# RESPONSE TO COMMENTS DOCUMENT ON THE

# PROPOSED RULE -- DISPOSAL OF POLYCHLORINATED BIPHENYLS
# OPPTS DOCKET #66009A

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## INTRODUCTION

The proposed rule (59 FR 62788, December 6, 1994) was issued pursuant to sections 6(e)(1), 6(e)(2)(B) and 6(e)(3)(B) of TSCA. Section 6(e)(1)(A) gives EPA the authority to promulgate rules prescribing the methods for the disposal of PCBs (15 U.S.C. 2605(e)(1)(A)). TSCA section 6(e)(1)(B) provides broad authority for EPA to promulgate rules that would require PCBs to be marked with clear and adequate warnings (15 U.S.C. 2605(e)(1)(B)). TSCA section 6(e)(2)(B) gives EPA the authority to authorize the manufacture, processing, distribution in commerce, and use of PCBs in other than a totally enclosed manner (15 U.S.C. 2605(e)(2)(B)). TSCA section 6(e)(3)(B) provides that any person may petition EPA for an exemption from the prohibition on the manufacture, processing, and distribution in commerce of PCBs (15 U.S.C. 2605(e)(3)(B)). EPA may by rule grant an exemption if the Administrator finds that: "(i) an unreasonable risk of injury to health or the environment would not result, and (ii) good faith efforts have been made to develop a chemical substance which does not present an unreasonable risk of injury to health or the environment and which may be substituted for such polychlorinated biphenyl."

EPA has considered all comments submitted on the proposal and has either responded to those comments specifically or modified the rule where appropriate. Numerous comments were received; responses to many of those comments appear in the preamble of the final rule. This document provides EPA's response to issues raised by comments on the proposed rule that otherwise have not been addressed in the preamble to the final rule.

During the comment period, EPA received numerous requests to participate at the informal public hearing which was held on June 6 & 7, 1995, in Washington, DC. A transcript of the public hearing, all comments regarding the proposed rule, statements prepared for presentation at the public hearing, and comments submitted in response to discussions at the public hearing can be accessed through OPPTS Docket #66009.

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## General

Comment 1: Some commenters objected to EPA's statements in several proposed regulation sections that the regulated community must comply with all other federal, state and local laws, either because the commenters believed the statement was unnecessary or because there should not be a dual penalty, i.e., EPA should not consider noncompliance with other statutes as a violation of TSCA as well. Other commenters requested that EPA include in the rule an explicit statement that TSCA preempts state statutes regulating PCBs.

Source: (C1-161, C1-179, C1-207, C1-233, C1-242, C1-251, C1-257, C1-266)

Response 1: EPA does not intend to enforce other federal statutes, or state or local laws or regulations, under this TSCA/PCB regulation. The provisions at issue are included merely to clarify that compliance with this PCB regulation does not relieve the regulated community of any obligations under other laws, such as RCRA, the Clean Air Act, OSHA, etc. EPA does not believe, however, that it is appropriate to list all other federal statutes or regulations that may apply, as one commenter suggested. These provisions serve as a reminder that other statutes and regulations may apply, and that the person undertaking a regulated activity regarding PCBs should also determine and comply with whatever other applicable statutes and regulations are in existence at the time that they undertake the action. If EPA were to include a comprehensive list, it would have to amend the TSCA PCB regulations each time a new statute or regulation that also governs PCBs was enacted or promulgated.

EPA also clarifies that these TSCA PCB regulations are not intended to preempt state statutes regulating PCBs. EPA's position on TSCA preemption of state PCB regulatory authority was set forth at length in the preamble to the proposed rule, 59 FR 62832 (Dec. 6, 1994). EPA's position on that issue has not changed.

Comment 2: EPA should revise the last sentence of §761.1(b) to read as follows: "No provision specifying a PCB concentration may be avoided as result of any dilution unless done so in compliance with Subpart G or unless otherwise specifically provided."

Source: (C1-179)

Response 2: Subpart G does not require or allow dilution. EPA is not amending subpart G to do so. It is the intention of TSCA that PCBs are disposed of with no unreasonable risk of injury to human health or the environment. The objective of TSCA is not to allow iterative stages of accidental or intentional disposal that successively dilute PCB concentrations, but at the same time result in more widespread environmental contamination. Because PCBs are persistent and bioaccumulative, human health and the environment would not be protected if PCBs were routinely disposed of by dilution or dispersal to concentrations below regulated levels. The purpose of the anti-dilution policy, and of subpart D as a whole, is to ensure that PCBs are disposed of in a manner that will minimize exposure as soon as practicable after they are removed

from use.

**Chart of Marking and Recordkeeping Requirements**

Comment 1: The chart indicates that generators must file annual reports. This is not so and should be clarified.

Source: (C1-146, C1-194)

Response 1: This was an error and has been eliminated from the chart in the final rule preamble.

Comment 2: The commenter suggests the preamble to the final rule include an updated chart reflecting final marking and recordkeeping requirements.

Source: (C1-147, C1-205)

Response 2: EPA is including such a chart in the final rule preamble.

Comment 3: Suggests EPA include a reference to DOT regulations in the chart under Transport Vehicles - Marking.

Source: (C1-147)

Response 3: The chart is meant to reflect EPA regulations only. A summary of other agencies' requirements is beyond the scope of this chart, and EPA believes that haphazardly including partial references to other agencies' requirements is likely only to mislead the reader.

Comment 4: Various comments on proposed requirements to mark transport vehicles and natural gas pipeline appurtenances which are in the chart.

Source: (C1-112, C1-180, C1-194)

Response 4: These comments pertain to proposed changes in the regulations which the chart only reflects. These issues themselves are addressed elsewhere as appropriate.

## §761.1 -- Applicability

Comment 1: Commenters suggest that the applicability section of §761.1(b) be amended to include coatings in the listing of substances regulated by 40 CFR Part 761.

Source: (C1-139, C1-260)

Response 1: Section 761.1(b) has been amended to include coatings as regulated substances.

## §761.1(b)(4) -- Wet Weight/Dry Weight

Comment 1: Paints as Excluded PCB Products. The commenter indicated that paints containing PCBs, when analyzed on a wet weight basis, could meet the definition of an "excluded PCB product". However, the commenter asserts that typical paint systems are 25% pigment and plasticizer and 75% vehicle. Once applied, the dry weight concentration of the PCBs is potentially increased by a factor of four and therefore potentially regulated. The commenter suggested that the definition of "dry weight basis" should be amended to provide, "Paints with a dry weight concentration of 100 ppm or less are excluded from this rule".

Source: (C1-139, C1-147, C1-171, C1-260)

Response 1: The definition of "excluded PCB products" means materials in which PCBs appear at concentrations of less than 50 ppm and which meet other regulatory requirements (see 40 CFR 761.3). In order for a painted surface to meet the definition of excluded PCB product the PCB concentration must be less than 50 ppm. This means less than 50 ppm on the painted surface at the time of testing for PCBs. Existing regulations do not include, and EPA is not creating, an assumption regarding the composition of the dried paint based on its PCB concentration at the time of application to the surface, as indicated by the commenter.

Comment 2: Disposal on an "as is" basis. Several commenters objected to the requirement to determine the concentration of non-liquid PCBs on a "dry weight basis" because it does not assess the PCB concentrations found in automobile shredder residue (ASR or fluff) on an as generated basis. These commenters state that reporting PCB concentrations on an "as is" basis is appropriate given the physical characteristics of the fluff and the general operating practices of the shredding industry. One commenter indicated that the actual PCB concentration of material as found/as disposed is the relevant criterion for determining treatment and disposal.

Source: (C1-141, C1-209, C1-253)

Response 2: The Agency, in §761.62(b) has created a disposal in solid waste landfills

section for wastes that contain PCBs not bound in a solid matrix and that leach less than 10 micrograms PCBs per liter of water measured using a procedure to simulate leachate generation. This section will allow disposal of PCB bulk product waste in a facility permitted, licensed, or registered by a state as a municipal or non-municipal non-hazardous waste landfill. The Agency is concerned that water used to separate metals from non-metallic automobile shredder fluff (ASR) will cause variation in the moisture content of the ASR. Since the Agency is concerned with establishing procedures for determining PCB concentrations that are consistent and reproducible, variations in the water content of the ASR will provide inconsistent and variable results.

Comment 3: Soil moisture analysis. The commenter believes that analyzing PCBs on a dry weight basis would have a significant effect on the PCB concentration determined if the analysis was performed on soil which can contain up to 25% moisture. This method would lower the concentrations and the additional time required for drying to exclude moisture would delay the determination of PCB concentrations and so delay spill cleanups.

Source: (C1-146)

Response 3: For spill cleanups, the most important issue should be the containment of the spill, not the time required to make PCB determinations. However, once containment is accomplished, the time necessary to conduct analysis of the samples should no longer be a factor since there is no further threat of environmental contamination.

Comment 4: Separated wastes. Another commenter asked whether separated wastes may be handled based on the actual concentration of the phase as opposed to applying the anti-dilution rule to the contact of the two phases

Source: (C1-147)

Response 4: The issue of separated wastes falls into two areas both of which relate to "anti-dilution": PCB phases contacting each other, and the total PCB concentration based on the highest concentration of any one phase. For example, if sludge contaminated with PCBs is dewatered, the sludge is analyzed as a non-liquid PCB on a dry weight basis. If the PCB level in the dewatered sludge is 50 ppm or greater then the sludge is regulated for disposal. The water would also be regulated for disposal at the same concentration as the sludge, since it was in contact with the sludge. However, through the decontamination procedures at §761.79 such water could be run through an activated charcoal filter to remove the PCBs. The filtered water would no longer be regulated as a PCB. PCBs found in the activated charcoal filter could be regulated as a PCB waste depending on the concentration.

Comment 5: Aroclor or congener analysis. A commenter requested clarification as to

whether Aroclor analysis is sufficient and when congener PCBs should be considered for analyzing PCB.

Source: (C1-147)

Response 5: In order to identify the criteria for use and disposal decisions, the amount of PCBs needs to be determined. These criteria are controlled by the "anti-dilution" rule, which generally does not allow for an "as found/as disposed" solution for determining PCB regulatory requirements. The requirements for anti-dilution state that no provision specifying a PCB concentration may be avoided as a result of any dilution (see 40 CFR 761.1(b)(5)). This provision does not provide any relief from the regulatory requirements because such dilution was intentional or unintentional. The anti-dilution requirement does not apply to PCBs spilled prior to April 18, 1979, the effective date of the disposal and marking rule. However, PCBs generated on or after April 18, 1978, at concentrations of 50 ppm or greater, are regulated for disposal. When determining PCB concentrations the Agency has never discussed specific Aroclor or congener analysis. The rules allow discounting factors for mono- and dichlorinated biphenyls in the context of excluded PCB products where the PCBs in an end-product are the result of inadvertent or unintentional impurities in products. However, when determining PCBs levels, the total of the 209 congeners of PCBs must be reported, not separate results for individual congeners.

Comment 6: Definitions. The terms "separable water," "pure PCBs", "actual concentration", "diluted concentration" and "total PCBs" need to be clarified or defined.

Source: (C1-147)

Response 6: The terms "separable water," "actual concentration," "diluted concentration" and "total PCBs" are not used in codified language. They were used in the preamble to the proposed rule. The term "derived from" is found in §761.30(j) where it refers to sources of PCB samples for use in research and development. The term "pure PCBs" is used in the preamble and codified portions of the final rule as it relates to Research and Development disposal activities using less than 1 kilogram of pure PCBs. The Agency has not included a definition of the term "pure PCBs" in §761.3. Generally, "pure" means free of impurities.

Comment 7: Temperature of wastes. One commenter suggested that the definitions of "liquid PCBs" and "non-liquid PCBs" take into consideration the current permitted methods of disposal of PCB materials which are flowable at the temperature at which they are generated. The commenter incidentally generates PCBs that are flowable only at elevated temperatures and maintains the PCB wastes at the elevated temperature in order to allow pumping them into an incinerator. The commenter requested clarification that these definitions only apply to remediation wastes, not to process wastes.

Source: (C1-164)

Response 7: The commenter is concerned that the definitions of "liquid PCBs" and "non-liquid PCBs" will require changes to their disposal process. The requirements for determining PCB levels are intended to direct owners or operators to choosing the proper disposal options for their PCBs. Since the commenter has already chosen incineration, the most stringent disposal option, PCB determinations would not be necessary. The definitions of "liquid PCBs" and "non-liquid PCBs" apply to all PCBs

Comment 8: Oil and water analysis. Several commenters indicated that analysis of phases in multiphasic materials, especially oil and water mixtures or immiscible regulated material in water, could be reduced if the water portion did not require analysis and the disposal requirements for the multiphasic materials could be based on PCB analysis of the oil or immiscible regulated material because of the hydrophobic nature of PCBs. Another commenter indicated that in order to analyze some multiphasic materials, a very large sample would need to be taken in order to have sufficient water to conduct an analysis.

Source: (C1-171, C1-178, C1-229)

Response 8: The Agency is concerned with the proper disposal of PCBs. Multiphasic samples such as oil and water, as the commenter describes, could be separated and the water processed separately to remove the PCBs, and the other phases containing PCBs disposed of separately. The disposal requirements for both the oil and the water are based on the highest PCB concentration. However, separated water could be disposed of through the decontamination requirements at §761.79, by using activated carbon charcoal to remove the PCBs from the water. The other waste materials as well as the activated carbon charcoal filter would need to be disposed of based on their PCB concentration.

Comment 9: Dry weight and anhydrous mixtures. A commenter stated that dry weight basis has no meaning when analyzing anhydrous PCB-containing mixtures.

Source: (C1-172)

Response 9: Since an anhydrous PCB containing mixture, by definition, contains no water the weight of the water has no bearing on the chemical analysis. A sample of anhydrous PCB-containing mixtures could contain other liquids as well as non-liquid materials, which would require the sample to be considered multiphasic and each of the phases would need to have its PCB concentration determined as appropriate for liquids and non-liquid PCBs.

Comment 10: Liquid PCBs definition. A commenter stated that the definition of "liquid

PCBs" should be changed because the definition implies that if a liquid contains more than 0.5% non-dissolved solids it becomes non-liquid PCBs. The commenter noted that "non-liquid PCBs" are defined to have no flowable liquids, so a homogenous flowable material containing both PCBs and greater than 0.5% non-dissolved solids meets neither definition. Another commenter indicated that the definition of "liquid PCBs" uses the word homogenous to describe the "flowable material containing PCBs", which does not take into consideration that liquid PCBs may have immiscible liquid layers and would not be homogenous. The commenter suggests that the word "homogenous" and "no more than 0.5% non-dissolved material" be removed from the definition of liquid PCBs. Still other commenters indicated that "non-dissolved material" should be more completely described, and that the Agency should clarify the analytical method to be used to determine the percentage by weight of non-dissolved material.

Source: (C1-031, C1-055, C1-178, C1-179, C1-248)

Response 10: If liquid materials contain more than 0.5% non-dissolved solids or contain immiscible layers they should be considered multiphasic and separated prior to analysis. The word "homogenous" is intended to describe the liquid PCBs, meaning without layers, a uniform mixture that contains less than 0.5% non-dissolved solids. However, if the most stringent disposal option is chosen, no analysis is required. The Agency has avoided prescribing rigid analytical methods for PCB analysis and is interested in analytical methods that provide reproducible results. The Agency will use the analytical methods appropriate to the samples as outlined in SW-846.

Comment 11: PCB Compliance Policy Recision. The commenter requested revocation of TSCA Compliance Program Policy No. 6-PCB-4 entitled "Disposal Methods for PCBs in Sludge."

Source: (C1-161)

Response 11: Any revocation of the TSCA Compliance Program Policy No. 6-PCB-4 must come from the Office of Enforcement and Compliance Assurance (OECA). However, in this final rule portions of §§761.61, PCB Remediation Waste; 761.62, Disposal of PCB Bulk Product Waste; and 761.79, Decontamination; will have an impact on the TSCA Compliance Program Policy. The issue has been forwarded to OECA, which has taken the comment under consideration.

Comment 12: EPA should adopt RCRA's definition of sludge in order to be consistent with RCRA's definition. The current classification/definition of sludge as a liquid is unclear because many sludges meet neither the definition of a liquid or a non-liquid because they fail the paint filter test but have greater than 0.5% by weight non-dissolved material.

Source: (C1-242)

Response 12: The sludge described in the comment is a multiphasic waste, i.e., a mixture of liquid and non-liquid waste. The phases must be separated before chemical analysis. Depending on the concentrations found in the different phases, it may not be necessary to separate the waste for disposal so long as the disposal option is approved for all wastes in the mixture. For a bi-phasic waste, for both phases to be disposed of together without separation, a disposal option must be: approved for both phases; approved for one phase and not prohibited for the other phase; or not prohibited for either phase.

Take, for example, a bi-phasic PCB remediation waste which is a sludge containing a mixture of 90% water at a concentration of 3 ppb PCBs, and 10 percent suspended non-dissolved organic solid at 60 ppm PCBs. The disposal options approved for each phase of this example waste are described separately below. Based on the approved options for each phase, if the phases are not separated for disposal, this example waste could only be incinerated at an approved high temperature incinerator or disposed of in a thermal alternate destruction technology approved under §761.60(e). If the phases were separated, the options for each phase are as follows.

Approved disposal of water containing 3 ppb PCBs: According to the requirements for the disposal of liquid PCB remediation waste in §761.61(a)(5)(iv), water at 3 ppb may be decontaminated to the standards at §761.79(b)(1)(I). Water containing less than 200 $\mu$g/L (i.e., <200 ppb PCBs) can be used in a non-contact application in a closed system where there are no releases; however, the organic solid could not be used in this closed system. The water can also be disposed of in an approved incinerator or high efficiency boiler which has an approval to burn water. There currently are no §761.761.60(e) approvals for the disposal of contaminated water, however this is also a potential option.

Approved disposal of organic solid containing 60 ppm PCBs: Disposal options for the organic solid PCB remediation waste are land disposal in a low occupancy area that is capped; land disposal in an approved TSCA chemical waste landfill; land disposal in a hazardous waste landfill permitted by EPA under section 3004 of RCRA, or by a state authorized under section 3006 of RCRA; soil washing in accordance with §761.61(a)(5)(I)(A); disposal by a "non-thermal" technology at a facility approved under §761.60(e) (most of these technologies could not function or destroy PCBs in a waste containing 90% water); and disposal in a TSCA incinerator approved under §761.70 or alternate thermal destruction method approved under §761.60(e).

In accordance with §761.79, separation procedures other than a paint filter might be used to remove the non-dissolved, non-liquid phase, which passes through a paint filter but constitutes more than 0.5% by weight of a waste, from the water phase of the waste and the separated phases could be disposed of in one of the approved disposal options for each phase.

## §761.2 -- PCB Concentration Assumptions for Use

Comment 1: Requiring all oil-filled equipment manufactured after the ban to be sampled if not labeled or certified by the manufacturer to contain no PCBs would be far-reaching and costly.

In the commenters' experience, this equipment does not contain PCBs.

Source: (C1-134, C1-146, C1-147, C1-227)

Response 1: This requirement is not retained in the final rule. EPA has created new §761.2, PCB Concentration Assumptions for Use, to set forth the PCB concentration assumptions for the use of transformers and other oil-filled electrical equipment. Section 761.2 codifies EPA's policy (the assumption policy) that the owner of mineral oil-filled electrical equipment, including transformers, that was manufactured prior to July 2, 1979, and whose PCB concentration has not been established, must assume that it is PCB Contaminated, i.e., contains 50 ppm or greater PCB, but less than 500 ppm PCB. If the date of manufacture is unknown but the dielectric fluid is known to be mineral-oil, then the owner must assume the unit to be PCB Contaminated.

Comment 2: Commenters asserted that equipment owners should be allowed to use other information than a manufacturer's certification, such as equipment type, application, and service records, to demonstrate there are no PCBs in the unit. The commenter asks whether it is valid for a utility to use purchase date(s) in determining probable PCB concentration in a transformer.

Source: (C1-027, C1-147, C1-230)

Response 2: Those persons wishing to establish the PCB concentration of a piece of equipment, rather than making an assumption in accordance with today's rule, may do so. PCB concentration may be established (1) by testing the equipment; or (2) from a permanent label (i.e., a nameplate), mark or other documentation from the manufacturer of the equipment indicating its PCB concentration at the time of manufacture, and service records or other documentation indicating the PCB concentration of all fluids used in servicing the equipment since it was first manufactured. The date of purchase of a piece of equipment does not establish its PCB concentration.

Comment 3: EPA should not change "current" assumption that capacitors of unknown PCB concentration are PCB-Contaminated.

Source: (C1-029, C1-148, C1-122, C1-161, C1-209, C1-262, C1-297)

Response 3: EPA's assumption policy on capacitors of unknown concentration has always been that they contain 500 ppm PCBs or greater and that they are therefore PCB Capacitors, not PCB-Contaminated. Prior regulatory language on the assumption of concentrations for capacitors was only included in subpart D (§761.60(b)(2)(i)); EPA is including similar language under the new §761.2 assumptions section to clarify its existing assumption policy on capacitors.

All information EPA has obtained indicates that capacitors made with PCBs contain pure or nearly pure PCBs. EPA has no basis for establishing any assumption that capacitors are PCB-

Contaminated. For example, data supplied by the electrical power industry (EEI/USWAG) in support of the August 25, 1982 electrical use rule (47 FR 37342) indicated all large capacitors with PCBs were at concentrations of 500 ppm or greater (see 47 FR 17426, at 17428). EPA's information at that time was that virtually all large capacitors manufactured prior to 1978 were filled with PCBs at a concentration near 100%. No commenter provided any new data or information that would substantiate the contention that capacitors of unknown concentration are likely contain PCBs at the PCB-Contaminated level, i.e., 50-499 ppm PCB concentration. The general misunderstanding of the regulatory status of capacitors, as evidenced by these comments, is the reason EPA is clarifying this issue in the final rule.

Comment 4: Several commenters indicated that changes to the definition of PCB transformer and assumptions for contaminated electrical equipment did not directly address "dry transformers".

Source: (C1-147, C1-161, C1-165, C1-239)

Response 4: Section 761.2 provides that transformers containing less than 1.36 kg of fluid, including "dry" transformers (those that use air as an insulating material) whose PCB concentration has not been established may be assumed to contain <50 ppm PCBs. EPA believes this policy as applied to transformers containing less than 1.36 kg of fluid poses no unreasonable risk of injury to health or the environment. Because of the widespread and diverse nature of the use of these transformers, and the small amount of PCBs contained within each one, all regulatory approaches targeted at controlling releases from them are very expensive compared to the potential quantity of PCBs kept from the environment. Thus, EPA has not identified a reasonable cost-effective regulatory alternative that would significantly reduce the risks from the remaining PCB small transformers in service. Since these transformers contain small quantities of dielectric fluid and many of them are encapsulated, PCBs are rarely released from these transformers during their use or from the equipment using the transformers. Therefore, risks of exposure to humans, food, feed, water, or the environment from their use is low. In conclusion, EPA finds that allowing the continued use of small transformers containing PCBs is not unreasonable because the risk of exposure is low and there appear to be no practical, cost-effective risk reduction measures. They may, therefore, if the concentration is unknown, be assumed to be non-PCB while in use.

**§761.20(c)(2) -- Processing for Disposal**

Comment 1: Commenters urged EPA not to require additional approval for high-efficiency boilers, where PCBs are pumped from storage containers or bulk transport vehicles into the boiler, as long as the facility is operated in conformance with the high efficiency boiler notification provisions. The commenters suggested that notification under 40 CFR 761.60 be considered as equivalent to prior EPA approval.

Source: (C1-009, C1-136, C1-198, C1-257)

Response 1: No additional approval would be required for this activity. Under §761.20(c)(2)(i), processing activities which are primarily associated with and facilitate storage or transportation for disposal do not require a TSCA PCB storage or disposal approval. Pumping liquids out of a transportation vehicle directly into the fuel feed system of a high efficiency boiler system is processing primarily associated with transportation for disposal, which does not require an additional approval. However, the high efficiency boiler fuel feed system including the pumping from the transportation vehicle must be in compliance with §§761.71(a)(1)(iv) and (v) or 761.71(b)(1)(iv) and (v).

Comment 2: Several commenters stated that "processing" is not an easy term to understand, thus making "processing for storage or transportation" and "processing for treatment or land disposal" even more difficult to understand. The commenters suggested that EPA clarify the boundaries between "processing for disposal" and "processing for storage and transportation" and provide clear definitions in §761.3 for both of these terms. Several commenters recommended that EPA expand §761.20(c)(2)(i) and (ii) to include the specific examples cited in the preamble discussion and/or additional guidance concerning which processing activities require approval and which do not, in order to clarify what types of activities will and will not need prior EPA approval. One of these commenters suggested that in addition to incorporating these examples into the regulations, decisions that are made regarding new examples should be added to the promulgated list of examples. Furthermore, EPA should avoid using the word "processing" in order to prevent confusion, as this term has regulatory significance under other provisions of TSCA. EPA should clarify that "entities who are processing for storage, transportation, or disposal should not be subject to requirements imposed on processors under other parts of TSCA such as Sec. 8(c)."

Source: (C1-171, C1-178, C1-183, C1-242, C1-266)

Response 2: Processing for disposal activities which are primarily associated with and facilitate storage or transportation for disposal are disposal, but do not require a TSCA PCB disposal approval. Examples include, but are not limited to: removing PCBs from service (e.g., draining liquids); pumping liquids out of temporary storage containers or articles into drums or tank trucks for transportation to a storage facility or disposal facility; dismantling or disassembling serviceable equipment pieces and components; packaging or repackaging PCBs for transportation for disposal; or combining materials from smaller containers.

Processing for disposal activities which are primarily associated with and facilitate treatment, as defined in 40 CFR 261.10, or land disposal, require an approval unless they are part of an existing approval or a self-implementing activity (such as activities allowed under §761.61(a) and §761.79), or are otherwise specifically allowed under part 761, subpart D. Examples include, but are not limited to, microencapsulation; pulverization; particle size separation; employing augers or hoppers to facilitate feeding non-liquid PCBs into a disposal unit;

directly piping liquid PCBs into a disposal unit from PCB Items, storage containers or bulk transport vehicles; and directly introducing non-liquid PCBs from containers, bulk transport vehicles or on pallets into a disposal unit, such as an incinerator, a high efficiency boiler, a scrap metal recovery oven or smelter, alternate destruction method, or chemical waste landfill.

For additional guidance, contact the EPA Regional Administrator for the region in which the processing for disposal activity will take place.

Processing is regulated explicitly in TSCA §6(e) and is defined in §761.3 as it applies in all of Part 761. Processing for purposes other than disposal requires an authorization under §761.30 or an exemption under §761.80.

For guidance on reporting requirements under TSCA section 8(c), see EPA's regulations at 40 CFR Part 717.

Comment 3: A commenter questioned which category of processing would apply to the stripping of PCB-Contaminated insulation from electrical wiring.

Source: (C1-183)

Response 3: Section 761.20(c)(2)(ii)provides that processing activities which are primarily associated with and facilitate disposal under §761.79(b) or (c) do not require a TSCA PCB disposal approval. Stripping of insulation from wire is allowed under §761.79(b) and would not require an approval as long as certain measurement-based standards are met.

Comment 4: A commenter urged EPA to leave §761.20(c)(2) as currently written, in order to prevent difficulty in the interpretation of the new sections. The commenter stated, "Restrictions on disposal should appear in §761.60, not §761.20, and thus the proposed subparts (ii), (iii) and (iv) should not be included in this section of the rule." The commenter suggested EPA should, instead, explain that the existing language is intended to indicate that any processing occurring as part of disposal is permitted as long as that activity is consistent with the disposal requirements. Additionally, once EPA makes this clarification of the existing language, EPA should combine paragraphs (2) and (4) of §761.20 (c) to read, "PCBs and PCB Items at any concentration may be distributed in commerce and processed for purposes of disposal in compliance with the disposal requirements of subpart D."

Source: (C1-209)

Response 4: While existing §761.20(c)(2) does authorize processing for purposes of disposal, the amendments to this section are intended to clarify when the processing activities must be included in and authorized under a TSCA PCB disposal approval.

Comment 5: A commenter recommended that EPA revise the last sentence of §761.20(c) to read, "(c)(1) through (c)(7)" to incorporate the proposed additions to paragraph (c).

Source: (C1-254)

Response 5: Proposed §761.20(c)(6) and (c)(7) are not included in the final rule because they addressed decontaminated materials that are regulated under §761.20(c)(5). Thus, this suggested change is no longer necessary.

Comment 6: A commenter stated that the process of recycling PCB ballasts is a process primarily associated with the treatment and disposal of PCBs and should require EPA approval. The commenter stated that approval is necessary because it would greatly reduce the risk of PCB releases into the environment. The commenter urged EPA to ensure that ballast disposers are gaining approval for recycling PCB ballasts and are thus, complying with EPA standards.

Source: (C1-272)

Response 6: There are three known potential sources of PCBs in a fluorescent light ballast: paint on the outside of the ballast, potting material on the inside of the ballast and liquid inside a capacitor inside the ballast. It is also possible that there are other sources of PCBs in the ballast such as plastic insulation on wires. If there is paint on the exterior of ballast or potting material on the inside of the ballast containing $\geq$50 ppm PCBs, the removal of the paint or potting material must be in accordance with §761.79(b)or (c) or a §761.60(e) approval. In the absence of other PCB material on the interior of the ballast, removal of an intact and non-leaking capacitor, does not require an approval and could be compared to removing an intact and non-leaking transformer from a utility pole for disposal.

**§761.20(c)(5) -- Distribution in Commerce of Decontaminated Materials & §761.30(u) -- Use/Reuse of Decontaminated Materials**

Comment 1: Authorization for decontaminated equipment. Commenters generally supported the proposed use authorization for decontaminated equipment, structures and materials while providing minor comments which are addressed as specific issues below. One commenter, however, felt that allowing these uses was unfair to companies that had TSCA approvals which prohibited some of the proposed uses; further the commenter questioned whether the EPA regions would be required to incorporate the newly authorized uses into the existing TSCA approvals.

Source: (C1-009, C1-038, C1-091, C1-107, C1-144, C1-147, C1-161, C1-178, C1-188, C1-198, C1-209, C1-241, C1-254, C1-257)

Response 1: EPA has retained the proposed use authorizations for decontaminated equipment, structures, and materials with some minor changes which are discussed below. EPA will not require that existing TSCA approvals be revised to reflect these changes. Instead, the new use authorizations will allow companies with and without TSCA approvals to use decontaminated materials, equipment and structures in accordance with the conditions specified in the final regulation.

Comment 2: Scope. A commenter said that EPA should revise the wording to reflect distribution in commerce "and use" rather than "or use." Another commenter argued that the proposal was too restrictive by limiting equipment, structures, or materials to those which become contaminated by spills from or proximity to PCB items >50 ppm. The commenter also wanted EPA to broaden the scope of the authorization to include equipment, materials, and structures which have been remediated or decontaminated with EPA approval while under an enforcement action (e.g., under a CERCLA order) because the proposed §761.61 self-implementing remediation provisions excluded sites under enforcement action.

