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CLASSIFICATION OF INFILTRATION GALLERIES UNDER THE UIC AND RCRA PROGRAMS

United States Environmental Protection Agency
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Office of Water

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SUBJECT: Classification of Infiltration Galleries

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TO: Water Management Division Directors Regions I - X

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PURPOSE

Underground Injection Control (UIC) and Hazardous Waste Management program offices in a number of Regions have requested clarification on whether or not infiltration galleries are, in fact, Class V injection wells and subject to UIC program authorities. These questions arise from alternative, but conflicting, readings of the Office of Solid Waste's (OSW) final rule of April 2, 1991 (56 FR 13406) on the Toxicity Characteristic Leaching Procedure (TCLP) rule's compliance dates for different types of disposal facilities.

This rule makes a distinction between injection wells and infiltration galleries for RCRA treatment and compliance schedules, but does not provide a detailed definition of an infiltration gallery as opposed to an injection well. The rule granted an extension to the effective date of the TCLP for reinjection of ground water pursuant to hydrocarbon recovery operations undertaken at petroleum refineries and transportation facilities. The notice explicitly declined to extend the TCLP rule compliance date for

infiltration galleries, implicitly concluding that no infiltration gallery can be called an injection well. The purpose of this guidance is to provide clarification as to which type of infiltration galleries may be classified as injection wells and qualify for the rule's compliance date extension, assuming other conditions, such as location at a refinery, are met.

BACKGROUND

The Agency believes that a wide array of re-injection mechanisms are and have been termed infiltration galleries, including such operations as impoundments, pits, ponds and lagoons. A literature search conducted for the development of this guidance has not revealed a single, commonly accepted engineering definition for this practice. Neither UIC nor RCRA Program regulations define the term infiltration gallery.

The November 1990 (55 FR 46829) proposed TCLP compliance date extension for injection wells at hydrocarbon recovery operations noted that there was insufficient information on the design and operation of infiltration galleries to determine whether they should be treated differently from injection wells. The proposal also requested information on the design and operation of infiltration galleries to determine if they should be treated differently from injection wells for the purposes of the TC rule.

The most commonly depicted arrangement for infiltration galleries are devices employed to return treated ground water at aquifer remediation sites. Another use for these devices is in water supply system arrangements where they are designed to collect, rather than discharge, ground water. UIC program research indicates that most infiltration galleries are trenches, backfilled with a permeable material, through which fluids are discharged to the sub-surface. Fluids are distributed through one or more (vertical) pipes leading to a (horizontal) pipe laid in the trench. The intent of these operations offers striking parallels to commonly-accepted concepts of injection well operations.

DISCUSSION

EPA's review of regional submissions of typical infiltration galleries recognizes that certain types of these galleries, are, in fact, injection wells and do fall within UIC authorities. In the absence of a commonly accepted definition for these operations,

this guidance is intended to clarify which types of infiltration galleries are injection wells. This determination is based on the regulatory definition of an injection well (see 40 CFR §144.3).

The basic definition of an injection well is that it is comprised of a bored, drilled, or driven shaft, or a dug hole, whose depth is greater than the largest surface dimension, and is used for the subsurface emplacement of fluids. Infiltration galleries commonly use trenches whose surface dimension is greater than its depth. However, these trenches typically contain multiple vertical pipes for the discharge of treated ground water to either the gravel filled trench directly or to a horizontal, perforated pipe in the fill.

For purposes of this guidance, each of these vertical pipes, individually or in series, should be considered an injection well subject to UIC authorities. Conversely, other configurations (which may also be commonly referred to as infiltration galleries) such as pits or lagoons are not considered to be injection wells.

Attachment A depicts an infiltration gallery which fits within the definition of "injection well" outlined above. The use of such a gallery system also occurs at Class III solution mining operations.

These operations (which we recommend calling "injection galleries" to distinguish them from other types of infiltration galleries) are a UIC-regulated activity. Facilities discharging fluids which are RCRA hazardous waste, as part of an approved RCRA or CERCLA clean-up operation at a site not addressed by the TC exemption, may be authorized as Class IV wells in accordance with 40 CFR §144.13(c). Injection operations at sites specifically authorized by the TC exemption are not considered hazardous waste injection and would, therefore, be Class V wells. Any other ground water discharge that follows the prescribed pattern would be a Class V well.

The UIC program's highest priority has been and remains addressing discharges from injection wells which may endanger underground sources of drinking water (USDWs) when they are used to dispose of wastes. Injection galleries operating pursuant to State or federally approved remediation actions are not primarily discharging a waste product, but rather are recycling the resource to improve its quality. These activities are already a part of an

enforcement action, rather than an abuse or endangerment of ground water, and would not require the additional environmental controls which can be imposed by the UIC program. Such operations should be examined solely to ensure that adequate safeguards are incorporated into the enforcement order to protect USDWs.

Further, a number of additional authorities are available to address the operation of injection galleries. Generally, State ground water protection statutes authorize the regulation of all discharges to the "waters of the State" in parallel to Clean Water Act (NPDES) authorities. Injection galleries, much like surface impoundments (pits, ponds and lagoons), may therefore be regulated under these authorities. In addition, Section 1431 of the Safe Drinking Water Act (SDWA) and Section 7003 of RCRA provide an avenue of regulatory control in those cases where an imminent threat of endangerment to USDWs and/or human health and the environment exists from the operation of an injection gallery.

GUIDANCE

Ground water remediation actions utilizing a method of discharge termed infiltration galleries should be subject to a joint review by the UIC and RCRA program directors. If the facility can be characterized as an injection gallery in light of the definitions referenced in this guidance, it is subject to SDWA requirements as well as RCRA and possibly CERCLA and is eligible for the TC exemption. In cases where such remediation actions are not RCRA or CERCLA authorized, the UIC Director should decide whether a permitting or enforcement action is necessary. Remediation facilities that do not meet this criteria, such as pits, ponds or lagoons, are to be considered disposal facilities under RCRA/CERCLA or other State authorities and are not eligible for the TC exemption. Such facilities are not subject to SDWA requirements unless a Section 1431 action is warranted, but are subject to RCRA hazardous waste disposal requirements.

CONTACT

For further information or questions relating to this guidance, please contact Lee Whitehurst of the UIC Branch at FTS 260-5532.

Attachment