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CERCLA Compliance With Other Laws Manual

CERCLA Compliance with the CWA and SDWA

Office of Emergency and Remedial Response
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Quick Reference Fact Sheet

The 1986 Superfund Amendments and Reauthorization Act (SARA) adopts and expands a provision in the 1985 National Contingency Plan (NCP) that remedial actions must at least attain applicable or relevant and appropriate requirements (ARARs). Section 121(d) of CERCLA, as amended by SARA, requires attainment of Federal ARARs and of State ARARs in State environmental or facility siting laws when the State requirements are promulgated, more stringent than Federal laws, and identified by the State in a timely manner.

To implement the ARARs provision, EPA has developed guidance, CERCLA Compliance With Other Laws Manual: Parts I and II (Publications 9234.1-01 and 9234.1-02). EPA is preparing a series of short fact sheets that summarize these guidance documents. This Fact Sheet focuses on CERCLA compliance with the Clean Water Act and the Safe Drinking Water Act (Chapters 3 and 4, respectively, in Part I). In addition, it discusses other statutes with provisions relevant to surface water or drinking water, such as dredge-and-fill requirements. The material covered here is based on SARA and on policies in the final revised NCP.

I. Compliance With The Clean Water Act

A primary purpose of the Clean Water Act (CWA), also known as the Federal Water Pollution Control Act, is to restore and maintain the quality of surface waters. The CWA regulations that are most likely to be ARARs for Superfund actions are the requirements for: (1) surface-water quality; (2) direct discharges to surface waters; (3) indirect discharges to publicly-owned treatment works (POTWs); or (4) discharges of dredge-and-fill materials into surface waters (including wetlands). Pollutants are regulated under the CWA according to their category (see **Highlight 1**).

Highlight 1: CATEGORIES OF POLLUTANTS

- **Toxic pollutants** -- the 126 individual priority toxic pollutants contained in 65 toxic compounds or classes of compounds (including organic pollutants and metals) adopted by EPA pursuant to the CWA section 307(a)(1);
- **Conventional pollutants** -- the pollutants classified as biochemical oxygen demand (BOD), total suspended solids (TSS), fecal coliform, oil and grease, and pH pursuant to the CWA section 304(a)(4); and
- **Nonconventional pollutants** -- any pollutant not identified as either conventional or toxic in accordance with 40 CFR section 122.21(i)(2).

A. CWA DIRECT DISCHARGE REQUIREMENTS (NPDES)

The CWA controls the direct discharge of pollutants to surface waters through the National Pollutant Discharge Elimination System (NPDES) program. NPDES requires permits for direct discharges to surface waters. The permits contain limits based upon either effluent (discharge) standards, or, if they are more stringent, ambient (overall water quality) standards. NPDES permits are issued, monitored, and enforced by EPA, or by a State agency authorized by EPA to administer an equivalent State program.

An on-site discharge from a CERCLA site to surface waters must meet the substantive NPDES requirements, but need not obtain an NPDES permit nor comply with the administrative requirements of the permitting process, consistent with CERCLA section

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121(e)(1). On the other hand, an off-site discharge from a CERCLA site to surface waters is required to obtain an NPDES permit and to meet both the substantive and the administrative NPDES requirements. (See **Highlight 2** for CERCLA activities considered to be direct discharges.) Occasionally, more than one CWA direct discharge requirement may potentially apply to a surface-water cleanup (see Section III for resolution of this issue).

Highlight 2: CERCLA ACTIVITIES CONSIDERED TO BE DIRECT DISCHARGES

From a Point Source:

- **On-site Waste Treatment:** wastewater is discharged from a treatment plant directly into, or in very close proximity to, a surface-water body through a discernible conveyance such as a pipe, ditch, channel, tunnel, or well.
- **Off-site Treatment:** wastewater from the site is piped or otherwise discharged through a discernible conveyance to an off-site surface-water body.
- **Any Remedial Action:** site runoff is channeled directly to a surface-water body through a ditch, culvert, storm sewer, or other means.