Source: (C1-178, C1-254)

Response 2: EPA has revised the regulations at §761.20 (c)(5) to authorize the distribution in commerce of materials that meet the decontamination standards in §761.79. At §761.30(u), EPA authorizes use or reuse of materials, equipment, or structures that are decontaminated or meet decontamination standards in §761.79, or which are decontaminated in accordance with a TSCA disposal approval or EPA PCB spill cleanup policies. There should not be any remaining concerns about enforcement directed decontamination activities as decontamination done in accordance with §761.79 is now self-implementing and does not require a disposal approval.

Comment 3: Uses associated with food, feed, and water. Commenters said that the proposal was too restrictive by stating that uses of decontaminated equipment, materials or structures "associated with" food, feed, or drinking water would not be allowed. Commenters suggested that "directly in contact with" be substituted for "associated with" to avoid unintended consequences such as precluding use of a building for storing food or feed if some area of the building had been decontaminated.

Source: (C1-161, C1-188)

Response 3: EPA agrees and has made the appropriate changes to reflect "direct contact" with food, feed, or drinking water at §761.30(u)(2).

Comment 4: Porous/non-porous surfaces. Commenters said that the proposed

§§761.20(c)(5) and (7) and §761.79 were inconsistent because (c)(7) only allowed for reuse of decontaminated non-porous surfaces while (c)(5) seems to allow for reuse of porous surfaces and §761.79 addressed both porous and non-porous surfaces. Some suggested combining paragraphs (c)(5) with (7). Commenters wanted EPA to allow reuse of non-porous surfaces in addition to porous surfaces which have been decontaminated. Another wanted the 10 microgram/100$cm^2$ limit to be used in lieu of 50 ppm for non-porous surfaces.

Source: (C1-107, C1-134, C1-161, C1-165, C1-178, C1-180, C1-188, C1-209, C1-260)

Response 4: In the final rule, the proposed §761.20(c)(7) provision for non-porous surfaces has been dropped because it was somewhat redundant of (c)(5) which now authorizes the distribution in commerce of decontaminated materials. Now §761.30(u) authorizes the use/reuse of materials that meet the §761.79 decontamination standards. These standards apply to the decontamination or removal of PCBs from water, organic liquids, non-porous surfaces, certain specified porous surfaces and concrete. The decontamination standards include a surface limit criterion for non-porous surfaces and concrete. The decontamination regulations also provide self-implementing, performance-based procedures which do not require confirmatory sampling.

A new §761.30(p) specifies conditions for continued use of porous surfaces contaminated by spills of liquid PCBs.

Comment 5: Collection pans and dedicated equipment. Some commenters stated that §761.20(c)(5) would appear to require testing or decontamination each time a pan was used for collecting PCB oil from electrical equipment being serviced, even if that same use would continue. The commenters felt this was inappropriate as long as this activity continued in conjunction with an authorized activity. Another commenter raised a similar concern with respect to other dedicated equipment such as "pumps, hoses, hard plumbing, concrete scabbing equipment, hand tools, metal pallets, tanker trucks, etc." The commenter stated that §761.20(c)(5) was not explicit about allowing unrestricted use without decontamination every time a piece of equipment is used for PCB activity. This commenter provided language to allow reuse of such equipment without prior decontamination or approval.

Source: (C1-009, C1-144, C1-147, C1-198, C1-257)

Response 5: EPA understands the commenters' practical concerns. Contaminated equipment that will be reused would not need to be decontaminated between uses if the conditions in a new §761.35 regarding the storage of "PCB Articles" designated for reuse are met. If the contaminated equipment will no longer be used (e.g. as a result of closure of a facility), the equipment is subject to the one-year storage for disposal provisions in §761.65(b); however, there is a 30 day temporary storage for disposal exception in §761.65(c)(1).

Comment 6: Exemption from subpart D. Commenters suggested clarifying language that says that decontaminated equipment, structures, and materials are exempt from subpart D disposal requirements.

Source: (C1-161, C1-188, C1-209)

Response 6: The Agency has explained in the preamble to the decontamination section and in §761.79(a)(4) that when equipment, structures, and materials are decontaminated, the materials, structure, or equipment are exempt from the subpart D disposal standards in Part 761.

**§761.30(a) -- Transformer Registration**

Comment 1: Storage for Disposal. Some commenters sought clarification as to whether the registration provision applied to transformers in storage for disposal. One sought clarification specifically as to whether commercial storers, treaters, or disposers must register transformers that they are managing for metal recovery.

Source: (C1-031, C1-061, C1-155)

Response 1: The transformer registration provision does not apply to transformers in storage for disposal, including those being managed for metal recovery.

Comment 2: Transformers assumed to be PCB-Contaminated and later found to be PCB Transformers. One commenter asked whether the transformer registration provision applied to transformers that were assumed to be PCB-Contaminated ($\geq$50 ppm but less than 500 ppm) and later found to be PCB Transformers ($\geq$500 ppm) at a repair shop or commercial storage facility. Another asked whether the registration requirement applies to a transformer that is removed from service for disposal within 30 days after it is identified as a PCB Transformer.

Source: (C1-031, C1-155)

Response 2: Section 761.30(a)(1)(vii)(A)(1) provides that transformers "identified" as PCB transformers after the initial registration deadline has passed, must be registered with EPA within 30 days after discovery. However, as discussed in Comment 1, above, this requirement does not apply if the discovery was made while the transformer was at a commercial storage facility being stored for disposal. If the transformer is at a repair shop, being repaired so that it can be returned to service, the registration requirement applies. However, you do not need to register a transformer with EPA if you remove it from service for disposal within 30 days after you identify it as a PCB Transformer.

Comment 3: Information in Annual Records. Some commenters suggested that the registration program was not needed because the information was already in each facilities' annual log. One suggested changing the existing fires rule to require a certification in the annual log that the transformer owner complied with the requirement to register with the appropriate fire response jurisdiction.

Source: (C1-028, C1-038, C1-205, C1-231)

Response 3: Information that is in the annual log, but not submitted to fire or emergency response personnel, does not assist those authorities in planning for fires at a facility. A certification of compliance, while possibly facilitating enforcement of the existing fires rule, would not provide the additional benefit to state emergency response personnel that a national database will provide. EPA, therefore, has not adopted the suggestions made by these commenters.

**§761.30(i) -- Use Authorization for Natural Gas Pipeline**

Comment 1: Use authorization. The natural gas pipeline industry strongly supported revising the proposed use and reuse authorizations but offered specific comments regarding more cost- effective and flexible approaches to regulating their industry. Some commenters felt that no additional requirements were needed because there is minimal, if any, risk to public health or the environment from PCBs in these systems. Some argued that PCBs were not "used" but were artifacts of past contamination. They stated that EPA should nonetheless authorize the "use" of PCBs because such use does not pose an unreasonable risk.

Source: (C1-038, C1-112, C1-134, C1-135, C1-156, C1-161, C1-164, C1-179, C1-180, C1-186, C1-202, C1-216, C1-229, C1-254, C1-294, C1-295, C1-300, C1-302, C1-306)

Response 1: The Agency has responded to as many of these concerns as possible while ensuring that the natural gas pipeline industry continues to take active measures to reduce PCB concentrations below 50 ppm in natural gas pipeline systems. Today's rule does not allow the introduction of PCBs into natural gas pipeline systems; instead it authorizes the use and reuse of natural gas pipeline systems that were contaminated with PCBs in the past, provided certain actions are taken. EPA disagrees with commenters that PCBs were never used in natural gas pipelines. PCBs were used in natural gas pipeline systems in pump oil, in grease, and for "fogging" the natural gas pipelines.

The use authorization provisions promulgated today in §761.30(i) for natural gas pipeline systems were modified slightly from those proposed in response to comments requesting more realistic time frames and flexibility (e.g., allowing the use of historical data to satisfy requirements for notification to EPA, sampling and analysis, or decontamination). The rule now authorizes the continued use of PCBs in natural gas pipeline systems at <50 ppm, as well at 50 ppm or greater if steps are taken to identify and reduce PCBs to <50 ppm in demonstrated sources of PCBs within

the natural gas pipeline system. More specific issues and EPA's responses are discussed below.

Comment 2: Definition of natural gas pipeline. Many commenters suggested regulatory language for a definition of natural gas pipeline or systems (to include appurtenances). One commenter suggested that EPA limit the applicability of the rule to those areas where problems might exist, e.g., the major cross-country transfer lines. The commenter stated that the definition of natural gas pipelines should cover those distribution lines whereby natural gas processors transfer natural gas from geologic formations and/or process natural gas and supply it to businesses and households; additionally, the definition should exclude persons using natural gas through piping but not processing. Otherwise, the commenter cautioned that EPA may be regulating pipelines supplying space heaters in homes or businesses, as well as all process equipment utilizing natural gas. Another commenter said that if the definition is too broad, it would cause demolition debris to be placed in expensive landfills.

Others commented that the definition must cover pipeline systems that are contaminated at 50 ppm or greater and include natural gas pipe, appurtenances, compressor stations (including air systems), and storage facilities, but not physical facilities owned by the ultimate customer of the gas. One commenter suggested adding a surface contamination limit measured by standard wipe test (e.g., 10 micrograms PCBs or greater per 100 centimeters squared). Another commenter suggested including pipelines with "nominal diameter larger than 6" or greater than 100 pounds maximum operating pressure". A commenter said the EPA should define "pipe", "pipeline", "pipe segment", and "length of pipe."

Source: (C1-028, C1-134, C1-156, C1-161, C1-179, C1-180, C1-186, C1-206, C1-254, C1-257, C1-300, C1-306)

Response 2: The definition of "natural gas pipeline system" in §761.3 now includes natural gas gathering facilities, natural gas pipe and pipeline appurtenances, natural gas compressors, and natural gas storage facilities. Appurtenances include instrumentation and vessels in direct contact with transported natural gas, such as valves, regulators, drips, filter separators, etc., but do not include air compressors. The natural gas pipeline system definition excludes air compressor systems because the use of air compressors is not unique to the natural gas pipeline industry. Air compressor systems are now addressed separately in the rule. Air compressor systems are defined in §761.3 and their use authorized under specific conditions in §761.30(s) to include PCB concentrations above and below 50 ppm.

Both interstate and local distribution natural gas pipeline systems are covered under today's rule. The portions of a natural gas pipeline system servicing end users of natural gas and which are not owned or operated by a natural gas seller or distributor are authorized at 50 ppm or more PCBs but are not subject to the pipeline system requirements in §761.30(i).

EPA did not specify a pipe diameter or pressure limit in the definition of "natural gas pipeline system" because these criteria are relevant in the context of sampling and analysis which is addressed in subpart M of the regulations.

EPA agrees with the commenter requesting a surface limit criterion when no liquids are

present and has added these criteria in the definition of "PCB Contaminated" in §761.3.

Comment 3: Identifying contamination sources. Commenters pointed out that they could not be responsible for addressing (e.g., identifying, sampling, reducing/removing) all potential PCB sources, particularly those resulting from companies outside their system. They felt some sources were outside their control and that characterization and sampling of all potential sources would be very costly; they thought that EPA should emphasize reducing PCBs in pipeline systems, not characterizing the problem. Further, commenters complained that reporting to EPA 30 days after discovery of PCBs in concentrations of 50 ppm or greater should not be retroactive but only apply to new discoveries so as not to burden them and EPA. Some suggested that historical data be allowed to meet the requirements for characterization, sampling, and actions to remove PCBs or reduce sources. One commenter said that since much had already been done under the Compliance Monitoring Program, nothing further needed to be done until pipe or equipment was removed form service. Another commenter stated that the reporting level should be >500 ppm, not 50 ppm, as the lower level was excessive in view of the associated risk.

Source: (C1-295, C1-300, C1-302, C1-306)

Response 3: EPA agrees that some sources are outside a pipeline company's control. In the final rule, any natural gas pipeline systems which do not include sources of PCBs such as natural gas scrubbers, compressors, filters or interconnects are generally exempt from the requirements for identifying, characterizing, and reducing sources of PCBs, provided documentation regarding this is maintained. PCB sources do not include valves, drips, or other small condensate collection points. For example, if a distribution system does not contain any sources, the owner/operator of the system would need to document that the most likely source of PCB contamination was from the natural gas pipeline system that supplied their natural gas.

With respect to notifying EPA of PCB contamination, EPA has modified the requirement to require notification to EPA only upon request, in order to provide a snapshot of the contamination problem. EPA agrees with the commenter to allow historical data to meet many of these requirements and has modified the regulations accordingly.

Comment 4: Sampling and Reducing PCBs. Commenters raised concerns that local distribution companies could not practically characterize and sample sources due to the grid type systems and changes in gas flow which makes it near impossible to determine what is upstream or downstream on a daily basis. Concerns were raised over cost and inability to excavate in urban areas to sample and characterize the contamination problem. Also, sources of contamination are frequently outside the local distribution system. One commenter claimed that tens of thousands of valves may need to be tested to see if a PCB containing valve sealant was used. Some suggested that sampling only apply to existing liquid collection points, as liquids were responsible for the limited movement of PCBs through pipelines, and liquids are systematically captured. Commenters suggested that removal of PCB liquids be allowed as an engineering method for

reducing PCBs in the system.

Source: (C1-295, C1-300, C1-302, C1-306)

Response 4: EPA understands the concerns of local natural gas distribution companies and others regarding the potential sampling burden. As mentioned in response 3 above, if there are no PCB sources (e.g., compressors, filters, scrubbers) in the company's system, the company can document that. EPA agrees with only sampling existing liquid collection points; it never intended companies to excavate in order to sample or characterize the PCB contamination problem. Additionally, the final requirements allow companies to reduce PCB concentrations to <50 ppm in demonstrated sources by removal of sources or other measures for reducing PCB concentrations, such as engineering methods or removal of liquids. Historical data may be used to document past actions to meet the requirements in the final rule, including PCB sampling, decontamination, declassification, reclassification, and removal as well as when no action is taken because there are no demonstrated PCB sources in concentrations of 50 ppm or greater in the pipeline system. Finally, a modification to the requirements could be made by EPA based on the unique situation (e.g., configuration or size) of a particular natural gas system.

Comment 5: Waivers/extensions/approvals. Commenters supported EPA's ability to grant waivers from some of the requirements. Some suggested additional language for the criteria used by EPA's Director of the National Program Chemicals Division or Regional Administrators to grant extensions, waivers, or approvals to include: size of the natural gas system, nature and extent of PCB contamination, and source of contamination for segments in addition to components of the gas system. Another complained that giving the Regional Administrator this authority would lead to inconsistencies across the regions and impose resource burdens on the regions.

Source: (C1-295, C1-300, C1-306)

Response 5: EPA has provided for the Director of the National Program Chemicals Division, after consultation with the appropriate EPA region, to grant approvals, waivers, modifications or extensions to the use authorization requirements if such a change poses no unreasonable risk. The EPA Director may, upon request, delegate his authority to the Region. EPA does not think delegations will pose concerns for national consistency.

The criteria for modifying the requirements include the size, configuration, or current operating conditions of the natural gas system; nature, extent or source of PCB contamination; proximity of contamination to end-users; or previous sampling, monitoring, remedial actions, or documentation of activities already taken.

Comment 6: Presumption of compliance. Commenters suggested that EPA add a section in the regulations creating a presumption of compliance with the §761.30(i) requirements in cases

where the company has implemented a comprehensive plan to manage PCB liquids in the pipeline system regardless of whether the plan was implemented pursuant to federal, regional or state requirements. The commenters said this would make the program self-implementing and consistent with the abandonment and disposal sections of the rule.

Source: (C1-300, C1-306)

Response 6: EPA cannot pre-approve programs it does not know about by providing a blanket statement regarding compliance with its regulations. The provisions in §761.30(i)(1)(iii)(D) regarding EPA's ability to modify requirements, however, provide a mechanism to take into account company specific actions to address their PCB pipeline contamination.

Comment 7: Use authorization/Presumption Policy/Compliance Monitoring Program. Commenters requested use and reuse authorizations for pipelines that were presumed to contain PCBs in concentrations >500 ppm because of EPA's Presumption Policy or historical sampling that indicated such contamination. Without this authorization, commenters were concerned that many legitimate reuses of contaminated natural gas pipeline and appurtenances would be precluded. Other commenters requested that EPA drop its 500 ppm presumption policy and compliance monitoring program due to the action taken over the years to identify and reduce PCB concentrations to <50 ppm. (In a June 6, 1988 letter, EPA stated that it would presume that natural gas pipelines in EPA's Compliance Monitoring Program were contaminated at >500 ppm PCBs due to the discovery of such concentrations in components of the natural gas pipeline system or because the purchase of natural gas from another system had shown PCB concentrations at >500 ppm.)

Source: (C1-134, C1-156, C1-180, C1-186)

Response 7: Because PCB concentrations in natural gas pipelines have been declining over time to less than 50 ppm, EPA is now allowing for characterization of natural gas pipeline liquids, components, and segments based on the actual PCB concentrations at removal of these pipeline materials rather than former presumptions or historical data (see §761.30(i)(4)). Hence, the Presumption Policy is no longer relevant.

Additionally, EPA is formally ending the 1981 Compliance Monitoring Program and releasing the affected natural gas pipeline companies from any further obligations under that Program as of the effective date of this rule. Much progress has been made in reducing PCB concentrations in natural gas pipelines under the Compliance Monitoring Program. EPA believes that the final rule will adequately address any remaining actions necessary to further reduce PCB concentrations in these and other natural gas pipelines.

Comment 8: Time Frames. Commenters expressed difficulty with meeting the proposed

time frames for all reporting and actions (e.g., sampling and analysis) taken under §761.30(i) and provided specific suggestions.

Source: (C1-296, C1-302, C1-306)

Response 8: EPA agrees that the proposed time frames were generally too short to be practical and has extended them under §761.30(i). Time frames have been increased from the proposed 30, 45, or 60 days to 120 days for sampling and analysis and from 180 days to one year after characterization of PCB contamination for PCB removal or reduction of PCB concentrations to below 50 ppm. With respect to the sampling requirement now in §761.30(i)(1)(iii)(A)(3), EPA agrees with a commenter's suggestion that the 120 day period begin with the effective date of this rule for cases where pipeline owners are aware of existing PCB contamination.

Comment 9: Reclassification. Some commenters said that EPA should provide a procedure to reclassify natural gas pipeline systems that are presumed to contain PCBs >50 ppm but which are <50 ppm to allow unrestricted use in accordance with §761.30(i).

Source: (C1-134, C1-156, C1-254)

Response 9: Reclassification is no longer necessary if pipeline and pipeline liquids are used, reused or disposed of in accordance with the conditions in §761.30(i), whereby contaminated pipe and pipeline components and liquids are reused or disposed of based on the actual concentration of PCBs at removal. As mentioned in Response 7, the presumption policy is no longer applicable.

Comment 10: Status of EPA Guidance and Alternate Disposal Permits. One commenter asked that EPA clarify the relationship between the proposed regulations and EPA Technical Guidance Documents (TGD) and Alternate Disposal Permits (ADP). The commenter requested that EPA allow regulated entities the option of using TGDs and ADPs to meet the proposed requirements (e.g., §§761.30(i)(5), 761.30(q), and 761.60), particularly with respect to using existing PCB concentrations rather than presumed concentrations.

Source: (C1-254)

Response 10: The three technical guidance documents for Declassification, Abandonment, and Classification of Stored Pipe were developed to address needs arising from the implementation of EPA's presumption policy of PCB contamination at >500 ppm. As discussed above, today's rule eliminates the presumption policy and allows natural gas pipeline systems to be managed based on actual PCB concentration. Where sampling is not feasible, then acceptable disposal requirements are stipulated in the regulations. The Agency does not see the need for continued use of the guidance documents in light of the new regulations addressing the same

issues. Those who hold PCB disposal approvals issued under §761.60(e) may continue to use those approvals within the confines of their specific conditions. EPA, however, continues to reserve its right to modify those conditions when, for example, applicable regulatory requirements for disposal, decontamination or reuse are changed.

Comment 11: Reuse of natural gas pipeline. Although many commenters supported the allowable uses in §761.30(i)(6) for PCB contaminated drained natural gas pipeline, others thought that other uses should be added (e.g., use as conduit, transporting coal slurry). They stated that EPA should provide a method for getting additional uses authorized by the EPA Regional Administrator if such uses pose no unreasonable risk.

Other commenters said reuse of drained pipe and appurtenances without prior decontamination should not be allowed due to concerns of risk, e.g., sewage service, stream service, and irrigation systems. One commenter said that EPA should be protective of sensitive and developmental populations, such as children and pregnant women, when designating reuses. They also said that data should be provided to support the premise that the allowable reuses will not pose an unreasonable risk.

Source: (C1-036, C1-038, C1-112, C1-113, C-134, C1-135, C1-139, C1-161, C1-180, C1-186, C1-212, C1-229, C1-254, C1-270)

Response 11: Today's rule incorporates the reuse options which were proposed in 1994 for PCB-Contaminated (50-<500 ppm) natural gas pipelines that have been drained of all free-flowing liquids and are reused in certain low exposure uses under §761.30(i)(3). For example, drained pipelines may be used in the transport of liquids (such as coal slurry or bulk hydrocarbons), as casing to provide secondary containment or protection, as industrial structural materials, as temporary flume at construction sites, and as equipment skids. Additional uses are specified in the regulation. The Agency believes there is no need for establishing a mechanism for authorizing additional uses of drained pipeline because the categories established in the final rule are as broad as possible without posing an unreasonable risk of injury to health or the environment.

The Agency determined that drained natural gas pipeline does not need to be decontaminated before being used as specified in §761.30(i)(3) because such uses do not pose an unreasonable risk. EPA's risk assessment was intended to assess cancer risks for the general population as there was insufficient information available to address risks to different sub-populations. The approach taken was, however, a more conservative one with a conservative slope factor for estimating cancer risk.

Comment 12: Reuse via smelting. Some commenters requested that EPA further expand this use authorization section to allow drained natural gas pipe to be melted or smelted for metal recovery. They claimed that the 1994 proposal was too restrictive under the disposal provisions in §761.60(a)(4) which required PCB contaminated pipe to be burned in industrial furnaces. The

commenters stated that steel melting furnaces would not accept natural gas pipe under these conditions, thereby eliminating a cost-effective and safe reuse for their pipe.

Source: (C1-038, C1-134, C1-135, C1-180, C1-229, C1-300)

Response 12: EPA continues to believe it is more appropriate to address smelting and melting of natural gas pipe in the context of the disposal and decontamination provisions of the rule. Natural gas pipe does not have unique qualities that sets it apart from other metal that has come in contact with PCBs and may be smelted without posing an unreasonable risk of injury to health or the environment. In addition to smelting, commenters should refer to other disposal options for managing natural gas pipe under the decontamination provisions in §761.79 or §761.62 for bulk product waste disposal.

Comment 13: Culvert length. Some claimed that the 80 foot length restriction for drained PCB-Contaminated natural gas pipeline reused as culverts is too restrictive and arbitrary in light of the 200 mile limit for irrigation uses which EPA has proposed.

Source: (C1-134, C1-135)

Response 13: EPA agrees and has dropped the length restriction when drained pipe is used as a culvert under transportation systems in intermittent flow situations per §761.30(i)(3).

Comment 14: Reuse in same pipeline system. Some commenters stated that EPA should allow reuse of natural gas pipeline and appurtenances at concentrations of 50 ppm or greater in the same pipeline system or line section from which the pipe or appurtenances were removed, provided all free flowing liquids have been removed. Others said that EPA should allow drained pipeline and appurtenances subject to the Presumption Policy (i.e., over 500 ppm PCBs) to be reused in the same pipeline system from which it was removed.

Source: (C1-134, C1-135, C1-180)

Response 14: EPA agrees. Under §761.30(i)(2), PCB-Contaminated natural gas pipeline and appurtenances may be reused in any natural gas pipeline system provided that all free liquids have been removed. The issue of reuse of pipeline and appurtenances subject to the Presumption Policy is now moot since the Presumption Policy no longer applies. Natural gas pipe and appurtenances will be regulated based on actual PCB concentration at removal.

Comment 15: Authorization for other gas and liquid pipes. A commenter recommended that §761.30(i)(5) regarding use of PCBs in pipelines other than natural gas pipeline systems and air compressors be moved to a separate subsection.

Source: (C1-186)

Response 15: EPA agrees and has authorized under a new §761.30(t), the use of PCBs at various concentrations for intact and non-leaking gas or liquid transmission systems. Those systems with <50 ppm are authorized as well as those systems at 50 ppm or more if the system is not owned or operated by a seller or distributor of gas or liquid transmitted in the system. All other intact and non-leaking gas or liquid transmission systems with PCBs at 50 ppm or more are authorized only with the written approval of the Director, National Chemical Programs Division, subject to specified requirements in §761.30(i) for natural gas pipelines.

The use of PCBs in air compressor systems is now authorized in accordance with the requirements of §761.30(s).

Comment 16: Marking pipe or pipe storage areas. Commenters supported not marking natural gas pipeline <50 ppm PCBs as was required under §761.30(i); some stated that this could be interpreted to apply to all exposed pipe although EPA had interpreted it to mean pipeline compressors with detectable levels of PCBs.

Other commenters responded negatively to EPA's consideration of a requirement to mark individual pipe in temporary storage as compared to posting signs outside the storage area. They felt that this was unnecessary and burdensome. Some commenters said either option was fine, if marking must be required, as long as the operator could decide what to mark based on the situation.

Source: (C1-038, C1-112, C1-134, C1-135, C1-161, C1-180, C1-186, C1-195, C1-229, C1-270, C1-306)

Response 16: EPA is dropping the existing marking requirement for natural gas pipelines <50 ppm PCB in response to comments. However, the Agency is requiring at §761.30(i)(1)(iii)(A)(6) that aboveground pipeline sources of PCB liquids ≥50 ppm must be marked with the $M_L$ Mark in accordance with §761.45(a) because there is a potential of exposure to PCB liquids. Equipment that must be marked could included items such as compressors or other equipment that is aboveground and used to collect or contain liquids which have been demonstrated through historical data or recent sampling to contain ≥50 ppm PCBs.

EPA agrees with commenters and is not adding a requirement to mark individual pipe segments in temporary storage because this would be burdensome and unnecessary where the area was marked.

**§761.30(j) -- Use Authorization for Research and Development**

Comment 1: Commenters feel that the distinction drawn by EPA between R&D for use and R&D for disposal is confusing and arbitrary and that preamble discussions and descriptions of R&D activities were confusing because they overlapped. Finally, commenters recommended the

two R&D provisions be merged to remove the duplication.

Source: (C1-301, C1-242)

Response 1: EPA does not agree that the separate R&D provisions for "use" and "disposal" should be merged. Therefore, a number of modifications have been made in an effort to eliminate the confusion that may have been created by these separate provisions.

Comment 2: Commenter feels there is overlap between §§761.30(j) and 761.80(g) and refers to preamble text at 59 FR 62827, "...In authorizing the processing and distribution in commerce of small quantities of PCBs for research and development in 1984, EPA was addressing the need to process and distribute in commerce PCBs [emphasis added] for activities such as toxicological and environmental testing and analytical testing that include analyzing and monitoring PCBs in the air, soil, surface waters, and sediments; conducting bioassays and toxicological studies; and producing reference standards for identifying PCBs using gas chromatography (49 FR 28162, July 10, 1984)."

Source: (C1-242)

Response 2: EPA disagrees. Under TSCA section 6(e)(2), the Administrator has the authority to authorize the use of PCBs [emphasis added]. The provision at §761.30(j) authorizes the use of PCBs in research and development. Additionally, TSCA section 6(e)(3) gives individuals an opportunity to, among other things, obtain the Administrator's approval to process and distribute PCBs in commerce. Such approval is granted when an exemption from the statutory prohibitions is created at §761.80. Therefore, the provision at §761.80(g) authorizes the processing and distribution in commerce of PCBs for research and development. If the provision at §761.80(g) did not exist, individuals would not be able to obtain PCBs for their research and development activities, unless they already had PCBs in their possession or had been granted an exemption to manufacture PCBs. (Also see the preamble discussion at Unit IV.B.3.e.)

Comment 3: Commenter suggests that EPA change the term in §761.30(j) for "PCB wastes" to "PCB materials for R&D" to eliminate the requirement to label such material as waste. Commenter doesn't feel that untreated/unused waste samples should be treated (e.g., stored and disposed of within 1 year) as waste.

Source: (C1-242)

Response 3: Section 761.30(j) authorizes use of "PCBs and PCBs in analytical reference samples derived from waste materials" in certain R&D activities. The rule requires that PCB wastes resulting from these R&D activities be treated as any other PCB waste; i.e., stored and disposed of in compliance with subpart D requirements. The final provision does not require

untreated/unused analytical reference samples to be disposed of within 1 year.

Comment 4: Commenter points out that material limitations at §§761.30(j) and 761.60(j) are different and suggests that RCRA limits should be used instead. Commenter sees no rational basis for differing material limitations under RCRA and TSCA.

Source: (C1-242)

Response 4: In this final rule, the material limitations under the use authorization at §761.30(j) have been removed. The Agency has investigated regulating PCB wastes under the hazardous waste regime of the Resource Conversation and Recovery Act (RCRA) on a number of occasions, and has determined that regulating PCBs under RCRA would be far too complex and costly, to both the regulated community and EPA. Had EPA chosen to regulate PCB wastes as RCRA hazardous waste, there would be little need for EPA to exercise its authority for the disposal of PCBs under TSCA section 6(e)(1). Although there may be situations where adopting the RCRA hazardous waste requirements might be environmentally desirable, there are situations where the differences between the two statutes (RCRA and TSCA) require that different approaches be taken for seemingly similar activities. As a result, there has been no attempt to consistently regulate PCB waste as hazardous waste.

Comment 5: Commenter views the 30-day notification requirement in §§761.30(j) and 761.60(j) as onerous, resulting in delays. Commenter also points out that this requirement could result in multiple notifications and recommends EPA consider requiring annual reports instead.

Source: (C1-242)

Response 5: Notification is not a requirement of the use provision at §761.30(j).

Comment 6: Commenter recommends EPA delete the subpart D storage requirement proposed under §§761.30(j) and 761.60(j) for PCB waste samples and require compliance with Good Laboratory Practices instead.

Source: (C1-242)

Response 6: Subpart D storage is not required under §761.30(j) for PCBs in use for authorized R&D activities. PCB wastes resulting from these R&D activities must be stored and disposed of in compliance with applicable provisions under subpart D (i.e., §761.65 for storage, §761.64 for disposal).

Comment 7: Commenter is confused about the applicability of §761.64 to §§761.30(j) and 761.60(j) and points out that wastes generated under §761.64 are also produced by labs operating under §§761.30(j) and 761.60(j).

Source: (C1-242)

Response 7: The provision at §761.64 clearly states that it is applicable to waste generated during and as a result of research and development activities conducted under the use authorization at §761.30(j). Likewise, the provision at §761.64 is applicable to waste generated during the chemical analysis of samples containing PCBs conducted under §§761.60, 761.61, 761.62 and 761.79. The procedures at §761.64 do not apply, however, to pilot scale or larger R&D activities. Wastes generated as the result of R&D disposal activities, but not resulting from chemical analysis activities, are required to be disposed of pursuant to §761.60(a).

Comment 8: Commenter recommends EPA eliminate the five milliliter packaging and "originally packaged" restrictions.

Source: (C1-242)

Response 8: EPA is not dropping these requirements since they are tied to the definition of "small quantities for research and development" and several provisions found at Part 761. However, the provision in today's rule at §761.30(j) does not include the term "small quantities for research and development." Rather, the provision requires that PCBs obtained for use in research and development be obtained from authorized sources.

