8 actual course drilled, the kick-off point and the actual target superimposed on the proposed well
9 location plat. A correction in the target Carter Coordinates, if necessary, shall then be issued by the
10 department; and

11 (b) Three (3) copies of the side or cross-sectional view plat required in paragraph (d)1.
12 through 5. of subsection (2) [subsection (3)(a) through (e)] of this section shall be amended for the
13 actual path of the well, showing the actual formation(s), coal seams, target, kick-off point; and

14 (c) Copies of all directional surveys certified by the operator and the contractor responsible
15 for the directional survey. This survey shall be submitted for the entire well bore, and the operator
16 shall be able to identify the path or depth of the well bore at any given time during and after the
17 drilling of the directional or horizontal well. The survey points shall be made at each tool joint or at
18 any intervals more frequent; and

19 (d) On Form ED-8, the operator shall record the lateral offset from the well in feet and the
20 true vertical depth for the producing interval and formation and the coal seam intersections and
21 their true vertical depth. [~~The operator certification of formation offset and vertical depth Form~~
22 ~~ED-8, dated August 1, 1991, is filed and incorporated herein by reference. Copies of this form may~~

1 ~~be obtained from the Department for Natural Resources, 1025 Capital Center Drive, Suite 201,~~
2 ~~P.O. Box 2244, Frankfort, Kentucky 40602-2244, Monday through Friday, 8 a.m. to 4:30 p.m.]~~

3 (5) [(6)] The operator shall satisfy spacing requirements of offset mineral boundary lines
4 and between wells for the actual drilled course of the well and its end point and the intersection of
5 the well bore and the producing formations.

6 (6) [(7)] All coal operators or owners affected by the drilling of a directional or a horizontal
7 well shall be provided a copy of the predrill plat and cross-section plat described in paragraph (b)
8 of subsection (1) and subsection (2) [~~subsections (2) and (3)~~] of this section as required by KRS
9 353.050 and 353.060. Within ten (10) days after the well is drilled, the operator shall submit to the
10 coal operator or owner the revised plats and deviation survey log required in subsection (5) of this
11 section.

12 (7) [(8)] The requirements for a deep directional or horizontal well shall satisfy those
13 requirements set out in 805 KAR 1:100 and KRS 353.651 and 353.652 regarding the application
14 process and spacing units. Prior to the deep directional or horizontal well being drilled, a hearing
15 shall be held before the Kentucky Oil and Gas Conservation Commission.

16 Section 3. When an application for a directional or horizontal permit is submitted to the
17 department, the operator shall prepare a detailed drilling and casing plan on Form ED-7 for the
18 review by and the approval of the department. [~~This casing and cementing Form Ed 7 dated~~
19 ~~August 1, 1991 is filed and incorporated herein by reference. Copies of this form may be obtained~~
20 ~~from the Department for Natural Resources, 1025 Capital Center Drive, Suite 201, P.O. Box 2244,~~
21 ~~Frankfort, Kentucky 40602-2244, Monday through Friday, 8 a.m. to 4:30 p.m.] The items
22 requested in 805 KAR 1:130, Section 2(1), (2) and (3) shall be submitted with this plan.~~

1 Section 4. The operator shall install a blow-out prevention device capable of withstanding a
2 working pressure of 1500 psi and a test pressure of 3000 psi. A description of this device and its
3 installation shall be included with the drilling and casing plan required in Section 3 of this
4 administrative regulation. This BOP equipment shall be tested at intervals necessary to maintain its
5 ability to operate at rated capacity. The results of these tests shall be kept at the drill site and made
6 available to department personnel at their request.

7 Section 5. The requirements of 805 KAR 1:130, Sections 4, 5 and 6 shall also apply to this
8 administrative regulation.

9 Section 6. An operator in noncompliance with the requirements of this administrative
10 regulation is subject to penalties pursuant to KRS 353.991.

