**Section 730.193 Post-Injection Site Care and Site Closure**

a) The owner or operator of a Class VI injection well must prepare, maintain, and comply with a plan for post-injection site care and site closure that the Agency has determined meets the requirements of subsection (a)(2). The requirement to maintain and implement an approved plan is directly enforceable, regardless of whether the requirement is a condition of the permit.

1) The owner or operator must submit the post-injection site care and site closure plan to the Agency as a part of the permit application.

2) The post-injection site care and site closure plan must include the following information:

A) The pressure differential between pre-injection and predicted post-injection pressures in the injection zones;

B) The predicted position of the carbon dioxide plume and associated pressure front at site closure, as demonstrated in the area of review evaluation required by Section 730.184(c)(1);

C) A description of the proposed post-injection monitoring location, methods, and frequency;

D) A proposed schedule for submitting post-injection site care monitoring results to the Agency pursuant to Section 730.191(e); and

E) The duration of the post-injection site care timeframe and, if approved by the Agency, the demonstration of the alternative post-injection site care timeframe that ensures non-endangerment of USDWs.

3) Upon cessation of injection, the owner or operator of a Class VI injection well must either submit an amended post-injection site care and site closure plan or demonstrate to the Agency through monitoring data and modeling results that no amendment to the plan is needed. The Agency must approve any amendments to the post-injection site care and site closure plan and incorporate the amendments into the permit, and the incorporation of the amendments into the permit is subject to the permit modification requirements set forth in 35 Ill. Adm. Code 704.262 or 704.264, as appropriate.

4) At any time during the life of the geologic sequestration project, the owner or operator may modify and resubmit the post-injection site care and site closure plan for Agency approval. The owner or operator must resubmit the plan to the Agency within 30 days after making any modification.

b) The owner or operator must monitor the site following the cessation of injection to show the position of the carbon dioxide plume and pressure front and demonstrate that no USDW is being endangered.

1) Following the cessation of injection, the owner or operator must continue to conduct monitoring as specified in the Agency-approved post-injection site care and site closure plan for at least 50 years or for the duration of the alternative timeframe approved by the Agency pursuant to requirements in subsection (c), unless the owner or operator makes a demonstration under subsection (b)(2). The monitoring must continue until the geologic sequestration project no longer poses an endangerment to USDWs and the demonstration under subsection (b)(2) is submitted and approved by the Agency.

2) If the Agency determines, based on monitoring and other site-specific data, that the geologic sequestration project no longer poses an endangerment to any USDW before 50 years or prior to the end of the approved alternative timeframe, the Agency must either approve an amendment to the post-injection site care and site closure plan to reduce the frequency of monitoring or authorize site closure before the end of the 50-year period or prior to the end of the approved alternative timeframe.

3) Prior to authorization for site closure, the owner or operator must submit to the Agency for review and approval a demonstration, based on monitoring and other site-specific data, that no additional monitoring is needed to ensure that the geologic sequestration project does not pose an endangerment to any USDW.

4) If the owner or operator cannot make the demonstration required by subsection (b)(3) (i.e., the Agency has determined that additional monitoring is needed to ensure that the geologic sequestration project does not pose an endangerment to any USDW or the Agency has not approved the demonstration) at the end of the 50-year period or at the end of the approved alternative timeframe, the owner or operator must submit to the Agency a plan to continue post-injection site care until the owner or operator has made a demonstration that the Agency can approve.

c) Demonstration of Alternative Post-Injection Site Care Timeframe. If the Agency determines in consultation with USEPA during the permitting process that an alternative post-injection site care timeframe other than the 50-year default is appropriate and ensures non-endangerment of any USDW, the Agency must approve the alternative post-injection site care timeframe. The Agency must base its determination on significant, site-specific data and information, including all data and information collected pursuant to Sections 730.182 and 730.183, and the Agency must determine based on substantial evidence that the geologic sequestration project will no longer pose a risk of endangerment to any USDW at the end of the alternative post-injection site care timeframe.

1) A demonstration of an alternative post-injection site care timeframe must include consideration and documentation of the following:

A) The results of computational modeling performed pursuant to delineation of the area of review, as required by Section 730.184;

B) The predicted timeframe for pressure decline within the injection zone and any other zones, such that formation fluids may not be forced into any USDW, or the timeframe for pressure decline to pre-injection pressures;

C) The predicted rate of carbon dioxide plume migration within the injection zone and the predicted timeframe for the cessation of migration;

D) A description of the site-specific processes that will result in carbon dioxide trapping, including immobilization by capillary trapping, dissolution, and mineralization at the site;

E) The predicted rate of carbon dioxide trapping in the immobile capillary phase, dissolved phase, and mineral phase;

F) The results of laboratory analyses, research studies, or field or site-specific studies to verify the information required in subsections (c)(1)(D) and (c)(1)(E);

G) A characterization of the confining zones, including a demonstration that each confining zone is free of transmissive faults, fractures, and micro-fractures and is of appropriate thickness, permeability, and integrity to impede fluid movement (e.g., carbon dioxide, formation fluids, etc.);

H) The presence of potential conduits for fluid movement, including planned injection wells and project monitoring wells associated with the proposed geologic sequestration project or any other projects in proximity to the predicted or modeled final extent of the carbon dioxide plume and area of elevated pressure;

I) A description of the well construction and an assessment of the quality of plugs of all abandoned wells within the area of review;

J) The distance between the injection zone and the nearest USDWs above and below the injection zone; and

K) Any additional site-specific factors required by the Agency.

2) Information submitted to support the demonstration required by subsection (c)(1) must meet the following criteria:

A) All analyses and tests performed to support the demonstration must be accurate and reproducible, and they must have been performed in accordance with the established quality assurance standards;

B) Estimation techniques must be appropriate, and USEPA-certified test protocols must have been used where available;

C) Predictive models must be appropriate and tailored to the site conditions, composition of the carbon dioxide stream, and injection and site conditions over the life of the geologic sequestration project;

D) Predictive models must be calibrated using existing information (e.g., at Class I, Class II, or Class V experimental technology injection well sites) where sufficient data are available;

E) Reasonably conservative values and modeling assumptions must be used and disclosed to the Agency whenever values are estimated on the basis of known historical information instead of site-specific measurements;

F) The owner or operator must perform an analysis to identify and assess aspects of the alternative post-injection site care timeframe demonstration that contribute significantly to uncertainty. The owner or operator must conduct sensitivity analyses to determine the effect that significant uncertainty may contribute to the modeling demonstration.

G) An approved quality assurance and quality control plan must address all aspects of the demonstration; and

H) Any additional criteria required by the Agency.

d) Notice of Intent for Site Closure. The owner or operator must notify the Agency in writing at least 120 days before site closure. At the time of this notice, if any changes have been made to the original post-injection site care and site closure plan, the owner or operator must also provide the revised plan. The Agency may allow for a shorter notice period. The Agency must allow for a shorter notice period if the Agency determines that the shorter notice period is adequate to complete Agency review of the post-injection site care and site closure plan or that well closure must occur more promptly.

e) After the Agency has authorized site closure, the owner or operator must plug all monitoring wells in a manner that will not allow movement of injection or formation fluids which endangers a USDW.

f) The owner or operator must submit a site closure report to the Agency within 90 days after site closure, which must thereafter be retained at a location designated by the Agency for at least 10 years. The report must include the following records and documentation:

1) Documentation of the injection and monitoring well plugging as required by Section 730.192 and subsection (e). The owner or operator must provide a copy of a survey plat that the owner or operator has submitted to the local zoning authority designated by the Agency. The plat must indicate the location of the injection well relative to permanently surveyed benchmarks. The owner or operator must also submit a copy of the plat to USEPA Region 5;

2) Documentation of appropriate notification and information to all State and local authorities that have authority over drilling activities within the area of review, to enable those State and local authorities to impose appropriate conditions on subsequent drilling activities that may penetrate the injection and confining zones; and

BOARD NOTE: The Illinois Department of Natural Resources, Office of Mines and Minerals, Oil and Gas Division and the Illinois Department of Public Health each have some role in regulating well drilling, depending on the type of well. Other State agencies may also have a role. Further, units of local government and agencies of a sister state may regulate well drilling if a portion of the area of review lies within their jurisdiction. The owner or operator must assure that all applicable regulatory entities receive the required notification and information.

3) Records reflecting the nature, composition, and volume of the carbon dioxide stream.

g) Each owner or operator of a Class VI injection well must record a notation on the deed to the facility property or any other document that is normally examined during title search that will in perpetuity provide the following information to any potential purchaser of the property:

1) The fact that land has been used to sequester carbon dioxide;

2) The name of the county with which the survey plat was filed, as well as the addresses of the Agency and USEPA Region 5; and

3) The volume of fluid injected, the injection zone or zones into which the fluid was injected, and the period over which injection occurred.

h) The owner or operator must retain records collected during the post-injection site care period for at least 10 years following site closure. The owner or operator must deliver the records to the Agency at the conclusion of the retention period, and the records must thereafter be retained at a location designated by the Agency for that purpose.

BOARD NOTE: This Section corresponds with 40 CFR 146.93 (2017).

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