Comment 9: Commenter recommends EPA eliminate RA approval for the use of 100 grams or more of PCBs as proposed in §761.30(j)(5).

Source: (C1-242)

Response 9: This requirement is not reflected in the provision at §761.30(j) of today's final rule.

Comment 10: Commenter requests confirmation that the §761.30(j) use authorization would cover particle size analysis and that the §761.60(j) self-implementing process would cover soil washing.

Source: (C1-242)

Response 10: The commenter is correct; "particle size analysis" is an activity of the use

authorization at §761.30(j) and "soil washing" is a disposal activity which is covered by §761.60(j).

Comment 11: Commenter suggests EPA establish separate R&D provisions: one for sample analysis prior to disposal, treatment or storage, and one for R&D projects such as treatability. Commenter points out that some labs conduct PCB analyses for purposes other than research (e.g., laboratories at waste management facilities) and suggests that these labs should not be held to the same standards as research labs.

Source: (C1-266)

Response 11: EPA has established separate R&D provisions for these activities; sample analysis is covered by the provision at §761.30(j) and treatability is covered by the provision at §761.60(j). However, EPA disagrees with the commenter's view that all labs should not be held to the same standards; i.e., established GLPs.

Comment 12: Commenter points out that proposed §761.30(j) limits sample shipping containers to hermetically sealed five milliliter ampules or packaging in compliance with DOT standards for environmental media. Commenter would also like EPA to include DOT packaging standards for other types of industrial waste samples.

Source: (C1-266)

Response 12: The provision at §761.30(j) in this final rule does not contain PCB packaging requirements. The commenter is referring to §761.80(i) where reference is made to DOT performance standards for the packaging of PCBs. EPA is deferring to applicable DOT Hazardous Materials Regulations (HMR) at 49 CFR Parts 171-180 on issues associated with container requirements for PCBs in transit.

Comment 13: Commenter seeks clarification as to whether the container limit applies to the use of existing stocks of PCBs, some of which may have been manufactured and acquired prior to 1976.

Source: (C1-072)

Response 13: Existing stocks of PCBs are not subject to the container limits unless the PCBs are intended for distribution in commerce. At that point, the individual must be able to qualify for either an individual or one of the class exemptions in order to conduct PCB distribution in commerce activities. Please note, however, that the distribution in commerce of PCB wastes is subject to the container requirements of the HMR at 49 CFR Parts 171-180.

Comment 14: Commenter suggests that EPA should create a separate authorization for use and distribution in commerce of “round robin” samples.

Source: (C1-147)

Response 14: This is not a use authorization issue, but rather an exemption issue; in any event, further action should not be necessary since the class exemption volumes have been increased. If the volume of PCBs authorized for processing and distribution in commerce in today's rule is not adequate, the commenter may apply for an individual exemption.

**§761.30(k) -- Use of PCBs in Scientific Equipment**

Comment 1: The commenter was concerned that PCBs in microscopy and as mounting medium will be discontinued and a TSCA exemption will be revoked.

Source: (C1-002)

Response 1: EPA combined the proposed authorization at §761.30(s) and three existing use authorizations, §761.30(k), Microscopy mounting medium; §761.30(n), Microscopy immersion oil and §761.30(o), Optical liquids, into a single authorization at §761.30(k) entitled “Use in scientific instruments.” Each of the four uses is included in the new combined authorization. There is no need to obtain an exemption under §761.80 to conduct an activity that is authorized.

Comment 2: The commenter notes what appears to be a conflict between §761.30(j)(2), which sets an annual limit of 100 grams of pure PCBs for use in R & D activities, and §761.30(s)(1)(ii), which sets a limit of 100mL (140 grams) for use in a scientific instrument at any one time. Is scientific equipment exempt from §761.30(j)(2)?

Source: (C1-072)

Response 2: Yes. The limit in §761.30(j)(2) pertains to analysis, experimentation, and testing on PCBs, usually at low concentrations, to determine their toxicological or environmental characteristics. Section 761.30(k) allows the use of PCBs in high concentrations as a medium in scientific equipment used generally for measurement based on their optical and other physical properties.

Comment 3: The commenter notes conflicting effective dates for the authorization of the use of PCBs in scientific equipment. The preamble refers to an effective date as the date of the

proposed rule, while §761.30(s) lists an effective date as the date of the final rule.

Source: (C1-147)

Response 3: The final rule at §761.30(k) does not specify an effective date. This provision will become effective on the generally-applicable effective date of the rule as a whole.

Comment 4: Requests that the volume specified in §761.30(s)(1)(ii) be increased to 150 mL.

Source: (C1-072, C1-174)

Response 4: Commenters stated that experiments could require up to 150 milliliters of PCBs. Commenters also stated that the possibility of releases from scientific instruments is minimized because of OSHA's laboratory standards at 29 CFR §1910.1450. Based on these comments, EPA concludes that the use of PCBs in scientific instruments at greater than 100 milliliters will not pose an unreasonable risk, and the final rule does not retain the 100 milliliter limit.

Comment 5: Is medical equipment, such as X-ray machines, that use PCBs included with scientific equipment?

Source: (C1-270)

Response 5: Section 761.30(k) does not authorize use of PCBs in medical equipment such as X-ray machines. The commenter did not provide data on this use that would enable EPA to evaluate the risks and benefits.

**§761.30(m) -- Use in and Servicing of Circuit Breakers, Reclosers & Cable**

EPA is deferring further action on finalizing a provision proposed at §761.30(q) to authorize historic non-liquid PCB uses that are not currently recognized by the regulations at 40 CFR part 761. However, in conjunction with that issue, EPA had solicited comments on whether all cable containing PCBs should be regulated under the existing §761.30(m), which was developed for oil-filled cable with PCB concentrations below 50 ppm, or whether all other electrical cable (i.e., lead-sheathed cable containing PCBs in oil-soaked paper used to wrap copper conductors) should be regulated under a new provision at §761.30(q). As stated in the proposed rule, a review of the rulemaking record indicated that oil-filled cable was not designed to contain PCB dielectric fluid and that oil-filled cable generally contained less than 50 ppm PCBs.

EPA received actual data from a large underground electric transmission and distribution system based on the sampling of 265 lengths (approximately 400 feet each) of randomly selected cable. (Letters from M. Peter Lanahan, Jr., Vice President, Consolidated Edison Company of New York, to Tony Baney, Chief, Operations Branch, Re: Con Edison's PCB Sampling Protocol for Paper Insulted Cables, July 23, 1996, and November 5, 1996.) The cable consisted of single and three-phase construction in which the copper conductor (or conductors in the case of three-phase cables) is surrounded by tightly wrapped, oil soaked insulating paper and a protective casing made of lead and/or durable plastic material. The sampling study revealed that none of the segments contained 500 ppm or greater PCBs; 4% of the sampled cable had PCBs at a concentration of 50 ppm or greater; the remaining cable (96%) contained less than 50 ppm PCBs; and samples collected from 153 segments (or 58% of the sampled cable) did not contain PCBs in excess of 1 ppm.

These results are in sharp contrast to the information that was submitted to the Agency subsequent to the publication of the ANPRM on June 10, 1991, which suggested that this type of cable contains PCBs ranging from 50-500 ppm with some levels exceeding 100,000 ppm. EPA is inclined to believe that this sampling effort, conducted in late 1994 and early 1995 using a rigorous sampling scheme, is representative of the lead-sheathed cable which is currently in use. Therefore, EPA has determined that the existing provision at §761.30(m) for oil-filled cable should be interpreted to also include lead-sheathed cable.

### §761.30(p) -- Use of PCBs Spilled onto Porous Surfaces

This section was added based on numerous comments stating that contaminated concrete did not pose an unreasonable risk. EPA provided conditions for use which would control potential exposure to the PCBs in contaminated concrete and required disposal based on bulk PCB concentration when the concrete comes
out of use for disposal.

### §761.30(r) -- Rectifiers

Comment: Believes there should not be different servicing requirements for different types of electrical equipment and therefore, EPA should allow servicing of rectifiers with greater than 50 ppm PCBs.

Source: (C1-111)

Response: As a compromise to authorizing this previously unauthorized type of electrical equipment and in an effort to not introduce any new PCBs at regulated levels, and given the fact that most rectifiers are less than 50 ppm (commenters indicated that about 2% were above 50 ppm and rarely, if ever, above 500 ppm), the Agency is only allowing servicing of this type of

equipment with dielectric fluid at less than 50 ppm PCBs.

### §761.35 -- Storage for Reuse

Comment 1: Disposal Timeframe After Storage for Reuse. The commenter indicated confusion regarding the time period for storage for reuse and when the one year storage for disposal time limit began (the 9 month time frame as indicated in PCB TSCA Compliance Program Policy 6-PCB-6). Was the one year storage for disposal time frame included in the storage for reuse time frame?

Source: (C1-036)

Response 1: The time frame for storage for reuse has no relationship to the time frame for storage for disposal. The one year storage for disposal time frame commences when the owner or operator decides that a PCB Article is of no longer of use and decides to dispose of it.

Comment 2: Enforce Existing Requirements for Storage for Reuse. Commenters indicated that the requirements already exist for storage and the Agency should enforce those existing requirements rather than promulgate new ones.

Source: (C1-082, C1-134, C1-226)

Response 2: While the Agency has requirements for PCBs stored for disposal, no requirements exist for PCBs stored for reuse. Often PCB articles have been "stored" in uncontrolled locations, outside in fields without any precautions to assure that no leak or spills will occur. In order to assure that PCB articles that are being held for reuse as "spares" or for other reasons, the Agency is finalizing storage for reuse requirements with some changes from the Proposed Rule based on comments received.

### §§761.40(b) & (e) -- Marking of Transport Vehicles

Comment 1: TSCA should not specify transportation vehicle placard requirements. The vehicle marking requirements in §761.40 should be eliminated. DOT regulations are adequate for transportation related issues. Individual containers are also marked individually with the PCB mark, which is sufficient. The manifest is also a source of information on the load.

Source: (C1-039, C1-046, C1-047, C1-068, C1-069, C1-112, C1-125, C1-242, C1-251)

Response 1: EPA did not propose the reduction or outright elimination of the transport vehicle marking requirement, and cannot do so without reproposal.

Comment 2: At a minimum, EPA should clarify its rules to specifically require the removal of the PCB Mark [$M_L$] when PCBs are no longer in the transport vehicle.

Source: (C1-047)

Response 2: Proposed §761.40(d) states that "each transport vehicle loaded with ...shall be marked....." Empty vehicles shall not be marked. However, tankers are also subject to PCB Container marking requirements, and empty tankers must remained marked as PCB Containers until decontaminated. EPA does not believe this requires elaboration within the CFR.

Comment 3: The marking provision for transport vehicles would be retroactive to October 1, 1979 as proposed.

Source: (C1-046, C1-122)

Response 3: This was not the intent: the retroactive date was an oversight of the Agency in drafting the language in the proposed rule. The issue is now moot since this particular marking provision is not being finalized.

Comment 4: The proposed marking requirement for vehicles with 45 kg or more total weight of PCBs, liquid or non-liquid, would require hundreds of vehicles to be marked because they occasionally transport one or more drums of waste from spill cleanup sites.

Source: (C1-111)

Response 4: EPA acknowledges these concerns in regard to the proposed marking of vehicles carrying non-liquids in containers, and is not finalizing that provision. EPA has no intent, however, to rescind the existing requirement to mark vehicles carrying 45 kg or more liquid PCBs. Liquid PCBs pose a far greater spill hazard. In a mishap, liquids could leak out of a closed vehicle; in these instances the vehicle marking would be the first indication of PCBs to personnel at the site.

Comment 5: Proposal to mark vehicles with non-liquids will require marking of vehicles carrying items posing little, if any, danger during transport (e.g., contaminated rags, protective clothing and gloves, soil and other remediation wastes).

Source: (C1-112, C1-194, C1-195, C1-240, C1-251)

Response 5: EPA acknowledges these concerns and is not finalizing the proposal to mark vehicles carrying PCB Containers with non-liquids.

Comment 6: Utilities routinely carry small volumes (one half of a drum) of solid spill debris that may contain PCBs (assume 50-499 ppm). This material is generated as a result of the cleanup of small oil spills and is transported back to one of our service labs within one to two days, which then almost always identifies the oil as being non-PCB. The proposal would cause a logistical nightmare, in an area where there is very little risk, i.e., small amounts of debris and little to no PCBs involved.

Source: (C1-194)

Response 6: EPA acknowledges these concerns and is not finalizing the proposal to mark vehicles carrying PCB Containers with non-liquids.

Comment 7: Section 761.40(e) requires PCB Items containing PCBs in concentrations of 50-500 ppm to be marked. This appears to be totally unnecessary and in conflict with other provisions, especially for PCB-Contaminated gas pipeline which can be reused.

Source: (C1-112)

Response 7: Section 761.40(e) is an existing provision dating from May 31, 1979; it is being modified only to remove a redundant reference to marking of transport vehicles. For clarification, §761.40(e) requires the marking of applicable PCB Items in paragraphs 761.40(a)(1), (6), (7) and (8) only, not all PCB Items. These applicable items are: PCB Containers, electric motors, hydraulic systems and heat transfer systems. PCB-Contaminated gas pipeline is not subject.

Comment 8: Language should be revised to make it clear that marking of forklifts that do not carry PCBs over public roads is not required.

Source: (C1-147)

Response 8: EPA is clarifying this issue in the preamble to the final rule; EPA does not believe this issue is of sufficient concern to amend the Code of Federal Regulations.

Comment 9: Supports the proposed consolidation of existing transport requirements at

§§761.40(b) and (e).

Source: (C1-185, C1-198, C1-257)

Response 9: EPA is finalizing the consolidated language.

Comment 10: EPA should clearly state in the final rule that the PCB vehicle marking requirement is triggered by 45 kg of actual PCB in the material, not 45 kg of material containing PCB. Oppose "change" at §761.1.

Source: (C1-159, C1-161, C1-206, C1-209, C1-227, C1-251, C1-255)

Response 10: The 45 kg threshold has always applied to the total weight of the PCB material/waste; EPA is not making a change to the threshold. EPA is clarifying this point at §761.1(b)(6) because there has been some misunderstanding among the public on this issue, as evidenced by these comments.

Comment 11: Marking provisions should be expanded to include vehicles carrying non-leaking PCB Capacitors and drums containing PCB light ballasts.

Source: (C1-234)

Response 11: Given the overall negative response to the one extension of the vehicle marking requirement EPA did propose, EPA cannot justify making two extensions of the marking requirement beyond what was proposed, especially without additional notice and comment.

**§761.40(h) -- Marking of Storage Areas**

Comment 1: Section 761.40(h) should be modified to state that each individual item (e.g., pipe) in a common storage area need not be marked.

Source: (C1-112, C1-195)

Response 1: Paragraph 761.40(h) does not require the marking of any particular item; it only addresses the issue of the visibility of marks required by other provisions of §761.40. PCB Items in storage for disposal are to be marked in accordance with the requirements for the marking of individual items as stated in §761.40, e.g., PCB Transformers, PCB Containers, PCB Large High Voltage Capacitors.

**§761.40(k)(1) -- Marking of**
**Large Low Voltage (LLV) Capacitors in Use**

Comment 1: Support marking of Large Low Voltage Capacitors in use as proposed.

Source: (C1-036, C1-107, C1-144, C1-165, C1-198)

Response 1: EPA is finalizing the proposed marking provision for LLV Capacitors.

Comment 2: LLVs pose very low risk, and as such, were not marked until removed from use under current regulations. The burden of marking LLVs is unreasonable given the low risk.

Source: (C1-087)

Response 2: EPA is concerned that allowing the continued use of unmarked LLVs will lead to eventual improper disposal. While the risk of PCB release from the use of LLVs is less than from Large High Voltage (LHV) Capacitors, improper disposal of either poses the same risk. Regional and state inspectors indicate that the requirement to mark upon disposal is often not complied with, often because disposers are unaware the LLVs are PCBs. Requiring marking now will ensure that at the time of disposal, PCB LLVs are recognized as PCB waste and disposed of properly. While this may not increase disposal compliance at large companies with well-trained personnel, it will reduce improper disposal at facilities where personnel is less familiar with the particulars of the PCB regulations.

Comment 3: Wording should explicitly state that small capacitors are not subject.

Source: (C1-107, C1-165)

Response 3: EPA believes this is unnecessary. The regulations clearly state that the requirement is applicable to Large Low Voltage Capacitors. There should be no confusion over small capacitors being subject.

Comment 4: Identification of unmarked LLVs in protected locations should be allowed to be retained at a central facility rather than at the protected location.

Source: (C1-111, C1-147)

Response 4: The practice of keeping LLV Capacitor identification at a central records location would defeat the purpose of the marking requirement. Repair or emergency response personnel would be unable to tell if a leaking or failed LLV was PCB without access to off-site

records. EPA notes that the requirement to keep a record or procedure at a protected location is not mandatory; it is being offered as an option to the marking of individual LLVs in those locations. EPA believes that it would be preferable to mark the LLVs, in that it avoids the need to mark the protected location, establish an identification procedure and instruct personnel. Also, at disposal time, the individual LLVs will already be marked as required for disposal. This option is already in the regulations for the marking of LHVs. In this rule, EPA is extending this option to LLV marking requirements on the premise that there would be situations where individual LLVs cannot be marked. The frequency of this is likely to be less, however, since high voltage restrictions are not involved. Making LLV and LHV marking requirements consistent will also eases compliance.

**§761.40(k)(2) -- Marking of Equipment in Use**

Comment 1: Believes the proposal to mark all equipment in use containing PCB Transformers and PCB Large Capacitors is reasonable and sensible.

Source: (C1-144, C1-198)

Response 1: EPA is finalizing the proposal.

Comment 2: Sampling is necessary to determine concentration. Transformers and large capacitors inside equipment cannot be sampled for PCB content without rendering the equipment unusable.

Source: (C1-243)

Response 2: Sampling is not necessary to determine the regulatory status of equipment: transformers and capacitors may be treated as PCB, PCB-Contaminated, or non-PCB based on information available on the equipment using the assumption rules at §761.2.

Comment 3: At what concentration is it necessary to label equipment?

Source: (C1-243)

Response 3: At concentrations of 500 ppm PCB and greater. (PCB Transformers and PCB LLV and LHV Capacitors are 500 ppm PCB and greater concentration by definition.) A definition of "PCB Capacitor" has been added to §761.3 to help clarify this issue.

Comment 4: Marking while in use is burdensome.

Source: (C1-242)

Response 4: EPA does not believe the burden is unreasonable; particulars were not provided by commenter as to equipment inventory and associated costs of marking while in use.

## §§761.60(a)(2)(ii) & (3)(ii) -- Landfilling of Liquid PCBs 50-499 ppm

Comment 1: PCB-Contaminated sludges should be allowed to be landfilled.

Source: (C1-039)

Response 1: In the final rule EPA has retained a revised §761.60(a)(3)(ii) that allows the landfilling of non-oil liquids, such as sludges with the approval of the Regional Administrator of the region in which the landfill is located.

Comment 2: Oil should never be landfilled, regardless of level.

Source: (C1-039)

Response 2: EPA agrees, and is finalizing the proposal to eliminate the landfilling of the primary sources of PCB-Contaminated oil such as dielectric fluid.

Comment 3: The current rule is needed to allow for disposal of absorbents used for spill containment and cleanup, as well as carbon used to filter waste.

Source: (C1-111)

Response 3: Disposal of spent cleanup materials and filter media must be as liquid or non-liquid based on the paint-filter standard used to quantify other waste types. See §761.61(a)(5)(v) for disposal of these types of waste resulting from cleanup of remediation waste, and §761.79(g) for wastes resulting from decontamination.

Comment 4: Disposal capacity has not increased appreciably since the landfilling provisions were established in 1979.

Source: (C1-145, C1-207)

Response 4: As noted in the preamble, EPA believes that current disposal capacity is more than sufficient to handle this waste without landfilling. Commenter provides no information or data to refute EPA's assessment of disposal capacity.

Comment 5: Capacity is sufficient for incineration of these liquids.

Source:(C1-176)

Response 5: EPA agrees; see response 4.

Comment 6: To the extent that liquids may be stabilized under RCRA provisions, EPA should allow disposal in that manner.

Source: (C1-145, C1-207)

Response 6: EPA's intent is to make TSCA provisions more compatible with RCRA provisions. Under RCRA, liquid Hazardous Waste can only be landfilled if it contains less than 50 ppm PCBs. Today's rule allows the landfilling of liquid TSCA waste only if it contains less than 50 ppm PCBs, with the exception of certain incidental liquids that are also not in violation of the RCRA prohibition on landfilling.

Comment 7: Banning landfilling of these liquids is inconsistent with expanded landfilling provisions proposed for remediation wastes.

Source: (C1-176, C1-234)

Response 7: EPA wants to end the use of landfills as a disposal option for PCB oils and other fluids that are a component of the waste stream from ongoing industrial and commercial activities. EPA believes it is acceptable to set different standards for the disposal of an industrial waste stream and remediation waste. EPA wishes to encourage the cleanup of environmental contamination by offering remediation waste disposal options.

Comment 8: Between 10% and 25% of solid waste arriving at landfills contains some incidental liquids generated during transport, such as from rain, snow, load separation or condensation. Separation and disposal of this liquid would be unduly burdensome.

Source: (C1-176, C1-178, C1-234)

Response 8: EPA agrees with commenter, and is allowing for the continued landfilling of

such incidental liquids in accordance with the provisions of new §761.60(a)(3).

Comment 9: EPA "inadvertently" proposed to eliminate landfilling of PCB-Contaminated liquids.

Source: (C1-251)

Response 9: Proposed elimination was intentional and explained in the preamble to the proposed rule on page 59 FR 62818, as indicated by the outline of the preamble on page 62790.

**§761.50 -- Applicability**

Comment 1: The commenter suggests that EPA minimize confusion regarding disposal requirements by consolidating all disposal requirements in one section (§761.60). The commenter believes the subpart D rules would be more consistent, clearer and more workable if all disposal options were presented in §761.60, if all disposal options were made available for all wastes, regardless of their source as "remediation" or "non-remediation" waste, and if additional alternative methods of disposal were approved based on demonstration of no unreasonable risk or equivalency to methods already approved.

Source: (C1-239)

Response 1: EPA reorganized some of the sections in subpart D to address some of the commenter's objectives. EPA added a general section 761.50 to provide principal requirements for the disposal of all waste and a "road map" telling in which sections waste is regulated. Sections 761.60 through 761.64 set out requirements for disposal of different kinds of waste: liquids, PCB remediation waste, PCB bulk product waste, household waste, and laboratory waste. Section 761.65 addresses storage of all kinds of waste. Sections 761.70 through 761.75 include specific technical requirements and operating parameters for approved disposal technologies: incineration, high efficiency boilers, scrap metal recovery ovens and smelters, and chemical waste landfills. Section 761.77 provides for coordinated disposal and storage approvals. Section 761.79 provides for decontamination to change the status of materials contaminated with or in contact with PCBs either for disposal or for use.

Not all disposal options are available for all types of wastes. Some disposal technologies result in an unreasonable risk. For example, disposal of large volumes of high concentration liquid PCBs in a chemical waste landfill results in an unreasonable risk, but disposal of drained PCB-Contaminated transformers in the same chemical waste landfill would not result in an unreasonable risk. EPA has approved of the same kind of disposal options for wastes resulting in the same kind of risk. For example, disposable equipment from the cleanup of remediation waste (see §761.61(a)(5)(v)(A)) and similar equipment from chemical analysis (see §761.64(c)(1)) is approved for disposal in a facility permitted, licensed, or registered by a state to manage municipal

solid waste subject to part 258 of this chapter or non-municipal non-hazardous waste subject to §§257.5 through 257.30 of this chapter, as applicable, a RCRA Subtitle C landfill permitted by a state to accept PCB waste, or a PCB disposal facility approved under this part.

Comment 2: In order to provide generators of PCB/radioactive waste safe disposal options, EPA should allow radioactive waste disposal facilities authorized under the Atomic Energy Act that meet or exceed the substantive technical standards for municipal or industrial solid waste landfills to accept low risk PCB/radioactive wastes as alternative to disposal in an industrial or municipal solid waste landfill. These facilities are at least as protective of human health and the environment as state permitted, licensed or registered municipal or solid waste landfills. This disposal option can be accomplished by revising paragraphs §761.60(b)(ii), §761.60(b)(ii), §761.60(b)(6)(iii), §761.61(a)(5)(i)(B)(*1*) and §761.62(b) to include an option for PCB/radioactive waste.

Source: (C1-147)

Response 2: The Agency has concerns that disposal practices at those facilities, while appropriate for radioactive waste, may result in am unreasonable risk to human health and the environment from PCBs ≥50 ppm disposed of at those sites. Therefore, §761.50(b)(7) provides that any person disposing of PCB/radioactive waste must do so taking into account both its PCB concentration and its radioactive properties. EPA has, however, added the option of disposing of radioactive PCB remediation waste <50 ppm in a waste management unit licensed under the Atomic Energy Act. Disposers should be advised that site-specific permit or license conditions or local requirements may preclude such disposal.

EPA intends to address radioactive PCB remediation waste at ≥50 ppm PCBs on a case-by-case basis under §761.61(c). Any person disposing of PCB/radioactive waste at ≥50 ppm PCBs must do so taking into account both the PCB concentration and the radioactive properties of the waste. When taking into account only the properties of the PCBs in the waste (and not the radioactive properties of the waste), if the waste meets the requirements for disposal in a facility permitted, licensed, or registered by a state as a municipal or non-municipal non-hazardous waste landfill (e.g., PCB bulk product waste under §761.62(b)(1)), then the person may dispose of the PCB/radioactive waste, without regard to the PCB component of the waste, on the basis of its radioactive properties in accordance with all applicable requirements for the radioactive component of the waste.

Comment 3: A commenter stated that EPA is asserting that a variety of PCB wastes can be safely treated by generators without prior approval by EPA and if bearing low PCB concentrations or low PCB leachability, can be disposed at non-TSCA-approved facilities. Since EPA is relaxing the §761.60(a) disposal standards as extensively as proposed, then PCB/radioactive wastes and the non-chlorinated organic solvents used to decontaminate them ought to be eligible for disposal at facilities licensed to manage radioactive wastes. This result is

especially important in view of the total absence of TSCA-approved facilities presently able to handle PCB/radioactive wastes. EPA is urged to: (i) amend the definition of "PCB remediation waste" and "PCB non-remediation waste" to provide that they include radioactive wastes, (ii) amend the off-site disposal options in §761.61(a)(5) to allow off-site disposal of non-liquid PCB/radioactive remediation wastes with PCBs under 50 ppm at a facility licensed by the NRC or an Agreement State for that sort of radioactive wastes, (iii) amend the off-site disposal options in §761.62(b)(1) to allow off-site disposal of PCB non-remediation wastes which leach PCBs at less than 50 ppb as measured by the TCLP at a facility licensed by the NRC or an Agreement State for that sort of radioactive waste and (iv) amend the requirements in §761.79(a)(1) for off-site sale/use of non-chlorinated solvents used for treatment of PCB/radioactive wastes (remediation or non-remediation) or for decontamination of PCB- and radioactive-contaminated surfaces, so that these solvents can be used/disposed by a facility licensed by the NRC or an Agreement State for that sort of radioactive wastes."

Source: (C1-178)

Response 3: EPA has addressed the regulation for disposal of waste containing PCBs and radioactive materials with respect to the PCB content of the waste. EPA emphasizes that additional requirement under other federal, state and local laws may apply to the radioactive content of this waste. PCB radioactive waste having PCB concentrations <50 ppm is addressed in §761.50(b)(7)(ii) as follows:

> Any person disposing of PCB/radioactive waste must do so taking into account both its PCB concentration and its radioactive properties. If, taking into account only the properties of the PCBs in the waste (and not the radioactive properties of the waste), the waste meets the requirements for disposal in a facility permitted, licensed, or registered by a state as a municipal or non-municipal non-hazardous waste landfill (e.g., PCB bulk product waste under §761.62(b)(1)), then the person may dispose of the PCB/radioactive waste, without regard to the PCB component of the waste, on the basis of its radioactive properties in accordance with all applicable requirements for the radioactive component of the waste.

Comment 4: A commenter noted that the combustion standards in the proposed definition of "open burning" might conflict with existing regulations at §761.20(e) allowing the marketing and burning of used oil at 2-49 ppm PCBs.

Source: (C1-171)

Response 4: The final rule at §761.50(a)(1) clarifies that, while open burning is prohibited, combustion of PCBs allowed under part 761 is not open burning.

Comment 5: Several commenters stated their belief that EPA's legal authority is restricted

to using CERCLA for remediation of pre-1978 sites. Another commenter asked whether a facility on the National Priorities List that had contamination from PCB spills would be required to submit information under §761.60.

Source: (C1-029, C1-107, C1-111, C1-183)

Response 5: CERCLA sets up a program for taking response actions (which include removal and remedial actions) to clean up releases of hazardous substances (including PCBs). CERCLA requires all response actions to be protective of human health and the environment, and section 121(b) specifically requires all selected remedial actions to be "cost-effective" and "to utilize permanent solutions and . . . treatment . . . to the maximum extent practicable." EPA may accomplish private cleanups either by direct action using Fund monies (with cost recovery actions brought later against responsible parties under section 107(a)) or by enforcement actions against responsible parties under section 106. CERCLA requires remedial actions conducted "on-site" to comply with the "applicable or relevant and appropriate requirements" (ARARs) of other environmental laws, including requirements related to PCBs under TSCA. Where a CERCLA response action results in off-site management of wastes, those wastes must be managed in accordance with all applicable laws.

While an action under CERCLA is an available option for protecting human health and the environment at a site involving PCBs, nothing in CERCLA would prevent EPA from using its available authorities under TSCA section 6(e)(1) to protect against unreasonable risks from PCBs at the site.

Comment 6: EPA should specify criteria for the Regional Administrator to apply in determining whether a risk of exposure to PCBs exists at a pre-1978 site. This information is necessary to the preparation of the application. The Regional Administrator's determination should be made after an opportunity for public comment.

Source: (C1-061, C1-149, C1-161, C1-183, C1-189, C1-217, C1-218, C1-219)

Response 6: In the final rule, §761.50(b)(3)(i)(A) allows the EPA Regional Administrator to make a finding that spills, leaks, or other uncontrolled releases or discharges, such as leaching, from a site constitute ongoing disposal that presents an unreasonable risk of injury to health or the environment from exposure to PCBs at the site. If the EPA Regional Administrator makes such a finding, then he or she may direct the owner or operator of the site to dispose of the PCB remediation waste in accordance with §761.61 such that an unreasonable risk of injury no longer exists. Section I.D. of the preamble gives a general discussion of the factors that are involved in making an unreasonable risk determination. These factors include both costs and benefits. See Refs. 19 and 20 to the final rule for an example of how EPA evaluates specific data in a risk assessment of a PCB cleanup site. EPA intends to use the public comment process in use in each respective EPA Regional office.

Comment 7: EPA lacks the authority under TSCA §6(e) to require the cleanup of pre-TSCA spills. Only TSCA §7 provides a possible basis for compelling cleanup of pre-TSCA releases, and even this avenue appears very restrictive.

