

Coordination of NJDEP and USEPA PCB Remediation Policies

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Pursuant to the Technical Requirements for Site Remediation at N.J.A.C. 7:26E-1.1(b)1, the person responsible for conducting the remediation and the licensed site remediation professional (LSRP) must comply with the “more stringent requirements and provisions of other Federal, State or local applicable statutes or regulations.” The purpose of this document is to assist the person responsible for conducting the remediation and LSRP in satisfying the state and federal requirements for the cleanup of polychlorinated biphenyl (PCB) contamination.

The New Jersey Department of Environmental Protection’s (NJDEP’s) Contaminated Site Remediation & Redevelopment (CSRR) program has established residential and non-residential direct contact Soil Remediation Standards (SRS) for polychlorinated biphenyls (PCBs) based upon a legislatively mandated 1×10^{-6} cancer end-point. The residential SRS (RSRS) is 0.2 ppm and the non-residential SRS (NRSRS) is 1 ppm. See the Remediation Standards (N.J.A.C. 7:26D).

For the Impact to Ground Water (IGW) pathway, the default Soil Screening Level of 0.2 ppm may be used as a site-specific IGW standard. Alternatively, other procedures, most notably the Synthetic Precipitation Leaching Procedure, may be implemented to determine a site-specific standard which in most cases will be greater than the default Soil Screening Level. It should be noted that even when PCBs are present at the screening or site specific IGW standards, or at concentrations exceeding the site specific IGW standard, there may be enough of a buffer between the deepest concentrations and the water table to preclude the PCB contamination reaching the water table. This can be demonstrated by using the SESOIL transport model or the Immobile Chemicals option. In such an instance remediation may not be necessary, providing the direct contact pathways have been addressed satisfactorily. These and other options are detailed in the IGW guidance at <http://www.nj.gov/dep/srp/guidance/rs/>.

It is recommended that the Impact to Ground Water Introduction document at http://www.nj.gov/dep/srp/guidance/rs/igw_intro.htm be reviewed prior to conducting any sampling for this pathway.

Under current CSRR policy, PCBs detected below 0.2 ppm would not require remediation. In a residential use scenario, PCBs above 0.2 ppm and less than 1 ppm requires institutional (deed notice) and engineering controls. In a non-residential or restricted use scenario, PCBs found above 0.2 ppm requires a deed notice and when above 1 ppm, requires a deed notice and engineering controls. CSRR policy since 1993 allows for contaminants with appropriate institutional and engineering controls to be non-permanently remediated as long as the remedy is found to be protective of human health and the environment. The Administrative Requirements for the Remediation of Contaminated Sites (N.J.A.C. 7:26C-7) requires the establishment of a soil remedial action permit along with a deed notice.

NJDEP allows capping on a site-specific basis for the IGW pathway (see guidance at https://www.nj.gov/dep/srp/guidance/#igw_capping), or where remediation for IGW is determined to be technically impracticable. However, as discussed above, even when PCBs are present at the site exceeding the site-specific IGW standard, there may be enough of a buffer between the deepest concentrations and the water table to preclude the contamination from reaching the water table. If this is demonstrated using the options detailed in the IGW guidance (https://www.nj.gov/dep/srp/guidance/rs/immobile_chemicals.pdf), remediation will not be necessary, if the direct contact pathways have been addressed.

The USEPA Toxic Substances Control Act (TSCA) provides federal PCB remediation policy that must be coordinated with CSRR policy during PCB remediation projects. This coordination may require permanent remediation of PCBs dependent on future use and concentrations detected. The TSCA regulations (also known as the “Final PCB Rule” or the “Mega Rule”) dealing with the remediation of soil as “bulk remediation waste” are principally found in 40 CFR 761.61(a – c). USEPA typically does not require PCBs to be cleaned up to levels less than 1 ppm. If PCB contamination exceeds 1 ppm, TSCA stipulates a range of self-implementing cleanup levels based upon future high and low occupancy scenarios that are identified in 40 CFR 761.61(a)4. These self-implementing remediation scenarios fall within PCB soil contamination ranges from 1 to 100 ppm. Where concentrations above 100 ppm are present or where the occupational use requirements will not be met, risk-based disposal approval applications must be submitted to the USEPA for written approval before proceeding.

