CLASS V
UNDERGROUND INJECTION CONTROL
PERMIT APPLICATION FOR THE PURPOSE OF
AQUIFER RECHARGE AND/OR STORAGE

Submit to:
Kansas Department of Health Environment
Division of Environment
Bureau of Water
Geology Section
1000 SW Jackson St. Suite 420
Topeka, Kansas 66612-1367

Date of Application:_____
KDHE UIC Permit No.:_____

Well (s)#_____

Legal Description: ____1/4 ____1/4 ____1/4
_____Sec. _____, T _____ S, R _____ (E) (W)
_____ feet from south line of SE/4
_____ feet from east line of SE/4

Owner's Name, Telephone Number,
Mailing and E-Mail Addresses:
_____
_____
_____
_____

County _____

G.P.S. location of each injection well:
Latitude _____ Longitude _____

Operator's Name, Telephone Number,
Mailing and E-Mail Addresses:
_____
_____
_____
_____
_____

Contact Person's Name and Mailing Address:
_____
_____
_____
_____
_____

Contact Person's Information:
Phone: _____
Fax: _____
E-mail: _____

In conformity with the provisions of K.S.A. 65-164, 65-165, and 65-171d, the undersigned, representing

_____
(Name of company, corporation or person applying)

hereby makes application to KDHE for a permit to inject fluid into the subsurface for the purpose of aquifer recharge and/or storage.

1. Describe the purpose and scope of the project.

2. Describe in detail the function of the well(s) in this project

3. Describe the fluids to be injected. Include predicted concentrations of the parameters of concern in the injection fluid. Provide analytical results of a representative sample of the injection fluid. Provide information for any additives including Material Safety Data Sheets. Additional testing of the fluid to be injected may be required after review of the application and pertinent information. All analyses shall be conducted by a laboratory certified by the State of Kansas.

4. Describe the formation fluids receiving the injection fluid. Provide analytical results of a representative sample of the formation fluid. All analyses shall be conducted by a laboratory certified by the State of Kansas.

5. Conduct a study of the compatibility of the injection fluid with the formation fluids. Special consideration of any adverse impacts to the formation fluids due to injection should be discussed.

6. Provide a description of the injection zone including lithology, hydrology, porosity, permeability, groundwater flow velocity, transmissivity, and coefficient of storage. Include geologic maps, diagrams, geologic cross-sections, a piezometric surface map, and results of aquifer pump test. Provide references for the sources of the information submitted.

7. Injection Zone:

Formation(s) Name	Estimated Depth of Top*	Estimated Depth of Base*

*measured from ground surface.

8. Well Design:

Borehole, casing and cement or grout information.

Borehole size	Casing/ Tubing size	Material	Weight lbs/ft	Casing seat depth	Joint lengths	Type Cement	Amount cement (sacks)	Cemented interval from	to

Screen or perforation material: _____

Type of screen or perforation openings: _____

Screen or perforations intervals:

from _____ to _____ from _____ to _____

from _____ to _____ from _____ to _____

Gravel pack intervals:

from _____ to _____ from _____ to _____

from _____ to _____ from _____ to _____

To facilitate grouting, the ground intervals of the well bore shall be drilled to a minimum diameter at least three inches greater than the maximum outside diameter of the well casing. Provide information describing the seal to be used on the top of the well casing. This seal shall be air and water tight. If a pitless well adapter is to be used provide information describing the design of the pitless adapter. The pitless well adapter shall be so designed and fabricated to prevent soil, subsurface or surface waters from entering the well.

9. Provide a detailed schematic drawing indicating the proposed well(s) completion at the surface and subsurface.

10. Fluid Injection Rate:

    Fluids are to be injected at a minimum rate of _____ gallons/day to a maximum rate of _____ gallons/day. Demonstrate by appropriate calculations the well(s) is capable of receiving the proposed maximum fluid injection rate. Provide references for sources of all values used in the calculations.

11. Injection Pressure:

    Maximum wellhead injection pressure will be _____.

    Minimum wellhead injection pressure will be _____.

    Demonstrate by appropriate calculation's the proposed maximum injection pressure will not fracture the injection zone or damage the well components.

12. Discuss the stimulation program for the well(s), including chemical treatments and mechanical means.

13. Discuss the proposed injection procedure for the well(s) and provide a diagram. Submit a design for the injection system including any pumps, filters, lines and tanks used in the injection system.

14. Describe the meters or gauges that will be used to measure injection volume, injection rate and injection pressure. Include the frequency of calibration.

15. Provide a Sampling and Analysis Plan for the injection fluid.

16. Provide a plugging and abandonment plan for the well(s). The plugging plan must include the type of grout, estimated volume of grout, and a description of the grout emplacement procedure. Include a diagram of how the well will be plugged. Guidelines are attached.

17. Provide a map showing the well(s) to be permitted, surface water bodies, springs, mines, quarries, water wells, monitoring wells, withdrawal wells, any other penetrations of the aquifer and other pertinent surface features within the 1/4 mile radius area of review. The map must be clear and readable with the 1/4 mile radius area of review drawn on the map. A tabulation of data on all the wells within the area of review must be provided including the status, type, construction, date of drilling, location, depth, and plugging or completion data. Key the tabulated wells to their location on the map.

18. Provide modeling results for the proposed injection - withdrawal scenario. Provide a plan for monitoring the effects of injection on the groundwater system in the vicinity of the recharge project. Describe the monitoring wells to be used for this purpose. Include the data to be collected from the monitoring wells, frequency of data collection, data presentation format, and frequency of reporting the data to KDHE.

19. The well(s) shall be constructed by a water well contractor licensed by KDHE. Provide the contractor's name, business address and KDHE license number.

20. The following must be submitted to and approved by KDHE upon completion of the well(s).

    1. At a minimum, a detailed drillers log with lithologic descriptions is required. Any additional log(s) for the well(s) also need to be submitted for review.

    2. KDHE water well record from WWC-5.

    3. Complete casing, cementing or grouting, and screening information. Include work reports, work tickets or other documentation.

    4. A schematic drawing showing the actual completion of the well(s) at the surface and subsurface, if different from the proposed completion.

AUTHORITY

To whom should future correspondence be addressed:

_____

_____

_____

(signed) _____

CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information. K.A.R. 28-46-22 requires this certification and that this application be signed by an executive officer of a level of at least Vice-President or other authorized signatory as described at the Code of Federal Regulations 40 CFR 144.32 in effect on April 1, 1993.

_____

Printed Name of Authorized Signatory

_____

Signature of Authorized Signatory Company Title

Signatory Requirements for permit application are established in the attached Signatory Procedures.