Source: (C1-107, C1-161)

Response 7: TSCA §7 authorizes the Administrator to take certain actions against an "imminently hazardous chemical substance or mixture" or an article containing such a substance or mixture. Section 7(f) defines "imminently hazardous chemical substance or mixture" as:

> [A] chemical substance or mixture which presents an imminent and unreasonable risk of serious or widespread injury to health or the environment. Such a risk to health or the environment shall be considered imminent if it is shown that the manufacture, processing, distribution in commerce, use, or disposal of the chemical substance or mixture, or that any combination of such activities, is likely to result in such injury to health or the environment before a final rule under section 2605 of this title [TSCA §6] can protect against such risk.

EPA agrees that TSCA §7 provides EPA with authority to take action against certain risks posed by PCBs. Nonetheless, EPA believes TSCA §6(e) authorizes EPA to regulate present, ongoing risks from improper disposal of PCBs in the form of leaching and other types of releases from a pre-1978 disposal site, just as §6(e) authorizes EPA to address risks posed by ongoing uses of PCBs.

Comment 8: Commenters were concerned whether remediation of pre-1978 spills would be based on the Spill Cleanup Policy. Some commenters favored such an approach, others opposed it.

Source: (C1-111, C1-149, C1-219)

Response 8: The Spill Cleanup Policy applies to recent spills from electrical equipment and does not apply to pre-1978 wastes. Cleanup of these sites may be conducted in accordance with any of the available regulatory options (e.g., self-implementing, performance-based, risk-based, coordinated approval) that the Regional Administrator determines adequately protect against the risks identified in the Regional Administrator's risk assessment.

Comment 9: EPA should exempt from further risk analysis all PCB sites remediated using the EPA or state guidance in place at the time remediation took place, for example, voluntary remediations under the Spill Cleanup Policy.

Source: (C1-134)

Response 9: This section is concerned with present risk from a site, and the sites described

by the commenter are not exempt. If spills, leaks, or other uncontrolled releases or discharges, such as leaching, from a disposal site constitute ongoing disposal that presents an unreasonable risk of injury to health or the environment from exposure to PCBs at the site, under §761.50(b)(3)(i)(A) the EPA Regional Administrator may direct the owner or operator of the site to dispose of the PCB remediation waste in accordance with §761.61 such that an unreasonable risk of injury no longer exists.

Comment 10: The requirement to submit an application for a risk-based disposal to the Regional Administrator is inconsistent with other sections of the rule, which allow a self-implementing or traditional approach. All three approaches to cleanups should be available, regardless of the timing of the release.

Source: (C1-142, C1-147, C1-161)

Response 10: Once the EPA Regional Administrator determines that cleanup of the site is necessary, the owner or operator of the site and the RA can work together to decide what method best suits the site, including self-implementing or performance-based methods.

Comment 11: EPA should consider utilizing the fully-developed regulatory programs under CERCLA and RCRA for dealing with pre-1978 PCB disposal sites. Sites that have already been identified through CERCLA or by a state program as needing remediation could be needlessly delayed unless language is included that indicates that such sites are not included in the pre-1978 presumption of no unreasonable risk.

Source: (C1-147, C1-246)

Response 11: If such a site is subject to CERCLA or RCRA, the owner or operator should consider applying for a TSCA PCB Coordinated Approval under §761.77.

Comment 12: EPA should not apply the anti-dilution rule to pre-1978 PCB wastes. The purpose of the anti-dilution rule is to prevent the dilution of PCBs to escape regulation. However, to the extent that PCBs in historic spills have already been diluted, the policy serves no useful purpose.

Source: (C1-150, C1-151, C1-167, C1-221)

Response 12: EPA has responded affirmatively to this comment. Wastes at these sites would generally be PCB remediation waste. PCB remediation waste includes wastes disposed of prior to April 18, 1978, that are currently at concentrations $\geq$50 ppm PCBs, regardless of the

concentration of the original spill or disposal.

Comment 13: EPA should create a presumption that PCBs spilled before the Spill Cleanup Policy went into effect in 1987 do not present a risk of exposure.

Source: (C1-161)

Response 13: PCB waste that was disposed of between April 18, 1978, and 1987 was required to be disposed of in accordance with regulations in effect at the time of disposal. The final rule creates an assumption that pre-1978 wastes do not present an unreasonable risk only because EPA has limited authority over wastes disposed of prior to the effective date of the TSCA PCB disposal regulations.

Comment 14: EPA should clarify that the burden is on the site owner or operator to prove that the contamination occurred before April 18, 1978.

Source: (C1-234)

Response 14: Section 761.50(b)(3)(iii) provides that the owner or operator of a site containing PCB remediation waste has the burden of proving the date that the waste was placed in a land disposal facility, spilled, or otherwise released into the environment, and the concentration of the original spill.

Comment 15: EPA should require the owner or operator of the site to submit a notice to EPA within 30 days after the discovery of pre-1978 PCB contamination at the site. Without such a notice, EPA will not know about the site, and will not have the opportunity to review the potential for unreasonable risk at the site or the owner or operator's claim that the PCB contamination at the site occurred before April 18, 1978.

Source: (C1-234, C1-249)

Response 15: EPA has not imposed this obligation. It is less burdensome to both the site owner and to EPA to involve EPA only where there is a basis for believing that the site may pose an unreasonable risk. Section 761.50(b)(3) was not designed to catalog, like CERCLA §103(c), all sites contaminated with PCBs, but only to provide a regulatory scheme for addressing those sites under TSCA.

Comment 16: If a site owner decides to leave undisturbed a pre-1978 source of PCB contamination, the owner should be required to place a notice to that effect in the deed for the

property to help prevent future disturbance of the site.

Source: (C1-234)

Response 16: It is possible that a pre-1978 site with low levels of contamination could qualify as a "low occupancy area" without further cleanup under §761.61(a). Deed restrictions and other protections would be required. See responses to comments on that section for more information.

Comment 17: EPA should clarify that even if an area of PCB contamination qualifies as pre-1978, the disposal requirements do apply if that contamination is actively managed in any way.

Source: (C1-234)

Response 17: PCB disposal activities generally must meet the regulatory requirements in effect at the time the activities take place. However, for example, this does not mean that a municipal solid waste landfill containing pre-1978 wastes must collect and monitor leachate or groundwater in accordance with TSCA's chemical waste landfill requirements.

Comment 18: There is no risk basis for distinguishing between a certain level of PCBs in a site that was contaminated before 1978 and one that was contaminated after 1978, so there is no basis for regulating these sites differently.

Source: (C1-234, C1-249)

Response 18: For pre-1978 sites that the EPA Regional Administrator finds present a risk from ongoing improper disposal of PCBs, EPA is not restricting the available disposal options. The primary difference between these sites and other sites is that, solely for purposes of administering this program, the pre-1978 sites are assumed not to present an unreasonable risk.

## §761.60(b)(2) -- Disposal of Capacitors

Comment 1: Specific criteria development for PCB disposal sites. The commenter indicates that while the Agency provides specific criteria for design, permitting, and operation of chemical waste landfills accepting PCBs, EPA fails to provide similar requirements for municipal or industrial solid waste facilities accepting PCB wastes. Will EPA develop a permitting program establishing operating and monitoring requirements to insure that PCB wastes are not being improperly disposed of?

Source: (C1-061)

Response 1: The design, permitting, and operation requirements for municipal and other non-chemical waste landfills are generally under the purview of the Resource Conservation and Recovery Act (RCRA). The Agency, in §761.62(b), has created a disposal in solid waste landfills section for wastes that contain PCBs not bound in a solid matrix and that leach less than 10 micrograms PCBs per liter of water measured using a procedure used to simulate leachate generation. This section will allow disposal of bulk product waste in a facility permitted, licensed, or registered by a state as a municipal or non-municipal non-hazardous waste landfill.

Comment 2: CERCLA Notification to the National Response Center landfills. Commenters indicated that EPA should not specify the number of ballasts that could be disposed of during a year period of time. They felt that such additional requirements were burdensome and unwarranted. Commenters also indicated the number of ballasts disposed of in a one year time period should not be linked to the reportable quantity (RQ) for PCBs and the CERCLA notification requirement for a release to the environment. The commenters disagreed with EPA's statement in the preamble to the proposed rule that abandonment or disposal in a landfill of open or closed drums of fluorescent light ballasts containing 1 pound or more of PCBs would be a reportable release under CERCLA, requiring notification to the National Response Center. Commenters pointed out that the issue of release under CERCLA had been determined by the Circuit Court of Appeals for the District of Columbia in Fertilizer Institute v. EPA, 935 F.2d 1303 (D.C. Cir. 1991).

Source: (C1-011, C1-029, C1-038, C1-058, C1-062, C1-087, C1-105, C1-111, C1-125, C1-134, C1-143, C1-147, C1-161, C1-165, C1-172, C1-178, C1-179, C1-184, C1-185, C1-191, C1-195, C1-199, C1-206, C1-218, C1-242, C1-243, C1-251, C1-270, C1-272)

Response 2: EPA has not retained the numerical limits on land disposal of fluorescent light ballasts in the final rule. The basis for the proposed limit was information provided by TSCA Section 21 petitioners that PCB Small Capacitors disposed of in municipal solid waste landfills do not remain intact and non-leaking once they are placed in the landfill. The Agency sought, but did not receive, data confirming that the disposal practices at a municipal solid waste landfill, such as compaction, cause PCB Small Capacitors to rupture and the PCBs to leak into the environment. Therefore, the Agency has dropped its proposed limit of 25 fluorescent light ballasts per year.

EPA proposed an annual limit of 25 ballasts because, under CERCLA, the reportable quantity (RQ) for PCBs is one pound. If each small capacitor contains approximately 2/3 ounce of PCBs, 25 small capacitors equals just under one pound. However, the commenters' reading of Fertilizer Institute is correct. In that case, the court rejected EPA's interpretation of a release, finding that when the definitions from CERCLA for "release" and "environment" are read together, it becomes clear that under CERCLA it is the actual release of a hazardous substance from a facility, not the threat of such a release, that triggers the RQ notification to the National

Response Center. In any event, EPA has not retained the numerical limits on disposal of fluorescent light ballasts in the final rule.

Fluorescent light ballasts containing PCBs in the potting material have been added to the definition of "PCB bulk product waste" and are regulated for disposal at §761.62, as household waste under §761.63 (where applicable), or in accordance with the decontamination provisions at §761.79.

Comment 3: Creating incentives to promote recycling. The commenter suggests that instead of placing limits on disposal for fluorescent light ballasts, the Agency should be creating incentives to promote recycling.

Source: (C1-169)

Response 3: EPA has not retained the numerical limits on disposal of fluorescent light ballasts in the final rule. In addition, EPA has expanded the decontamination provisions of the rules at §761.79 to ease the requirements for disposal and allow more recycling of fluorescent light ballasts. The decontamination section will allow the metal components from fluorescent light ballasts to be separated from the potting material without an alternative technology disposal approval under §761.60(e). If the potting material contains PCBs, it must be disposed of as a PCB waste, while the decontaminated metals can be recycled.

Comment 4: Delete capacitor manufacturer disposal requirement. The commenter strongly recommends that §761.60(b)(2)(iv) (prescribing disposal requirements for manufacturers of PCB Small Capacitors) be deleted. The commenter argues that this provision is obsolete, since the use of PCBs in manufacturing has been banned for nearly two decades, and causes confusion by suggesting that capacitor manufacturers who remove old fluorescent light ballasts must dispose of them through incineration.

Source: (C1-242)

Response 4: The Agency did not propose to amend this section and has not done so in the final rule. If any manufacturer of PCB Small Capacitors discovers an inventory of old PCB Small Capacitors, deleting the requirement for incineration and allowing landfilling in a municipal solid waste landfill would not be protective of human health and the environment because large amounts of pure or high concentration PCBs could be placed into the environment. The Agency recommends that PCB Small Capacitors, wherever they are found, be collected and disposed of as PCB waste.

**§761.60(b)(4) -- PCB-Contaminated Electrical Equipment**

Comment 1: Several commenters expressed concern that the requirements for industrial furnaces in §761.60(a)(4), as defined in §761.3, are not realistic for the salvaging of drained electrical equipment. One commenter pointed out that drained electrical equipment consists of many types of materials (including but not limited to, copper, aluminum, silicone steel, mild steel, plastic, porcelain, paper and wood) that must be separated before they can be recycled. Another stated that the rule should account for and allow intermediate equipment salvage processes that are necessary to process, separate and otherwise prepare the individual metals for final disposal in the smelters. If these essential intermediate processes are not allowed, then electrical equipment will not be recycled. Another commenter stated that the type of furnace required to remove the insulation from coil assemblies to enable the coil assemblies to be separated into their copper and aluminum components is specialized and is not an integral component of a manufacturing process and therefore does not meet the definition of industrial furnace. Other commenters expressed concern that the operating requirements proposed at §761.60(a)(4) are beyond the design capabilities of most industrial furnaces presently in use and therefore would require extensive capital investment to meet the requirements or would necessitate either shut down or approval by the Regional Administrator to continue operation. Several commenters suggested alternative devices (such as wire burner incinerators, copper reclamation furnaces, aluminum sweat furnaces, steel melting furnaces, bake out ovens, and kilns) or furnace operating parameters for the recycling of the above-mentioned materials.

Source: (C1-027, C1-046, C1-061, C1-082, C1-83, C1-132, C1-134, C1-138, C1-140, C1-241, C1-148, C1-155, C1-158, C1-161, C1-177, C1-234, C1-242)

Response 1: EPA has responded affirmatively to this comment by deleting the definition of "industrial furnace" in §761.3. In addition, EPA has added §761.72(a) to allow disposal of PCBs in scrap metal recovery ovens meeting specified parameters. Any scrap metal recovery oven or smelter meeting the operating parameters of §761.72 may be used to dispose of PCB waste in accordance with that section.

Comment 2: A commenter states that §761.60(a)(4)(i)(I) needs clarification. Must industrial furnaces receive PCB contaminated material only when accompanied by a manifest, issue a certificate of destruction, and maintain an annual log even if they only process PCB contaminated electrical equipment? Or is it simply the notification requirement that is applicable?

Source: (C1-027)

Response 2: At §761.72(c)(2), EPA provides the reporting and notification process for scrap metal recovery ovens or smelters disposing of PCBs. In response to comments, EPA retained the notification requirement for scrap metal recovery ovens and smelters but deleted the manifesting requirements for drained PCB-Contaminated Electrical Equipment.

Comment 3: By allowing no visible emissions or releases from the building containing the furnace, is the EPA in essence allowing exposure to emissions to employees working within the building in which the furnace is located?

Source: (C1-061)

Response 3: There will only be relatively small amounts of PCBs present on wastes approved for disposal using scrap metal recovery ovens and smelters. When operating in accordance with the parameters required in §761.72, the ovens and smelters should not pose an unreasonable risk to human health or the environment, inside or outside the workplace.

Comment 4: The commenter suggests the following changes to the regulatory text.
**(1)** Rewrite §761.60(a)(4) to read as follows:

> PCB contaminated non-liquids containing at least 10% combustibles by volume (such as the internals of PCB contaminated electrical equipment) may be disposed of in an industrial furnace (i.e., wire reclaimer incinerator). PCB contaminated empty non-porous metal carcasses and separated non-porous metal shapes (i.e., separated metal. Components of PCB contaminated electrical equipment) with no porous or combustible components may be disposed of via metals recycling through smelting following compliance with proposed 40 CFR761.60(a)(4)(iv).

**(2)** Change the word "hearth" to "afterburner chamber". In §761.60(a)(4)(i)(A), make the temperature requirement at least 1000 $^{o}$C prior to placing a charge of PCB contaminated material in the "combustion chamber."
**(3)** In §761.60(a)(4)(i)(B), replace the requirement of molten metal and of having 1000 $^{o}$C temperature in the hearth with a requirement of a minimum 1000 $^{o}$C and 1 second dwell time in the afterburner chamber.
**(4)** In §761.60(a)(4)(i)(H), remove allowances for a RCRA permit and mandate a federal TSCA permit.

Source: (C1-113)

Response 4: There are three classes of waste which can be disposed of in a scrap metal recovery oven or smelter: drained PCB contaminated articles (see §761.60(b)(4)(i)(B)), PCB remediation waste non-porous metal surfaces (see §761.61(a)(5)(ii)(A) and (B)), and PCB bulk product waste metal surfaces (see §761.62(a)(6)). The required operating parameters for the oven or smelter have been moved to a new section §761.72 and amended to not only include metal smelters but also furnaces used for removing non-metals from metals for purposes of metal recycling.

With respect to the first comment, EPA does not believe it is necessary to determine the percent combustibles for this PCB waste. The amount of combustible material is not the determining factor for the destruction of the proportionally small amount of PCBs present versus the proportionally much larger proportion of metal. An external source of combustibles is

required to furnish the large amount of heat needed to burn the combustible materials and/or melt the metal.

As for the second and third comments, EPA has not substantively changed, at §761.72(b) and (c) of the final rule, the performance criteria from those for metal smelters proposed at §761.60(a)(4). Responding to comments, EPA has added at §761.72(a) requirements for ovens used for removing non-metals from metals for purposes of metal recycling. This commenter's changes are addressed by this addition, however the commenter's proposed language was not used. Scrap metal recovery ovens at §761.72(a) have a primary chamber where the waste is "baked" for an extended period at temperatures above the boiling point of PCBs and below the melting point of the lowest melting common metal component, aluminum. The fumes from this baking process are directed through a closed system into a secondary chamber operating at the same temperature, excess oxygen, and minimum combustion efficiency as a PCB incinerator.

With respect the commenter's fourth comment, EPA believes that operation of these ovens and smelters in accordance with the specified parameters will effectively dispose of any PCBs present and will not pose an unreasonable risk to health or the environment.

Comment 5: The commenter states that specific regulatory language is needed to spell out the provisions under this rule for PCB disposal in aggregate kilns, cement kilns, lead and zinc smelters and other devices which come under the very broad category of boilers and industrial furnaces under RCRA (BIFs). The commenter requested clarification of the definition of molten metal or metal at or above 1000 $^{o}$C, noting that the rule doesn't specify whether or not molten clinker or aggregate in cement or aggregate kilns would qualify. The commenter is also concerned that the minimum temperature for the combustion chamber is too low. The lowest minimum temperature required under the rule should be higher during PCB incineration. One thousand degrees may be too low a temperature to provide for total thermal destruction of the PCBs.

Source: (C1-133)

Response 5: EPA responded to comments on the disposal of PCB on metal in some kinds of "industrial furnace" as defined in 40 CFR 260.10. Preamble text addressing this is:

> In response to these comments, EPA has deleted this definition in the final rule, and has changed the terms in §761.72. That section now refers at §761.72(a) to "scrap metal recovery ovens" and at §761.72(b) to "smelters". Operating parameters for each type of device are specified. Any device that meets the operating parameters is authorized for disposal of PCBs wastes specified in §761.72 in accordance with those parameters.

EPA was not intending to allow disposal of liquids or other combustibles as the primary waste. EPA's intention was to allow disposal of incidental PCBs in proportionally small amounts associated with proportionally larger amounts of recyclable metals in electrical equipment and coated structural steel. If they could meet the performance criteria, it is unlikely that a cement kiln or aggregate kiln, which would be burning the waste for fuel or would operate in a way as to process these largely metal wastes, primarily steel and copper in electrical equipment. It might be

possible for cement kilns or aggregate kilns to be approved for the disposal of PCB combustible PCB remediation waste or PCB bulk product waste under the risk-based approval process at §§761.61(c) or 761.62(c), respectively. Disposal of liquid PCBs at concentrations >50 ppm would be required to be in compliance with the requirements of §761.60(a).

For PCB remediation waste or PCB bulk product waste consisting of lead or zinc metal coated with PCB concentrations >50 ppm, these smelters operate at a temperature less than the 537 °C required in §761.72(a) and less than the 1000 °C required in §761.72(b). Therefore lead or zinc smelters could not be used to dispose of the PCB metal wastes unless the metals were first disposed of through a scrap metal recovery oven operating in accordance with §761.72(a); an applicable approval under §§761.60(e), 761.61(c), 761.62(c), or 761.70; or decontaminated according to §761.79.

Comment 6: The commenter would like clarification regarding "upset incidents" at the industrial furnaces. The proposed TSCA rule does not say much about upset conditions; will upsets be limited in frequency, duration and quantity of emissions? Will it be unrealistically assumed that upset events will not occur at BIFs? The proposed TSCA rule is vague about the upset issue which can be significant especially as BIF units age; older units are much more prone to failure situations and major upsets.

Source: (C1-133)

Response 6: There are no allowances for "upset incidents". These units must always be operating in accordance with the combustion requirements in §761.72. Unlike many combustion systems which process high concentration liquid PCB wastes continuously, with new feed stock constantly being added to the combustion chamber, these units are batch fed limiting the amount of completely heated waste in the chamber in the event of an upset. Also, there are much smaller amounts of PCBs present in the feed material than is usually present in other combustion units. Therefore, the risk from a failure would likely be much less than from the failure of an incinerator operating in accordance with §761.70. The commenter did not provide data showing an unreasonable risk to human health or the environment from the operation of ovens and smelters in accordance with the proposed language, or suggest how to protect health and the environment in the case of accidental failure situations and major upsets.

Comment 7: The commenter is requesting clarification on the amending of Form 7710-53 to include a category for industrial furnaces. The commenter asks whether this notification is required for industrial furnaces designed and operated for purposes other than the disposal of PCBs, or for industrial furnaces used for disposal of PCBs only. Also, EPA has acknowledged that many responsibly operated furnaces are in operation for purposes other than the disposal of PCBs (i.e. metal reclamation or energy recovery) and that PCBs are now being inadvertently introduced into such operations. The commenter asks whether these units, which are not designed or operated as PCB disposal processes, must file an amended Form 7710-53.

Source: (C1-155)

Response 7: Form 7710-53 only applies to scrap metal recovery ovens and smelters which meet the requirements in §761.72 and which intend to dispose of PCB waste regulated for disposal under §§761.60(b)(4), 761.61(a)(5)(ii) and 761.62(a)(6).

Comment 8: The commenters requested clarification of §761.60(a)(4)(i)(D). Method 9 is a method used to determine visible emissions and, as such, opacity level in percent should be referenced. It is not realistic to have an opacity level of 0% during startup and may not be realistic to have an opacity level of 0% during normal operations. Further evaluations should be performed to establish appropriate opacity levels (including levels for fugitive particulate emissions) and they should be given in percents. It is common to have furnaces operating at or near 0%. One commenter was concerned that the rule fails to require any air quality monitoring which might ensure that an opacity standard would be met. Another commenter requested either a wording change or clarification for §761.60(a)(4)(i)(E) as it unintentionally permits the use of opacity reading for detecting PCB releases.

Source: (C1-133, C1-158, C1-238)

Response 8: The final rule has been revised at §761.72(b)(4) to require that a smelter must operate in compliance with any applicable emissions standards promulgated under the Clean Air Act in 40 CFR Part 60. These standards require opacity readings and compliance testing. The opacity reading is not intended to be a method to detect PCB releases. PCB destruction is assured by maintaining the combustion efficiency. Opacity readings are important, however, because opacity can be affected by non-combustible materials such as dust, condensing moisture, and metallic and oxide particles. These particles adsorb PCBs and can be major contributors to emissions of PCBs and other pollutants in stack test results. Removal of particulate matter, combustible or non-combustible, is indicative of removal of PCBs.

Comment 9: A commenter is concerned that industrial furnaces could treat large volumes of PCB contaminated material without a compliance test burn or air quality dispersion modeling to demonstrate that air quality standards will not be exceeded.
The commenter contends that the proposed rule fails to specify the temperature of the exit gases, fails to specify the operational parameters for the air pollution control equipment and fails to require any monitoring devices for these critical functions. The commenter also requests that furnaces be required to have acid scrubbers to handle the puffs of acid being produced during the disposal process.

Source: (C1-133)

Response 9: It would be very expensive to impose these requirements on the devices regulated under §761.72, and the commenter has not demonstrated that to do so would result in

significant environmental benefits over and above those required under 40 CFR Part 60.

Comment 10: The commenter requests that the wording of §761.60(a)(4)(i)(G) be changed to be consistent with 40 CFR §60.153(b)(3) and (c)(3) to read: "A record of the temperatures measured continuously in the primary combustion zone or suitable surrogate location should be taken, recorded and retained at the facility for a minimum of 2 years."

Source: (C1-158)

Response 10: Section §761.72(a)(6) and (a)(9) set forth the temperature monitoring requirements for a scrap metal recovery oven and §761.72(b)(6) and (b)(7) set forth the temperature monitoring requirements for a smelter. This language provides essentially the same requirements as the cited air rule, but is more consistent with other TSCA rules pertaining to record retention time.

Comment 11: The commenter requests a rewording of §761.60(b)(4) by removing the language "including liquid remaining after draining in accordance with this paragraph."

Source: (C1-171)

Response 11: The language referred to by the commenter has been removed in a revised introductory paragraph.

Comment 12: The commenter is concerned that there is a highly significant discrepancy between the preamble and regulatory language on whether industrial furnaces will be allowed to burn PCB contaminated non-liquids regardless of recycling value. EPA makes it plain in the preamble that the industrial furnace disposal option would be limited to the disposal of PCB contaminated electrical equipment and other PCB articles. The actual regulatory language proposed, however, sets forth conditions under which PCB contaminated non-liquids may be disposed of in an industrial furnace. The commenter contends that many PCB contaminated non-liquids have very little recycle value.

Source: (C1-234)

Response 12: EPA has revised the language in the final rule to restrict the classes of PCB waste which are approved for disposal in scrap metal recycling ovens and smelters to drained PCB contaminated articles (see §761.60(b)(4)(i)(B)), PCB remediation waste non-porous metal surfaces (see §761.61(a)(5)(ii)(A) and (B)), and PCB bulk product waste metal surfaces (see §761.62(a)(6)). Non-metal PCB remediation wastes such as liquids, soils, sludges and dredged sediments and non-metal PCB bulk product waste such as shredder fluff and air handling system

gaskets are not approved for disposal in a scrap metal recycling oven or smelter. However, waste oils containing PCBs at concentrations less than 50 ppm may be burned under specified conditions (see §761.20(e)).

Comment 13: Commenter requests EPA change §761.60(a)(4)(i)(A) and the following paragraphs to use the term "load", "feed", or "introduce" instead of the archaic term "charge".

Source: (C1-238)

Response 13: The term "charge" does not appear to be outdated as it is still used in industry. EPA uses terms most likely to be used by the regulated community which specifically has to comply with the regulations. Sometimes these "terms of art" have another meaning (or even other meanings) to many others in the regulated community or the general public, and the suggested changes therefore could cause confusion.

Comment 14: Commenters requested that the agency clarify the statement in §761.60(a)(4)(i)(B) that "each charge . . . must be into molten metal or a hearth . . . ".

Source: (C1-062, C1-238)

Response 14: Destruction of PCBs in a scrap metal recovery oven or smelter is effected by heat. Section 761.72 provides for two kinds of devices which destroy PCBs by heat but in two slightly different ways. The §761.72(a) scrap metal recovery oven heats up gradually over a long time period in a large primary chamber to remove PCBs from the metal waste. The vaporized PCBs and thermal byproducts of this slow heating process are passed directly into a much hotter chamber for final and complete disposal of any residual PCBs and potential combustion by-products. In the §761.72(b) smelter the temperature is much hotter and destroys the PCBs as soon as they enter the smelter.

In the §761.72(a) oven, the primary chamber containing PCB waste is charged at room temperature and closed. Before the charge can be heated, the secondary chamber must be at temperatures established to destroy the PCBs. As soon as the primary chamber starts warming up, PCBs begin to volatilize in the primary chamber and flow into the secondary chamber.

For the temperatures to be hot enough for immediate destruction in the single "chamber" of the smelter, there must be molten metal in the smelter (§761.72(b)). In most cases the first charge is warmed up from room temperature or some temperature much lower than the temperature of molten metal, just like the primary chamber of the §761.72(a) furnace. The PCB waste must not be added to the first batch of metal fed into a smelter, which may not be hot enough to destroy PCBs instantly. The 15 minute intervals between addition of waste are to allow the smelter to melt the metal added with the PCBs and to return to the temperature of molten metal.

Comment 15: The commenter is concerned that there is a lack of consistency concerning performance standards for emissions and that all burners of PCBs should meet the same standards.

Source: (C1-061, C1-234)

Response 15: EPA's purpose in proposing standards for smelters was to provide an additional option for disposal of PCBs that would present no unreasonable risk to health or the environment. The final rule also includes operating parameters for scrap metal recovery ovens that do not present an unreasonable risk. EPA did not propose to amend the existing provisions governing incinerators and high efficiency boilers, which have been in place for many years and have provided efficient and environmentally protective options for PCB disposal.

Comment 16: Commenters were concerned that the currently proposed definition of industrial furnaces and their operating parameters will force existing furnaces already approved and operating to go through the permitting processes again. Will these units have a period of time in order to comply with the operating requirements of 761.60? If so, then a compliance schedule or date should be added to this section of the rule. Other commenters expressed concern that the language in §761.60(a)(4)(i) may unintentionally limit the type of facility authorized for disposal of non-liquids, specifically by excluding facilities with current TSCA PCB Alternative Technology Permits.

Source: (C1-061, C1-112, C1-186, C1-195, C1-241)

Response 16: Scrap metal recovery ovens and smelters meeting the operating parameters of §761.72(a) or (b) do not need to get an individual approval. EPA expects that scrap metal recovery ovens which have valid state or RCRA permits and are disposing of the kind of PCB waste approved for disposal in §761.72 will already be in compliance with the final regulations. The owner or operator of a scrap metal recovery oven or smelter not meeting these parameters may apply to the RA for a risk-based approval under §761.72(c)(3). If the metal recovery oven or smelter has already gone through a different approval process, this information should be included in the application. However, if the RA issues a risk-based approval, other federal, state and local authorities may require additional approvals addressing PCBs.

Since this is one of many disposal options for these kinds of wastes, EPA does not believe that it is necessary to have a compliance schedule. The commenter did not provide any information which would lead EPA to believe that there is a shortage of such scrap metal recovery ovens which could meet the requirements.

Alternate disposal approvals issued under §761.60(e) are case-by-case approvals that allow disposal methods not otherwise authorized under Part 761. The promulgation of new codified disposal methods in §761.72 does not invalidate an existing approval under §761.60(e).

Comment 17: EPA should add Atomic Energy Act(AEA)-authorized radioactive waste disposal facilities as a disposal option for PCB-Contaminated transformers.

Source: (C1-147)

Response 17: EPA also recognizes other federally-permitted facilities through the establishment of Coordinated Approvals at §761.77. Therefore, an AEA-authorized radioactive waste disposal facility could be used for the disposal of PCB-Contaminated transformers.

Comment 18: EPA should state that wipe sampling of the transformer's interior is not required prior to disposal.

Source: (C1-251)

Response 18: At §761.60(b)(4) EPA provides the process for disposing of PCB-Contaminated transformers. This process does not include wipe sampling as part of the disposal process for PCB-Contaminated transformers.

Comment 19: The preamble states that the changes made to the disposal process for PCB-Contaminated transformers is to ensure that these units are properly disposed of and not reused illegally. Since this equipment is not regulated, how can it be illegally reused?

Source: (C1-262)

Response 19: This is an issue of use versus disposal. The drained PCB-Contaminated carcass is not regulated for disposal under TSCA, the use, however, is regulated. Unauthorized uses (e.g., as a barbeque grill) are prohibited.