From a Nonpoint Source:

- Unchanneled runoff from a site into surface water.

1. **Substantive Requirements**

a. **Ambient Water Quality Standards**

Federal Water Quality Criteria (WQC) - Federal WQC are non-enforceable guidelines that set concentrations of pollutants which, when published, were considered adequate to protect surface waters. The WQC may be relevant and appropriate to CERCLA cleanups based upon an evaluation of four criteria set forth in CERCLA section 121(d): (1) uses of the receiving water body; (2) media affected; (3) purposes of the criteria; and (4) current information. Under CWA section 304, EPA has developed WQC for: (1) protection of human health; and (2) protection of aquatic life.

State Antidegradation Requirements/Use Classifications - Under the CWA, every State is required to classify all of the waters within its boundaries according to its intended use. EPA regulation requires States to establish antidegradation requirements. As a result, discharges that result from CERCLA response actions to high-quality receiving waters could be prohibited or limited, unless an ARAR waiver (such as inconsistent application by the State) is available. State antidegradation requirements may be applicable to both point and nonpoint source discharges. (A point source is a discernible conveyance such as a pipe, ditch, channel, tunnel or well from which pollutants may be discharged.)

b. **Effluent Standards**

Technology-Based Limitations - CWA section 301(b) requires that, at a minimum, all direct discharges meet technology-based limits. Technology-based requirements for conventional pollutant discharges include application of the best conventional pollutant control technology (BCT). For toxic and nonconventional pollutants, technology-based requirements include the best available technology economically achievable (BAT). Because there are no national effluent limitations regulations for releases from CERCLA sites, technology-based treatment requirements are determined on a case-by-case basis using best professional judgment (BPJ) to determine BCT/BAT equivalent discharge requirements. Technology-based limits for water discharges are often expressed as concentration levels. Technology-based limits are applicable to direct discharges from a point source.

State Water Quality Standards (WQS) - Under CWA section 303, States must develop water quality standards. State WQS may be numeric or narrative. Where State WQS are narrative, either the whole-effluent or the chemical-specific approach is generally used as the standard of control. State WQS may be applicable to both point and nonpoint source discharges.

2. **Administrative Requirements**

An off-site direct discharge from a CERCLA response action to surface waters requires an NPDES permit. The requirements for obtaining a permit include:

- **Certification Requirements:** the applicant for an NPDES permit must receive certification from the State that the discharge will be in compliance with CWA sections 301, 302, 303, 306, and 307;
- **Permit Application Requirements:** an application for an NPDES permit for a new discharge must be made 180 days prior to the actual discharge; pollution control equipment must be installed before the new discharge begins; and compliance must be achieved within the shortest feasible time, not to exceed 90 days;

- **Reporting Requirements**: the NPDES permit requires a discharger to maintain records and to report periodically on the amount and nature of pollutants in the discharged wastewaters; and

- **Public Participation Requirements**: the NPDES discharge limitations and requirements developed for a CERCLA site are subject to public participation requirements, including public notice and public comment.

B. CWA INDIRECT DISCHARGE REQUIREMENTS (Pretreatment Program for Nondomestic Users of POTWs)

Under CWA, all discharges by nondomestic users into POTWs must meet pretreatment standards. The purpose of pretreatment standards is to avoid the introduction of pollutants into municipal wastewater treatment plants that pass through, interfere with, or are otherwise incompatible with, such treatment works. The pretreatment standards are found in the national pretreatment program and in all State and local pretreatment regulations. There are three types of pretreatment standards (see **Highlight 3**).

Any discharge from a CERCLA site to a POTW is considered an off-site activity. It is, therefore, subject to both the substantive and administrative requirements of the national pretreatment program, and to all applicable State and local pretreatment regulations.

