

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

OFFICE OF  
SOLID WASTE AND EMERGENCY  
RESPONSE

**JUL 19 2005**

**OSWER 9200.4-39**

**MEMORANDUM**

**SUBJECT:** Use of Alternate Concentration Limits (CLs) in Superfund Cleanups

**FROM:**

**TO:** Superfund National Policy Managers, Regions 1 - 10

**Purpose**

The purpose of this memorandum is to present EPA policy regarding use of Alternate Concentration Limits (ACLs) in remedies selected under the authority of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA). CERCLA section 121 provides authority to use ACLs under certain circumstances.<sup>1</sup> CERCLA section 121 also requires that all Superfund remedies selected, including those based on ACLs, be protective of human health and the environment. Regions are requested to consult with the Office of Superfund Remediation and Technology Innovation (OSRTI) prior to selecting a remedy that includes CERCLA ACLs.

If the Agency, in its discretion, decides an ACL might be appropriate based on site-specific circumstances, CERCLA section 121 sets forth a number of specific requirements that must be met. This memorandum, which is designed to assist Regions in evaluating the potential of ACLs at Superfund sites, is not a regulation itself, nor does it change or substitute for any regulations. It describes national policy and does not impose legally binding requirements on EPA, states, or the regulated community. This policy does not confer legal rights or impose legal obligations upon any member of the public. Interested parties are free to raise questions and objections about the substance of this memorandum and the appropriateness of the application of this policy to a particular situation. EPA and other decision makers retain the discretion to adopt approaches on a case-by-case basis that differ from those described in this memorandum, and may change this policy in the future.

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<sup>1</sup>The term CERCLA ACLs is used in this memorandum to distinguish this term from alternate concentration limits used in other programs (e.g., RCR ACLs, provided for in 40 CFR Part 264, or state ACLs). Only CERCLA ACLs are addressed in this memorandum.

## **Background**

CERCLA section 121 establishes certain requirements for the Superfund cleanup process.

Section 121(b)(1) requires that remedial actions be protective of human health and the environment. In addition to that independent requirement, Section 121(d) generally provides that remedial actions shall meet applicable or relevant and appropriate requirements (ARARs), unless those requirements are waived pursuant to section §121(d)(4) under appropriate site-specific circumstances.<sup>2</sup> Section 121(d)(2)(B)(ii) also addresses ACLs and limitations concerning their use, as follows:

- (ii) For the purposes of this section, a process for establishing alternate concentration limits to those otherwise applicable for hazardous constituents in groundwater under subparagraph (A) may not be used to establish applicable standards under this paragraph if the process assumes a point of human exposure beyond the boundary of the facility, as defined at the conclusion of the remedial investigation and feasibility study, except where-
- (I) there are known and projected points of entry of such groundwater into surface water; and
  - (II) on the basis of measurements or projections, there is or will be no statistically significant increase of such constituents from such groundwater in such surface water at the point of entry or at any point where there is reason to believe accumulation of constituents may occur downstream; and
  - (III) the remedial action includes enforceable measures that will preclude human exposure to the contaminated groundwater at any point between the facility boundary and all known and projected points of entry of such groundwater into surface water then the assumed point of human exposure may be at such known and projected points of entry.

The CERCLA ACL provision is directed at standards that are “otherwise applicable for hazardous constituents in groundwater.” Examples of such standards may include state requirements to clean up ground water to background levels (e.g., some state antidegradation requirements) or state requirements for ground water cleanup. Such standards must otherwise qualify as an applicable standard pursuant to section 121(d)(2)(A) (e.g., must be properly promulgated, enforceable, consistently applied).<sup>3</sup>

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<sup>2</sup>ARAR waivers are also discussed in §300.430(f)(1)(ii)(C) of the 1990 National Oil and Hazardous Substances Pollution Contingency Plan (the NCP).