Comment 20: The commenter requests clarification regarding the disposal of capacitors. Proposed §761.60(b)(4) states, "Capacitors that contain between 50 and 500 ppm PCB shall be disposed of in an approved incinerator that complies with §761.70 or in a chemical waste landfill that complies with §761.75 or by an alternate destruction method approved under paragraph (e) of this section." This appears contrary to the existing regulatory requirement in §761.60(b)(2)(ii), which provides that small capacitors may be disposed of as municipal solid waste unless the owner manufactured that capacitor.

Source: (C1-139, C1-260)

Response 20: The introductory language to §761.60(b)(4)has been revised to exclude capacitors: "Any person disposing of any PCB-Contaminated Electrical Equipment, except

capacitors, shall do so by removing all free-flowing liquid from the electrical equipment and disposing of the removed liquid in accordance with paragraph (a)of this section." Disposal of capacitors is addressed in §761.60(b)(2).

Comment 21: The commenter requests that EPA revise proposed §761.60(a)(4) to include the chemical waste landfill disposal option for all non-liquid PCBs at concentrations of 50 ppm or greater. Disposal in a chemical landfill should be universally reinstated in this section since EPA does permit it in the new proposed sections 761.61(b)(2) and 761.62(a).

Source: (C1-240)

Response 21: EPA has provided for the disposal of any non-liquid PCBs at concentrations greater than 50 ppm in a chemical waste landfill, approved in accordance with §761.75. In particular, EPA has responded affirmatively to this comment at §761.60(b)(4)(i)(C) and (ii), where drained PCB-Contaminated Electrical Equipment may be disposed of "In a disposal facility or process approved under this part."

Comment 22: The commenter is concerned that EPA has contradicted itself regarding the landfilling of drained PCB contaminated electrical equipment. In 59 FR 62802, EPA recommends that the core and sorbent material be removed and placed in TSCA approved landfill, while in 59 FR 62803, EPA then inexplicably states that drained PCB contaminated electrical equipment and articles "may be disposed of in a facility permitted, licenced or registered by a state to manage municipal or industrial solid waste."

Source: (C1-234)

Response 22: In the final rule at §761.60(b)(4), EPA is not requiring the removal of the core and sorbent material prior to land disposal of drained PCB-Contaminated Electrical Equipment.

## §761.60(b)(5) -- Natural Gas Pipeline Containing PCBs

General

Comment 1: A commenter stated that EPA has proposed rules in §761.60(b)(5) for natural gas pipelines without specifically defining what the rules apply to. At their broadest, the rules could be interpreted to apply to all gas lines. Furthermore, EPA has not presented evidence that a significant amount of PCBs still remain in these gas lines. EPA has proposed major testing and analytical burdens and has suggested that pipelines be abandoned in ways that are already common practice in the industry. The commenter stated that these procedures will not provide

improvement to human health or the environment. The commenter suggested that EPA either justify the need for these rules and show how they would benefit human health and the environment or remove them from the final rule. If EPA provides evidence that the rule will improve human health and the environment, the commenter recommended that EPA limit the rules to the areas where real problems may still exist (the major cross-country transfer lines) by including the following definition: "Natural gas pipelines, for the purpose of this rule, are those distribution lines whereby natural gas processors transfer natural gas from geological formation and/or process natural gas and supply that gas to businesses or households. Persons using natural gas through piping, but not processing, natural gas would not fall under this definition and would not be subject to the natural gas pipeline regulations."

Source: (C1-028)

Response 1: Under §761.60(b)(5), all components of "natural gas pipeline systems" at concentrations ≥50 ppm PCBs are regulated for disposal. That term is defined in §761.3 as "natural gas gathering facilities, natural gas pipe, natural gas compressors, natural gas storage facilities, and natural gas pipeline appurtenances (including instrumentation and vessels directly in contact with transported natural gas such as valves, regulators, drips, filter separators, etc., but not including air compressors)". Only components of a natural gas pipeline system meeting the definition of "PCB household waste" would not be subject to the disposal requirements of §761.60(b)(5).

EPA does not agree with the commenter that regulation of disposal of natural gas pipeline systems is no longer needed. Despite years of cooperative effort between EPA and the natural gas pipeline industry, some natural gas pipeline systems still contain PCBs in liquid condensate despite repeated attempts to rid the systems of PCBs. (See, for example, comments of Interstate Natural Gas Association of America, May 1, 1995 (C1-134)). Based on a risk assessment performed by EPA on Texas Eastern's natural gas pipeline system, as well as years of experience addressing PCB contamination issues in natural gas pipelines, EPA believes that the disposal requirements of the final rule are necessary to prevent an unreasonable risk to health or the environment.

Comment 2: Several commenters stated that the term "natural gas pipeline" should be replaced with the term "natural gas pipeline systems" throughout §761.60(b)(5). A commenter suggested rewording §§761.60(b)(5)(i)(A) and (B) to read, "A section of natural gas pipeline/PCB-Contaminated natural gas pipeline...".

Source: (C1-134, C1-161, C1-179, C1-180)

Response 2: EPA has adopted this suggestion and has included a definition of "natural gas pipeline systems" in §761.3. Sections 761.60(b)(5)(i)(A) and (B) now refer specifically to "natural gas pipe".

Comment 3: Commenters suggested that the provision in §761.60(b)(5)(i)(A) should be limited to natural gas pipeline at concentrations of 50 ppm and above, as §761.1(b) states, "Subpart D applies generally to materials at concentrations of 50 ppm and above." Additionally, they suggested that §761.60(b)(5)(i) be expanded to address air compressor systems.

Source: (C1-134, C1-161, C1-179, C1-180, C1-206)

Response 3: The final rule specifically states that §761.60(b)(5) applies to natural gas pipeline systems containing ≥50 ppm PCBs. Air compressor systems containing PCBs are authorized for use under certain conditions at §761.30(s). A provision for self-implementing decontamination of air compressor systems, for reuse or for disposal, is included at §761.79(c)(5). Air compressor systems can be disposed of without decontamination as PCB Articles under §761.60(b)(6).

Comment 4: Commenters suggested that EPA clarify that the requirements of §761.60(b)(5) do not apply to pipelines which have been determined to have never contained PCBs above 50 ppm or to pipelines that have been declassified or that will be reclassified.

Source: (C1-134, C1-156, C1-179, C1-180)

Response 4: This section applies to disposal of natural gas pipeline systems containing ≥50 ppm at the time of disposal, regardless of historical contamination. The PCB concentration in the natural gas pipeline system must be determined by analyzing organic liquids found in the natural gas pipeline system, or if no organic liquids are present, by draining free-flowing liquids and collecting standard wipe samples according to subpart M.

Declassification was allowed under one of three technical guidance documents (TGDs) for declassification, abandonment, and classification of stored pipe. These TGDs were developed to implement EPA's presumption policy of PCB contamination at ≥500 ppm. Today's rule eliminates the presumption policy and allows natural gas pipeline systems to be managed based on actual PCB concentration. Therefore, today's regulations supersede these guidance documents.

Comment 5: A commenter stated that EPA has not addressed appurtenances such as residential meters, regulators, and small equipment. The commenter recommended guidance similar to that in the EPA policy "Guidance on Classification for Purposes of Disposal of Stored Natural Gas Pipe which was not Part of a Pipe Removal Project Carried Out under an EPA-Approved PCB Disposal Activity."

Source: (C1-038)

Response 5: The final rule broadens the proposed definition of natural gas pipeline systems to include appurtenances. The disposal requirements address natural gas pipeline systems and,

thus, appurtenances. This equipment can be disposed of based on sampling condensate or surfaces as provided in §761.60(b)(5)(iii). For example, disposal options include: an incinerator operating in compliance with §761.70; a chemical waste landfill operating in compliance with §761.75, provided that all free-flowing liquid PCBs have been thoroughly drained; and as a PCB remediation waste in compliance with §761.61. Decontamination of appurtenances for reuse in accordance with §761.20(c)(5) as non-PCB appurtenances is addressed in §761.79(b) and (c). Sampling surfaces of decontaminated appurtenances having small surface areas is addressed in §761.302(b). Residential equipment may be disposed of as household waste in accordance with §761.63.

Comment 6: Commenters suggested that §761.60(b)(5)(ii)(A)(2) should be expanded to include pipe that was removed prior to issuance of the rule.

Source: (C1-134, C1-161, C1-180, C1-206)

Response 6: The referenced section of the disposal amendments takes effect 60 days following publication. In general, EPA does not have the legal authority to promulgate regulations that apply retroactively. For the period before the effective date of the new rules, refer to regulations, policies, and specific enforcement agreements applicable to the time an action was taken.

Comment 7: A commenter questioned the practicality of draining pipe for 48 hours. The commenter also suggested allowing the use of a swab or a pig to remove liquids.

Source: (C1-038)

Response 7: EPA did not propose a requirement for draining pipe for 48 hours. Drained pipe means the absence of free-flowing liquids on the interior surface. There are no restrictions on methods which can be used to remove liquids from natural gas pipeline systems.

Comment 8: A commenter stated, in regard to the disposal of the liquids removed from a pipeline system, that §§761.60(a)(1) and (3) apply. The commenter further stated that when the removed liquids will be managed as a single entity and disposed in a §761.70 incinerator, one criterion applies: the concentration of the aqueous or organic fraction must be $\geq$50 ppm. The PCBs will distribute to the organic phase to a much greater extent than to the aqueous fraction, therefore, only the PCB concentration in the organic phase needs to be determined. The analysis of the aqueous phase would only be necessary if the PCB concentration of the organic phase is <50 ppm or if a high efficiency boiler was used for disposal.

Source: (C1-254)

Response 8: The final rule has been revised to allow characterization of pipeline liquids based on the concentration of PCBs in the organic phase. It is necessary to separate the phases of a multi-phasic liquid to determine this concentration.

Where removed liquids will be managed as a single entity, as described in the comment, it would not be necessary to determine the concentration of each phase. Where phases will be disposed of separately, disposal should be based on the existing concentration of each phase. For example, it is not necessary to separate bi-phasic liquids for disposal by combustion (approved incineration or high efficiency boiler) when one phase is water and the other phase oil, if the oil contains $\geq$50 ppm.

Pipeline liquids at concentrations <50 ppm PCBs are not regulated for disposal under §761.60(b)(5). For example, in a bi-phasic liquid containing PCBs <50 ppm in an oil phase and an untested water phase, neither the water phase nor the oil phase is regulated for disposal. Similarly, aqueous condensate having a concentration less than 50 ppm is unregulated for disposal under §761.60(b)(5).

While these materials may be unregulated for disposal under §761.60(b)(5), other federal, state or local disposal regulations may apply. It may be possible for liquids to be disposed of in a municipal landfill, applied to land, deep well injected, or discharged to a private or industrial water treatment plant, all in accordance with other non-TSCA regulations. In addition, PCBs may be used only in accordance with an authorization in subpart B. Specifically, water may not be used in closed systems or discharged to a POTW or navigable waters, except as provided in §761.30(u).

Comment 9: A commenter stated, in response to EPA's solicitation for comments regarding the marking of stored dry gas pipe, that either of the proposed options are suitable and both should be available.

Source: (C1-038)

Response 9: EPA found that commenters opposed a requirement to mark individual natural gas pipe temporarily stored for testing prior to disposal, stating that it was too burdensome and unnecessary when the storage area is marked. EPA agrees with the commenters and will not require the marking of individual pipe in temporary storage areas.

Comment 10: Commenters stated that EPA's current interpretation of coated pipe classifies it as a porous surface. Thus, it would be impossible to obtain an interior wipe sample from a non-porous surface in a gas pipeline, as required in Appendix I. A commenter suggested that EPA resolve this situation by either redefining non-porous surfaces or revise Appendix I such that references to the definitions of non-porous and porous surfaces are eliminated.

Source: (C1-154, C1-180)

Response 10: EPA has responded affirmatively to this comment by including "natural gas pipe with a thin porous coating originally applied to inhibit corrosion" in the definition of "non-porous surface".

Comment 11: A commenter suggested that EPA revise the scope of §761.60(b)(5)(iii) to address other PCB containing liquids generated by natural gas pipeline companies, such as pipeline liquids (condensate), air compressor condensate and used lubricating oil.

Source: (C1-180)

Response 11: In the final rule, §761.60(b)(5)(iii) addresses characterization of natural gas pipeline systems by sampling condensate liquid. Condensate does not include liquids removed from the lubricating/cooling fluid reservoirs of equipment, such as compressors, or other liquids or non-liquids not in contact with the transmitted natural gas, such as valve grease. EPA has added §761.60(b)(5)(iv) to address the disposal of all PCB liquids found in natural gas pipeline systems. Liquids removed from air compressors systems are regulated for disposal at the existing concentration as liquid PCB remediation waste (see §761.61(a)(5)(iv)).

Comment 12: A commenter suggested that EPA include a regulatory definition for PCB-Contaminated pipeline equipment. The definition should incorporate the proposed definition for "PCB-Contaminated" and the DOT definition of pipeline as shown at 49 CFR 192.3. The commenter further recommended that the definition exclude those gas facilities over which the local distribution company has no control (i.e. customer owned service lines and mains).

Source: (C1-206)

Response 12: EPA has revised the definition of natural gas pipeline systems to include parts of the system that are relevant to the use authorizations for PCBs. Natural gas pipeline system equipment which contains PCBs at a concentration $\geq$50 ppm is regulated for disposal. The regulations at §761.60(b)(5) do not obligate transmission or distribution companies to dispose of customer-owned service lines and mains.

Sampling

Comment 13: Commenters recommended that one year be adopted as the length of time a sample may be taken "prior to or following removal of the natural gas pipeline", in regards to §761.60(b)(5)(ii)(A)(1).

Source: (C1-161, C1-180)

Response 13: The accuracy of a sample depends less on the amount of time that has passed since the sample was taken than on the events that have occurred since the sample was taken. The final rule requires collection of condensate within 72 hours of the final transmission of natural gas through the part of the system to be abandoned and wipe samples after the last transmission of gas through the pipe or during removal from the location it was used to transport natural gas. The final rule regulates natural gas pipe based on its current PCB concentration. Since transmission of gas through the pipe between a time of sampling and the removal/abandonment can change the PCB concentration in the pipe, EPA requires that sampling occur after transmission of gas has ceased.

Comment 14: Commenters suggested that §761.60(b)(5)(iii) be clarified as to how long a segment of pipe can be characterized based on one liquid sample. One commenter recommended that the maximum length be set at 50 miles. Another commenter recommended that the distance between two consecutive compressor stations (40-70 miles) be set as the maximum length of pipe that can be characterized based on one liquid sample. Still other commenters recommended that the length be set as the distance between three consecutive compressor stations (80-140 miles). Additionally, commenters suggested clarification as to which sample is used for characterization of the pipe if both a liquid and a wipe sample are collected. They recommended using the wipe sample as the controlling sample. Another commenter questioned the basis for requiring that seven pipe segments be sampled.

Source: (C1-038, C1-134, C1-161, C1-178, C1-179, C1-180)

Response 14: The commenters did not provide any data justifying the proposal for a single sample characterizing 50 or 40-70 miles of pipe. EPA based characterization sampling on monitoring data submitted to the EPA from natural gas pipeline companies known to have had historical contamination from PCBs. Subpart M describes sampling protocols, including the interval between samples, for natural gas pipe removed for disposal or abandoned in place. EPA clarified in §761.60(b)(5)(iii) that the source of contamination is liquids and therefore liquid condensate samples take precedence over surface samples when characterizing pipe.

Comment 15: A commenter stated that the separation of removed pipeline liquids into organic and aqueous components would be an unnecessary step if the liquids will be disposed of as a single entity; the collection, separation and recombination of these liquids will result in increased handling, as well as opportunity for spilling. The commenter suggested that only a representative sample of the removed liquids be collected and decanted. The commenter suggested EPA clarify that the entire volume of removed liquids need not be collected and decanted by saying, “A representative sample of organic and aqueous condensate liquids shall be separated by decantation and the components separately analyzed...”

Source: (C1-254)

Response 15: EPA did not intend to require that multiphasic waste be separated for disposal. Multiphasic waste samples must be separated for analysis because the PCBs may have concentrated in one of the phases. Proper separation allows the multiphasic sample to be analyzed using consistent and reproducible methods. In general, the anti-dilution rule (see §761.1(b)(5)) requires that even if the phases were to be disposed of separately, all phases would have to be disposed of based on the highest concentration in any phase in the sample, since the phase contaminated at a lower level was in contact with a more contaminated phase. However, in the PCB remediation waste (§761.61) and decontamination (§761.79) provisions, EPA is allowing each separated phase to be disposed of or decontaminated, respectively, based on its own PCB concentration.

Comment 16: A commenter questioned the need that the liquid samples must be analyzed by Method 8080 or "equivalent". The commenter recommended that provisions be added to the introductory section to provide for use of field screening tests (tests that give a definitive response for PCB concentration ≥50 ppm and >500 ppm), which would be satisfactory for the purposes of liquid disposal and pipeline classifications in the hydrocarbon and aqueous fractions; chromatographic analysis by Method 8080 should be required only as confirmation if the field test indicates <50 ppm.

Source: (C1-254)

Response 16: Method 8080 is not required in the final rule. There are several options in §761.60(g). Many field screening tests have been verified on a limited number of matrices. Interferences, such as elemental sulfur and hydrocarbons, present in natural gas condensate may invalidate or bias these tests. These interferences cannot readily be detected in many field screening tests since they have no trace or scan which could show an interference.

Comment 17: A commenter recommended that §761.60(b)(5)(iii) be revised to read, "Characterization of pipe by PCB concentration in the organic phase of condensate", in order to be consistent with the requirement in "Technical Guidance for Abandonment in Place of Interstate Natural Gas Pipeline Systems" that classification of the pipe be based on the PCB concentration in the organic phase of the collected condensate.

Source: (C1-254)

Response 17: EPA agrees, and has revised §761.60(b)(5)(iii) to allow characterization of pipeline based on the PCB concentration in the organic phase of liquid condensate.

Comment 18: A commenter stated that there are other viable options for the characterization of natural gas pipe than those stated in §761.60(b)(5)(iii)(B), such as analysis of

solid pipeline debris/residues or filter elements. The commenter recommends that EPA not rule out these other methods by using overly exclusive language. Another commenter suggested that EPA revise the protocol for characterization of natural gas pipeline such that all other testing protocols, such as liquid sampling or sampling of solid materials from inside the equipment for PCB content, are exhausted before wipe sampling and extrapolating to content are accepted as a characterization protocol.

Source: (C1-112, C1-241)

Response 18: EPA believes that PCBs are transported through natural gas pipeline systems in either the gas phase or liquid phase or both. This transportation does not appear to be rapid because there are still significant PCB concentrations present in some natural gas pipeline systems more that twenty years after the last acknowledged use in the system. In the final rule, EPA clarifies in §761.60(b)(5)(iii) that wipe sampling should be used to characterize the natural gas pipeline system where no organic liquids are present.

The commenters did not provide any data demonstrating any relationship between PCBs in pipeline debris/residues or filter elements and surface measurements or condensate levels in natural gas pipeline. EPA believes that the risk from disposal of natural gas pipeline systems should be addressed based on the current PCB concentration in the actual equipment to be disposed of rather than a historical accumulation of material in debris or filters.

Comment 19: A commenter recommended that EPA revise its wipe sampling protocol such that the wherever possible, the minimum surface area to be sampled is 100 $cm^2$; where it is impractical to obtain a 100 $cm^2$ sample, the item may be characterized using a wipe sample from the largest surface area than can practicably be sampled.

Source: (C1-186)

Response 19: EPA believes that 100 $cm^2$ is available for sampling in most natural gas pipeline systems. At §761.243(b) in subpart M, EPA has provided for sampling smaller areas when 100 $cm^2$ areas are not available.

Comment 20: A commenter requested that EPA clarify the concept of "average sample results" by specifying which measure of central tendency should be used (i.e. arithmetic mean, geometric mean, median, mode, mid-range, etc.).

Source: (C1-270)

Response 20: The expression "average sample results" is no longer included in the final rule. In the final rule at §761.247(c)(1), EPA requires sampling only one end of a pipe segment.

Abandonment

Comment 21: A commenter stated that abandonment of natural gas pipeline on a property should be reflected in the property deed.

Source: (C1-036)

Response 21: Abandonment of natural gas pipeline according to the requirements in the regulation results in no unreasonable risk. There is no reason to acknowledge the no unreasonable risk finding in a property deed.

Comment 22: Commenters suggested that §761.60(b)(5)(i)(D) be clarified to show that the abandonment options in §761.60(b)(5)(i)(A) through (C) are also available for pipelines in the locations mentioned in (D) and that §761.60(b)(5)(i)(D) provides an additional option for pipe contaminated above 500 ppm. The commenters also questioned the reasoning behind limiting the applicability of §761.60(b)(5)(i)(D) to abandonments under permanent buildings that are not associated with the pipeline. They stated that it is not a sensible practice to tear down buildings to remove pipe. Furthermore, they stated that if the pipeline company owns the building, then the pipeline company would be aware of the abandoned PCB containing pipe and could take the necessary precautions to prevent risk.

Source: (C1-134, C1-180, C1-186)

Response 22: EPA has affirmatively addressed these comments by deleting proposed §761.60(b)(5)(i)(D) so that selection of disposal options is dependent on size of the pipe and concentration of the PCBs, not the pipe's location.

Comment 23: A commenter suggested that abandonment in place should be permitted under §761.60(b)(5)(i), provided all free flowing liquids have been removed, for any pipe which would be permitted to be disposed of in a municipal landfill under §761.60(b)(5)(ii).

Source: (C1-195)

Response 23: Section 761.60(b)(5)(ii) allows PCB-Contaminated natural gas pipe and natural gas pipe less than 4" in diameter to be disposed of in a municipal waste landfill. These categories of pipe can also be abandoned in place, but additional controls are required to prevent exposure to residual PCBs in the event that the location where the pipe was abandoned was disturbed, allowing access to the pipe.

Comment 24: A commenter suggested that EPA clarify the statement in

§761.60(b)(5)(i)(A)(2) to read, "...50 percent or more of the volume of the pipe...", in order to avoid unnecessary precision.

Source: (C1-195)

Response 24: EPA responded affirmatively to this comment.

Comment 25: A commenter suggested that EPA clarify §761.60 (b)(5)(i)(C) by saying, "...pipeline of any diameter which contains PCBs of any concentration be abandoned...".

Source: (C1-195)

Response 25: EPA has responded affirmatively to this comment.

Comment 26: A commenter stated that the current gas industry practice is to replace segments of existing natural gas by insertion of a smaller pipe through the existing pipe. The commenter requested EPA to confirm that the "new" pipe system (existing pipe and inserted pipe) is "in service" and exempt from the disposal requirements in this proposed rule.

Source: (C1-206)

Response 26: For purposes of discussion, EPA will identify the outer pipe or casing, which contains PCBs regulated for disposal but is not transmitting natural gas, as the sleeve and the inner pipe, which is transmitting natural gas, as the insert. PCB-Contaminated natural gas pipe may be used as a casing if it has been drained of free-flowing liquids (see §761.30(i)(3)). Pipe which is contaminated with PCBs at concentrations $\geq$500 ppm or $\geq$100 µg/100 $cm^2$ is not authorized for use as a sleeve. EPA has assumed in risk assessment for the use and disposal of pipe that there would be no dermal contact with the interior surfaces of pipe. If insert pipe is ever removed from the sleeve, it may be possible for the exterior surface of the insert to be contaminated by residual PCBs on the surface of the sleeve. Persons most likely to be exposed to such PCBs would be workers who are removing the insert from the sleeve. These persons should be protected from dermal contact with PCBs.

Comment 27: A commenter stated that the process of capping pipelines and abandoning them in place could cause harmful releases of PCBs via pockets of PCB laden fluid and deteriorated pipe. The commenter suggested that the proposed provision be provided for in a case by case analysis. The decision as to whether removal or encasement should occur should consider the environmental impact and the probability of potential leakage of PCBs.

Source: (C1-212)

Response 27: EPA has required removal of free-flowing liquids in larger diameter pipe prior to disposal. EPA's risk assessment evaluating the potential risk from residual PCBs in abandoned pipe shows no unreasonable risk from this activity. The commenter did not provide a contradictory risk assessment. In many locations where the pipe is intended for abandonment the environmental impact from removal or encasement of pipe would be significant.

Comment 28: A commenter suggested adding "cementitious coal combustion by products or other equivalent sealant materials" to the lists of grout examples in §761.60(b)(5)(i)(A)(2) and (D).

Source: (C1-257)

Response 28: Cementitious coal combustion byproducts or other equivalent sealant materials are acceptable for use as a grout in §761.60(b)(5)(i)(A)(2) and (C)(2).

Comment 29: A commenter suggested that parts (1), (2), and (3) of §761.60(b)(5)(i)(C) should be linked so that the reader will know that all three conditions must be met.

Source: (C1-270)

Response 29: EPA has revised and clarified §761.60(b)(5)(i)(C).

Comment 30: A commenter stated that grouting abandoned pipelines precludes future potential use as replacement parts. Additionally, grouted pipelines that contained >500 ppm PCBs would have to be disposed of in a PCB landfill, preventing them from being readily cleaned and recycled to salvage companies. The commenter suggested the following provisions be used to manage abandoned natural gas pipelines and associated equipment:

1. Remove all free flowing liquid and batch into one or more containers. Free liquids can be removed by pushing polyurethane plugs through the pipelines using compressed air. Other methods include vacuum suction, gravity draining, or flushing with a solvent or cleaning solution.
2. Test each container for PCBs.
3. Pipelines that formerly held >50-499 ppm PCB liquids are unregulated for purposes of disposal consistent with current PCB rules. A triple rinse of these segments using a full volume of solvent or cleaning solution could be used prior to distributing the pipe in commerce for purposes other than disposal. Pipelines which had PCBs of 500 ppm or higher would be managed as PCB waste for disposal or could be cleaned and recycled or distributed in commerce as described above.
4. If the pipeline is to be abandoned in place, removal of liquids and capping the ends is adequate.

Source: (C1-111)

Response 30: EPA has provided two disposal options for natural gas pipeline systems in §761.60(b)(5). One option allows abandonment in place and the second option allows removal of the pipeline for disposal. In the revised regulations, EPA generally requires the removal of all free flowing liquids, however a specific method is not required. In regards to suggested provisions (3) and (4), EPA provides different options for abandonment based on the concentration of PCBs contained in the pipe, as well as the diameter of the pipe. Refer to revised §761.60(b)(5) for the specific provisions. Reuse of natural gas pipe, as opposed to disposal, is addressed in §761.30(i)(2) and (3).

Comment 31: A commenter suggested that EPA consider whether there is a sound technical argument for reducing the volume percentage for the grouting option, based on calculations with respect to the volume of liquids traditionally in the pipe and the theoretical volume that would have to be filled to encapsulate those surfaces of the pipe exposed to the liquids.

Source: (C1-292)

Response 31: EPA's objective for grouting was to convince potential users of abandoned pipe that the pipe could not be used to transport any liquids, including water. The commenter didn't provide data showing that EPA's objective could be met successfully by grouting a smaller volume of the pipe. At §761.60(b)(5)(I)(A)(*1*), EPA provided the additional abandonment option for small diameter pipe which could be filled with grout. That additional options is a public service notification program, such as a "one-call" system under 49 CFR 192.614(a) and (b). At §761.60(b)(5)(I)(C)(*1*), where for larger diameter pipe grouting is one option another option is that the interior surface is decontaminated with one or more washes of a solvent in accordance with the use and disposal requirements of §761.79(d). This decontamination process must result in a recovery of 95 percent of the solvent volume introduced into the system, and the PCB concentration of the recovered wash must be <50 ppm.

Comment 32: A commenter suggested EPA recognize that historical data may be useful when no other alternative is available. Historical data indicating no or low level contamination should be sufficient to document compliance when no other data is available. Analysis at the time of abandonment in place is extremely impractical. Additionally, the commenter stated that it will often not be physically possible to characterize small natural gas distribution pipe by either analysis of liquid or wipe samples. The commenter also stated that when responding to an emergency situation or a repair, it will not be practical to wait for laboratory results in order to know if grouting or flushing is required to properly abandon the pipe. The commenter stated that gas distribution companies must be able to characterize their pipeline prior to replacement or repair activity. Several commenters suggested that the rule should state that a pipeline segment which is to be abandoned must be tested for the presence of PCBs only when there is reason to

suspect that PCBs are present. One commenter stated that their samples of natural gas condensate obtained at various points in their system have not show PCBs above 50 ppm for the last 12 years. Another commenter suggested that EPA provide the same extensive guidance for liquid sampling as it does for wipe sampling, to include guidance on selecting sample locations and the appropriate numbers of samples to be obtained.

Source: (C1-112, C1-146, C1-154, C1-164, C1-180)

Response 32: In the final rule, any person disposing of a natural gas pipeline system under §761.60(b)(5)(i)(B) or (b)(5)(ii)(A)(1) (i.e., on the basis that its concentration is ≥50 and <500) must characterize it for PCB contamination by analyzing organic liquids collected at existing condensate collection points in the natural gas pipeline system. Collect condensate within 72 hours of the final transmission of natural gas through the part of the system to be abandoned and wipe samples after the last transmission of gas through the pipe or during removal from the location it was used to transport natural gas. The level of PCB contamination found at a collection point is assumed to extend to the next collection point downstream. If no organic liquids are present, drain free-flowing liquids and collect standard wipe samples according to subpart M. Determine the PCB concentration after the last transmission of gas through the pipe or during removal from the location it was used to transport natural gas. There is no requirement to test a natural gas pipeline system that has never shown any evidence of PCB contamination. The rule also offers several options for abandoning or disposing of pipe without establishing the PCB concentration.

Small-Diameter Pipe

Comment 33: A commenter stated that there is no viable option for abandonment of small diameter pipe and that abandonment in-place of small diameter pipe poses little risk. The commenter suggested EPA include a provision in the abandonment options comparable to the option in §761.60(b)(5)(ii)(A)(2). The suggested language for the new option is as follows: "Natural gas pipeline containing PCBs at any concentration and having a nominal inside diameter less than or equal to 4" may be abandoned in the location it was used to transport natural gas provided it contains no free flowing liquids and that each end is sealed closed."

Source: (C1-112)

Response 33: EPA agrees in part with this suggestion and has included at §761.60(b)(5)(i)(A) a provision for abandonment of pipe having an inside diameter less than or equal to 4". This provision does, however, provide additional controls to prevent the abandoned pipe from being reused. Section 761.60(b)(5)(i)(A) reads:

> Natural gas pipe having a nominal inside diameter of 4" or less, and containing PCBs at any concentration but no free-flowing liquids, may be abandoned in the place it was used

to transport natural gas if each end is sealed closed and the pipe is either:

(1) Included in a public service notification program, such as a "one-call" system under 49 CFR 192.614(a) and (b); or

(2) Filled to 50 percent or more of the volume of the pipe with grout (such as a hardening slurry consisting of cement, bentonite, or clay) or high density polyurethane foam.

Comment 34: A commenter suggested that §761.60(b)(5)(i)(A) be changed to read, “of any diameter” in place of “and having an inside diameter less than or equal to 4 inches”.