Highlight 3: TYPES OF PRETREATMENT STANDARDS

- **Prohibited discharge standards** apply to all nondomestic discharges and prohibit pollutants that cause fire or explosions, corrosion, obstructions, high temperatures at POTWs, problems with worker health and safety, or interference.

- **Categorical pretreatment standards** are national, technology-based effluent limitations developed by EPA for certain industrial categories. Currently no national standards exist for CERCLA discharges.

- **Local limits** are developed by qualifying POTWs, and are designed to ensure compliance with specific environmental standards and criteria at the local level.

1. Discharge of CERCLA Wastewater to a POTW

Wastewater from a CERCLA site may be sent to a POTW that either has or does not have an EPA-approved pretreatment program. A POTW with an approved pretreatment program already has the mechanisms necessary to ensure that discharges, including those from a CERCLA site, comply with applicable pretreatment standards and requirements. Remedial Project Managers (RPMs) must evaluate a POTW without an approved pretreatment program to determine whether it has sufficient mechanisms for meeting the requirements of the national pretreatment program when accepting CERCLA wastewater.

The determination of whether the POTW can accept CERCLA wastewater should be made during the RI/FS stage of the remedial action. Factors for determining a POTW's ability to accept CERCLA wastewater include:

- The quantity and quality of the CERCLA wastewater and its compatibility with the POTW;

- The impacts of a CERCLA discharge on the POTW's treatment system and on its continued compliance with its NPDES permit;

- The POTW's record of compliance with its NPDES permit and pretreatment program requirements to determine if the POTW is a suitable disposal site for the CERCLA wastewater;

- The potential for volatilization of the wastewater constituents at the CERCLA site, while moving through the sewer system, or at the POTW, and its potential impact on air quality;

- The potential for ground-water contamination from the transport of the CERCLA wastewater or impoundment at the POTW, and the need for ground-water monitoring;

- The potential effect of the CERCLA wastewater upon the POTW's discharge as evaluated by maintenance of water quality standards in the POTW's receiving waters;

- The POTW's knowledge of and compliance with any RCRA requirements or requirements of other environmental statutes; and

- The various costs of managing the CERCLA wastewater, including all risks, liabilities, permit fees, etc.

In addition to these factors, off-site discharges of CERCLA wastewaters may only be made to facilities (generally POTWs) in compliance with the CERCLA off-site policy (OSWER Directive 9834.11, November 1987,

at p. 11; see also 40 CFR 300.440 (proposed), 53 FR 48218, November 29, 1988).

2. **Applicable POTW Control Mechanisms (Permits or Orders)**

It is likely that RPMs will have to obtain from POTWs permits or orders for CERCLA remedies involving indirect discharges to such POTWs. POTWs have the authority to limit or reject wastewater discharges and to require dischargers to comply with control mechanisms such as permits or orders. These permits or orders contain applicable pretreatment standards including local discharge prohibitions and numerical discharge limits. In addition to incorporating pretreatment limitations and requirements, the control mechanisms may also include: (1) monitoring and reporting requirements to ensure continued compliance with applicable pretreatment standards; (2) spill prevention programs to prevent the accidental discharge of pollutants to POTWs (e.g., spill notification requirements); and (3) other requirements.

C. DREDGE-AND-FILL REQUIREMENTS

Any discharge of dredge-and-fill material into the navigable waters of the United States, including wetlands, is subject to the requirements of certain regulatory authorities (see **Highlight 4**). These requirements ensure that impacts on aquatic ecosystems are evaluated. CERCLA activities that may be considered dredge-and-fill activities include, but are not limited to, the following:

- Dredging of contaminated lake, river, or marine sediments;
- Disposal of contaminated soil, waste material, well-drilling materials, or dredged material in surface water, including most wetlands;
- Capping of a site containing wetlands;
- Construction of berms and levees to contain wastes;
- Stream channelization; and
- Excavation to contain effluent.