It is important to note the low and high occupancy self-implementing cleanup criteria are differentiated by the anticipated future use exposure time frame, by an individual not wearing dermal and respiratory protection, for more or less than an average of 6.7 hours/week. Self-implementing PCB remediation requires a minimum 30-day advance written notification by the party conducting the remediation to the USEPA Regional Administrator and other involved regulatory agencies. Provided that the work is performed in strict conformance with 40 CFR 761.61(a) (for example, there is no deviation from the regulatory sampling requirements), the licensed site remediation professional (LSRP) submitting the notification may assume that the proposed remediation is acceptable if the Regional Administrator does not respond within 30 calendar days of receiving the notice. It is recommended that the LSRP document the USEPA notification and any related correspondence in the remedial action work plan and remedial action report submitted to the NJDEP.

TSCA Self-Implementing Criteria in Defined High Occupancy Areas – PCBs may remain between 1 and less than or equal to 10 ppm with a cap (meeting certain thickness and geotechnical requirements as discussed below) and deed notice. This would be applicable to residential or other uses where occupancy will exceed an average of 6.7 hours/week.

TSCA Self-Implementing Criteria in Defined Low Occupancy Areas – Where occupancy will not exceed an average of 6.7 hours/week, PCBs up to 25 ppm may remain without engineering controls, but a deed notice is still required. PCBs may remain at between 25 and 50 ppm when access is restricted by fencing, warning signs are provided, and a deed notice is filed. PCBs may remain at levels between 25 and 100 ppm when appropriately capped and a deed notice is filed (note no fencing required). 40 CFR 761.61(a)7 defines a cap as being a minimum

of 6 inches of asphalt or concrete (or similar material), or 10 inches of compacted soil meeting the geotechnical requirements specified in the regulations. The TSCA cap requirements may be somewhat different than that required by the CSRR in terms of other geotechnical properties. An LSRP or responsible party proposing to cap a PCB contaminated site should state that their proposal is in compliance with 40 CFR 761.61(a)7 to cover any potential additional USEPA geotechnical requirements.

CSRR policy does not recognize these occupancy and concentration-based scenarios and requires a deed notice when PCBs exceed 0.2 ppm and engineering controls when PCBs exceed 0.2 ppm or 1 ppm residential/non-residential scenarios, respectively. Where post-excavation sampling is being conducted to assure attainment of NJDEP SRS/TSCA soil cleanup criteria, the Technical Guidance for Site Investigation of Soil, Remedial Investigation of Soil, and Remedial Action Verification Sampling for Soil (https://www.nj.gov/dep/srp/guidance/#si_ri_ra_soils) should be followed. Note that when USEPA is directly involved in a PCB cleanup, USEPA may have additional investigatory and post-excavation PCB sampling requirements.

TSCA Performance-Based Disposal

The performance-based disposal codified in 40 CFR 761.61(b) allows for remediation under certain conditions without USEPA notification or approval. In such situations, all PCB remediation waste (as defined in the federal PCB regulations at 40 CFR 761.3) above 1 ppm must be excavated and disposed at a TSCA approved disposal facility, regardless of the concentrations found. The benefit of this option is that it allows for the more rapid remediation of PCB contaminated soils without the notification requirements as long as the soil quantity is small enough that the timeliness of the response outweighs potential additional TSCA disposal costs. It is recommended that this option be discussed with the USEPA regional contact (see contact information below) prior to implementation.

TSCA Risk-Based Cleanup and Disposal Approval

Taking into account a future low occupancy use scenario with appropriate deed notice and engineering controls, PCB concentrations up to 100 ppm may remain on site under both CSRR and TSCA guidelines. An LSRP or responsible party may elect to request a risk-based disposal approval under 40 CFR 761.61(c) from the USEPA Regional Administrator for any situation not covered by the self-implementing cleanup guidance. This requires submission of a request and a written response from the USEPA Regional Administrator before any remedial actions may be taken. Such risk-based disposal proposals may include requests to waive the more restrictive high occupancy limitations, leave PCB concentrations in excess of 100 ppm, or construct an alternate cap. However, please note that the federal regulations pertaining to risk-based disposal approvals are silent on the issue of occupancy level, and there is no need by the LSRP or responsible party to request a specific occupancy level. All risk-based approvals as well as other questions on TSCA PCB issues should be coordinated with the USEPA. The USEPA Region 2 PCB Coordinator is Andy Park, and he can be reached at park.andy@epa.gov or (212) 637-4184. The USEPA Region 2 NJDEP TSCA Contact is Eleni Kavvadias. She can be reached at kavvadias.eleni@epa.gov, or (212) 637-4138.

