



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

JAN 30 1991

OFFICE OF WATER

**MEMORANDUM**

**SUBJECT:** Incorporation of UIC "No Migration" Petition Conditions into Class I Hazardous Waste Injection Well Permits; Underground Injection Control Program Guidance # 73

**FROM:** Michael B. Cook, Director  
Office of Drinking Water (WH-550) *Michael Cook*

**TO:** Water Division Directors  
EPA Regions I - X

**Purpose**

This document provides guidance for incorporating any special conditions for a "no migration" exemption to the land disposal restrictions required by the Hazardous and Solid Waste Amendments of 1984 (HSWA), into the operator's Class I hazardous waste injection well permit.

**Background**

The Underground Injection Control (UIC) regulations at 40 CFR 148.20, allow an operator of a Class I well injecting hazardous waste to continue injection of prohibited wastes provided that a demonstration is made to the Agency, to a reasonable degree of certainty, that there will be no migration of hazardous constituents from the injection zone for as long as the wastes remain hazardous. The demonstration, or no migration petition, submitted to the appropriate EPA Region, generally is based on computer waste flow and transport modeling or geochemical fate modeling.

Certain conditions for petition approval, related to assumptions used for the modeling, may be necessary for a valid demonstration. The Agency believes that it is appropriate to incorporate these conditions into the Federal or State UIC permit for ease of administration and enforcement. The UIC regulations at 40 CFR 148.24 outline those situations where a petition may or should be terminated. However, the Agency believes that terminating the petition and subsequently shutting down injection wells for minor "paperwork" violations will not provide any additional level of protection to human health and the

environment. Although EPA may enforce petition condition violations directly under authority of RCRA section 3008, the Agency believes that injection well operators may be more efficiently brought back into compliance by using the enforcement mechanisms of the UIC permit process.

### Previous Guidance

The Office of Drinking Water issued a guidance, "Class I Permit Conditions Guidance" (UICPG #46), on February 28, 1986. This guidance provided the Regional Offices and States with the types of special conditions appropriate for UIC Class I permits. Examples of boilerplate were provided, and this guidance should be consulted for this type of information.

Additionally, UICPG #46 recommended that certain special conditions should be included in permits for Class I hazardous waste injection wells. In particular, a yearly pressure test and a yearly Radioactive Tracer Survey (RTS) were advocated for this class of injection wells. Permit writers should first re-examine these permits and ensure that the new 40 CFR Part 146, Subpart G permit requirements applicable to hazardous waste injection wells, including those cross-referenced under Part 148, have been written in the permit. Ambient monitoring requirements for all Class I wells were also promulgated under 40 CFR 146.13. The incorporation of these conditions should occur after primacy States adopt and implement the new Part 146 requirements. EPA may incorporate these conditions in Federal UIC permits now, or at permit renewal. However, the causes for immediate permit modification may be limited to new regulations arising under Part 146, as indicated in 40 CFR §144.39.

### Permit Modifications

For Class I injection wells which petitioned and received an exemption to the land disposal restrictions, Regional UIC staff should begin the process of modifying Federal permits as soon as possible. 40 CFR 144.39 gives us the authority to undertake this action. In Primacy States, the Agency should work closely with the State permitting Agency, advising them of the conditions imposed on the exemption.

Permit writers should take some care when they add the special conditions of Land Ban petitions to the UIC permits. In particular they should be certain that the petition conditions are clearly understood and are correctly and completely incorporated as enforceable permit conditions.

The following examples indicate the types of special conditions for no migration petitions that are to be written into the Class I permit. Generally, permit writers should have some license in writing the language necessary to incorporate the

conditions provided that the permit conditions mirror the conditions established in the petition approval.

- Conditions such as limiting injection to specific intervals can be included in permits without much modification. It is essential to give footage measurements in relation to some datum point such as depth from surface, elevation, etc.
- Conditions such as limiting the specific gravity to specified ranges or averages will need to be incorporated into permits. For example, if the petition limits the specific gravity of the waste to a volume-weighted average (or average), the permit writer will have to incorporate this condition, or alternatively incorporate a **range** of average values in the permit based on the petition's conservative assumptions.
- In no case should the permit incorporate a specific number for the specific gravity of the injected waste. Compliance with such an exacting condition would be very difficult to monitor, and is meaningless. What is important is that the waste be not too buoyant or too dense so that the petition demonstration remains valid.
- Whatever method is used to bound the limits of specific gravity, the permit should include specifics of the frequency of sampling, the method of sampling, the location of sampling, the method of calculating the averages (a volume weighted average is the preferred method), and the frequency of reporting.
- Conditions such as limiting the injected volume to a maximum monthly value should be added to the permit without change. However, where feasible with regard to pressure buildup in the injection zone, permit writers should consider converting monthly values to yearly values. Yearly values are more realistic because they allow for normal operational variability and are more appropriate with predictive modeling. The most important parameter that determines the extent of predicted waste movement at a given site is the total injected volume. Variations in injection rate and injection history do not influence the long-term transport of waste.
- Permit writers should also include any other conditions of petitions, such as limitations on injection rate, injection pressure (particularly for wells which may be injecting into overpressured reservoirs or are injecting at high pressures), waste stream composition,

and hazardous constituent concentrations, into permits in a manner similar to the above examples.

### Public Comment and Other Considerations

Any additional well surveys, geophysical well logs, any increased frequency of mechanical integrity testing, and additional monitoring requirements which are petition conditions should also be incorporated in the permit.

In order to incorporate new permit conditions, public participation procedures under 40 CFR Part 124 for Federal permit modifications should be followed as appropriate. The addition of new permit conditions in Primacy States may also require public participation and comment as a matter of state law.

The permit writer should also document in the file, a short explanation why (i.e. for "no migration" exemption under 40 CFR Part 148.20) and when the additional conditions were added. This documentation provides an administrative record if a judicial review of either the permit and/or no migration petition occurs.

### Contact

For any questions relating to this guidance, please call Francoise Brasier, Chief, Underground Injection Control Branch, at FTS 382-5530.