D. COORDINATION BETWEEN SUPERFUND AND WATER OFFICES

RPMs are required to identify potential CWA ARARs when considering a discharge to surface waters, a discharge to a POTW, or dredging of surface-water sediments. In order to identify and communicate ARARs in a timely manner, each EPA Region should establish procedures between the Regional Superfund and Water offices. The Superfund and the Water offices should coordinate their activities at the following stages of the remedy selection process:

Highlight 4: DREDGE-AND-FILL AUTHORITIES

Dredge-and-fill activities are regulated under the following authorities:

- **Section 10 of the Rivers and Harbors Act** prohibits the unauthorized obstruction or alteration of any navigable water of the United States.
- **Section 404 of the Clean Water Act** regulates the discharge of dredged or fill material to waters of the United States. It applies to all discharges of dredged or fill material to U.S. waters, regardless of the condition of the wetland. While section 404, when applicable, requires consideration of any practicable alternatives, there is no duty to mitigate adverse effects from previous dischargers. However, it may be appropriate in some circumstances to protect the environmental values of the site.
- **Section 103 of the Marine Protection Research and Sanctuaries Act** regulates ocean discharges of materials dredged from waters of the United States.
- **40 CFR Part 6, Appendix A** contains EPA's regulations for implementing Executive Order 11990, Protection of Wetlands, and Executive Order 11988, Floodplain Management, which require Federal agencies, wherever possible, to avoid or minimize adverse impacts of Federal actions upon wetlands and floodplains (including dredge-and-fill activities). The proposed plan and selected remedial action should be evaluated in light of these requirements and the alternative modified, if necessary, to avoid or minimize adverse impacts.

- **Preliminary Assessment/Site Investigation**. For planning purposes, copies of pertinent documents may be sent to the Water offices (Regional and State, if appropriate) to promptly notify them of possible remedial actions involving discharges to surface waters.
- **Remedial Investigation/ Feasibility Study**. To provide and obtain additional information regarding the site and the potential contamination of the surface water, copies of the RI/FS Workplan (draft and final), the RI/FS Report, and the Proposed Plan may be sent to the Water offices. In addition, close coordination should occur during the initial and detailed screening of alternatives.

- **Selection of Remedy/Record of Decision.** To ensure that the selected remedy attains all CWA ARARs (or other health- or risk-based levels when ARARs are waived or do not exist) and is adequately documented, the Water offices should be contacted for additional information.

- **Remedial Design/Remedial Action.** To help ensure that the selected remedy will attain all ARARs, the Water offices should be consulted during the RD/RA.

II. Compliance With The Safe Drinking Water Act

The Safe Drinking Water Act of 1974 (SDWA), as most recently amended in 1986, requires EPA to establish regulations to protect human health from contaminants in drinking water. To achieve this, EPA has developed: (1) drinking water standards; (2) a permit program for the underground injection of wastes (the Underground Injection Control (UIC) Permit Program); and (3) ground-water protection programs (the Sole Source Aquifer Program and the Wellhead Protection Program).

A. DRINKING WATER STANDARDS

1. National Primary Drinking Water Regulations

The drinking water regulations are applicable to public water systems (defined as systems) having at least 15 service connections or serving at least 25 year-round residents. National primary drinking water regulations consist of contaminant-specific standards known as Maximum Contaminant Levels (MCLs), which are set as close as feasible to Maximum Contaminant Level Goals (MCLGs) (see **Highlight 5**). "Feasibility" is based upon best technology and it takes cost into consideration.

Highlight 5: DEFINITIONS OF MCLs AND MCLGs

Maximum Contaminant Levels are enforceable standards that apply to specified contaminants which EPA has determined have an adverse effect on human health above certain levels.

Maximum Contaminant Level Goals are non-enforceable health-based goals that are established at levels at which no known or anticipated adverse effects on the health of persons occur and which will allow an adequate margin of safety.