Hybrid Approvals from USEPA

USEPA may consider issuing hybrid self-implementing/risk-based approvals for those situations where the frequency of the characterization or verification (post excavation) sampling deviates from the regulatory requirements. USEPA may also consider issuing hybrid approvals for caps that are technically equivalent to those required under the federal PCB regulations. The technical basis for the deviation (whether sampling or cap construction) must be submitted with the notification, and it is in USEPA's discretion whether or not to approve the deviation.

Other PCB Coordination Issues

Concrete

Another CSRR/TSCA PCB coordination issue that frequently arises is how to sample and remediate contaminated porous materials such as concrete. The Mega Rule acknowledges that surficial wipe sampling and decontamination of concrete is only applicable where a spill has occurred within a 72-hour time frame. Beyond that time frame, PCBs will have soaked into the concrete making decontamination unsuccessful and wipe sampling unreliable. The Mega Rule establishes cleanup levels for concrete in the same manner as for soil as a bulk remediation waste. As such, concrete sample results can be compared to both the NJDEP SRS and TSCA bulk remediation waste regulations in 40 CFR 761.61(a)4.

In normal site remediation situations where contaminated concrete is suspected, sampling must include core (depth to be site specifically determined) or chip samples to evaluate the horizontal and vertical extent of contamination in concrete. Remediation that achieves the RSRS of 0.2 ppm would warrant issuance of an unrestricted use Response Action Outcome (RAO). A limited restricted use or restricted use RAO may be applicable based upon the levels of PCBs present and the requirement for institutional and/or engineering controls.

Where someone wishes to continue using intact concrete surfaces contaminated by spills of liquid PCBs, the concrete may be cleaned, covered and labeled in accordance with 40 CFR 761.30(p). Such cover may include a solid barrier or a double layer of solvent resistant coatings (for example, epoxy paint) applied in contrasting colors to provide a visual indication of wear. When the contaminated concrete is eventually taken out of service as in demolition, disposal must be in accordance with the bulk remediation waste criteria. Subsequent to the Mega Rule, guidance has been provided by USEPA that has eased the restrictions that were in place for the sale of structures with contaminated concrete.

Note that under the federal TSCA regulations, crushed or broken PCB-contaminated concrete cannot be reused as backfill; it can only be disposed, but disposal can be onsite. Please see USEPA's PCB regulations as well as the NJDEP's current Guidance for Characterization of Concrete and Clean Material Certification for Recycling (updated 1/2010) available at <http://www.nj.gov/dep/dshw/resource/techman.htm - concrete>.

Compliance Averaging

While the NJDEP allows for compliance averaging pursuant to its guidance at https://www.nj.gov/dep/srp/guidance/#attainment_comp the federal PCB regulations do not

specifically provide for this activity. As such, compliance averaging can only be applied where PCBs are present at or below the 1 ppm TSCA threshold.

PCBs in Historic Fill

The federal PCB regulations do not define historic fill and so, for the purposes of TSCA, it must be treated as any other PCB-contaminated media present on the site.

PCBs in Alternative Fill

The NJDEP's alternative fill policy allows for alternative fill that has contaminants present above soil remediation standards to be brought onto known contaminated sites, where similar like-on-like contaminants exist. USEPA does not have a similar policy; under USEPA's requirements, fill brought to a site from an off-site location must contain PCBs at less than or equal to 1 ppm. Conversely, use of material that contains greater than 1 ppm PCBs is prohibited as alternative fill or fill material.

Disposal of Building Materials Manufactured with PCBs

Buildings constructed or renovated between about 1950 and 1979 may contain PCBs in materials such as paint, caulk, or mastic. These materials should be sampled to determine if PCBs are present. If PCBs are found at concentrations equal to or greater than 50 ppm, then USEPA considers these materials to be a bulk product waste that must be disposed in accordance with 40 CFR 761.62.