11 Section 7. Incorporation by Reference. (1) The following material is incorporated by
12 reference:

13 (a) "Application Form" ED 1, March 1990;

14 (b) "Casing and Cementing Form" ED 7, August 1991; and

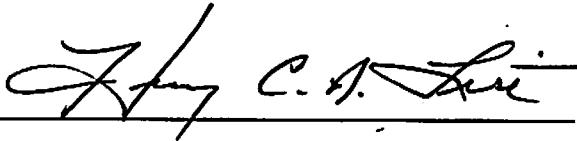
15 (c) "Operator Certification of Formation Offset and Vertical Depth Form" ED 8, August
16 1991.

17 (2) This material may be inspected, copied, or obtained, subject to applicable copyright
18 law, at the Division of Oil and Gas Conservation, 1025 Capital Center Drive, Suite 201, Frankfort,
19 Kentucky 40602-2244, Monday through Friday, 8 a.m. to 4:30 p.m.

805 KAR 1:140 approved for filing.
Pages (1-7)

10-12-09

Date



A handwritten signature in cursive script, appearing to read "Henry C. A. List", is written above a horizontal line.

Henry C. A. List, Deputy Secretary
Signing for
Leonard K. Peters, Secretary
Energy and Environment Cabinet

PUBLIC HEARING AND PUBLIC COMMENT PERIOD: A public hearing on this administrative regulation shall be held on July 21, 2009 at 10:00 A.M. (Eastern Time) at Conference Room D-16 of the Department for Natural Resources at #2 Hudson Hollow, Frankfort, Kentucky. Individuals interested in being heard at this hearing shall notify this agency in writing July 14, 2009, five workdays prior to the hearing, of their intent to attend. If no notification of intent to attend the hearing is received by that date, the hearing may be cancelled. This hearing is open to the public. Any person who wishes to be heard will be given an opportunity to comment on the proposed administrative regulation. A transcript of the public hearing will not be made unless a written request for a transcript is made. If you do not wish to be heard at the public hearing, you may submit written comments on the proposed administrative regulation. Written comments shall be accepted until July 31, 2009. Send written notification of intent to attend the public hearing or written comments on the proposed administrative regulation to the contact person.

CONTACT PERSON: Kim Collings, Director
Division of Oil and Gas Conservation
1025 Capital Center Drive, Suite 201
Frankfort, KY 40601
Telephone: (502) 573-0147 Fax (502) 573-1099
Email: Kim.Collings@ky.gov

REGULATORY IMPACT ANALYSIS
AND TIERING STATEMENT

Administrative Regulation No.: 805 KAR 1:140

Contact Person: Kim Collings, Director

(1) Provide a brief summary of:

(a) What this administrative regulation does: This administrative regulation identifies the requirements for permitting directional and horizontal wells.

(b) The necessity of this administrative regulation: This administrative regulation is necessary to detail requirements for obtaining a permit for directional and horizontal wells.

(c) How this administrative regulation conforms to the content of the authorizing statutes: KRS 353.550 requires the Department for Natural Resources to regulate the drilling and casing of all wells and filing of all down-hole surveys. This administrative regulation identifies the requirements for permitting directional and horizontal wells.

(d) How this administrative regulation currently assists or will assist in the effective administration of the statutes: This administrative regulation identifies the permit requirements for directional and horizontal wells for regulated entities.

(2) If this is an amendment to an existing administrative regulation, provide a brief summary of:

(a) How the amendment will change this existing administrative regulation: This amendment introduces information regarding horizontal and directional wells as it relates to HB 452 from the 2009 legislative session. This amendment revises the definition of "Directional Survey" in order to match the statutory definition from HB 452. Also this amendment corrects language to make the regulation KRS 13A compliant and changes the permit fee from \$100 to \$300 in order to comply with a past statutory change which wasn't reflected in the regulation.

(b) The necessity of the amendment to this administrative regulation: This amendment is necessary to introduce information regarding horizontal and directional wells as it relates to HB 452 from the 2009 legislative session. This amendment is in an effort to reduce confusion pertaining to the definition of "Directional Survey".

(c) How the amendment conforms to the content of the authorizing statutes: This amendment adds language related to horizontal and directional wells as it relates to the changes introduced by HB 452. KRS 353.590(2)(a) authorizes the division to charge a \$300 fee for each permit application it receives. The amount is being increased from \$100 to \$300 in order to comply with a past statutory change which wasn't reflected in the regulation.

