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

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

DEC 27 1989 OSWER Directive # 9234.1-06

MEMORANDUM

SUBJECT: Applicability of Land Disposal Restrictions to RCRA and CERCLA Ground Water Treatment Reinjection Superfund Management Review: Recommendation No. 26

FROM: Don R. Clay, Assistant Administrator
Office of Solid Waste and Emergency Response

TO: Waste Management Division Directors
Regions I - X

Regional Counsel
Regions I - X

Purpose

There has been some question as to whether ground water contaminated with restricted RCRA hazardous wastes, which is extracted during a RCRA corrective action or CERCLA response action, must meet the best demonstrated available technology (BDAT) identified for that waste under the RCRA land disposal restrictions (LDRs) prior to each reinjection, in a pump-and-treat reinjection remediation system. (See RCRA sections 3004 (f), (g) and (m), and 40 C.F.R. Parts 148 and 268.) This memorandum explains EPA's interpretation of whether the LDRs are applicable or (under CERCLA response actions only) relevant and appropriate to such reinjections or to the remediation as a whole.

Background

RCRA LDRs prohibit land disposal of restricted RCRA hazardous wastes that do not meet treatment standards after the effective date of the restrictions. Treatment standards for RCRA hazardous wastes are based upon the best demonstrated available technology (BDAT) identified for that waste. See 40 C.F.R. 268. Because placement of hazardous waste into underground injection wells constitutes "land disposal" under LDR (see RCRA section 3004(k)), and the ground water undergoing reinjection may contain a restricted waste, the issue has been raised as to whether each reinjection of contaminated ground water should meet BDAT during response or corrective actions.

RATIONALE

Ground water restoration under RCRA corrective actions and CERCLA response actions often involves withdrawal, treatment of the contaminated water, and reinjection of the treated water into the ground. The land disposal restrictions (LDR) of the Resource Conservation and Recovery Act (RCRA) prohibit land disposal of restricted RCRA hazardous wastes that do not meet treatment standards after the effective date of the restrictions. Treatment standards for RCRA hazardous wastes are based upon the best demonstrated available technology (BDAT) identified for that waste. See 40 C.F.R. 268. Because placement of hazardous waste into underground injection wells constitutes "land disposal" under LDR (see RCRA section 3004(k)), and the ground water undergoing reinjection may contain a restricted waste, the issue has been raised as to whether each reinjection of contaminated ground water should meet BDAT during response or corrective actions.[1]

Section 3020 of RCRA [previously section 7010[2]] specifically addresses waste injection in the context of CERCLA and RCRA cleanups. RCRA section 3020(a) bans hazardous waste disposal by underground injection into or above an underground source of drinking water (within one-quarter mile of the well). However, RCRA section 3020(b) exempts from the ban all reinjections of treated contaminated ground water into such formations undertaken as part of a CERCLA section 104 or 106 response action, or a RCRA corrective action. To qualify for the exemption, the following three conditions must be met: (1) the injection is a CERCLA response action or a RCRA corrective action, (2) the contaminated ground water must be treated to substantially reduce hazardous constituents prior to such injection, and (3) the response action or corrective action must be sufficient to protect human health and the environment upon completion.

Although RCRA section 3020 and the LDR provisions at RCRA sections 3004(f), (g) and (m) arguably can address the same activity, RCRA section 3020 specifically applies to all CERCLA and

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[1] CERCLA remedial actions are required to meet Federal requirements and standards at completion of the remedial action if the Federal standards are applicable or relevant and appropriate requirements (ARARs), absent invocation of a statutory waiver. See CERCLA section 121(d). Agency policy and the proposed National Contingency Plan (NCP) require the Agency to comply with all ARARs pertinent to the action during the course of a remedial action, as well as upon its completion. See the proposed NCP (published at 53 Fed. Reg. 51,394 (Dec. 21, 1988)(to be codified at 40 C.F.R. 300.435(b)(2)), and CERCLA Compliance with Other Laws Manual: Part I, I-8 (OSWER Directive number 9234.1-01, August 8, 1988).

[2] RCRA section 3020 was section 7010 in the Hazardous and Solid Waste Amendments of 1984, but was re-numbered in 1986.

RCRA ground water treatment reinjections into Class IV injection wells.[3] Consistent with traditional principles of statutory construction, RCRA section 3020 -- which is directly focused on injections of treated contaminated ground water into Class IV wells during cleanups -- should be controlling for such injections; a contrary reading would render section 3020(b) meaningless. Where Congress has provided two potentially applicable statutory provisions, a choice between them is both necessary and appropriate, and within the discretion of the expert agency. Accordingly, EPA construes the provisions of RCRA section 3020 to be applicable instead of LDR provisions at RCRA sections 3004(f), (g), and (m), to reinjections of contaminated ground water into an underground source of drinking water (USDW), which are part of a CERCLA response action or RCRA corrective action.

As a result, the three conditions of RCRA section 3020(b) must be met during response or corrective actions involving ground water treatment reinjection into or above underground sources of drinking water. Failure to meet these conditions bans the activity under RCRA section 3020(a).[4] First, the injections must be part of a CERCLA response action or a RCRA corrective action. Second, each reinjection has to be treated to "substantially reduce hazardous constituents prior to such injection..." (RCRA section 3020(b)). Until guidance is prepared addressing the issue, steps necessary to "substantially reduce" hazardous constituents during a RCRA corrective action or a CERCLA response action should be decided on a case-by-case basis. Third, the response or corrective action upon completion must "be sufficient to protect human health and the environment" (RCRA section 3020(b)). RCRA and CERCLA statutes, regulations and policies should be reviewed to determine protectiveness.

The issue may also arise under CERCLA as to whether LDRs are relevant and appropriate requirements when treated ground water is reinjected into Class IV wells as part of a CERCLA response action. In order to be considered to be both "relevant" and "appropriate," a requirement must address problems or situations similar to the circumstances of the release or remedial action contemplated, and be well-suited to the site. A key factor in determining the potential relevance and appropriateness of a

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[3] Class IV injection wells are used to inject contaminated ground water into or above an underground source of drinking water. See 40 C.F.R. 146.5(d). In most situations, ground water treatment reinjection involves only Class IV injection wells because treated ground water is recharged back into an underground source of drinking water (USDW) during pump-and-treat activities, not beneath it. Other classes of wells are not subject to section 3020's special provisions.

[4] Note, however, that an ARARs waiver may be appropriate in certain cases for actions taken under CERCLA.

requirement is to compare the CERCLA response objective with the purpose and objective of the requirement. See "CERCLA Compliance with Other Laws Manual" at p. 1-65 (EPA, August 8, 1988); proposed NCP, 53 FR at 51436 (Dec. 21, 1988) (proposed section 300.400(g)(2)).

The ultimate purpose of treating and reinjecting ground water into Class IV wells is to restore the formation to drinking water quality. EPA believes that standards that have been specifically developed to establish drinking water quality levels (such as MCLs[5]) are particularly well-suited to the accomplishment of that purpose. Although LDRs also prescribe treatment levels, those levels were not specifically developed to achieve drinking water quality (although they may often have that result). Thus, where drinking water standards are available, the Agency believes that they will generally be the relevant and appropriate requirement to use in setting treatment standards for CERCLA cleanups of drinking water formations.

In situations where no drinking water standard has been promulgated for the contaminants to be treated, the Region should consider potentially relevant and appropriate requirements (including any available health-based standards, LDR treatment standards, etc.) and attain the standard, if any, that the Agency finds is "relevant and appropriate under the circumstances of the release" (or justify a waiver).[6] EPA guidance sets out a number of factors for deciding if a requirement is relevant and appropriate under the circumstances of the release. See CERCLA Compliance with Other Laws Manual, at p. 1-67.

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[5] See the discussion of MCLs and MCLGs in the proposed and final NCP.

[6] If no such standards are relevant and appropriate, TBCs may be used as cleanup levels; use of a TBC should be explained and justified for each specific case.

Separate from the restrictions found in RCRA LDRs, an independent provision of the statute, RCRA Section 3020, bans hazardous waste injection into drinking water formations (Class IV injection wells), unless the conditions in subpart (b) are met. Subpart (b) permits reinjection of contaminated ground water that has been treated if: (1) the injection is a CERCLA response action or a RCRA corrective action, (2) the contaminated ground water is treated to substantially reduce hazardous constituents prior to each injection, and (3) the response action or corrective action is sufficient to protect human health and the environment upon completion. (See RCRA section 3020(b).)

Resolution

For the reasons specified in the attachment to this memorandum, LDR is not applicable to these activities. Instead of LDR, RCRA section 3020 applies to reinjection of treated contaminated ground water into Class IV injection wells during CERCLA response actions or RCRA corrective actions. Moreover, for CERCLA response actions where the goal is to clean up ground water to drinking water levels, the Agency believes that health-based drinking water standards (e.g. MCLs) -- rather than LDRs -- will generally be the relevant and appropriate cleanup standard. See the attachment.

Until guidance addresses the issue, what is required to "substantially reduce" hazardous constituents prior to each injection in a CERCLA response action or RCRA corrective action should be determined on a case-by-case basis. RCRA and CERCLA program policies and guidance should be reviewed to determine protectiveness upon completion of the action.

Attachment

cc: CERCLA and RCRA Branch Chiefs
Office of Drinking Water