The USEPA PCB Q&A Manual (revised 2014) is a good source for answers related to PCB site remediation and disposal questions. This document can be found at <https://www.epa.gov/pcbs/polychlorinated-biphenyl-pcb-question-and-answer-manual-and-response-comment-documents>.

See figures that follow

NJDEP Soil Remediation Standards for PCBs

Remediation Standards - N.J.A.C. 7:26D
<http://www.nj.gov/dep/srp/guidance/rs/>

- Residential Soil Remediation Standard
 - RSRS = 0.2 mg/kg
- Non-Residential Soil Remediation Standard
 - NRSRS = 1 mg/kg
- Impact to Groundwater Soil Remediation Standard
 - Site specific but screening levels available

✦ Note – PCBs regulated by the sum of the Aroclors ex. 1248 + 1260...)

PCB Impact to Ground Water Standards (IGWSRS)

- No soil numbers promulgated as standards
- Default IGW Soil Screening Level is 0.2 ppm, when exceeded, the pathway needs to be evaluated
- Capping is allowed on a site-specific basis for the IGW pathway or when determined to be technically impracticable to remediate.

To derive a site specific standard above the 0.2 ppm Soil Screening Level:

See http://www.nj.gov/dep/srp/guidance/rs/igw_intro.htm

Some options include:

- ✓ Possibility of higher standard using SPLP
- ✓ Possibility of higher standard because adequate buffer zone exists between contaminant and water table
- ✓ Other options (ex. transport modeling and incorporating site specific parameter values...)

TSCA Bulk PCB Remediation Waste Cleanup Levels

40 CFR 761.61 – Bulk Remediation Waste

- (a)4 – Self-Implementing Cleanup Levels
 - Self-Implementing Cleanup Notification – 40 CFR-761.61(a)3 requires 30-days notification of USEPA & NJDEP prior to initiating soil remediation.
 - High Occupancy > 6.7 Hours exposure per Week
 - Low Occupancy < 6.7 Hours exposure per Week

TSCA Bulk PCB Remediation Waste Cleanup Levels

➤ High Occupancy Areas > 6.7 Hours exposure per Week

- ≤ 1 ppm – Acceptable for unrestricted use
- > 1 - ≤ 10 ppm - Requires cap, DN

➤ Low Occupancy Areas < 6.7 Hours exposure per Week

- ≤ 25 ppm – Unrestricted Cleanup Level, DN
- > 25 ppm and ≤ 50 ppm – Fence, Signs, DN
- > 25 ppm and ≤ 100 ppm – Cap and DN

Note DN = Deed Notice

TSCA Bulk PCB Remediation Waste Cleanup Levels

40 CFR 761.61 – Bulk Remediation Waste

➤(b) – Performance-based Disposal

- If remediation conducted to 1 ppm with disposal at a TSCA approved facility – No USEPA notification required.

➤(c) – Risk-based Disposal Approval

- Any proposed PCB remediation not meeting the self-implementing conditions requires written approval from the USEPA Regional Administrator.
 - Ex. Proposal to leave > 10 ppm PCBs under a cap in a high occupancy area
 - Ex. Proposal to leave > 100 ppm PCBs under a cap in a low occupancy area
- Sediments contaminated by PCBs are excluded from self-implementing remedies.

Coordination of NJDEP/TSCA PCB Soil Remediation Standards

- ▶ < 0.2 ppm RSRS – Unrestricted use
- ▶ > 0.2 ppm IGW Soil Screening Levels must be evaluated
- ▶ > 0.2 ppm – Residential Use – Cap, Deed Notice
- ▶ > 0.2 to 1 ppm – Non-Residential Use – Deed Notice
- ▶ ≤ 1 ppm - TSCA Cleanup Level for Unrestricted High Occupancy Use or Performance-based cleanup
- ▶ > 1 ppm - Non-Residential Use - Cap, Deed Notice
- ▶ > 1 - ≤ 10 ppm – TSCA Cleanup Range for High Occupancy Use with a Cap and Deed Notice
- ▶ 100 ppm – Maximum TSCA Self-Implementing level
- ▶ > 100 ppm – Requires TSCA Risk-based Disposal Approval