<sup>3</sup>Federal or state Maximum Contaminant Levels (MCLs) or non-zero Maximum Contaminant Level Goals (MCLGs) established under the Safe Drinking Water Act generally are not “applicable” requirements but are considered to be “relevant and appropriate” requirements for aquifers that are current or potential future sources of drinking water. (see, CERCLA section 121(d)(2)(A)(i); and §300.430(e)(2)(i)(B) of the NCP). Similarly, water quality criteria under the Clean Water Act also may be “relevant and appropriate” standards for specific contaminants where a plume discharges to (or threatens) surface water (see, CERCLA section 121(d)(2)(A)(i) and (B)(i); and §300.430(e)(2)(i)(E) of the NCP). Further information concerning environmental standards that may be either applicable or relevant and appropriate to a Superfund cleanup action is available from the EPA web site: <http://www.epa.gov/superfund/action/guidance/remedy/arars.htm>

This provision of the statute also contains several site-specific conditions which must be met in order to establish CERCLA ACLs. Regions have broad discretion under the statute when evaluating whether a CERCLA ACL might be appropriate under site-specific circumstances. Generally, in satisfying the statutory requirements in section 121(d)(2)(B)(ii), Regions should consider a number of factors, including:

1. whether contaminated ground water discharges to surface water;
2. whether all plumes of contaminated ground water are discharging to surface water (e.g., are contaminants present in a deeper aquifer that does not discharge to surface water?);
3. whether significant degradation of the aquifer might occur prior to discharge to surface water (e.g., could the plume spread to uncontaminated portions of the aquifer or to other aquifers that are interconnected?);
4. whether "known and projected" points of entry of the plume (or plumes) into a surface water body have been, or can be, specifically identified;
5. whether the discharge of ground water to surface water would lead to a "statistically significant" increase of contaminant concentrations in the surface water body at those points of entry, at points downstream, or at any point at which contaminants might be expected to accumulate (including accumulation of contaminants that might occur in sediments at or below those points of entry);
6. whether ground water can be restored (e.g., can the program goal of restoring contaminated ground water to its beneficial uses be met in a reasonable time frame?);
7. whether there is the potential for degradation products, particularly those that could represent more of a risk than the parent compounds (e.g., trichloroethene (TCE) can degrade into the more toxic compound, vinyl chloride), within the zone between the source and the points of entry;
8. whether the ACL will lead to a "statistically significant" increase in the concentration of degradation compounds in the surface water, and whether the assessed risk from any potential degradation products in the surface water is within EPA's acceptable risk range;
9. whether enforceable measures can be implemented to preclude human consumption of the contaminated ground water, and ensure that there would be no exposure to contaminants in the ground water above health-based levels (e.g., is it possible to reliably prevent human exposure to the contaminated ground water through the use of institutional controls?); and
10. whether a Total Maximum Daily Load (TMDL) pursuant to Clean Water Act section 303(d) has been (or is being) established for the surface water, and whether an ACL could result in exceedence of a TMDL even though there would be no "statistically significant" increase in the concentration of the contaminant in the surface water body.

## **Implementation**

In general, Regions should consider the factors discussed in this guidance in evaluating whether use of CERCLA ACLs may be appropriate under site-specific circumstances. Where CERCLA ACLs are established as part of a remedy, the Superfund Record of Decision (ROD) should identify the applicable standards for which the CERCLA ACLs have been substituted, and should document specifically how the site meets the specific conditions required by the statute (e.g., point of entry, no statistically significant increase of constituents, enforceable measures that will preclude human exposure). The ROD also should explain the process used to establish the CERCLA ACLs and their numeric values. Finally, the ROD should explain how the ACL meets the independent requirement in CERCLA section 121 that CERCLA response actions be protective of human health and the environment (e.g., selected engineering measures; institutional controls).

For sites not meeting the statutory conditions for use of CERCLA ACLs, Regions should consider other flexibilities provided for in CERCLA and the NCP that may be appropriate. ARAR waivers are an example of the flexibility provided in CERCLA and the NCP (section §121(d)(4) and part §300.430(f)(1)(ii)(C), respectively).<sup>4</sup>

This memorandum provides EPA policy related to the use of CERCLA ACLs in Superfund cleanups and supersedes any previous guidance on this matter. Where the Region contemplates using an ACL, and for questions regarding program flexibilities that may be appropriate to ground water cleanup, including CERCLA ACLs, please have your staff contact Kenneth Lovelace of OSRTI, at (703) 603-8787. For question regarding ARARs compliance, please have your staff contact Robin M. Anderson of OSRTI at (703) 603-8747.

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<sup>4</sup>Also, EPA guidance on factors to consider when evaluating the technical impracticability of ground water restoration can be found at: [http://www.epa.gov/superfund/resources/gwdocs/tec\\_imp.htm](http://www.epa.gov/superfund/resources/gwdocs/tec_imp.htm) .