

APPENDIX A

KENTUCKY DIVISION OF OIL & GAS
CLASS II PERMIT APPLICATION CHECKLIST

OPERATOR: _____
WELL NAME: _____ **WELL NUMBER:** _____
NEW WELL **EXISTING WELL (PROPOSED CONVERSION)**
DATE APPLICATION REC'D: _____ **DOG FILE NO. :** _____

- DOG Class II permit application** (Form ED- 14) completed and properly filled out and signed by an authorized agent of the applicant. 805 KAR 1:110 (2), KRS 353.570 (1) and (2).
- A well location plat map** included with the permit application in accordance with 805 KAR 1:030.

Area of Review (AOR) (805 KAR 1:110 (7))

- A 7.5' topographic map with the Area of Review (AOR) clearly marked and circumscribing a distance of ¼ mile around the proposed injection well.

The map shall also show:

- The number or name and location of existing producing wells, injection wells, abandoned wells, dry holes, plugged wells and domestic water wells
- Surface and subsurface mines, quarries and other pertinent surface features including permanent residences and all primary/secondary roads
- Known or suspected faults (identified on USGS 7.5' quads)
- Location of hazardous waste treatment or disposal facilities.
- Location of all surface and subsurface mines, quarries, residences, roads, and known or suspected faults within the AOR. Only information of public record and pertinent information known to the applicant is required
- Location of distribution manifold applying injection fluid to wells in the AOR including all system monitoring points
- Location of all rivers and streams
- Location, names and mailing addresses of all permanent residences

Additional supplemental information required for AOR:

- Tabulation of well data including a description of well type, wellbore construction, date drilled, location, total depth, producing horizon(s), record of plugging or well completion.
- Record of completion and plugging for each well which penetrates the injection zone, and any other wells within the AOR which would be affected by proposed increase in pressure if the injection well is operated over the fracture pressure of the injection formation.
- For wells in the AOR which are improperly sealed, completed, or abandoned, a corrective action plan which consists of steps or modifications to prevent movement of fluid into a USDW is required.

Wellbore Schematic of the Proposed Class II Well (805 KAR 1:110 (11)(d)(e))

- Total Depth (or plug-back depth) of well
- Depth of injection or disposal interval
- Geologic name of the injection zone or disposal zone
- Vertical distance separating the top of the injection zone from the base of the USDW
- Depth of the top and the bottom of all casing strings and cement displaced
- Size of the production casing and tubing and the depth of the packer
- Depth to the base of the deepest USDW

Laboratory Sample Analysis of Parameters in Injected Fluid (805 KAR 1:110 (11)(2)(e)(2))

- Barium (If Sulfate is less than 500 mg/l)
- Calcium
- Total Iron
- Magnesium
- Sodium
- Bicarbonate
- pH
- Specific Gravity
- Carbon Dioxide
- TDS
- H₂S

Operating Data (805 KAR 1:110 (11)(2)(g)(5))

- Estimated maximum injection pressure
- Estimated average injection pressure
- Estimated maximum daily injection rate and volume
- Estimated average daily injection rate and volume
- Material Safety Data Sheet (MSDS) for all inhibitors added to injection fluid
- Nature of the annulus fluid between the tubing and casing
- Amount of inhibitor
- Pressure at which the annulus will be maintained

Geologic Data on the Injection and Confining Zones (805 KAR 1:110 (5)(4))

- A description of the injection zone including: lithologic description, geologic name, thickness, & depth.

Underground Sources of Drinking Water (USDW) (805 KAR 1:110 (11)(2)(h))

- All USDW's within the AOR shall be described through which the well would penetrate:
 - o Geologic Description and Name
 - o Depth to bottom of USDW

Construction Procedures (805 KAR 1:110(11)(2)(i))

Description of the current or proposed casing program on the Casing and Cementing Plan for UIC Wells (Form ED-25) and shall include the following:

- Casing size, weight, and type.
- Cement volume (sacks, bbls, or ft³) and type.
- Packer type.

Stimulation Program (805 KAR 1:110 (11)(2)(j))

- Proposed stimulation (fracturing or acidizing) program, if no program is proposed, then state so.

Plan for Shut-ins and Well Failures (805 KAR 1:110 (11)(2)(k))

- Description of proposed contingency plans to cope with all shut-ins or well failures so as to prevent migration of fluids into USDWs.

Injection Procedures (805 KAR 1:110 (11)(2)(l))

- If a manifold monitoring program is utilized, a description of the program and a demonstration equivalence to individual well monitoring.

Plugging and Abandonment Plan (805 KAR 1:110 (10) (805 KAR 1:060 or 805 KAR 1:070))

- Proposed plugging and abandonment plan
- Current Cost needed to properly, close, plug and abandon the well(s)

Financial Responsibility (805 KAR 1:110 (8))

- Demonstration of financial responsibility is required to properly plug and abandon the well to the satisfaction of DOG.

Aquifer Exemption (805 KAR 1:110 (3))

If an aquifer exemption is requested, necessary data must be submitted to verify the exemption meets the following criteria:

- It does not currently serve as a source of drinking water.
- It cannot now and will not in the future serve as a source of drinking water:
 - It is a mineral, hydrocarbon, or geo-thermal energy producing, or may be demonstrated to contain minerals or hydrocarbons that, considering their quantity and location, are expected to be commercially producible.
 - It is situated as a depth or location which makes recovery of water for drinking water purposes economically or technologically impractical.
 - It is so contaminated that it would be economically or technologically impractical to render the water fit for human consumption.
 - The TDS (total dissolved solids) content of the groundwater is more than 3,000 mg/l, and less than 10,000 mg/l and it is not reasonably expected to supply a public water system.

Corrective Action Plans for Wells in the AOR (805 KAR 1:110 (7)(4)(a)(b))

Wells in the AOR which are improperly sealed, completed or abandoned require a corrective action plan which will include procedures to prevent vertical migration of fluid into USDW's. DOG will review the well type, well construction, date drilled, carter coordinate location, depth, record of completion and/or plugging affidavits for each well in the AOR that penetrates the injection zone. DOG will consider following factors during evaluation of corrective action plan:

- Nature and volume of injected fluids
- Nature of native fluids or by-products of injection
- Potentially affected population
- Geology
- Hydrology
- History of injection operations
- Well Log and Completion Reports
- Plugging Affidavits and plugging records upon abandonment
- Hydraulic connections with USDW's

Notification Process (805 KAR 1:110 (11)(4))

Applicant shall personally or by certified mail, submit written notification to:

- Each owner of rights to the surface or subsurface property that the well penetrates
- Owner of any property within the AOR
- Owner/operator of any oil/gas well (producing or shut-in) within AOR
- Permittee of any underground mine within AOR

In addition, applicant shall place a "Notice of Permit Application" in a newspaper of general circulation in the county the proposed well is located. Individual and publication notices shall include:

- Name and address of applicant
- Location of proposed well
- Geological name and depth of the injection zone
- Maximum injection pressure
- Maximum rate of barrels each day

The notice shall specify that a person who wishes to object to the issuance of a Class II permit may submit written comments or request a hearing.