CERCLA section 121(d)(2)(A)(i) requires on-site CERCLA remedies to attain standards or levels of control established under the SDWA (i.e., MCLs, where they are applicable or relevant and appropriate). CERCLA section 121(d)(2)(A) also requires on-site remedies to attain MCLGs where relevant and appropriate under the circumstances of the release. EPA believes that MCLGs set at levels above zero should be attained where relevant and appropriate as cleanup levels for ground or surface waters that are current or potential sources of drinking water. If the MCLG is equal to zero, the Agency believes it is not appropriate for setting cleanup levels, and the corresponding MCL will be the potentially relevant and appropriate requirement. (In some instances, MCLs will also be applicable if the water is delivered through a public water supply system having the requisite number of service connections and year-round customers mentioned above.)

2. Secondary Drinking Water Regulations

Secondary drinking water regulations consist primarily of Secondary Maximum Contaminant Levels (SMCLs) for specific contaminants or water characteristics that may affect the aesthetic qualities of drinking water (i.e., color, odor, and taste). SMCLs are nonenforceable limits intended as guidelines for use by States in regulating water supplies. SMCLs are guides for public water systems and are typically measured at the tap of the user of the system. However, SMCLs are potential relevant and appropriate requirements in States that have adopted SMCLs as additional drinking-water standards.

B. UNDERGROUND INJECTION CONTROL PROGRAM (UIC)

Under the UIC program, owners and operators of certain classes of underground injection wells are required to obtain and adhere to the requirements of operating permits. The permit applicant must prove to the State or Federal permitting authority that operation of the underground injection will not endanger drinking-water sources. For regulatory and reporting purposes, underground injection wells are divided into five categories. Class I, Class IV, and Class V wells are most likely to be associated with CERCLA response actions (see **Highlight 6**).

Highlight 6: DESCRIPTION OF CLASS I, IV, AND V WELLS

- Class I wells are used to inject industrial, hazardous, and municipal wastes beneath the lower most formation containing, within one-quarter mile (1/4) of the well bore, an underground drinking-water source.
- Class IV wells are used to inject hazardous or radioactive waste into or above a formation containing, within one-quarter mile (1/4) of the well bore, an underground drinking-water source.
- Class V wells include all wells not incorporated in Classes I through IV, and are typically recharge wells, septic system wells, and shallow industrial (non-hazardous) disposal wells.

An abandoned or failed Class I and Class IV injection well facility could be a site of a CERCLA action, or the CERCLA response action may include the reinjection of treated ground water. In addition, a CERCLA cleanup could involve the reinjection of nonhazardous waste water to a Class V well. In each case, requirements under the UIC program may be potential ARARs.

1. Substantive Requirements

a. The SDWA UIC Provisions

The injection of hazardous wastes from CERCLA sites into wells constructed both on-site or off-site must meet the substantive requirements of the UIC program. In general, no owner or operator may construct, operate, or maintain an injection well in a manner that results in the contamination of an underground source of drinking water at levels that violate MCLs or otherwise affect the health of persons. While the UIC regulations expressly refer to MCLs (40 CFR Parts 142, 144), non-zero MCLGs will generally be potential relevant and appropriate requirements for CERCLA cleanups involving an on-site injection well containing ground water potentially used for drinking water. In addition, all owners and operators of underground injection wells are subject to UIC closure requirements. Finally, injection of hazardous wastes into a Class I well requires compliance with additional UIC construction, operating, and monitoring requirements.

b. The Resource and Conservation and Recovery Act (RCRA)

Under section 3020 of RCRA, the injection of hazardous wastes into Class IV injection wells is banned unless: (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. These requirements are potential ARARs for the reinjection of hazardous waste into Class IV wells in a pump-and-treat remediation system.

