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

MAY 31 1983

MEMORANDUM

SUBJECT: Appropriate Classification and Regulatory Treatment of Experimental Technologies. Ground-Water Program Guidance No. 28 (GWPG # 28).

FROM: Victor J. Kimm
Director, Office of Drinking Water

TO: Water Division Directors, Regions I-X
Water Supply Branch Chiefs
UIC Representatives

BACKGROUND

On August 27, 1981 EPA promulgated technical amendments to the Underground Injection Control (UIC) Regulations, 40 C.F.R. Parts 144* and 146, under Part C of the Safe Drinking Water Act. These included an amendment to §146.05(e), adding "[i]njection wells used in experimental technologies" to the list of Class V wells. Without further explanation, it may be difficult to determine exactly what is an experimental technology for the purposes of this classification and what the regulatory treatment of that technology will be. This guidance is intended to clarify this issue.

DISCUSSION

According to the well classification system in the UIC regulations, Class V is intended to contain wells for which EPA needs further information or study to determine what regulatory treatment is appropriate. By placing "experimental technologies" in Class V, the regulations relieve any well that qualifies as experimental from the technical standards of the class into which it normally would fall. "Experimental technology" was defined in §146.03 of the February 3, 1982 UIC regulatory amendments (47 FR 4992) as "a technology which has not been proven feasible under the conditions in which it is being tested."

---

*/ These regulations were promulgated on May 19, 1980 (45 FR 33418) as Part 122 and amended on August 27, 1981 (46 FR 43156) and February 3, 1982 (47 FR 4992). Part 122 was subsequently reorganized and renumbered as Part 144 by technical amendment on April 1, 1983 (48 FR 1416).

Some of these wells would fall into Class V, according to EPA's well classification criteria, even if they were not experimental. Others fall in Class V solely because of their experimental status, and would otherwise fall under another well classification. With respect to this latter group, the regulations do not definitively state whether a technology, once proven feasible, "reverts" automatically to the class into which it originally would have fallen and is subject to the technical requirements for that class, or whether it is treated like all the other injection practices explicitly placed in Class V, i.e., remains in Class V until, if ever, appropriate standards are developed.

In view of the different types of experimental technologies that may exist, the Agency has determined, based on the reasoning set out below, that the appropriate interpretation is that some technologies will be considered to revert to their original class when the technology becomes commercially feasible, while others will remain in Class V pending any future regulation. This interpretation applies only to types of wells that are in Class V solely because they meet the general definition of an experimental technology. A type of well that meets any other definition of a Class V well will in all cases remain in that class until future regulations are developed, notwithstanding whether it also meets the general experimental technology definition.

As mentioned above, a type of injection practice placed in Class V because it is experimental usually would have fallen into some other class if it were not experimental. Some of these practices, though experimental, are sufficiently similar or analogous to the other wells contained in that other class that the standards of that class are still technologically appropriate to the new practice. This will usually be the case when, for example, the new practice is not truly a new technology but rather a variation on an existing technology.

The justification for treating this type of experimental well as Class V is that to encourage innovation, a developing technology arguably should not be burdened by strict technical standards designed for commercially operating facilities. This is especially justifiable since the wells are likely to be few in number and operate only intermittently, and under Class V would be bound by the general standard that they not endanger drinking water. This justification implies that the technology be considered Class V only while experimental. Once the technology proves feasible, the justification no longer applies.

Consequently, at any time that such injection wells are to begin commercial operation, EPA will no longer consider this type of injection to be in Class V. The injection practice would "revert" to the class into which it would have fallen originally had it not been experimental, and therefore would be subject to the technical requirements of that class.

Some experimental practices, however, will be "truly new technologies," so different from the other types of wells in the class into which they otherwise would have fallen that the standards of that other class are technologically inappropriate. Existing standards might be impossible to apply, or might fail to address the environmental hazards of the practice even when fully met. Some of these technologies have already been identified by EPA, and have been placed in Class V not by virtue of the general "experimental technology" category at issue here, but because they have been explicitly identified by regulation. Examples include the technologies listed in 40 CFR §146.05(e)(16): the in-situ mining of lignite, coal, tar sands, and oil shale.

For this type of well, treatment as Class V is justified not only by the aim of encouraging innovation, but also because it is undesirable to require compliance with technical standards that are inappropriate to the new technology. In addition, many of these new technologies are closely monitored by other federal agencies to collect information on and guard against threats to drinking water. Where these additional reasons for treatment as Class V exist, the wells should remain in Class V not only during the period they are experimental but even after commercial feasibility is demonstrated, until EPA determines appropriate treatment.

This is already the case for those experimental wells referred to above that have been explicitly placed in Class V by regulation. The same treatment should be afforded "truly new technologies" that EPA may have been unable to anticipate when promulgating the regulations. As a result, any experimental technology for which the standards of the class into which it would otherwise fall are technologically inappropriate will continue to be treated as Class V after it becomes commercially feasible. EPA may in the future determine other appropriate treatment for such wells, and may reclassify the wells at that time. An example of such a "truly new technology" is the slurry borehole mining of phosphate, which ordinarily would fall in Class III but which the Class III technical requirements do not fit.

Of course, all wells, whether in Class V or any other class, must comply with 40 CFR §144.12, the broad prohibition of any injection that may cause the violation of primary drinking water standards or otherwise adversely affect the health of persons. Even "truly new technologies," therefore, must comply with this basic standard. In addition, the long development period likely to to be associated with a "truly new technology" should allow EPA to develop technologically appropriate regulations for any such type of well, where appropriate, before substantial commercial production begins.

EPA will presume that any experimental technology can be appropriately regulated under the class into which it otherwise would have fallen, and will treat the operation as falling under that class once feasibility is demonstrated, unless the owner or operator demonstrates to EPA or the state agency administering an approved state program that the practice should be treated as a "truly new technology." EPA does not intend that treatment as a "truly new technology" be used as a vehicle for avoiding compliance with appropriate technical requirements. Such treatment will be reserved for cases where it clearly is technologically infeasible to apply the technical standards of the class into which it otherwise would fall, or where those standards clearly fail to provide protection for drinking water.

IMPLEMENTATION

Regional offices are instructed to use this guidance in operating UIC programs where EPA has primary enforcement responsibility. They are further instructed to make this guidance available to states working towards primacy and to advise the State Director that these interpretations represent EPA policy.

For further information on this guidance contact:

Francoise M. Brasier
U.S. Environmental Protection Agency
Office of Drinking Water
401 M Street, SW
Washington, D.C. 20460
(202) 382-5560