Source: (C1-112)

Response 34: The rule provides different options for abandonment depending on the size and PCB concentration of the pipe. Pipe of any size, including pipe having an inside diameter less than or equal to 4" that is PCB-Contaminated (i.e., <500 ppm PCBs) may be abandoned simply by removing free-flowing liquids and sealing the ends. Pipe containing higher or unknown concentrations, such as pipe having an inside diameter less than or equal to 4" that is too small to wipe-sample, is subject to additional controls to prevent exposure to the PCBs, such as filling with grout or inclusion in a one-call system. Pipe having a nominal diameter greater than 4" is subject to different regulatory controls because it creates a greater risk of exposure after abandonment (e.g., through unlawful reuse), and it is easier to determine the PCB concentration of the pipe through wipe sampling.

Comment 35: A commenter suggested references to 4-inch diameter pipe be revised to say, “4-inch nominal pipe diameter”, as “4-inch pipe” may have a diameter marginally smaller or larger than 4" in the actual measurement.”

Source: (C1-112, C1-186, C1-195, C1-206, C1-229)

Response 35: EPA has adopted this suggestion. See §§761.60(b)(5)(i)(A) and 761.60(b)(5)(ii)(A)(2).

Comment 36: A commenter proposed to extend the 4" allowance to 6" pipe to accommodate local distribution companies. Another commenter recommended that EPA reconsider their proposed threshold for small diameter pipes, as pipe having a diameter of less than 8" presents a logistical challenge when wipe sampling is required.

Source: (C1-038, C1-206, C1-292)

Response 36: EPA believes that wipe sampling is an important tool for evaluating surface concentration of PCBs in pipe where there are no liquids. Wipe sampling is difficult in 4" diameter and smaller pipe, but is possible in larger diameter pipe. There are other abandonment options, which do not require surface sampling, for the disposal of pipeline having a larger nominal diameter than 4" (see §761.60(b)(5)(i)(C) and (D)).

Comment 37: A commenter questioned the requirement to grout pipe. The commenter suggested sealing the pipe and adding the sealed pipe to a one-call notice.

Source: (C1-038)

Response 37: Sealing pipe and using the one-call notice is an option for pipe having a nominal diameter of 4" or less. Because of its small size, this pipe can be difficult to wipe sample, and some disposal options are impracticable. For larger diameter pipe, grouting is not the only option for abandonment. Disposal options vary based on the PCB concentrations in the pipe. Larger diameter pipe can be more easily characterized and may turn out to be unregulated for disposal. If the larger pipe qualifies as PCB-Contaminated, it can be drained and capped. If the larger pipe contains PCBs at levels $\geq$500 ppm or $\geq$100 µg/100 $cm^2$, decontamination is still an option other than grouting the pipe. Large diameter pipe can have considerably more surface area contaminated with PCBs, and these disposal options are designed to prevent an unreasonable risk from exposure to the contaminated surfaces that is expected to be more effective than inclusion in a one-call system.

Comment 38: A commenter stated that the cost to grout service pipelines and small diameter pipe significantly outweighs the risk of exposure. The commenter suggested that service pipelines and small diameter pipe be drained of all liquids, with proper management of liquids collected, but be exempt from the grouting requirement. The commenter further recommended rewording §761.60(b)(5)(i)(A) as follows: "Small diameter natural gas pipeline (including service lines) containing PCBs at any concentration, with no free flowing liquids, may be abandoned in the place it was used to transport natural gas if the pipeline is sealed closed at each end or the pipe is included in a public service notification program, such as a "one-call" system under 40 CFR 192.614 (a) and (b)."

Source: (C1-229)

Response 38: EPA has responded affirmatively to this comment in §761.60(b)(5)(i)(A)(1).

Comment 39: A commenter suggested revising §761.60(b)(5)(i)(A) and §761.60(b)(5)(ii)(A)(2) to read, "a nominal diameter of 6" or less or greater than 100 pounds maximum operating pressure" in place of, "an inside diameter less than or equal to 4"." Another

commenter suggested that 6" diameter pipelines may be more appropriate for sampling requirements than four-inch diameter pipelines.

Source: (C1-257, C1-292)

Response 39: The commenters did not provide any data to support this comment. EPA's determination on the minimum diameter of pipe was the ability to collect a wipe sample inside the pipe. EPA believes that a wipe sample can easily be collected inside a pipe having a nominal diameter of 6". The pressure rating of the pipe has no bearing on the presence or absence of PCBs.

Smelting

Comment 40: A commenter suggested that EPA allow smelting of dry pipe without measurement.

Source: (C1-038)

Response 40: EPA cannot be assured that surface levels of pipe are below levels considered safe for smelting. EPA allows smelting for pipe which has been contaminated at <500 ppm PCBs or having a surface area <100 $\mu$g/100 cm$^2$. EPA has no information which could lead to a generic assumption that pipeline is always below these levels as it has for electrical transformers, for which there is substantial data. EPA has provided for representative sampling of pipe to reduce the cost of sampling expenses.

Comment 41: A commenter suggested that EPA consider other disposal technologies such as smelting or thermal desorption for this category of natural gas pipelines. The commenter stated that smelting of natural gas pipeline and pipeline facilities presents no significant risk and that smelting would prevent large volumes of valuable resources from reaching landfills.

Source: (C1- 180, C1-186)

Response 41: EPA has responded affirmatively to this comment by including decontamination according to §761.79 in §761.60(b)(5)(ii)(B)(iv). Decontamination includes smelting in §761.79(c)(6), thermal decontamination.

Solvents

Comment 42: A commenter recommended that EPA allow the pipe to be cleaned with any appropriate solvent, in regards to §761.60 (b) (5) (i) (C). They suggested that the section be

reworded to read, "(2) The interior surface is cleaned using a single wash of PCB Decontamination Fluid . . . " Another commenter suggested rewording §761.60(b)(5)(i)(C)(2) by replacing "a single wash" with "one or more washes", in order to prevent the misinterpretation that the procedure is limited to no more than one wash. The commenter also suggested EPA permit the use of kerosene for this wash. Another commenter recommended adding language to the effect that if cleaning is performed and the recovered wash is found to be in excess of 50 ppm, the process may be repeated; after the third wash, no testing will be required, and the pipe may be abandoned in place without grouting after the solvent is recovered.

Source: (C1-134, C1-161, C1-180, C1-186, C1-195, C1-206, C1-229, C1-270)

Response 42: The final rule has been modified to allow greater flexibility. It now allows the use of one or more washes of any solvent, so long as the solubility of PCBs in the solvent is 5 percent or more by weight. This is consistent with existing requirements for solvents at §761.79(a). The solvent may be reused for decontamination so long as its PCB concentration is <50 ppm. Section 761.79(g) sets out the requirements for disposal of used solvents. No data were provided supporting the option of allowing abandonment after three washes without further testing.

Comment 43: A commenter questioned the requirement in §761.60(b)(5)(i)(C) that 95% of the volume introduced into the system for washing be recovered. The commenter stated that due to the adherence of liquid to the large surface area that is washed, it is possible that more than 5% of the volume may not be recovered. The commenter recommended revising the requirement such that the segment being washed be drained of all free flowing liquids to the maximum extent practicable and that the recovered free flowing liquids are managed, recycled and/or disposed of in accordance with all appropriate laws and regulations.

Source: (C1-186, C1-229)

Response 43: EPA proposed decontamination procedures with the objective of allowing potentially small amounts of solvent loss when recovering PCBs. Larger losses of solvent offset the benefit from this kind of decontamination and are in opposition to the Agency's goal of waste minimization. For large abandonments where significant solvent losses are possible, the commenter should either flush out the pipe in short lengths where 95% of the solvent can be recovered or use the alternative of filling the pipe with grout. Another disposal option is to apply for a risk-based approval under §761.61(c).

Existing Approvals and Policies

Comment 44: Commenters urged EPA to continue the renewal of alternative disposal permits as long as companies request renewals. They suggested that a permit holder should be

allowed to operate under the revised regulation in lieu of their ADP if they choose to do so.

Source: (C1-134, C1-156, C1-180)

Response 44: EPA has responded affirmatively to the commenter's suggestion. The preamble text addressing this matter follows:

> Those who hold alternate PCB disposal permits or approvals issued under §761.60(e) may continue to use those approvals within the confines of their specific conditions to dispose of natural gas pipeline and appurtenances. A company may, however, request in writing that EPA revoke its alternate disposal approval to allow the company to comply with today's regulatory requirements in lieu of the conditions specified in its disposal approval. EPA continues to reserve its right to modify the conditions of the alternate disposal approval when, for example, applicable regulatory requirements for disposal, decontamination or reuse are changed. Accordingly, EPA does not intend to grant renewals for existing alternate disposal approvals in cases where the final PCB regulations adequately address protection of human health and the environment. These approvals have been issued based on a no unreasonable risk finding. However, some specific conditions in approvals are different from similar general conditions in the rulemaking. These specific conditions are based on monitoring data collected during disposal and other pipeline maintenance operations conducted under the approval. This data may not be applicable to the general population of natural gas pipeline systems.

Comment 45: A commenter stated that EPA should clarify whether the presumption in the preamble that discusses pipelines known or suspected to be contaminated with PCBs above 500 ppm still applies, or how it affects disposal and abandonment requirements of these pipelines.

Source: (C1-134)

Response 45: EPA has stated in the preamble that the presumption that certain natural gas pipeline systems contain PCBs at >500 ppm is no longer in effect. The following is the applicable text from the preamble:

> In a June 6, 1988, letter, EPA stated that it would presume that natural gas pipelines in EPA's 1981 Compliance Monitoring Program were contaminated at ≥500 ppm PCBs due to the discovery of such concentrations in components of the natural gas pipeline system or because natural gas purchased from another system had shown ≥500 ppm PCBs (Ref. 10). Much progress has been made in reducing PCB concentrations in natural gas pipelines under the Compliance Monitoring Program. Thus, EPA is formally ending the Program and releasing the affected natural gas pipeline companies from any further obligations under it as of the effective date of today's rule. Therefore, EPA's 500 ppm presumption policy for natural gas pipeline systems no longer applies. EPA believes that the final rule adequately addresses remaining actions necessary to further reduce PCB

concentrations in natural gas pipelines while providing regulatory flexibility and reduced compliance costs.

Comment 46: A commenter requested clarification regarding the applicability of the proposed rule (§761.60(b)(5)) as well as confirmation that the proposed language in §761.60(b)(5)(iii) authorizes disposal of PCB-containing liquids in accordance with their PCB concentration at the time of removal from the pipe, notwithstanding the presumption that EPA has applied to portions of many natural gas pipeline systems.

Source: (C1-254)

Response 46: PCB-containing liquids are regulated at the concentration in the liquids at the time the liquids are removed from the natural gas pipeline system.

Disposal of Other Systems

Comment 47: A commenter suggested that EPA investigate the past use of PCB-containing AWWA C203 coal-tar enamel on and in water distribution systems. Specifically, the EPA should provide guidance for maintenance, removal, and/or abandonment of coal-tar enamel-coated water piping, similar to the proposed manner for natural gas pipelines.

Source: (C1-139)

Response 47: EPA has no other information on this product. Under current regulations, these systems are not authorized for use, so EPA has not prepared guidance on their maintenance. However, EPA believes that the measurement-based provisions in the amended section §761.79 address removal of liquid and non-liquid PCBs from metal surfaces. Water system components manufactured to contain PCBs would, at the time of their disposal, fall within the definition of PCB bulk product waste. The owner or operator of the system or equipment could request the EPA Regional Administrator to authorize its abandonment pursuant to a risk-based disposal approval under §761.62(c).

Comment 48: A commenter suggested that EPA allow the disposal, by abandonment in place, of buried air lines containing PCBs at any concentration, in order to be consistent with the definition of natural gas pipeline systems. Language should be added to §761.60(b)(5) to include the abandonment of buried air lines and associated air system components.

Source: (C1-154)

Response 48: EPA has provided for the use and self-implementing performance-based decontamination of air compressor systems in §761.30(s) and §761.79(c)(5) respectively. These provisions are based on EPA's experience during permitting and information submitted during the comment period. EPA did not propose similar provisions for the disposal of these systems, and has inadequate information on which to base generally-applicable disposal requirements. Air lines and air system components containing PCBs as a result of a leak or spill would, at the time of their disposal, fall within the definition of PCB remediation waste. The owner or operator of the system or equipment could request the EPA Regional Administrator to authorize its abandonment pursuant to a risk-based disposal approval under §761.61(c).

Comment 49: A commenter suggested that the scope of §761.60(b)(5) be expanded to include PCB-Contaminated underground piping associated with natural gas pipeline systems and/or electrical transmission systems. Removal of this piping, in some instances, would adversely impact building foundations and other structures.

Source: (C1-210)

Response 49: To abandon underground pipe contaminated by spills from liquid PCBs, EPA has provided for one disposal option in §761.61(c) and another option for decontamination in §761.79.

Comment 50: A commenter suggested that EPA expand §761.60(b)(5) to include air compressor condensate. The commenter recommended rewording §761.60(b)(5)(iii).

Source: (C1-134, C1-180)

Response 50: EPA has not included air compressors as part of natural gas pipeline systems, because their use is not unique to the natural gas pipeline industry. In the final rule, air compressor systems are defined separately in §761.3 and their use is authorized in §761.30(t). Decontamination procedures specific to air compressors are included at §761.79(c)(5). At the time of disposal, air compressors should be treated as PCB Articles under §761.60(b).

**§761.60(b)(6) -- PCB Articles**

Comment 1: Regulating articles that have been emptied of liquids is not consistent with the RCRA program. Under RCRA, once an article, such as a drum, has been emptied of hazardous waste liquids, the article is no longer regulated. This provision applies to articles that may have a light coating of the hazardous waste liquids remaining in the surface or even pooling at the bottom of an article if a certain specified amount of the liquid is not exceeded. This practical requirement, which has been protective of human health and the environment for

hazardous waste liquids, should also be more than adequate for PCB Article management.

Source: (C1-105)

Response 1: This is not always the case. If a waste is a RCRA P-listed waste, then its container cannot be declared "RCRA Empty". It is still listed as a hazardous waste and carries the waste code and shipping name to its final disposal/destruction destination. There are potential uses of containers used for regulated PCBs which can result in an unreasonable risk under TSCA.

Comment 2: The regulations are not clear on how appurtenances such as valves, regulators and other small equipment are to be characterized for disposal. Small valves and regulators cannot be accurately wipe sampled and liquids may not be present. The regulations should allow sampling sludge, scale, grease or any other extractable material that would allow for the identification and quantifying of PCBs. The regulation should also allow for compositing of samples.

Source: (C1-135, C1-147)

Response 2: Sludge scale and grease should be left on surfaces, which are not in contact with free-flowing liquids, and sampled using a standard wipe sample. Surface sampling locations may be determined in accordance with subpart P. Alternative decontamination procedures, including sampling, may be approved in accordance with §761.79(h) in the final rule. For more information, see responses to comments on §761.60(b)(5).

Comment 3: On p.62804, column 1, EPA states that it will limit the application of the wipe test to "certain porous articles." The limits or restrictions need to be defined in the proposed regulation.

Source: (C1-188)

Response 3: In the final rule, §761.79(a)(5) says, "Any person decontaminating porous surfaces other than concrete under paragraph (b)(4) and coated metal under paragraph (c)(8) of this section must obtain an alternative decontamination approval in accordance with paragraph (h) of this section." Section 761.79(b)(4) adds, "The decontamination standard for concrete is $\leq 10$ $\mu$g/100 cm$^2$ as measured by a standard wipe test (§761.123) if the decontamination procedure is commenced within 72 hours of the initial spill of PCBs to the concrete or portion thereof being decontaminated."

Comment 4: The proposed rule mentions nothing about allowing the collection and analysis of porous core materials or destructive samples from porous materials such as concrete.

The commenter recommends that this sampling methodology be incorporated in §761.60(b)(6) without the need for an alternative disposal approval.

Source: (C1-188)

Response 4: Concrete is regulated as PCB remediation waste when it is contaminated as a result of a spill of liquid PCBs. Core sampling of non-liquids is addressed in subpart N of the final rule. Concrete which is a constituent of PCB bulk product waste may be disposed of in accordance with §761.62(b)(1)(i) which may not require sampling. Section 761.60(b)(6) applies only to PCB Articles.

Comment 5: Would this section apply to lead covered copper cable (LCCC)? Although LCCC does not contain any free flowing liquid per se, the porous paper insulation is impregnated with oil which can be removed for analysis and is considered to be the most appropriate and accurate method of determining PCB concentration.

Source: (C1-188)

Response 5: In §761.60(b), electrical equipment is presumed to be contaminated by liquid PCBs. PCB-Contaminated electrical equipment drained of free-flowing PCBs is regulated for disposal at §761.60(b)(4). If no liquid PCBs were ever present in the equipment, such as the cable described by the commenter, the equipment is PCB bulk product waste and may be disposed of according to §761.62. PCB impregnated paper may be land disposed in §761.62(b)(2) subject to leachability of the PCBs present.

Comment 6: EPA states that areas of non-porous surfaces that come in contact with PCBs at 100 micrograms per 100 square centimeters (100 $\mu g/cm^2$ ) could be disposed of in an industrial furnace. Other articles found to be contaminated with PCBs at >100 $\mu g/cm^2$ must be disposed of in a TSCA approved incinerator or placed in a TSCA approved chemical waste landfill. It appears that the statement from EPA discourages recycling for non-porous surfaces having PCBs at less than 100 $\mu g/cm^2$ and prohibits recycling for non-porous surfaces having PCBs greater than 100 $\mu g/cm^2$. Please clarify.

Source: (C1-230)

Response 6: Metal surfaces in contact with PCBs present as coating or residual surface concentrations from contact with liquids or non-liquids may be decontaminated for purposes of metal recovery in accordance §761.79 regardless of the concentration. Specifications for the decontamination depend on the surface concentration or the PCB concentration in the coating (see §761.79(b)(3) and (c)(8)).

Comment 7: Section 761.60(b)(6)(iii) should specify the number of wipe tests per unit areas required and the pattern in which they should be collected.

Source: (C1-260)

Response 7: This section has been renumbered in the final rule as §761.60(b)(6)(ii). It applies to PCB-Contaminated Articles contaminated by contact with liquid PCBs, and presumes that the concentration ($\geq$50 and <500 ppm PCBs) has been established by testing the liquid. This equipment must be drained of free-flowing liquids, and no further sampling is required. Proposed §761.60(b)(6)(iii) also included non-porous surfaces such as ship and submarine hulls, most of which would have been contaminated through contact with non-liquid PCBs. These surfaces now are regulated for disposal based on leachability under §761.62 (PCB surface concentration does not need to be established) and for decontamination under §761.79(b)(3).

Comment 8: The commenter is concerned that a proposed reclassification rule will conflict with the proposed disposal rules. The reclassification rule allows for PCB contaminated transformers to be reclassified after a prescribed procedure. The proposed disposal amendments make no allowance for transformer reclassification and requires more stringent disposal. The commenter asks that EPA expand the term "PCB contaminated" to "PCB contaminated unless reclassified by retro-filling". By expanding this term, the two proposed rules can be combined to encourage either decontamination through retrofill and reclassification or more stringent disposal.

Source: (C1-027)

Response 8: The "reclassification rule" and these disposal amendments are being developed in harmony with one another, although the reclassification rule is a separate regulatory effort. It is EPA's intent to avoid any conflict.

Comment 9: Definition of "PCB Contaminated" is confusing. In regards to having neither liquids or non-liquids on a surface, please explain what other state of matter you can have if something is neither liquid or non-liquid.

Source: (C1-061)

Response 9: The definition of "PCB-Contaminated" has been revised. That term now refers to a non-liquid material containing PCBs at concentrations $\geq$50 ppm but <500 ppm; a liquid material containing PCBs at concentrations $\geq$50 ppm but <500 ppm or where insufficient liquid material is available for analysis, a non-porous surface having a surface concentration >10 $\mu$g/100 $cm^2$ but <100 $\mu$g/100 $cm^2$, measured by a standard wipe test as defined in §761.123.

Comment 10: Was the option of TSCA landfilling PCB non-liquids of ≥50 ppm (soils, rags or other debris) in the current §761.60(a)(4) intentionally left out? By not restoring this option, TSCA incinerators may unnecessarily go to capacity.

Source: (C1-242)

Response 10: Soil, rags, and other debris are now regulated as PCB remediation waste under §761.61. Several landfilling options are available.

Comment 11: A commenter stated that redefining PCB contamination through wipe sample standards is "erroneous", as solvents used to wipe the area can migrate under the template and absorb more PCBs than what is actually present in the sampled area.

Source: (C1-181)

Response 11: The absence of free-flowing liquids from a surface does not necessarily mean the same thing as the absence of risk from PCBs. EPA's risk assessments have established no unreasonable risk levels for PCB surface concentration and use these levels as a standard for decontamination and reuse. PCBs on surfaces can be measured two different ways: by direct extraction from the surface, which usually means cutting a large section of metal from the system and extracting it in a chemical analysis laboratory, or by surface sampling using a wipe sampling procedure. Any measurement technique has advantages and disadvantages. EPA uses wipe sampling in evaluating the potential risk form PCBs on surfaces. If there is better quality data from the cumbersome and evasive direct extraction, this kind of sampling does not justify the additional burden and cost. For measurement by wipe sampling, control of the amount of solvent used should minimize migration of PCBs from under the template.

Comment 12: A commenter requested an explanation on the derivation of EPA's statement in the preamble that PCB concentrations of 500 ppm or greater are equivalent to 100 $\mu$g/100 cm$^2$.

Source: (C1-061, C1-206)

Response 12: The current PCB regulations generally establish a concentration of 50 parts per million (ppm) as the regulatory threshold for authorized PCBs in use (i.e., in service). This was based, in part, on the economic impact of the regulations on electrical transformers, but 50 ppm has been extended to include all authorized PCBs and PCB Articles, unless otherwise noted (e.g., PCB concentration of less than 50 ppm resulting from dilution). Where liquid samples could not be collected, such as on contaminated surfaces, surface sampling and concentration levels were developed (see part 761, subpart G, The PCB Spill Cleanup Policy). The surface concentrations, which were based on dermal exposure, were equated to the existing PCB

regulations which included economic considerations. As a result, the regulations established for PCBs at concentrations of 50 to less than 500 ppm were applied to contaminated surfaces at concentrations of greater than 10 to less than 100 micrograms per 100 square centimeters (>10 to <100µg/100cm$^2$). The final regulations, in several sections of this notice, codify the relationship between surface contamination and the existing regulations based on milligrams of PCBs per liter of liquid on a dry weight basis.

**§761.60(g) -- Analytical References**

Comment 1: EPA should identify specific sample preparation and gas chromatography (GC) analytical techniques for specific uses and materials.

Source: (C1-163, C1-270)

Response 1: Although it is true that determining the concentration of PCBs in any matrix (e.g., soil, oil, water, etc.) consists of many steps before actual GC quantitation can take place, the PCBs must first be extracted from samples with solvents. Then the solvents must be cleaned up to remove impurities before quantitation of PCB concentration can occur with gas chromatography. EPA has not specified any particular extraction, cleanup or GC method because the selection of such protocols will be determined by factors such as the material or matrix being tested, the ultimate accuracy and precision required for the use of the data obtained, and on the most current "state of the art" in GC technology at the time the samples are being analyzed for PCB concentration.

Although EPA recognizes variability can exist when different testing methods and procedures are used to analyze PCBs, EPA has determined that the statutory requirement to consider the costs and benefits associated with establishing regulatory requirements argue for increased flexibility at the expense of precision. As a result, the provisions at §§761.60(g)(1)(iii) and (g)(2)(iii) offer the maximum flexibility for individuals to use any gas chromatographic test method.

Comment 2: EPA should remove the reference to "representative samples" found at §§761.60(g)(1)(ii) and (g) (2)(ii).

Source: (C1-269)

Response 2: EPA did not propose any changes to these provisions.

Comment 3: Commenter suggests that ASTM standard D-923, Standard Test Method for Sampling Electrical Insulating Liquids, is inappropriate because it is a procedure for sampling impurities such as water in dielectric fluids.

Source: (C1-269)

Response 3: EPA did not solicit comments on this procedure in the proposed rule.

Comment 4: Commenter was disappointed that EPA had not included immunoassay and other emerging analytical methods that provide quicker and more economical determinations in the laboratory or in the field for determining PCB concentrations for regulatory purposes.

Source: (C1-229)

Response 4: EPA agrees that the application of these new test kits may be useful in screening certain matrices to determine whether PCBs are present at regulated levels. However, these results are preliminary at best and must be verified by gas chromatography or mass spectrometry to ensure compliance with the regulatory requirements. Informal discussions with members of the regulated community suggest that the cost associated with GC analytical procedures has decreased substantially over the years and is not the financial impediment it may have been at one time.

## §761.61 -- PCB Remediation Waste

### §761.61(a) -- Self-Implementing On-Site Cleanup and Disposal of PCB Remediation Waste

General

Comment 1: Requests clarification of spills less than 50 ppm. Current rules cover spills of 50 ppm and greater and spills of less than 50 ppm have never been illegal or subject to cleanup policies. There has been little record keeping regarding these spills and it would be unreasonable to expect the site owner to prove the original source of PCBs and the date of the disposal or release, or to undertake remediation regardless of current concentrations or prior remediation activities.

Source: (C1-062, C1-170)

Response 1: In the final rule,"PCB remediation waste" is defined to mean waste containing PCBs as a result of a spill, release, or other unauthorized disposal, at the following concentrations: materials disposed of prior to April 18, 1978, that are currently at concentrations $\geq$50 ppm PCBs, regardless of the concentration of the original spill; materials which are currently at any volume or concentration where the original source was $\geq$500 ppm PCB beginning on April 18, 1978, or $\geq$50 ppm PCB beginning on July 2, 1979; and materials which are currently at any concentration if the PCBs are from a source not authorized for use under this part. Thus, whether contaminated material falls within the definition of PCB remediation waste and must be cleaned

up depends on the concentration of PCBs at the time of the spill. Section 761.50(b)(3)(iii) also clarifies that the owner or operator of a site containing PCB remediation waste has the burden of proving the date that the waste was placed in a land disposal facility, spilled, or otherwise released into the environment, and the concentration of the original spill. EPA realizes that at some sites this burden may be difficult to meet. However, PCBs that have been improperly land disposed may enter watersheds, drinking water reservoirs, aquatic and marine ecosystems, and other areas. Where the applicability of the regulations to such areas is uncertain, EPA believes it is appropriate to err on the side of preventing an unreasonable risk to human health or the environment.

Comment 2: A commenter stated that EPA sets out a definition of PCB remediation and non-remediation waste which purports to classify the universe of PCB contaminated waste. It is unclear from the definitions whether an item excluded from one list is automatically included in the other. However, the two lists aren't complimentary and definitions are circular. Items that are specifically remediation wastes should be listed. All other items should be considered non-remediation wastes. Manufactured items where the PCBs are inextricably bound should be defined as non-remediation wastes. Commenters suggested clarifications to the definitions.

Source: (C1-161, C1-260)

Response 2: EPA has revised and clarified which PCB wastes qualify under the definitions of PCB remediation waste and PCB non-remediation waste (PCB bulk product waste in the final rule). PCBs regulated for disposal and spilled are regulated as PCB remediation waste. Waste resulting from a spill or release of product in the waste from processes which manufacture inadvertently generated PCBs is regulated for disposal as PCB remediation waste. A manufactured product which is not an unauthorized use is regulated for disposal based on whether it is a non-liquid or liquid. Non-liquid products are regulated as PCB bulk product waste at §761.62. Liquid products are regulated as liquid PCBs at §761.60(a).

Comment 3: Commenters stated that EPA has not included in either the definition of PCB remediation waste or PCB non-remediation waste construction debris from the demolition of buildings. The commenters continued that even though the term "PCB non-remediation waste" is defined to include debris from the demolition of buildings, the comment in the preamble (at paragraph II(A)(6)) specifies that such terms includes only "the demolition of buildings and other human-created structures where the construction materials were manufactured or coated (e.g., by using paint containing PCBs) with PCBs as opposed to being contaminated with PCBs (e.g., through a spill from electrical equipment)." Further, the commenters stated that in contrast, the term "PCB remediation wastes" includes all environmental media containing PCBs, rags and other debris generated as the result of a cleanup spill. Although the term "debris" is included in such definition, the term is used in the context of rags and other materials generated as a result of a cleanup, not material which is contaminated as a result of a spill. Building and construction debris, such as concrete slab or flooring, which has been contaminated by the release of PCBs, is

not specifically included in either definition although such type waste fits into the category of "large volume PCB waste" which the agency is addressing by this regulation.

The Agency should specifically acknowledge in the preamble to the final regulation that wastes such as concrete slabs, flooring and similar types of debris which are commonly associated with the demolition of buildings are included in the definition of PCB remediation wastes. The Agency should also include phraseology in the definition of the term "PCB remediation wastes" to clarify that materials such as building and construction debris are included in the materials contemplated by use of the term.

Source: (C1-161, C1-188, C1-242)

Response 3: In §761.3 of the final rule the definition of PCB remediation waste includes:

> Buildings and other man-made structures, such as concrete or wood floors or walls contaminated from a leaking PCB or PCB-Contaminated transformer, porous surfaces and non-porous surfaces.

At §761.3 in the final rule, the definition of PCB bulk product waste includes the following language:

> PCB bulk product waste includes, but is not limited to: (1) Non-liquid bulk wastes or debris from the demolition of buildings and other man-made structures manufactured, coated, or serviced with PCBs. PCB bulk product waste does not include debris from the demolition of buildings or other man-made structures that is contaminated by spills from regulated PCBs which have not been disposed of, decontaminated, or otherwise cleaned up in accordance with subpart D.

Comment 4: Under the proposed amendments, municipal sewage sludge with any detectable PCB concentration would be considered a PCB Remediation Waste and would be subject to the corresponding disposal alternatives. Virtually all municipal sludge produced in the United States contains low but detectable PCB concentrations. POTWs would be forced to abandon traditional biosolids management practices that are currently recognized and regulated by the EPA under 40 CFR Part 503 and pursue alternatives that carry a much higher price tag.

Source: (C1-005, C1-007, C1-008, C1-018, C1-024, C1-032, C1-035, C1-037, C1-053, C1-064, C1-065, C1-078, C1-092, C1-094, C1-191, C1-201, C1-250, C1-259, C1-260)

Response 4: EPA revised the definition of "PCB remediation waste" to respond to these comments. The definition of "PCB remediation waste" in the final rule excludes sewage sludge at less than 50 ppm in use under §761.20(a)(4), and includes "PCB sewage sludge" as defined at 40 CFR 503.9(w) containing $\geq$50 ppm PCBs. Land application of sewage sludge containing less than 50 ppm PCBs is "use" under TSCA Section 6(e) and is authorized under §761.20(a)(4). Use of sewage sludge containing $\geq$50 ppm PCBs is not authorized.

Sewage sludge containing ≥50 ppm, defined as "PCB sewage sludge", must be disposed of pursuant to §761.61 as PCB remediation waste. Disposal of sewage sludge containing less than 50 ppm PCBs, including application as a landfill cover, is not regulated under TSCA.

Regulations at 40 CFR Part 503 and 40 CFR Part 257 may apply to use and disposal of sewage sludge containing <50 ppm PCBs. However, some use and disposal activities not clearly covered by the CWA regulations are banned by TSCA even for sewage sludge containing less than 50 ppm PCBs, for example the intentional or accidental dilution of PCB wastes by mixing or blending with sewage sludge.