Because reinjection of treated contaminated ground water at CERCLA sites is specifically addressed in RCRA section 3020, RCRA land disposal restrictions (sections 3004(f), (g) and (m)) are not applicable to each reinjection or to the conclusion of a pump-and-treat remediation. EPA also expects that generally they will not be found to be relevant or appropriate requirements. Therefore, the best demonstrated available technology (BDAT) generally will not have to be met for each reinjection or at the conclusion of a pump-and-treat remediation involving a Class IV well. (See the Don Clay, AA (OSWER), Memorandum on the "Applicability of Land Disposal Restrictions to RCRA and CERCLA Groundwater Treatment Reinjection," December 27, 1989, OSWER Directive 9234.1-06).

RCRA also requires the owner or operator of a Class I UIC well to comply with RCRA corrective action, for releases from solid waste management units, if the permit was issued after November 8, 1984 (see 40 CFR 270.60).

2. Administrative Requirements

Off-site CERCLA actions must comply with the following administrative requirements of the UIC Program:

- **Application requirements.** All existing and new underground injection wells must apply for a permit unless an existing well is authorized by rule for the life of the well;
- **Inventory and Other Information Requirements.** Existing underground injection wells that are authorized by rule are required to submit inventory information to EPA or an approved State. Other information may be required to determine whether injection will endanger an underground source of drinking water; and
- **Reporting Requirements.** Owners and operators of Class I wells are required to maintain records and report quarterly on the characteristics of injection fluids and ground-water monitoring wells and various operating parameters (e.g., pressure, flow rate, etc.).

NOTE: Off-site CERCLA actions must also comply with CERCLA requirements for off-site transfers of waste. (OSWER Directive 9834.11, November 1987; 53 FR 48218, November 29, 1988).

C. SOLE SOURCE AQUIFER (SSA) PROGRAM

The SDWA permits EPA to designate as "sole source aquifers" any aquifer that is the sole source or principal drinking-water source for an area and which, if contaminated, would present a significant hazard to human health. Under the SSA program, Federal financial assistance (from any Federal Agency) may not be committed for any project that may contaminate a sole source aquifer so as to create a significant public health hazard. Generally, CERCLA activities would not in and of themselves increase pre-existing contamination of sole source aquifers. Therefore, it is unlikely that CERCLA activities would be subject to restrictions on Federal financial assistance. Nonetheless, a review of any potential problems associated with sole source aquifers should be part of the RI/FS process.

D. WELLHEAD PROTECTION PROGRAM

The 1986 amendments to the SDWA direct States to develop and implement programs to protect wells and recharge areas that supply public drinking-water systems from contaminants that flow into the well from the surface and subsurface. Because the Wellhead Protection program is designed to be run by the States, the program will not involve Federal ARAR provisions. Nonetheless, State Wellhead Protection programs may impose requirements that may be ARARs for CERCLA response actions. RPMs should be aware of State Wellhead Protection program requirements and should coordinate with the appropriate Regional drinking-water program personnel assigned to the Wellhead Protection program.

III. RESOLUTION OF POTENTIALLY CONFLICTING ARARS

For relevant and appropriate requirements, the very availability of a certain requirement often suggests that other requirements, which are less well suited to the circumstances, are not relevant and appropriate. Several conceivable conflicts among potential relevant and appropriate requirements concerning surface water may be resolved as follows:

- Where surface water serves as actual or potential drinking-water source and there are no impacts to aquatic organisms, the following requirements should be attained where relevant and appropriate:

  (1) State WQS that are designated for drinking-water use, and are more stringent than Federal standards, or specific to the uses of that water body; or, if none

  (2) Non-zero MCLGs; or, if none

  (3) MCLs; or, if none

  (4) Federal WQC adjusted for drinking-water use.

- For non-drinking surface water and there are no impacts to aquatic organisms, attain where relevant and appropriate, the stricter of:

  (1) State WQS; or

  (2) Technology Based Limitations.

- For non-drinking surface water and there are impacts to aquatic organisms, attain, where relevant and appropriate:

  (1) State WQS; or, if none

  (2) Federal WQC.