



## ENVIRONMENTAL GUIDANCE REGULATORY BULLETIN

Office of Environmental Guidance • RCRA/CERCLA Division (EH-231)

September 23, 1992

# Amendments to Interim Status Downgradient Groundwater Monitoring Standards at Hazardous Waste Facilities

## Notice to Approve Alternate Groundwater Monitoring Standards

On May 19, 1980, the EPA promulgated comprehensive standards (45 *FR* 33153) under the Resource Conservation and Recovery Act (RCRA) for owners and operators of hazardous waste treatment, storage, and disposal facilities (TSDFs) who qualify for interim status. These standards, 40 CFR Part 265, include technical requirements for groundwater monitoring (Subpart F) which are applicable to owners and operators of interim status landfills, surface impoundments, and land treatment facilities. Subpart F requires that the owners and operators of these facilities implement a groundwater monitoring program capa-

ble of determining the facility's impact on the quality of the groundwater in the uppermost aquifer underlying the facility. Section 265.91 (a)(2) of Subpart F provides that a groundwater monitoring system must be capable of yielding groundwater samples for analysis and must consist of at least three monitoring wells installed hydraulically downgradient *at the limit of the waste management area*.

Shell Oil Co. challenged the groundwater monitoring requirements of 40 CFR 265.91 (a)(2) (*Shell Oil Co. v. EPA*, D.C. Cir. No. 80-1532 and consolidated cases) and requested a review of the requirement to locate hydraulically downgradient wells "at the limit of the waste management area" to determine if this requirement is arbitrary and capricious or otherwise not in accordance with law. Complying with a settlement agreement, EPA proposed on January 18, 1991, to amend 40 CFR 265.91 to allow for the alternate placement of hydraulically downgradient wells at interim status facilities where existing physical obstacles prevent installation of monitoring wells at the limit of the waste management area (56 *FR* 2108).

EPA also proposed that the owner and operator of a facility must establish the need for the location of alternate groundwater monitoring wells, by means of a written demonstration certified by a "qualified geologist" or "qualified geotechnical engineer." Alternate locations for downgradient groundwater monitoring wells would not be appropriate when physical obstacles at the downgradient boundary of a facility could be avoided by means of alternate drilling techniques (e.g., directional

drilling) or by interrupting power in overhead electrical cables during the installation of monitoring wells to ensure the safety of drilling crews.

## *DOE's Comments on Proposed Rule*

On February 21, 1991, the Office of Environmental Guidance solicited comments on the proposed rule from DOE Program and Field Offices. A consolidated Departmental response was submitted to EPA on March 19, 1991. While the Departmental response was generally supportive, there were aspects of the proposal that the Department felt needed further clarification.

DOE recommended that, in addition to existing hazardous waste management units, the rule should also apply to new hazardous waste management units, lateral expansion of existing units, and replacement hazardous waste management units. DOE requested that provisions under the rule be expanded to include replacement wells, because DOE believes that it is usually not advisable to install a new monitoring well at the same location as the one being replaced.

DOE also requested that EPA clarify the training and experience required for an individual to be considered a "qualified geologist or geotechnical engineer." Finally, DOE requested that EPA discuss the meaning of a number of terms used in the proposed rule including *waste management area*, *limit*, and *practical* as these terms are used in the phrase "the selected alternate downgradient location is as close to the limit of the waste management area as practical," and *immediate detection*, as used in "the location ensures immediate detection of any statistically significant amount of hazardous waste or hazardous constituents that migrate from the waste management area to the uppermost aquifer."

## *Final Rule: Demonstrable Criteria*

On February 3, 1992, the Office of Environmental Guidance, RCRA/CERCLA Division (EH-231) distributed copies of the Final Rule (56 *FR* 66365, December 23, 1991), which amends 40 CFR 260.10 and 265.91 respectively, to Program and Field Offices. The effective date of this rule was June 23, 1992. The only difference between the proposed rule and the final rule is that the criterion of *immediate detection* of hazardous constituents migration in the proposed rule was replaced by a less stringent requirement of detection *as early as possible*.

Specifically, § 265.91(a)(3) provides that an owner or operator may demonstrate that an alternate hydraulically downgradient monitoring well location will meet several criteria as outlined below. The demonstration must be in writing, must be kept at the facility, and must be certified by a qualified groundwater scientist, as newly defined in § 260.10. The demonstration must establish that:

- ❑ an existing physical obstacle prevents monitoring well installation at the hydraulically downgradient limit of the waste management area;
- ❑ the selected alternate downgradient location is as close to the waste management area as practical; and
- ❑ the location ensures that, given the alternate location, detection of any statistically significant amounts of hazardous waste or hazardous constituents that migrate from the waste management area to the uppermost aquifer is *as early as possible*.

Section 265.91(a)(3) limits the availability of alternate locations of downgradient wells to

units existing on the effective date of the final rule and to units subsequently made subject to interim status by new listings or expansions of the hazardous waste characteristics. Lateral expansion, new, or replacement units are *not* eligible for an alternate downgradient location.

In addition to geologic features, buildings, highways, or railroads, EPA determined that factors affecting the safety of personnel (e.g., the presence of overhead or underground cables and wires or underground storage tanks and associated pipelines) may also qualify as *physical obstacles*. EPA also determined that alternate locations of downgradient wells are not appropriate when physical obstacles at the limit of the waste management area may be avoided.

EPA, however, does not intend to require placement of monitoring wells where installation or sampling would substantially raise the level of risk posed to individuals involved in those activities or where placement would require an extreme disruption to normal facility operations. An *extreme disruption* is not defined in the final rule. Such determinations will be made on a case-by-case basis by the EPA Regional Office or state regulatory agency.

## *DOE's Concerns Partially Addressed*

The final rule limits the availability of alternate locations of downgradient wells to units existing on June 23, 1992, and to units subsequently made subject to interim status by new listings or expansions of the hazardous waste characteristics. EPA did not extend the alternate well location standard to new, expanding, and replacement units because, according to the preamble, EPA believes that careful planning by the owners or operators will enable them to install, operate, and maintain a groundwater monitoring system capable

of detecting releases of hazardous constituents (§ 265.91).

The final rule provides for inclusion in 40 CFR 260.10 a definition of a “qualified groundwater scientist”. A qualified groundwater scientist is a scientist or engineer who has received a baccalaureate or post-graduate degree in the natural sciences or engineering and has sufficient training and experience in groundwater hydrology and related fields to enable that individual to make sound professional judgments regarding groundwater monitoring and contaminant fate and transport. Such training and experience may be demonstrated by state registration, professional certifications, or completion of accredited university courses.

The final rule does not clarify the meaning of waste management area or limit in the phrase, “the selected alternate downgradient location is as close to the limit of waste management area as practical.” However, with respect to the term *practical*, EPA commented that while no generic regulatory standard could provide meaningful guidance on all of the factors that might be relevant to an individual site-specific decision. In general, EPA indicated that a well should be located as close to the obstacle as physically possible without:

- affecting the performance of the well,
- damaging the obstacle, or
- endangering the installation or sampling crew.

***Please direct questions about this notice regarding amendments to interim status for downgradient groundwater monitoring well locations at hazardous waste facilities to Jerry Coalgate, DOE Office of Environmental Guidance, RCRA/CERCLA Division, EH-231, 1000 Independence Ave., S.W., Washington, D.C., 20585, at (202)586-6075.***