Comment 5: A commenter would like to know the answers to the following questions: (1) What criteria would be used to determine when a facility's sludge is defined as a PCB remediation waste? (2) Would a facility's sludge which tests positive one month out of twelve be defined as a PCB remediation waste? (3) Is an average value over time to be used? and (4) If a facility's sludge is then land applied would the soil be deemed a PCB remediation waste and have to be managed under §761.61?

Source: (C1-201)

Response 5: EPA did not receive any comments from sludge generators that PCB sewage sludge (containing ≥50 ppm PCBs) would be routinely generated. Therefore there is no sampling plan specifically developed for sampling sewage sludge. Subpart R is a general sampling procedure for PCB remediation waste destined for off-site disposal. A risk-based alternative sampling plan may be submitted to the RA for approval under §761.61(c).

Comment 6: A commenter stated that the definition of "PCB remediation waste" includes among other things "porous surfaces" and "non-porous surfaces". It specifically does not include "natural gas pipeline, equipment and appurtenances". Can we assume that contaminated porous and non-porous surfaces found on natural gas pipeline, equipment and facilities are excluded from the definition PCB remediation waste? If not where/how is the line drawn?

Source: (C1-042)

Response 6: In the final rule EPA has included natural gas pipeline systems contaminated with PCBs as PCB remediation waste. There are several categories of PCB remediation waste. Contaminated metal surfaces in natural gas pipeline systems are included in the category of non-porous surfaces. EPA has determined that even if the interior of natural gas pipe is coated with a thin anti-corrosion porous material, this coated surface is still defined as a non-porous surface.

Comment 7: A commenter stated that while PCB remediation wastes are categorized into several types, the commenter could not tell if liquid wastes have any specific requirements. The

commenter added that liquids are mentioned in §761.61(b) for "performance based disposal", but liquids other than water are not addressed in §761.61(a), "self-implementing disposal".

Source: (C1-171)

Response 7: The self-implementing disposal of liquid PCB remediation waste is addressed at §761.61(a)(4)(iv) for cleanup levels and §761.61(a)(5)(iv) for site cleanup.

Comment 8: Commenters asked what circumstances initiate a site remediation and at which point it can be voluntarily terminated. Several commenters asked about the status of sites cleaned prior to the effective date of §761.61. One commenter asked whether organizations are allowed to conduct studies, sampling or other assessments that do not comply with §761.61 to determine if a pre-1987 spill occurred and if it is subject to 761.61. If prior cleanup has been done and the 10 $\mu$g/100 cm$^2$ has been achieved, is resampling required using core samples per Appendix II? Another commenter asked that cleanup obligations not be imposed retroactively, particularly in the cases of spills cleaned up prior to the 1987 Spill Cleanup Policy where a cleanup standard of <50 ppm was used.

Source: (C1-029, C1-185, C1-265)

Response 8: There are no requirements as to when self-implementing site cleanup under §761.61(a) must be initiated or when it may be terminated. It is one of several options for the cleanup of PCB remediation waste. However, any cleanup activities not in direct compliance with the requirements for self-implementing cleanup do not qualify for the deregulatory benefits of §761.61(a). If PCB levels at a site meet the cleanup levels at §761.61(a)(4), no additional cleanup is necessary, but the owner or operator of the site must notify the EPA Regional Administrator under §761.61(a)(3) to qualify the site as clean under the self-implementing option.

Sites where PCBs have been placed in a land disposal facility (such as a dump, landfill, waste pile, or land treatment unit), spilled, or otherwise released to the environment prior to April 18, 1978, are presumed not to present an unreasonable risk of injury to health or the environment from exposure to PCBs at the site, and do not necessarily require further disposal action. The final rule at §761.50(b)(3) allows the EPA Regional Administrator, on a case-by-case basis, to make a finding that spills, leaks, or other uncontrolled discharges, such as leaching, from a pre-1978 disposal site constitute ongoing disposal that presents an unreasonable risk of exposure to PCBs.

Comment 9: Several commenters were unclear about the effect of the new provisions on disposal of PCB remediation waste on the PCB Spill Cleanup Policy at subpart G. One commenter requested that the EPA provide spill cleanup policies for spills other than those from electrical equipment. Another believed EPA should consolidate the spill policies for old and new spills into one spill policy in order to clarify and expedite cleanups. Another argued that the

TSCA PCB Spill Cleanup Policy is neither a statute nor a regulation. It was never subject to notice and comment. 59 FR 62793 states the Policy is "not a binding regulation" yet the Agency does in fact treats and uses the Policy as if it were a binding regulation. If the EPA wants the Policy to become regulation it should make it subject to notice and comment.

Source: (C1-062, C1-107, C1-114, C1-179, C1-180, C1-229, C1-238, C1-242, C1-265)

Response 9: The EPA continues to emphasize that subpart G is not a regulation but an enforcement policy that applies to recent releases from authorized uses. EPA intends new §761.61 as an alternative disposal method for spill scenarios covered under subpart G, as well as spills not covered by subpart G, such as those which occurred prior to May 4, 1987, and those which occurred after May 4, 1987 where notification was not given and/or where cleanup was not begun in accordance with the PCB Spill Cleanup Policy. Today's final rule does not expand the scope of subpart G, but EPA factored many of the assumptions used in subpart G, such as time allowed for PCBs to migrate from a spill, into §761.61.

Comment 10: A commenter was concerned that the provision that allows recent spills from electrical equipment to be cleaned under either subpart G or §761.61 seemed likely to encourage dilution through spillage in order to avoid costly disposal of PCB-containing electrical equipment and dielectric fluid. Instead of paying to dispose of the equipment and liquid as PCB waste, someone could simply spill the material on the ground and in many cases it would be below the numerical standards of the self-implementing option. Further, all someone would have to do is raise the grade by 10" of clean soil or put down 6" of asphalt and not even pay for disposal. The commenter recommended that EPA consider either disallowing the self-implementing option for spills from electrical equipment, or amending the enforcement policy and penalty matrix to require some minimum enforcement action in cases of releases from electrical equipment under 761.61. Other commenters stated that EPA could promote the use of the self-implementing remediation option by creating a presumption against future TSCA enforcement actions and additional cleanup requirements as it does under the Spill Cleanup Policy. One commenter noted that EPA could retain the authority to require additional remediation if it found that the cleanup levels for remediation waste had not been achieved or that the self-implementing cleanup had not been performed in good faith.

Source: (C1-134, C1-161, C1-209, C1-239, C1-249)

Response 10: Subpart G requires notification and cleanup soon after a spill is discovered. Waste is regulated for disposal at the original concentration of the spill, regardless of the current concentration. Therefore, all detectable PCB waste would be regulated for disposal. Under TSCA, EPA waives any penalty for the unauthorized disposal, so long as the cleanup is carried out in accordance with the policy. EPA agreed to this policy in order to address the environmental problem quickly instead of waiting for the completion of a potentially protracted

administrative and litigation process, during which cleanup could be delayed.

Although cleanup levels for subpart G and §761.61(a)(4) are similar, §761.61(a) differs from subpart G in several ways. In particular, first, there is no constraint on the inception of the cleanup activity and second EPA does not waive the penalty for unauthorized disposal. In §761.61(a), EPA still addresses the environmental problem, but does not link the solution to the problem to the penalty for unauthorized disposal. There are completely separate processes for determining cleanup requirements and for enforcing compliance with the disposal regulations for the original PCBs prior to the spill.

Comment 11: The commenter asked for clarification of subpart G and §761.61. Are organizations allowed to conduct studies, sampling or other assessments that do not comply with §761.61 to determine if a pre-1987 spill occurred and if it is subject to §761.61? If prior cleanup has been done and the 10 $\mu$g/100 cm$^2$ has been achieved, is resampling required using core samples per Appendix II?

Source: (C1-265)

Response 11: PCB remediation waste meeting the definition in §761.3 is regulated for disposal under §761.61. EPA will judge on its own merit any information submitted in defense of a conclusion that a spill occurred prior to May 4, 1987.

For any PCB-related cleanup or measurement activities at a site where there is PCB remediation waste, EPA does not require that the activity necessarily occur within the confines of §761.61(a) or subpart G. However, in order to receive the benefits of either §761.61(a) or subpart G, it is necessary to comply with the requirements of these regulations.

Comment 12: Commenters stated that the proposed cleanup goals, containment levels, treatment levels and allowable treatment technologies should be consistent with those required in CERCLA, RCRA and Clean Water Act (CWA) programs. Another commenter recommended rewording §761.61 to read, "PCB remediation waste (where reportable quantities have been reached or exceeded) shall be removed or otherwise disposed of in accordance with one of the options in paragraphs (a) through (c) of this section."

Source: (C1-062, C1-071, C1-130, C1-147, C1-185, C1-221, C1-229)

Response 12: TSCA, RCRA, and CERCLA have different statutory mandates and objectives. Different risk considerations apply. These TSCA PCB regulations for the cleanup of PCB remediation waste are not intended to contradict cleanup decisions approved by the RA under other programs taking into account the presence of PCBs. EPA does not have the authority under TSCA to set cleanup levels for other programs.

Comment 13: Disposal options should not be discussed in this section since it is supposed to be discussing cleanup measures. All references to disposal options should be in §761.60, in particular, paragraph (c) could be folded into the existing approval process under §761.60(e) since both require seeking approval from the same EPA offices under the same protection of health and the environment criteria.

Source: (C1-239)

Response 13: To help the public locate applicable provision, EPA has reorganized subpart D and included a new section, §761.50, to set out requirements generally-applicable to PCB disposal and to provide a road map.

Applicability

Comment 14: Commenters objected to the provision excluding facilities with CERCLA or RCRA actions or permits in place or in process from the self-implementing provisions. One commenter stated that this exclusion should be limited to CERCLA, RCRA or other enforcement actions that address PCBs, and asked for clarification regarding whether the entire site is excluded or only the specific area where an enforcement action or permit is in place. The CERCLA site limitation should only apply to sites for which EPA has issued a Record of Decision addressing PCBs for that portion of the site.

Source: (C1-028, C1-062, C1-134, C1-154, C1-209, C1-239, C1-242, C1-251)

Response 14: The NPRM stated that the self-implementing option of §761.61 would not apply at sites being cleaned up under CERCLA, RCRA, or any EPA enforcement action. EPA did not intend to prevent or discourage persons from conducting self-implementing cleanups where another part of the same facility is being addressed under an authority such as CERCLA or RCRA. But EPA also clarifies that a facility cannot unilaterally decide to do a self-implementing cleanup under §761.61, and then contend that their decision precluded any further or different cleanup under other authorities. As modified, today's rule does not prevent a person from conducting a self-implementing cleanup at any part of its property, even if another part of the facility is also being addressed under some other authority. For example, a large site having zones A, B, and C could have an on-going RCRA corrective action cleanup at zone A, a CERCLA section 106 order at zone B, and still potentially be eligible for a self-implementing PCB remediation at zone C. Section 761.61(a)(1)(ii) simply clarifies that such action by the facility does not bind other cleanup programs, such as CERCLA or RCRA, which remain free to determine which parts of the facility they will address and how to do so, using their usual cleanup criteria. Since sites contaminated with PCBs often contain other contaminants such as metals and organic solvents, each remedial action needs to consider and address all constituents of concern. If a person is considering doing a self-implementing cleanup at a portion of the facility likely to undergo cleanup under some other federal or state program, they would be well-advised to

coordinate with that program before proceeding, to avoid having to do further work after its self-implementing cleanup was completed. With respect to PCB remediation waste cleanup, EPA acknowledges the usefulness of the documents entitled: Guidance on Remedial Actions at Superfund Sites with PCB Contamination, EPA/540/G-90/007, August 1990; Technology Alternatives for the Remediation of PCB-contaminated Soil and Sediment, EPA Engineering Issue, EPA/540/S-93/506, October 1993; and Best Management Practices (BMPs) for Soil Treatment Technologies: Suggested Operational Guidelines to Prevent Cross-media Transfer of Contaminants during Clean-up Activities, EPA 530-R-97-007, May 1997. These documents are available from the RCRA Hotline at 1-800-424-9346.

Comment 15: Some commenters believed the self-implementing provisions have excessive restrictions. One commenter pointed out that facilities in entire states could be ineligible because of wildlife migration patterns, particularly endangered species. Another asked that the provisions be available for public buildings where the site of the spill or release was isolated and no migration of PCBs from the site would occur (for example, an electrical vault).

Source: (C1-028, C1-174, C1-209, C1-242, C1-270)

Response 15: The applicability section of the NPRM provided that the self-implementing remediation waste option was not applicable to areas having human or animal populations that might have a higher sensitivity to the toxic effects of PCBs. This provision has been deleted in response to comments it could apply to almost all sites. New language has been added at §761.61(a)(4)(vi) to enable the EPA Regional Administrator, based on the notification required in §761.61(a)(3), to require cleanup of the site or a portion of the site to more stringent cleanup levels based on proximity to areas such as residential dwellings, hospitals, schools, nursing homes, playgrounds, parks, day care centers, endangered species habitats, estuaries, wetlands, national parks, national wildlife refuges, commercial fisheries, and sports fisheries. An electrical vault might be treated as a low occupancy area that could be cleaned to the lower level specified in §761.61(a)(4).

Comment 16: Commenters asked for clarification of the applicability of self-implementing disposal to sediments, noting that §761.61(a)(1) precludes sediment cleanups, while the definition of PCB remediation waste includes sediments. In addition, the economic analysis supporting the rule indicates that EPA contemplates economic savings from application of the rule to sediments. One commenter stated that self-implementing disposal should be allowed for sediments in ponds, lakes, and streams that are located wholly on the owner or operator's property and do not endanger groundwater or surface water used for drinking water. Another commenter suggested EPA allow disposal in accordance with an EPA Contaminated Sediment Management Strategy.

Source: (C1-154, C1-213, C1-242)

Response 16: While sediments are include in the definition of "PCB remediation waste", under §761.61(a)(i)(1)(B), self-implementing cleanup cannot be used to remove sediments from marine or freshwater ecosystems, including ponds, lakes, and streams that are located wholly on the owner or operator's property. The risks from dredging can vary greatly from site to site, and EPA does not have broadly-applicable data to support inclusion of this activity as a self-implementing option. Sediments must be disposed of in accordance with performance-based disposal at §761.61(b) or risk-based disposal at §761.61(c).

Comment 17: Self-implementing disposal should be allowed for industrial sewers. Site owners should be able to clean and decontaminate their own plant piping without being required to go through an extensive approval process.

Source: (C1-242)

Response 17: In order for EPA to include industrial sewers in self-implementing cleanup, EPA would have to conclude that there is a universally applicable procedure which can remove PCBs from sewer systems, and collect the removed PCBs for proper disposal. EPA does not have data indicating any kind of successful cleanup of PCBs from an industrial sewer system. EPA believes that some of these systems have been contaminated for many years and the PCBs most likely have been distributed through the system and far beyond the system at discharge points. Most of these systems were not designed to manage PCBs and consequently may be made of porous materials which are extremely difficult to clean by surface contact. Solvent cleaning porous surfaces has the disadvantage of driving PCBs into the surface as well as removing surface material. In addition, many of these systems were not made to withstand the physical rigors of many abrasive or pressure cleaning tests. In the event that an applicant for a risk-based approval to dispose of PCB remediation waste at §761.61 can convince the RA or the Director of NPCD that a sewer cleaning procedure qualifies for a self-implementing approval, EPA can amend the regulations.

Comment 18: Requests a definition for "enforcement action" as it applies to section 40 CFR 761.61 (a)(1)(iii)(C).

Source: (C1-218)

Response 18: The final rule replaces the language in proposed §761.61(a)(1)(iii)(C) with, "The self-implementing cleanup provisions shall not be binding upon cleanups conducted under other authorities, including but not limited to, actions conducted under §104 or §106 of CERCLA, or §3004(u) and (v) or §3008(h) of RCRA." This language does not specifically address enforcement actions. The self-implementing disposal requirements were not intended to supersede enforcement agreements already in effect that establish procedures and levels for cleanup of PCB remediation waste.

Comment 19: The commenter asks EPA to clarify whether §761.61(a)(1)(i)(C), which excludes "sewers and sewage treatment systems" from the self-implementing disposal option, also applies to the sludge which is produced in sewage treatment systems and to any effluent discharged from such systems.

Source: (C1-032, C1-094)

Response 19: The language in §761.61(a)(1)(i)(C) addresses certain kinds of locations where the PCBs, such as hydraulic fluids or dielectric fluid, have been spilled to more sensitive areas where the self-implementing cleanup of PCB remediation waste is not approved. PCB sewage sludge (containing PCB concentrations ≥50 ppm) generated at a POTW is required to be disposed of as PCB remediation waste. Sewage sludge (containing PCB concentrations <50 ppm) is regulated for disposal under 40 CFR 503 and 40 CFR 257.

Site characterization

Comment 20: Site characterization should be based on best engineering judgement rather than just sampling. Best engineering judgement would allow for site knowledge and history to be factored into the characterization process rather than relying on extensive and costly sampling.

Source: (C1-219)

Response 20: Today's rule requires any person conducting self-implementing cleanup of PCB remediation waste to characterize the site adequately to be able to provide the information necessary for the Regional Administrator to review the cleanup plan. The proposal required detailed small scaled information, such as numbers of characterization sample results (proposed Appendix II). Today's rule is more flexible, providing subpart N as a reference point for the assessment of sampling data but allowing other sampling methods that are as effective at characterizing contamination at the site. The final rule does not require a specific number of pre-cleanup characterization samples. Because of the self-implementing nature of this option, it is important to start out with adequate accurate information about the PCB concentrations at the site to provide both the RA and the owner of the site knowledge on the effective methods to cleanup the site. Well-meaning, but incorrect, estimates or predictions of PCB concentrations have often taken cleanup actions by surprise during cleanup verification sampling, which will always be required under §761.61(a)(6).

Comment 21: The cited analytical methods do not include accepted techniques, newer measurement technologies nor performance-based measurement systems. EPA Method 8080 is obsolete. The cited methods should include capillary column gas chromatography methods such

as EPA Method 8081. Immunoassay methods such as EPA Method 4020 should also be included. Performance-based criteria should also be included. Other commenters asked for the use of field test kits to provide a cost-effective site characterization and cleanup verification.

Source: (C1-087, C1-091, C1-130, C1-242, C1-270)

Response 21: EPA has revised the citations for SW-846 Methods to include Method 8082 instead of Method 8080 or Method 8081. In the final rule, other methods, including field test kits, may be used for the analysis PCB remediation waste in accordance with the testing required in subpart Q. Users of immunoassay field tests should account for the presence of hydrocarbons, which can show false negatives when analyzing for PCBs.

Comment 22: The use of the PCB field screening test is discussed only under the subheading pertaining to self-implementing site remediation (§761.61(a)). Therefore, the proposed rules could be interpreted to limit the use of field screening tests solely to the self-implementing option. It is recommended that the field screening methods be available for use with all three remediation options. The field screening tests provide significant time and cost savings without compromising the quality of the collected data. Moreover, manufacturers of some of the tests have statistically demonstrated extremely low error rates for their methods, compared to GC/ECD Method 8080.

Source: (C1-134, C1-154)

Response 22: Section 761.61(b) does not address sampling. PCB remediation waste collected for disposal may be analyzed by methods specified in §761.61(a) or (c) for disposal by the methods in §761.61(b)(1) and (2).

Comment 23: It seems unreasonable to establish a 75% recovery criteria since sample matrices, analysts' experience, instrumentation, and sample extraction/cleanup impact the precision of and accuracy of any analysis. What type of statistical analysis was performed on the field and laboratory data generated from this study that convinced USEPA to establish this 75% criterion? Please clarify why Method 8280 was selected since it was designed for the analysis of Polychlorinated Dibenzofurans and dibenzo-p-dioxins. A modification of this method is used for the analysis of PCB congeners.

Source: (C1-270)

Response 23: EPA proposed 75% recovery as a starting point and asked for data. For a self-implementing procedure, EPA sought methods which can be very sensitive at measuring PCBs at the cleanup or "go-no go" levels. EPA received immunoassay test data from a number of commenters. With the use of appropriate standards, Method 8280 can be used for PCB

analysis in difficult matrices such as chlorinated hydrocarbons.

Notification

Comment 24: Commenters were confused about the interrelationship of self-implementing cleanup under §761.61(a) and cleanup of recent spills under subpart G, particularly as these provisions apply to notification. One commenter noted that any transformer releases are small leaks which involve less than a pint of PCB contaminated mineral oil which require the removal of a small quantity of soil/debris over a very small area, and asked why the owner of the transformer must wait 30 days after official notification before cleanup of the contaminated debris can be initiated. Other commenters stated that the notification requirement is inconsistent with the Spill Cleanup Policy, which requires the remediation of a spill must be completed within 48 hours. If the PCB waste is immediately removed, §761.61(a)(3) would be violated, but if a spill isn't cleaned up for at least 30 days, the Spill Cleanup Policy would be violated.

Source: (C1-010, C1-056, C1-239, C1-262)

Response 24: Recent releases of small amounts of PCBs from authorized uses can be addressed through 40 CFR 761 subpart G, better known as the PCB Spill Cleanup Policy (SCP). However, there are some significant restrictions on the applicability of the SCP. The intent of the proposal was not to eliminate the SCP but to provide cleanup criteria for spills and remediation waste outside of the applicability of the SCP.

EPA clarifies that it did not intend the 30-day notification requirement to prohibit emergency cleanup (see §761.61, introductory text). Emergency cleanup may occur without notification but does not satisfy the requirements of §761.61. Emergency cleanup is appropriate where there is imminent danger to health and the environment without containment and/or treatment. Emergency cleanup is not appropriate to prevent additional cleanup costs or other business expenses resulting from containment or from waiting 30 days for the notification process to be completed. Emergency response personnel should communicate directly with EPA regional personnel on proposed remedial actions. EPA has retained language allowing less than 30 days notification if the EPA Regional Administrator and state and local officials who are required to receive notification, waive the 30-day requirement in writing.

Comment 25: What is the legal definition of a "certificate" as referenced in §761.61(a)(2)? It is anticipated that this document could have significant legal ramifications if, for example, sampling plans need to be revised as the remediation process proceeds. Would a new "certificate" have to be submitted to the Regional Administrator each time revisions are made to the existing plans and procedures? Does the "certificate" require that the responsible party inform the property owner each time plan or procedure revisions are proposed?

Source: (C1-010)

Response 25: Section 761.61(a)(3)(i)(E) requires the owner of the property where the cleanup site is located and the party conducting the cleanup to sign and submit to the EPA Regional Administrator a written certification that all sampling plans, sample collection procedures, sample preparation procedures, extraction procedures, and instrumental/chemical analysis procedures used to assess or characterize the PCB contamination at the cleanup site, are on file at the location designated in the certificate, and are available for EPA inspection.

This certificate is intended to insure that the information that is the basis for the site characterization is documented, is maintained, and there is someone accountable for the content and preservation of the information. The certification covers all sampling plans, sample collection procedures, sample preparation procedures, extraction procedures, and instrumental/chemical analysis procedures used to assess or characterize the PCB contamination at the cleanup site at any time during the course of the cleanup. It is not necessary to provide a new certification each time new sampling information is added to the site records, if there are no changes in the cleanup plan, the certificate required in §761.61(a)(3)(i)(E) only addresses sampling performed for the site characterization, not sampling which occurs during remediation.

Comment 26: Delete "At least 30 days prior to the date for beginning the remediation of a site". It is more restrictive than the Spill Cleanup Policy, and would delay remediation, increase the extent of potential contamination, increase remediation expense and delay potential use of the property by its owner (not to mention increase cost for regulators). With facsimile machine technology, regulatory authorities must be able to respond to at least a concurrent notification. Landowners can't afford to sacrifice the use of their property and responsible parties can't afford the added expense of delayed remediation, while federal, state and local authorities file stacks of 30-day paper notices.

Source: (C1-091, C1-209, C1-257)

Response 26: EPA is continuing its policy of giving state and local jurisdictions advance notice of PCB disposal. Section 761.61(a)(3) was renumbered and revised to designate who in the state and local agencies would received notification. EPA did not intend the 30-day notification requirement to prohibit emergency cleanup (see §761.61, introductory text). Section 761.61(a)(3)(iii)(D) also provides for waivers of the 30-day notification requirement, if the person cleaning up the site receives a separate waiver, in writing, from each of the agencies they are required to notify under that section. The person must retain a copy of the original written waiver.

Cleanup levels

Comment 27: Several commenters requested clarification or modification of the definition of "high exposure area" or "low exposure area". One commenter stated that for the purpose of on-site cleanup and disposal under the self-implementing option, the Agency adopt three exposure

categories and establish cleanup requirements accordingly. The three exposure categories could be based on the definitions published in the 1987 Spill Cleanup Policy and could be defined as follows: 1) High Exposure -- Non-restricted access areas and high contact industrial surfaces, 2) Low Exposure -- Electrical substations, other restricted access areas except high contact industrial areas and 3) Restricted Access -- Non-routine access by authorized personnel only. The self-implementing option should be available in all categories and as is the case under the Spill Cleanup Policy, cleanup standards could be tailored to anticipate the exposure. Another commenter stated that controlled access areas should be removed from the definition of "high exposure area" because the personnel who have access to these areas are highly trained in working with PCBs. Commenters suggested that the definition take into account the amount of PCBs at the site, the likelihood that humans or animals will be exposed, the current and future use of the site, cost, and the training of personnel who have access to the site. A commenter asked whether EPA considered each standard equally protective.

Source: (C1-029, C1-045, C1-061, C1-072, C1-147, C1-148, C1-154, C1-161, C1-172, C1-183, C1-206, C1-218, C1-219, C1-221, C1-239, C1-242, C1-262, C1-270)

Response 27: The proposed definitions at §761.3 for "high exposure area" and "low exposure area," have been changed in two ways: (1) To reflect that EPA is addressing the occupancy of the area by individuals not wearing dermal and respiratory protection as a surrogate for reasonable worst case exposure; and (2) to reflect that EPA evaluates the exposure risk in the area based on the combination of the final concentration of PCBs in the area and the amount of time of exposure. "High exposure area" is now defined as "high occupancy area" and "low exposure area" is now "low occupancy area". The new definition of "low occupancy area" includes any area where PCB remediation waste has been disposed of on-site and where occupancy for any individual not wearing dermal and respiratory protection for a calender year is less than 840 hours (an average of 16.8 hours per week) for non-porous surfaces and less than 335 hours (an average of 6.7 hours per week) for bulk remediation waste. Examples could include an electrical substation, a location in an industrial facility where a worker spends small amounts of time per week (such as an unoccupied area outside a building, an electrical equipment vault, or the non-office space in a warehouse where occupancy is transitory). The new definition of "high occupancy area" means any area where PCB remediation waste has been disposed of on-site and where occupancy for any individual not wearing dermal and respiratory protection for a calendar year is 840 hours or more (an average of 16.8 hours or more per week) for non-porous surfaces and 335 hours or more (an average of 6.7 hours or more per week) for bulk PCB remediation waste. Examples could include a residence, school, day care center, sleeping quarters, a single or multiple occupancy 40 hours per week work station, a school class room, a cafeteria in an industrial facility, a control room, and a work station at an assembly line.

The final rule is structured so that the risk to unprotected occupants of high occupancy areas and low occupancy areas is generally the same. For the same chemical (PCBs) the risk is directly proportional to exposure. The rule allows different concentrations of PCBs to remain in high occupancy areas and low occupancy areas based on different occupancy times (see

§761.61(a)(4) of the regulatory text). For example, the non-porous surface cleanup level for high occupancy areas is 10 $\mu$g PCB/100 cm$^2$, and for low occupancy areas is 100 $\mu$g PCB/100 cm$^2$, an order of magnitude difference. Therefore, to have the same risk of exposure, the maximum occupancy time must be one-tenth as long in a high occupancy area as in a low occupancy area. For bulk remediation materials, EPA allows cleanup levels of 1 ppm in high occupancy areas and 25 ppm in low occupancy areas. EPA believes that the measures taken to prevent exposure in low occupancy areas, such as capping, marking and fencing, provide sufficient additional protection to normalize the higher cleanup levels.

EPA's evaluation of risk assumed exposure 24-hours a day, 7 days a week (168 hours per week) for the high occupancy scenario. Because the surface cleanup concentrations are 10 times as high in the low occupancy area as in the high occupancy area, to have the same exposure in both areas, the low occupancy exposure would have to be one-tenth of the high occupancy exposure period, or less than 16.8 hours per week. For bulk materials, the low occupancy exposure would be one twenty-fifth of 168 hours, or less than 6.7 hours per week. The number of hours in the definitions of "high occupancy area" and "low occupancy area" in §761.3 reflect these weekly averages times a 50-week exposure per year assuming a 2-week annual vacation from the occupancy area, that is, 50 weeks x 16.8 hours/week = 840 hours and 50 weeks x 6.7 hours/week = 335 hours.

Although EPA believes that training helps workers understand risks from exposure, occupancy is the issue and it is not necessarily the same as understanding. If workers are trained not to occupy certain areas and they do not occupy those areas they are not exposed. If workers are trained not to occupy certain areas and choose to occupy those areas, or are asked to occupy those areas regardless of their training, they are exposed.

Comment 28: Commenters stated that current available technologies cannot reliably demonstrate or economically achieve a 1 ppm PCB cleanup level for high exposure areas, and asked whether that level is supported by risk assessment? They suggested this concentration actually be 2 ppm.

Source: (C1-158, C1-221)

Response 28: There are several different options for cleanup established for PCB remediation waste. EPA believes that it is possible to economically clean up PCBs in some environmental media to less than 1 ppm. However, higher residual levels are allowed provided risk mitigation measures are in place. EPA's risk assessment (see Ref. 2) and other assessments (see Refs. 33 and 34 to the final rule) show a risk at the $10^{-6}$ level from soil levels at 1 ppm.

Comment 29: Who determines whether a particular site is a high or low exposure area? Since the requirements are self-implementing, how is the EPA assured that the performance criteria have actually been met? The section is weak in this area, providing only a short "token" paragraph discussing a "duty to comply"."

Source: (C1-061)

Response 29: The owner or operator of the site determines whether a location is a high or low occupancy area. Workplace operations will dictate areas of the facility where workers occupy their time. Prudent workplace managers will move work stations away from low occupancy areas and physically restrict access or mark the areas. EPA retains the authority to determine, based on inspections, whether a cleanup area has been correctly designated high or low occupancy.

Comment 30: Recommended revision to §761.61(a)(4)(i)(B): "Non-porous surfaces shall be decontaminated in accordance with 761.79 or disposed of in a facility with a disposal approval under this part."

Source: (C1-179)

Response 30: This paragraph has been moved to §761.61(a)(5)(ii) and includes options in addition to §761.79 as proposed. At paragraph §761.61(a)(5)(ii)(A)(*2*) the final rule includes disposal by technologies approved under §761.60(e).

Comment 31: The characterization of concrete as porous restricts disposal options where the rest of the proposed rule deals with increased flexibility. There is also the added cost of removing, packing, transporting and disposing of the concrete and the logistical problem of excavating concrete that has equipment or a structure mounted on it. Commenters stated that solvent cleaning of concrete is a more practical and cost-effective approach than removal and should be allowed. One commenter urged EPA to recognize and allow solvent extraction as an acceptable remediation option. A commenter stated that there are technologies now that can achieve cleanup down to <10 $\mu$g/100 cm$^2$, and that both waste minimization and cost savings could be realized if EPA would allow cleanup of spills on concrete to this level. Another commenter added that an interior concrete surface (smooth - steel trowel finish type) should not be considered a porous surface, since coring programs have shown PCB penetration only through the first 1/4 inch. Another commenter stated that solvent soaking of concrete has proven to be an effective way of cleaning PCB contaminated concrete.

