

New Jersey Department of Environmental Protection Adopts New Remediation Standards

On 2 June 2008, the New Jersey Department of Environmental Protection (NJDEP) adopted their new Soil Remediation Standards Rule (SRS) at N.J.A.C. 7:26D. The NJDEP utilized the United States Environmental Protection Agency's (USEPA's) soil screening level equations to calculate soil standards that combine the direct ingestion and dermal absorption pathways. The NJDEP, as directed by the Legislature, also developed human health based soil remediation standards for residential and non-residential exposure scenarios in order to prevent unacceptable risk to human health from inhalation of contaminated particulates and/or vapors emanating from contaminated soil. The inhalation standards were developed using USEPA's soil screening guidance and models.

The SRS will govern site remediation activities at any contaminated site in New Jersey, whether or not the site is under NJDEP's oversight, performed under the Industrial Site Recovery Act (ISRA), the Spill Compensation and Control Act (Spill Act), the Underground Storage of Hazardous Substances Act, the Voluntary Cleanup Program, or other statutes or programs. These rules implement the provisions of the Brownfield and Contaminated Site Remediation Act, N.J.S.A. 58:10B-12, and other statutes by establishing minimum standards for the remediation of contaminated ground water and surface water (previously adopted), and by establishing new minimum residential direct contact and non-residential direct contact SRS. These rules do not establish the minimum impact to ground water SRS; these standards shall be developed by the NJDEP on a site-by-site basis, pursuant to the NJDEP's authority under N.J.S.A. 58:10B-12a.

Phase In Requirements

The NJDEP has amended the Technical Requirements for Site Remediation (Tech Rules), N.J.A.C. 7:26E-1.3(d)1, to apply the SRS to responsible party/person conducting a remedial action. A six-month phase in period ending 2 December 2008 has been established for the implementation of the SRS. After the phase in period, the following applies:

The person responsible for conducting the remediation must remediate a site:

1. To the remediation standards at N.J.A.C. 7:26D and the impact to ground water SRS developed on a site-by-site basis pursuant to Brownfield and Contaminated Site Remediation Act; or
2. To the Soil Cleanup Criteria (SCC) that were in effect prior to 2 June 2008 when:
 - i. The remediating party has submitted a remedial action work plan (RAWP) or a remedial action report (RAR) to the NJDEP before 2 December 2008 that establish the SCCs as the standards for the site;

- ii. The RAWP or a RAR is in compliance with the Tech Rules, N.J.A.C. 7:26E-6; and
- iii. The SCCs for the site are not greater by an order of magnitude or more, than the soil remediation standards adopted by N.J.A.C. 7:26D.

A RAWP or a RAR will be considered in compliance with the Tech Rules, N.J.A.C. 7:26E-6, when the NJDEP has reviewed the report and has:

1. Approved the RAWP or RAR; or
2. Issued a Notice of Deficiency (NOD) and the remediating party rectifies all deficiencies to the NJDEP's satisfaction within the timeframe specified by the NJDEP; and
3. The remedial action is conducted within the timeframe specified in the RAWP.

A RAWP or a RAR will not be considered in compliance with the Tech Rules, N.J.A.C. 7:26E-6, when the NJDEP has reviewed the report and has issued a Notice of Violation (NOV) to the remediating party. Under this situation, the remediating party must remediate the site to the SRS and the impact to ground water soil remediation standards developed on a site-by-site basis pursuant to N.J.S.A. 58:10B-12a.

Order of Magnitude Guidance

The NJDEP provided order of magnitude provisions to the SRS for the direct contact (ingestion/dermal and inhalation) exposure pathway. Thirteen compounds have new nonresidential SRS that are ten times lower (i.e., an order of magnitude) or more than their prior SCC, and eleven compounds have new residential SRS that have changed by an order of magnitude or more. The NJDEP will require remediation to the new SRS before RAWP or RAR approval or may compel the person responsible for conducting the remediation to remediate to the new SRS after RAWP approval but prior to No Further Action (NFA) approval. The NJDEP may also compel the person responsible for the discharge to remediate to the new standards after NFA approval.

For sites with NFA approval that include engineering and/or institutional controls, the person responsible for maintaining those controls (such as a cap and Deed Notice), will be required to compare concentrations of contaminants of concern (COCs) left in place to the new SRS in their next biennial certification. If there is a change in the standards by an order of magnitude or more, then an evaluation for the protection of human health and the environment must be conducted and any necessary remediation completed.

For sites with NFA approval and no engineering and/or institutional controls (i.e., an unconditional NFA) DEP will require an order of magnitude evaluation, whenever a site "re-enters" the Site Remediation Program (such as under an ISRA trigger).

Impact to Groundwater Standards

The NJDEP requires responsible parties to develop site-specific soil remediation standards that are protective of groundwater. A site-specific impact to groundwater (IGW) SRS must be developed when a discharge to soil is known or suspected. The NJDEP offers four methods for development of IGWSRS. These methods include: soil-water partition equation; synthetic precipitation leaching procedure (SPLP); SESOIL Model (vadose zone/saturated zone modeling); and SESOIL/AT123D Model. Default IGW soil remediation standards are available in the Soil-Water Partition Equation Guidance Document.

Alternative Soil Remediation Standards

The person responsible for conducting the remediation may propose, for the Department's approval, an alternative soil remediation standard (ARS) for the Ingestion-Dermal exposure pathway for a site or an area of concern based on one of the options provided in Appendix 4 of the SRS. The basis for requesting an ARS includes: new chemical toxicity data; new risk assessment methodology or models; alternative land use planned for the site; or site-specific conditions that support the modification of input parameters for models to develop ARS. In addition, a request for an ARS may be submitted for the Inhalation pathway, based on the procedures in Appendix 5.

Hypothetical Case Example

We have provided a hypothetical case example involving the remediation of a site where the COC is tetrachloroethene (PCE), a common dry cleaning solvent. The first issue to address is whether the application of the SRS to current site remediation applies. If a RAWP or RAR conforming to the Tech Rules has been or will be submitted to NJDEP prior to 2 December 2008 then the SRS will not apply, provided that the Order of Magnitude Guidance is not applicable to the COC. If the RAWP or RAR will not be submitted to NJDEP prior to 2 December 2008, the SRS will apply and the new Direct Contact SRS will be used to evaluate remediation. The responsible party will also be required to develop site-specific SRS that are protective of groundwater or use the default values. For the case of PCE where the SRS will apply, the new direct contact residential and non-residential SRS moderately change from 4 milligrams per kilogram (mg/kg) to 2 mg/kg for residential and from 6 mg/kg to 5 mg/kg for non-residential. However, the default IGW remediation standard changed from 1 mg/kg under the Soil Cleanup Criteria, compared to the new IGW default remediation standard in the IGW guidance of 0.005 mg/kg. Determining the appropriate approach for addressing IGW will likely drive the remediation process for this hypothetical scenario.