**Section 730.182 Required Class VI Injection Well Permit Information**

This Section sets forth the information that the Agency must consider when authorizing a Class VI injection well. For a converted Class I, Class II, or Class V experimental injection well, certain maps, cross-sections, tabulations of wells within the area of review, and other data may be included in the application by reference, provided they are current, readily available to the Agency, and sufficiently identified as to be retrieved. In cases where USEPA issues the permit, all the information in this Section must be submitted to the USEPA, Region 5.

a) Prior to the issuance of a permit for the construction of a new Class VI injection well or the conversion of an existing Class I, Class II, or Class V injection well to a Class VI injection well, the owner or operator must submit, pursuant to Section 730.191(e), and the Agency must consider, the following:

1) The information required by 35 Ill. Adm. Code 702.123(a) through (f);

2) A map showing the injection well for which a permit is sought and the applicable area of review consistent with Section 730.184. Within the area of review, the map must show the number or name and location of all injection wells, producing wells, abandoned wells, plugged wells, or dry holes; deep stratigraphic boreholes; Agency‑ or USEPA-approved subsurface cleanup sites; surface bodies of water, springs, mines (surface and subsurface), quarries, water wells; and other pertinent surface features, including structures intended for human occupancy, state boundaries, and roads. The map should also show faults, if known or suspected. Only information of public record is required to be included on this map;

3) Information on the geologic structure and hydrogeologic properties of the proposed storage site and overlying formations, including the following documents and information:

A) Maps and cross sections of the area of review;

B) The location, orientation, and properties of known or suspected faults and fractures that may transect the confining zones in the area of review and a determination that the faults and fractures would not interfere with containment;

C) Data on the depth, areal extent, thickness, mineralogy, porosity, permeability, and capillary pressure of the injection and confining zones; including geology and facies changes based on field data, which may include geologic cores, outcrop data, seismic surveys, well logs, and names and lithologic descriptions;

D) Geomechanical information on fractures, stress, ductility, rock strength, and in-situ fluid pressures within the confining zones;

E) Information on the seismic history that includes the presence and depth of seismic sources and a determination that the seismicity would not interfere with containment; and

F) Geologic and topographic maps and cross sections that illustrate regional geology, hydrogeology, and the geologic structure of the local area;

4) A tabulation of all wells within the area of review that penetrate the injection or confining zones. The tabulated data must include a description of each well's type, construction, date drilled, location, depth, applicable records of plugging and completion, and any additional information that the Agency may require to evaluate the request for a permit;

5) Maps and stratigraphic cross sections indicating the general vertical and lateral limits of all USDWs, water wells, and springs within the area of review, their positions relative to the injection zones, and the direction of water movement, where known;

6) Baseline geochemical data on subsurface formations that includes all USDWs in the area of review;

7) Proposed operating data for the proposed geologic sequestration site that includes that following items of information:

A) The average and maximum daily rate and volume or mass, and the total anticipated volume or mass, of the carbon dioxide stream;

B) The average and maximum injection pressures;

C) The sources of the carbon dioxide stream; and

D) An analysis of the chemical and physical characteristics of the carbon dioxide stream;

8) A proposed program for pre-operational formation testing that fulfills the requirements of Section 730.187 to obtain an analysis of the chemical and physical characteristics of the injection zones and confining zones;

9) A proposed stimulation program, a description of stimulation fluids to be used, and a determination that stimulation will not interfere with containment;

10) A proposed procedure to outline steps necessary to conduct injection operation;

11) Schematics or other appropriate drawings of the surface and subsurface construction details of the well;

12) Injection well construction procedures that fulfill the requirements of Section 730.186;

13) A proposed area of review and corrective action plan that fulfills the requirements of Section 730.184;

14) A demonstration which is sufficient to support an Agency determination that the applicant has met the financial responsibility requirements under Section 730.185;

15) A proposed testing and monitoring plan, as required by Section 730.190;

16) A proposed injection well plugging plan, as required by Section 730.192(b);

17) A proposed post-injection site care and site closure plan, as required by Section 730.193(a);

18) At the Agency's discretion, a demonstration of an alternative post-injection site care timeframe required, as required by Section 730.193(c);

19) A proposed emergency and remedial response plan, as required by Section 730.194(a);

20) A list of contacts, submitted to the Agency, for those states identified to be within the area of review of the Class VI project based on information provided pursuant to subsection (a)(2); and

21) Any other information requested by the Agency that would support an Agency determination whether to issue the requested permit.

b) Pursuant to this Section, and as required by 40 CFR 145.23(f)(13), the Agency must notify any states that the Agency determines are within the area of review of the Class VI project based on information submitted pursuant to subsections (a)(2) and (a)(20) of the permit application in writing.

c) Prior to granting a permit for the operation of a Class VI injection well, the Agency must consider the following information:

1) The final area of review based on modeling, using data obtained during the logging and testing of the well and the formation required by subsections (c)(2), (c)(3), (c)(4), (c)(6), (c)(7), and (c)(10);

2) Any relevant updates to the information on the geologic structure and hydrogeologic properties of the proposed storage site and overlying formations, submitted pursuant to subsection (a)(3), based on data obtained during the logging and testing of the well and the formation required by subsections (c)(3), (c)(4), (c)(6), (c)(7), and (c)(10);

3) Information on the compatibility of the carbon dioxide stream with fluids in the injection zones and minerals in both the injection and the confining zones, based on the results of the formation testing program, and with the materials used to construct the well;

4) The results of the formation testing program required by subsection (a)(8);

5) Final injection well construction procedures that fulfill the requirements of Section 730.186;

6) The status of any corrective action on wells in the area of review;

7) All available logging and testing program data on the well required by Section 730.187;

8) A demonstration of mechanical integrity pursuant to Section 730.189;

9) Any updates to the proposed area of review and corrective action plan, the testing and monitoring plan, the injection well plugging plan, the post-injection site care and site closure plan, or the emergency and remedial response plan, and any updates to the alternative post-injection site care timeframe demonstration, which the applicant has submitted pursuant to subsection (a), that are necessary to address new information collected during logging and testing of the well and the formation, as required by this Section; and

10) Any other information requested by the Agency.

d) An owner or operator which seeks a permit that includes alternative injection well depth requirements to the generally applicable requirement to inject below the lowermost USDW must also refer to Section 730.195 and submit a supplemental report, as required at Section 730.195(a). The supplemental report is not part of the permit application.

BOARD NOTE: This Section corresponds with 40 CFR 146.82 (2017).

(Source: Amended at 42 Ill. Reg. 24145, effective November 19, 2018)