(d) How the amendment will assist in the effective administration of the statutes: This amendment will assist in the administration of the statutes by providing clarification to the definition and addressing any issues related to KRS 13A.

(3) List the type and number of individuals, businesses, organizations, or state and local governments affected by this administrative regulation: The amendment will affect those entities that drill wells through a workable coal bed. The division currently has approximately 1800 operators that could be affected.

(4) Provide an analysis of how the entities identified in question (3) will be impacted by either the implementation of this administrative regulation, if new, or by the change, if it is an amendment, including:

(a) List the actions that each of the regulated entities identified in question (3) will have to take to comply with this administrative regulation or amendment: This amendment will not require those entities to perform any additional tasks.

(b) In complying with this administrative regulation or amendment, how much will it cost each of the entities identified in question (3): There will be no additional cost associated with this amendment.

(c) As a result of compliance, what benefits will accrue to the entities identified in question (3): The entities will benefit by a clarification of the definition of "Directional Survey".

(5) Provide an estimate of how much it will cost the administrative body to implement this administrative regulation:

(a) Initially: There will be no costs to the agency associated with implementation.

(b) On a continuing basis: There will be no continuing costs to the agency.

(6) What is the source of the funding to be used for the implementation and enforcement of this administrative regulation: A new fee will be promulgated in a separate administrative regulation which will be packaged with this administrative regulation for promulgation. The new fee will be \$50 and was authorized by HB 452.

(7) Provide an assessment of whether an increase in fees or funding will be necessary to implement this administrative regulation, if new, or by the change if it is an amendment: This regulation does not increase or establish any fees. However, a new fee will be promulgated in a separate administrative regulation which will be packaged with this administrative regulation for promulgation. The new fee will be \$50 and was authorized by HB 452.

(8) State whether or not this administrative regulation established any fees or directly or indirectly increased any fees: This administrative regulation does increase the permit

application fee in order to comply with KRS 353.590(2)(a). The statute was amended in the early 1990's however due to an oversight the regulation wasn't amended to match the statute. The \$300 fee is currently being paid by those entities that submit a permit application. This increase will not be new to them.

(9) TIERING: Is tiering applied? (Explain why or why not) No. The same process and procedures are required by entities that drill a well through a workable coal bed.

FISCAL NOTE ON STATE OR LOCAL GOVERNMENT

Admin. Regulation No. 805 KAR 1:140 Contact Person: Kim Collings, Director

1. Does this administrative regulation relate to any program, service, or requirements of a state or local government (including cities, counties, fire departments, or school districts)?

Yes X No

If yes, complete questions 2-4.

2. What units, parts or divisions of state or local government (including cities, counties, fire departments, or school districts) will be impacted by this administrative regulation? This amendment will impact the Division of Oil and Gas Conservation.

3. Identify each state or federal statute or federal regulation that requires or authorizes the action taken by the administrative regulation. KRS 353.540 and 353.550.

4. Estimate the effect of this administrative regulation on the expenditures and revenues of a state or local government agency (including cities, counties, fire departments, or school districts) for the first full year the administrative regulation is to be in effect.

(a) How much revenue will this administrative regulation generate for the state or local government (including cities, counties, fire departments, or school districts) for the first year? This amendment will not generate any additional revenue. The permit fee is being increased in order to match the value in KRS 353.590(2)(a) but this is a fee that has been paid by the permit applicant since the early 1990's when the statute was changed.

(b) How much revenue will this administrative regulation generate for the state or local government (including cities, counties, fire departments, or school districts) for subsequent years? This amendment will not generate any additional revenue.

(c) How much will it cost to administer this program for the first year? There are no additional costs associated with this amendment.

(d) How much will it cost to administer this program for subsequent years? There are no additional costs associated with this amendment.

Note: If specific dollar estimates cannot be determined, provide a brief narrative to explain the fiscal impact of the administrative regulation.

Revenues (+/-):

Expenditures (+/-):

Other Explanation: