



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

SEP 15 1998

OFFICE OF  
WATER

MEMORANDUM

SUBJECT: Statement of Fluid Movement

FROM: Connie M. Bosma, Chief *Connie M. Bosma*  
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Office of Ground Water and Drinking Water

TO: Regional Drinking Water and UIC Branch Chiefs/Representatives  
Regions I-X

The purpose of this memorandum is to transmit to the Regions a copy of the Statement of Fluid Movement Requirements (the Statement) developed by EPA in response to a case that the Legal Environmental Assistance Foundation (LEAF) brought against EPA in 1995 to contest the Agency's denial of LEAF's petition to withdraw the delegated Underground Injection Control (UIC) program from the State of Florida. The Statement is a summary of current requirements and does not establish any new policy. EPA prepared the Statement in the context of mediated negotiations of that case, in order to clarify the federal regulations that provide the standard to which a state program is compared. The Statement was then attached to the Settlement Agreement in the LEAF litigation.

The Statement provides a convenient summary and restatement of all federal regulations that are relevant to fluid movement as they relate to Class 1 injection operations. If you have any questions or comments on the Statement, please contact Howard Beard of my staff at (202) 260-8796.



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**Attachment B**

**Statement of Fluid Movement Requirements**

1. Class I injection well permits shall establish construction and operation requirements and other appropriate conditions to prevent movement of fluids into a USDW, not simply movement of fluids into a USDW which may cause a violation of a primary drinking water regulation under 40 CFR part 142 or otherwise adversely affect the health of persons. 40 CFR §§ 144.52(a)(3) and 144.52(a)(9).
2. Where monitoring data indicates that activities at a Class I injection well have resulted in the movement of any contaminant into a USDW, except as authorized under 40 CFR part 146 for exempted aquifers, the Director shall prescribe such additional requirements for construction, corrective action, operation, monitoring or reporting (including closure of the injection well) as are necessary to prevent such movement, regardless of whether such movement may cause a violation of a primary drinking water regulation under 40 CFR part 142, or otherwise adversely affect the health of persons. 40 CFR § 144.12(b).
3. If the Director determines on the basis of evidence in the record (which may include modeling, monitoring or other evidence) that movement of any contaminant into a USDW will result from operation of the well, regardless of whether such movement may cause a violation of a primary drinking water regulation under 40 CFR part 142 or otherwise adversely affect the health of persons, except as authorized under 40 CFR part 146 for exempted aquifers, the Director may deny the permit or may prescribe additional conditions as are necessary to prevent such movement. 40 CFR § 144.12(b). It is not necessary that the Director have monitoring data indicating that movement of a contaminant into a USDW will occur for the Director to deny a permit for a Class I well.
4. An applicant for a Class I injection well permit has the burden of demonstrating that:
  - (a) maximum injection volumes and/or pressures necessary to assure that fractures are not initiated in the confining zone, that injected fluids do not migrate into any underground source of drinking water, that formation fluids are not displaced into any underground source of drinking water, and to assure compliance with the part 146 operating requirements. 40 CFR § 144.52(a)(3).

- (b) plugging and abandonment of the well will not allow the movement of fluids into or between underground sources of drinking water. 40 CFR §§ 144.51(o) and 146.10.
- (c) mechanical integrity as defined in 40 CFR § 146.8 has been and is being maintained. 40 CFR § 144.51(q). If the Director has determined that a well lacks mechanical integrity then the owner or operator must cease injection within 48 hours of receipt of the Director's determination (or earlier if the Director requires immediate cessation), as provided in 40 CFR § 144.51(q)(2), and the Director may allow the owner or operator of the well to continue or resume injection only if the owner or operator satisfactorily demonstrates that there is no movement of fluid into or between USDWs. 40 CFR § 144.51(q)(3).
- (d) the well is cased and cemented to prevent the movement of fluids into or between a USDW, regardless of whether such movement may cause a violation of a primary drinking water regulation under 40 CFR part 142 or otherwise adversely affect the health of persons. 40 CFR § 146.12(b).
- (e) injection pressure will not cause the movement of injection or formation fluids into an underground source of drinking water, regardless of whether such movement may cause a violation of a primary drinking water regulation under 40 CFR part 142 or otherwise adversely affect the health of persons. 40 CFR § 146.13(a)(1).
- (f) diverging holes have not been created during drilling which may result in vertical avenues of fluid migration, regardless of whether such movement may cause a violation of a primary drinking water regulation under 40 CFR part 142 or otherwise adversely affect the health of persons. 40 CFR § 146.12(d)(1).
- (g) contingency plans have been prepared to cope with all shut-ins or well failures so as to prevent migration of fluids into a USDW, regardless of whether such movement may cause a violation of a primary drinking water regulation under 40 CFR part 142 or otherwise adversely affect the health of persons. 40 CFR § 146.14(a)(12).
- (h) the wells shall be plugged with cement in a manner which will not allow the movement of fluids either into or between underground sources of drinking water. 40 CFR § 146.10.
- (i) the movement of fluid containing any contaminant into a USDW will not occur in violation of the prohibitions and requirements in 40 CFR parts 144 and 146 as interpreted by EPA.

In addition, neither paragraphs 4 nor 5 herein should be construed as an exhaustive list of permit requirements for owners and operators under the UIC program.

5. The Director must for Class I well permits:

- (a) establish a permit condition which requires reporting within 24 hours of any noncompliance which may endanger health or the environment, including any noncompliance with a permit condition or malfunction of the injection system which may cause fluid migration into or between underground sources of drinking water. 40 CFR § 144.51(l)(6).
- (b) condition an emergency permit in any manner he or she determines is necessary to ensure that the injection will not result in the movement of fluids into underground sources of drinking water. 40 CFR § 144.34(b)(6).
- (c) establish case-by-case condition(s) as are necessary to prevent the migration of fluids into underground sources of drinking water. 40 CFR § 144.52(a)(9).
- (d) establish an area of review, which is either a fixed radius or a calculated "zone of endangering influence" which includes that area the radius of which is lateral distance in which the pressures in the injection zone may cause the migration of the injection and/or formation fluid into an underground source of drinking water. 40 CFR § 146.6.
- (e) determine the steps needed to prevent fluid movement into underground sources of drinking water in determining the adequacy of corrective action proposed by the applicant under 40 CFR § 144.55. 40 CFR § 146.7.
- (f) prepare quarterly reports to be submitted to the Regional Administrator when the Director determines significant permit noncompliance or other significant event has occurred, such as a migration of fluids into an underground source of drinking water. 40 CFR § 144.8(a)(2)(v)(C).
- (g) consider, among other things, the information required in 40 CFR § 146.14(a)(4), (a)(7), (a)(8), and (a)(12).

In addition, paragraph 5 herein should not be construed as an exhaustive list of the Director's responsibilities under the UIC program.

- 6. The movement of fluid into a USDW described in paragraphs 1 through 5 above includes lateral or vertical movement of injected or formation fluids.
- 7. The applicant for a permit for any class of injection well has the burden of demonstrating

that the movement of fluids containing a contaminant into a USDW will not cause a violation of a primary drinking water regulation under 40 CFR part 142 or otherwise adversely affect the health of persons. 40 CFR § 144.12(a).

8. All references to the term *contaminant* in this attachment mean *contaminant* as defined in 40 CFR § 144.3.