Source: (C1-029, C1-094, C1-122, C1-147, C1-148, C1-151, C1-159, C1-183, C1-205, C1-221, C1-239, C1-242)

Response 31: PCBs spilled onto concrete are not included in the definition of bulk PCB remediation waste. PCB contaminated concrete is a porous surface (see §761.3). The permeability of concrete to oils and water over time render surface cleaning of such spills by surface action ineffective. PCBs spilled on concrete can move upward or downward during the application of surface agents. The final result is that not all PCBs move to the surface of the

concrete. Outside the provisions in 40 CFR 761 subpart G and §761.79(b)(4) of the final rule for the timely surface cleanup of recent spills (for which EPA assumes limited migration from the surface down into the concrete), EPA has not allowed the use of a surface measurement to evaluate whether there are no longer PCBs in the concrete following a spill with subsequent surface cleaning. EPA did not receive during the comment period demonstrations of cleaning of concrete where testing proved that the PCBs were not driven down into the concrete only to resurface upon evaporation of the cleaning solvent. EPA's own data are very unconvincing about solvent cleaning of concrete (see 52 FR 10699, April 2, 1987). Persons having proven effective processes for the complete removal of PCBs from porous surfaces and materials may apply to the RA for an approval under either §761.61(c) or §761.79(h).

The final rule provides that porous surfaces must be disposed of on-site or off-site based on the levels for bulk PCB remediation waste according to §761.61(a)(4)(i). Porous surfaces may be decontaminated for use according to §761.79(b)(4), which allows cleaning surface levels of concrete only if the decontamination procedure is commenced within 72 hours of the initial spill of PCBs to the concrete or portion thereof being decontaminated. Porous surfaces are authorized for use if they are cleaned and sealed in accordance with §761.30(p).

Comment 32: Several commenters were concerned that proposed §761.61(a)(4) would require either removal of concrete to specified levels for high and low exposure areas, or, if those levels could not be achieved, complete removal or use of the time-intensive process for risk-based cleanup approvals (proposed §761.61(c)). Commenters generally believed removal would not be a practical or economically feasible option, particularly for low access areas and structures such as building foundations. Commenters suggested several alternatives to removal of the concrete, such as encapsulation (i.e., epoxy coating); cleaning with products specifically designed to remove PCBs; and removal of the concrete to a specified depth or to the depth of PCB penetration and capping with fresh concrete or sealant.

Source: (C1-148, C1-150, C1-154, C1-161, C1-165, C1-170, C1-178, C1-183, C1-218, C1-220, C1-239, C1-241, C1-242, C1-262, C1-270)

Response 32: In the final rule at §761.30(p), EPA has provided a use authorization for concrete, including structural concrete contaminated by spills from PCBs. The use authorization requires measures to prevent contact with and exposure to PCBs in the concrete while in use, and disposal of the concrete at the end of use.

Comment 33: Several commenters suggested modifications to the definition of "non-porous surface". Some asked that material be included in the definition based on its impermeability to PCBs, so that materials such as metals (whether or not coated), glass, aluminum siding and enameled or laminated surfaces would be included. Also, the term "high density plastics" should be quantified as to the minimum density required to be considered non-porous, and clarified to include polycarbonates and melamine.

Source: (C1-107, C1-142, C1-161, C1-165, C1-186, C1-192, C1-218, C1-209, C1-

254, C1-257)

Response 33: In the final rule, EPA has defined porous coatings, such as paint, on non-porous surfaces as porous surfaces. However, EPA has provided for the self-implementing decontamination of those coated surfaces for purposes of use or disposal of the decontaminated surfaces, depending on the effectiveness of the decontamination, as non-PCB or PCB-Contaminated. Decontamination of these porous surfaces may be by physical means or, for coated metals by thermal means, in a qualified scrap metal recycling oven or smelter. EPA added polycarbonates and melamine, but did not receive any comments on performance criteria to use for defining "high density." EPA continued to include enameled surfaces as porous surfaces. Laminated surfaces could be either porous or nonporous depending on the lamination material, e.g. unpainted wood (porous) or melamine (non-porous). EPA included all the commenter's suggestions to the list of examples for porous surfaces.

Site cleanup

Comment 34: As proposed, §761.61(a)(5)(i)(A) appears to require the use of expensive heat drying or incineration devices to remove all water from PCB remediation wastes because these are the only methods capable of removing all water potentially present in PCB remediation wastes. It is recommended that EPA clarify the amount of water to removed by providing a performance standard or maximum percentage water content allowable in PCB remediation wastes. This will allow greater latitude in selecting on-site dewatering technologies.

Source: (C1-165)

Response 34: EPA revised the requirement to dry mixtures of PCB remediation waste containing bulk PCB remediation waste and flowable liquids, usually water. In addition to dewatering, according to the revised §761.61(a)(5)(i)(B)(*1*), these mixtures may be transported off-site for disposal so long as they are transported off-site in containers approved by the DOT Hazardous Materials Regulations (HMR) at 49 CFR parts 171-180.

Comment 35: EPA should expand the new pre-approved technologies beyond solvent extraction, microencapsulation and vitrification. Commenters suggested a number of other technologies that have been demonstrated to be effective for full-scale treatment of PCBs, such as thermal desorption, dehalogenation, bioremediation, phytoremediation, alkaline glycolate dechlorination, and the "X*TRAX" technology. Approval can be applied for under the risk based option but it would be time consuming and resource intensive. If EPA has concerns over these applicable technologies, appropriate performance standards could be specified. Commenters requested that EPA periodically publish updated or additional technologies that can be used under the self-implementing option in order to promote innovative technologies.

Source: (C1-079, C1-134, C1-154, C1-161, C1-172, C1-178, C1-185, C1-209, C1-233, C1-242)

Response 35: Only one technology, soil washing, is approved in §761.61(a)(5)(i)(A) for self-implementing disposal (i.e., disposal without prior approval from EPA). To inform its consideration of which self-implementing disposal technologies to approval as self-implementing, EPA sought information demonstrating independent operations on a wide variety of wastes by a wide variety of operators. In the preamble to the proposed rule EPA stated:

> Based on EPA's experience with approving PCB disposal technologies, the solvent washing process is the only currently available destruction or physical separation PCB disposal process considered generally effective in a variety of situations, commercially feasible at ambient temperatures (i.e., no external heat source), and safe enough to be conducted without prior approval. EPA will consider these factors, along with the general statutory requirement to prevent unreasonable risk of injury to health and the environment, in considering the addition, under §761.61(c), of other processes, procedures, or technologies to §761.61(a). EPA specifically requests comments on the best method to expeditiously include new universally acceptable risk-based treatment technologies as self-implementing treatment options prior to amendment of §761.61(a) in the Federal Register. 59 FR 62797.

EPA received considerable information about different kinds of innovative and alternative technologies which were not authorized under §§761.60, 761.70, or 761.75. These data did not convince EPA that any of these technologies met the criteria set out in the NPRM to qualify for self-implementing disposal. Innovative technologies may be still approved on a case-by-case basis through §761.61(c).

Comment 36: A commenter proposed new language under §761.61(a) to include bioremediation as a self-implementing option. Also proposed was a revised section to include an evaluation and addition of self-implementing cleanup options.

Source: (C1-233)

Response 36: EPA has not included biotechnology as a self-implementing disposal method which does not require prior EPA approval. There have been no independently evaluated demonstrations proving the routine, reproducible, consistent and effective destruction of PCBs to levels and scale necessary for on-site disposal of PCBs in a variety of PCB remediation wastes. Biotechnology processes to dispose of a particular PCB remediation waste at a particular site may be submitted for approval to the RA under §761.61(c). EPA is prepared to amend the PCB disposal regulations, through notice and comment rulemaking, to add disposal technologies which have met the criteria provided in the preamble to the proposed rule.

EPA does not find the commenter's proposal of self-implementing cleanup levels less than 500 ppm to result in a $10^{-3}$ risk to pass the TSCA "no unreasonable risk of injury to human health or the environment" standard.

Comment 37: Recommends clarifying the requirements for solvent extraction approval by combining (iii)-(v) into one subsection to read as follows: (iii) All solvent shall be disposed in accordance with this subpart. Treated non-liquid remediation waste may either be disposed in accordance with this subpart or if it meets the applicable clean up level criteria, remain on site.

Source: (C1-161)

Response 37: Requirements for soil washing solvents have been revised at §761.61(a)(5)(i)(A), which as its last step requires disposal, recovery, and/or reuse of solvents in accordance with relevant provisions of approvals issued according to paragraphs §761.61(b)(1) or (c), or applicable paragraphs of §761.79. For disposal on-site, soil washed by this process must meet the cleanup levels in §761.61(a)(4)(i).

Comment 38: Microencapsulation should not be a treatment option since it has been shown that organic compounds do not respond well to it. The RCRA program no longer allow microencapsulation and there are many other more effective technologies available for the destruction and removal of PCBs.

Source: (C1-171)

Response 38: Based on data submitted during the comment period, EPA agrees and has removed microencapsulation from technologies included in the self-implementing (without prior approval from EPA) disposal of PCB remediation waste in the final rule at §761.61(a)(5)(i)(A).

Comment 39: EPA should retain in-situ vitrification as a self-implementing option. In order to control PICs the EPA could require an emission control system that would 1) enclose the area to be treated (e.g., temporary, air-tight shelter), 2) create vacuum in the enclosure and 3) capture the exchanged air from the enclosure and treat the air in a condenser to allow recovery and proper disposal of any volatile PICs generated during the treatment process.

Source: (C1-147, C1-223)

Response 39: Based on comments received on the potential emissions of products of incomplete combustion from *in-situ* vitrification and EPA's experience in approving this disposal technology, this technology may not be used for on-site disposal without an approval from EPA under §761.60(e) or §761.61(c).

Comment 40: Commenters suggested modifications to the definition, operating requirements, and disposal requirements for microencapsulation and vitrification.

Source: (C1-028, C1-061, C1-087, C1-139, C1-142, C1-147, C1-154, C1-161, C1-165, C1-178, C1-209, C1-242, C1-260)

Response 40: These definitions are not included in the final rule. The only forms of on-site disposal technology which do not require an approval under §§761.60 or 761.70 and which are approved for self-implementing disposal are soil washing, and decontamination in accordance with §761.79. Soil washing is extraction of PCBs from soil using a solvent, recovering the solvent from the soil, separating the PCBs from the recovered solvent for disposal, and then disposal or reuse of the solvent in accordance with §761.79(d) and (g).

Comment 41: A commenter stated that all non-liquid remediation waste should be eligible for the TCLP test, not just material that has been stabilized and the EPA should bring the PCB TCLP more in-line with the RCRA version. The commenter also proposed to use an alternative to the TCLP test, the Synthetic Precipitation Leaching Test (SPLP). Another commenter stated that the TCLP test is widely known as an unreliable test for assessing the hazards associated with organics, including PCBs since, because of the nature of PCBs, PCBs rarely leach out of untreated contaminated soil, as measured by the TCLP test. The commenter provided data showing that, in a treatability study, untreated soils containing 2,000 to 3,000 ppm PCBs leached between 2.8 and 23 $\mu$g/l under the TCLP test. The commenter noted that, under the proposed rule, this soil could be left on-site virtually untouched.

Source: (C1-154, C1-267)

Response 41: Based on comments, EPA has withdrawn from §761.61(a) the use of vitrification and stabilization as self-implementing disposal technologies, not requiring prior EPA approval. EPA only proposed the application of the TCLP test, a RCRA method, as a method to verify that cleanup was complete when using these technologies. EPA's risk assessment for on-site disposal of soil and other non-liquid PCB remediation waste takes into account the transport of PCBs through the soil using general assumptions (see Refs. 19 and 20 to the final rule). Any person proposing different methods for determining the procedures for verifying cleanup, such as a leachability test, may apply to the EPA Regional Administrator for a risk-based approval under §761.61(c).

Comment 42: A commenter asked whether it could use a soil extraction technology that has received its operating permit, and achieves cleanup levels of below 2 ppm for one type of soil but has only achieved cleanup to 6 ppm for the soil sample for a particular site? If the commenter is working under a compliance order from the state which requires cleanup to 10 ppm, can they use the solvent extraction method in conjunction with a soil cover or cap if the proposed rule is promulgated, or does the technology still need to demonstrate achievement of cleanup to 2 ppm for each type of soil?

Source: (C1-057)

Response 42: There are two different paths by which this particular disposal process could be used to dispose of PCB remediation waste soil: in accordance with its §761.60(e) disposal approval or in accordance with the requirements for a self-implementing (without prior approval from EPA) soil washing process at §761.61(a)(5)(i)(A).

By the first path, in §761.61(a)(5) in the final rule, PCB disposal technologies approved under §§761.60 and 761.70 are acceptable for on-site (or off-site) self-implementing PCB remediation waste disposal within the confines of the operating conditions of the respective approvals. For the cited example, the approval has a requirement to clean soil to <2 ppm and must also have an upper limit, not specified in the comment, for PCB soil concentration which can be disposed of using the approval. This technology, approved under §761.60(e) can be used in accordance with §761.61(a)(5)(i)(B)(*3*)(*iii*) or §761.61(b)(2)(i), so long as the concentration of the soil PCB remediation waste to be disposed is lower than the maximum PCB concentration which can be disposed in the approval and also in accordance with any other applicable conditions, such as soil moisture content.

In general, technologies approved under §761.60 or §761.70 for disposal must be operated in accordance with that approval including limits of the maximum concentration of PCBs which is approved for disposal and the final disposal level of <2 ppm in most wastes. Also other restrictions in the approval apply, for example, disposal technologies approved to dispose of PCB liquids only may not be used to dispose of soil.

If a technology has been approved by another authority or under a program other than TSCA, and if the commenter sought to use this first (performance-based approval) regulatory pathway, the commenter could consider applying for a TSCA PCB Coordinated Approval under §761.77.

Since the technology at issue is a soil washing technology there is a second regulatory pathway provided for the disposal of bulk PCB remediation waste using this technology: soil washing in accordance with §761.61(a)(5)(i)(A). This technology could be used in accordance with the requirements of this paragraph even if the requirements of the paragraph differ from the requirements int eh §761.60(e) approval. For example, §761.61(a)(5)(i)(A) has not upper limit on the initial (untreated) concentration of the PCB remediation waste (soil) and the soil could be washed to a final concentration of <50 ppm PCBs if, as an example, the soil was to be disposed of on-site in accordance with §761.61(a)(4)(i)(B)(*2*) or (*3*).

Comment 43: Requests that the statement reading, “any facility permitted, licensed or registered by a state as a municipal or industrial solid waste landfill” be changed to read, “any contained facility permitted, licensed or registered by a state as a municipal or industrial solid waste landfill.” Also proposes a definition for “contained facility”. “Contained facility means a municipal or industrial landfill that has a leachate collection and removal system that protects public health and the environment and that meets the requirements of 49 CFR 258.40(a)(2).”

Source: (C1-246)

Response 43: In deciding that land disposal in the absence of containment (leachate collection) would not pose an unreasonable risk to health or the environment, EPA considered the likelihood that the wastes would leach to groundwater.

Comment 44: Will RCRA landfills accepting low-level PCB remediation waste be required to comply with the requirements of §761.75, as well as obtain a TSCA operating permit? In addition, what modifications, if any, would such a facility have to make to its RCRA operating permit to allow it to begin accepting low-level PCB remediation waste? Would the facility qualify for any type of RCRA interim status?

Source: (C1-061)

Response 44: Under §761.61(a)(5)(v)(A), PCB remediation waste containing less than 50 ppm PCBs may be sent off-site for disposal in land disposal facilities approved by a state for the management of municipal solid waste under 40 CFR Part 258 or non-municipal, non-hazardous waste under 40 CFR 257.5 through 257.30; a hazardous waste landfill permitted by EPA under section 3004 of RCRA, or by a state authorized under section 3006 of RCRA; or a TSCA-approved PCB disposal facility. Landfills operating under these authorities need no further approvals under TSCA to accept this waste. Additional federal, state or local requirements may apply.

Comment 45: The preamble and the proposed rule are inconsistent regarding the decontamination of solvents used in remediation. The preamble allows for decontamination according to §761.79(a)(1) but the proposed rule does not include §761.79(a)(1) as an option.

Source: (C1-062, C1-147)

Response 45: The final rule at §761.61(a)(5)(v)(B) provides that cleaning solvents, abrasives, and equipment from a cleanup site may be reused after decontamination in accordance with §761.79. Under §761.79(b)(2), the decontamination standard for organic liquids and non-aqueous inorganic liquids (e.g. solvents) containing PCBs is <2 mg/kg (i.e., <2 ppm PCBs).

Comment 46: Recommended revision to 761.61(a)(5)(ii): "Other non-liquid materials such as rags, gloves, booties, other disposable personal protective equipment and similar materials resulting from site remediation activities shall be disposed of off-site according to paragraph (a)(5)(i)(B(1), (2) or (3) of this section."

Source: (C1-179)

Response 46: EPA did not intend to prohibit or discourage off-site disposal and is

retaining the off-site disposal regulatory options which have been in place since April, 18, 1978 (see §761.61(b)). EPA recognizes that some materials will be sent off-site because of the economics of on-site treatment of small amount of unusual or high concentration waste. Today's rule expands the options for off-site disposal, for example, PCB remediation waste containing less than 50 ppm PCBs may be sent off-site for disposal in state approved land disposal facilities for the management of municipal solid waste subject to part 258 of this chapter or non-municipal, non-hazardous waste subject to §§761.257.5 through 257.30 of this chapter, a RCRA Subtitle C landfill permitted by the state to accept PCBs or a PCB disposal facility approved under this part.

Comment 47: There are too many cross-references cited in this section (§761.61(a)(4)(v)(A)). Section §761.61(a)(4)(v)(A) refers to §761.61(a)(5)(ii) which in turn refers to §761.61(a)(5)(i)(B)(1). Section 761.61(a)(4)(v)(B) refers to §761.79(a)(1) which in turn refers to §761.60(a), §761.60(a)(1)-(3) and §761.61(a)(5)(B). To facilitate understanding of the regulatory requirements, EPA should not make cross-references such as these. EPA Should simply state that under §761.61(a)(4)(v)(A) that non-liquid cleaning materials may be disposed of in a municipal or industrial waste, RCRA or TSCA landfill.

Source: (C1-242)

Response 47: EPA has reorganized subpart D to reduce the number of cross references. In order to limit the extent of expansion of the text of subpart D EPA, has balanced the repetition of virtually identical text with the potential confusion form numerous cross references. EPA added a new §761.50 to provide guidance to the regulated community on how waste was regulated in general paragraph §761.50(a), where to find the regulations for disposal of types of regulated waste §761.50(b), and where to find requirements for disposal technologies in §761.50(d). The structure of §761.61(a)(4) is now cleanup levels and §761.61(a)(5) is now site cleanup. To restrict confusing cross references, these paragraphs have been organized into a parallel structure based on types of PCB remediation waste: bulk non-liquids, non-porous surfaces, porous surfaces, and liquids. For many kinds of waste, a common disposal option is decontamination in accordance with the applicable paragraph in §761.79.

In the final rule non-liquid materials from the cleanup of PCB remediation waste and wastes generated as a result of research and development activities authorized under §761.30(j) and chemical analysis of PCBs (lab waste) may be disposed of in a facility permitted, licensed, or registered by a state to manage municipal solid waste subject to part 258 of this chapter or non-municipal non-hazardous waste subject to §§257.5 through 257.30 of this chapter, as applicable; a hazardous waste landfill permitted by EPA under section 3004 of RCRA, or by a state authorized under section 3006 of RCRA; or a PCB disposal facility approved under this part.

Comment 48: In addition to disposing of PCB remediation waste in a municipal landfill (provided it passed the TCLP test), EPA should consider setting additional options (and, if appropriate, a use authorization) for treated PCB remediation waste for use as backfill for landfills

(municipal, industrial or radiological) and other restricted access or low exposure areas which are already contaminated with PCBs. This alternative would facilitate waste minimization while creating cost savings to facilities in disposing of their PCB wastes.

Source: (C1-147)

Response 48: EPA's purpose in allowing PCB remediation waste sites to be cleaned to certain levels, and waste concentrations below those levels to remain on site, was to encourage cleanup of these sites by providing cost-effective alternatives. Wastes cleaned from these sites must be disposed of in a disposal facility. EPA did not intend these wastes to be accumulated at other cleanup sites. The commenter may request approval of a disposal option not specifically provided for in the regulations under §761.61(c).

Comment 49: On-site containment is often the most protective and cost effective cleanup method. Proposes to revise §761.61(a) to read as follows: "PCB remediation waste shall be contained on-site, removed or otherwise disposed of in accordance with one of the options in paragraphs (a) through (c) of this section. ... (a) Self-implementing site remediation. Where applicable, the cleanup, containment and disposal of PCB waste may be conducted in accordance with the following requirements without a written approval from EPA."

Source: (C1-161, C1-209)

Response 49: EPA has not added containment to the language describing cleanup and disposal, even though the PCBs could be considered to be contained. Containment is not an required attribute of a no unreasonable risk finding as limitation or restriction to exposure would be. In a formal sense on-site disposal is not containment as off-site disposal in a landfill would be. On-site disposal is limitation of exposure by the restriction of contact with of low concentration PCBs and/or restriction of the environmental migration of the PCBs when they are disposed in accordance with the procedures in §761.61(a)(5).

Comment 50: Proposed remediation requirements do not address storage of the waste generated during remediation. EPA needs to make allowance at §761.61 or at §761.65 for storage of PCB remediation wastes during the course of remediation under the self-implementing and performance based options. In most remedial actions it is not practical or possible to meet the container or storage requirements of §761.65. EPA should develop storage requirements similar to CERCLA remediation site storage rules.

Source: (C1-147)

Response 50: EPA has added §761.65(c)(9) to allow on-site storage of bulk PCB remediation waste in a way which prevents uncaptured releases in case of a spill and controls

migrations from precipitation and volatilization. Waste transported off-site must be packaged according to the Hazardous Materials Regulations at 49 CFR Parts 171-180 and stored for disposal in facilities approved under §761.65(b).

Cleanup verification

Comment 51: Since both Appendix II and Appendix III protocols are highly detailed and applicable only to a limited range of situations, they should not be mandated as generic protocols. Instead, the rule should clearly state the requirement for representative samples and statistically valid sampling protocols, as well as when such requirements apply and all detailed explanations should be provided in guidance with options allowed for differences in site and material characteristics. In summary, the best means of resolving the many problems raised by Appendix II is for EPA to substitute a requirement in §761.61, parallel to the requirements in the 1987 Spill Policy, §761.130, that cleanup be verified by a "statistically valid, reproducible, sampling scheme." As in the 1987 policy, EPA could then issue a recommended -- although not mandatory -- sampling guidance document. Also in the 1987 policy, although any party who used a "valid, reproducible" sampling scheme would be free from being found to have violated TSCA on this point, EPA would retain the authority to order additional cleanup if its own sampling found that the cleanup requirements were not met. This would satisfy both the EPA's objectives and the need of the regulated community for a reasonable self-implementing option for PCB cleanup. A detailed discussion of Appendix II and III are included in the comment letter. Another commenter stated that central to the success of EPA's desire to promote self-initiated cleanup is a realistic verification sampling scheme. If the sampling scheme required for verification is unduly burdensome, persons will not conduct voluntary cleanup. Unfortunately, the verification scheme referenced for §761.61 remediation cleanup (contained in EPA's Appendix II) is complex and burdensome, could entail immense costs and will discourage voluntary cleanup. It is recommended that the EPA adopt performance-based requirements for cleanup verification--rather than the prescriptive standards in Appendix II.

Source: (C1-161, C1-192, C1-209, C1-239)

Response 51: In the final rule, EPA balanced the need for an EPA presence and direct participation in the progression of the cleanup of a site with the requirement of sufficient information on record to demonstrate that the cleanup is in compliance with regulatory requirements in the absence of a direct EPA presence during the progression of the cleanup. EPA considers that there are several critical factors in a self-implementing cleanup: understanding the nature of the site before cleanup begins, establishing cleanup levels resulting in no unreasonable risk, and the ultimate measure of the completeness of the cleanup, post-cleanup sampling. EPA has revised all sampling protocols and included procedures for the compositing of waste in order to create samples which better represent large volumes of heterogeneous or unknown distribution of PCBs. In addition, EPA provided a number of options for the application to the RA for site-specific, risk-based sampling approvals. At sites anticipated for the PCB Spill Cleanup Policy

(SCP), i.e., roughly 6 meters (20 feet) in diameter, in many cases fewer analyses are required according to the final rule procedures than would be required under the SCP.

Commenters alleged that the SCP should apply retroactively to any PCB remediation waste. Many of the sites, which are not eligible for cleanup under the SCP, to be cleaned up under §761.61(a) are very different from sites which are subject to the SCP. In particular, pre-SCP have had more than a decade for the PCBs to migrate from the original site of deposition. The original source(s) and concentration(s) of PCBs may not be known. There may be no way to verify the extent of the visible traces of the spill. All of these conditions are presumed to be known for an SCP cleanup. In addition, there is a reasonable likelihood that the areas of highest concentration can be seen an removed for disposal. SCP events are presumed to be point source single event releases and not multi-source or continuous releases over long period of time.

The following language was taken from the preamble to the final rule.

> EPA did not intend self-implementing PCB remediation waste disposal to apply to large PCB remediation sites unless very stringent sampling requirements are used. EPA intended it to address moderate sized sites where only PCBs were present (or the properties of PCBs drove cleanup decisions) and where a general no unreasonable risk remedy would be acceptable. Generic risk assumptions and sampling approaches for small areas of contamination cannot be universally applied to very large sites. Nor can sampling schemes for continuously generated, current waste streams from well-characterized industrial processes serve as a scientifically sound starting point for large areas where the homogeneity of the waste is unknown. Sampling must be much more comprehensive for heterogeneous waste (or waste of unknown homogeneity) where little is known about contamination sources, the periodicity and exact location of waste generation, and any PCB migration from the waste since original deposition. Much greater knowledge from pre-cleanup characterization of waste can reduce verification sampling. Through a risk-based approval at §761.61(c), the EPA Regional Administrator can more actively evaluate measurements taken concurrently with cleanup (as is done at Superfund National Priority List (NPL) sites) as an alternative to a more stringent self-implementing verification sampling approach required in §761.61(a). Without the same level of oversight as in NPL sites, self-implementing verification sampling should be comprehensive. To limit transaction time for site cleanup and constraints on cleanup, EPA placed the site sampling emphasis in §761.61(a)(6) at the post-cleanup verification period, rather than under the limited pre-cleanup site characterization in §761.61(a)(2).

Additional preamble language addressing the new subparts addressing sampling follows:

> The final rule clarifies that the scope of subpart O (proposed Appendix II) includes verifying that bulk PCB remediation waste or porous surfaces at a site have been properly cleaned up in accordance with §761.61(a). EPA added options, including compositing, to the cleanup verification sampling in subpart O. Cleanup verification sampling for non-porous surfaces is addressed in subpart P. These subparts may not be used to make conclusions or extrapolations about PCB concentrations outside of the area which has been cleaned and verified based on the results of sampling. EPA also added a third

dimension to the verification procedure to ascertain if the cleanup captured vertical waste migration. Subpart O applies only to bulk PCB remediation waste and porous surfaces left at the original cleanup location. Non-liquid, non-metal PCB remediation waste to be shipped off-site must be sampled in accordance with subpart R.

EPA did not propose to allow compositing on the grounds that compositing can dilute hot spots but commenters pointed out that hot spots should have been eliminated in the contamination removal process. EPA agrees and therefore the final rule provides for the compositing of samples. For example, EPA has changed the minimum number of samples from three to one composite of three. For liquids, no compositing is necessary because the mix naturally and are easily homogenized by stirring.

Subpart O provides two sampling options for large sites. The first option is designed to address sites having a single point source, many point sources or an unknown number of sources of contamination. The second option only address sites having a known single point source of contamination. Both options use a square grid structure and grid interval, which has been enlarged to correspond to the largest interval provided in the PCB Spill Cleanup Policy. Both options specify compositing of adjacent samples of the same size , provide the maximum number of samples which can be composited and require that composited samples be mixed thoroughly and subsampled before chemical analysis.

EPA revised the requirement to reclean an entire site based on a single sample's failure to meet cleanup levels. As revised when a composite fails to meet the cleanup requirements, the area that must be recleaned and reanalyzed is an area larger by a grid interval that the area represented by the failing composite.

Subpart P provides sample site selection procedures for non-porous surfaces as well as procedures for analyzing the samples and interpreting the results of the sampling. subpart P applies to all non-porous surfaces destined for disposal, regardless of whether the disposal will take place on-site or off-site.

EPA also provided in subpart Q, a test for qualifying an alternate extraction ans chemical analysis procedure for determining PCB concentrations in PCB remediation wastes in initially characterizing the cleanup site and for post cleanup verification.

Comment 52: There are no post cleanup requirements (such as groundwater monitoring, operation and maintenance requirements or periodic reviews) for the self-implementing remediation option, especially where the contamination was left in place. CERCLA or a cleanup conducted on a state level would include these requirements.

Source: (C1-130)

Response 52: EPA has made a no unreasonable risk finding for the disposal of PCB remediation waste on site under the conditions in the final regulations. The risk evaluation included risk from drinking ground water beneath the site. Based on the cost of monitoring, operation and maintenance requirements and periodic reviews of waste disposed under the conditions required under the final rule EPA could find sufficient benefit from these activities.

Cap requirements

Comment 53: Requests that the PCB concentration limit for capping a site be extended from 100 ppm to 500 ppm. Claims the current limit is costly in terms of treatment and disposal.

Source: (C1-154, C1-161, C1-221, C1-233)

Response 53: EPA's risk assessment indicates that 100 ppm is the maximum PCB concentration which can be left on-site under general conditions. (See Refs. 19 and 20 to the final rule.)

Comment 54: Change the requirements for caps from specific standards to performance based standards.

Source: (C1-122, C1-147)

Response 54: At §761.61(a)(7), EPA has replaced descriptions of cap materials with performance criteria, which essentially paraphrase cap requirements from §264.310(a) of the RCRA regulations.

Comment 55: If the cap requirements of §761.61(a)(4)(iii) are intended to apply to the 10" soil cover over soils containing PCBs, the requirements stated here are inappropriate. The intent of the soil cover is assumed to be to prevent direct human contact. If that is the intent, specified permeability, sieve sized, liquid limit and plasticity index is not required. If the intent is to limit infiltration to the contaminated soil, it should be kept in mind that the permeability of a 10" cover will increase dramatically with each freeze-thaw or drying cycle that is experienced. There is no way to effectively maintain a specified permeability in a compact clay cap at the ground surface. It also appears excessive to require inspection of a surface cap once a month.

Source: (C1-139)

Response 55: The intent of the cover is to prevent direct human contact. A secondary benefit from the use of a cap having the specified performance criteria is a reduction in the infiltration of water through the contaminated soil. Even though the integrity of the cover and the permeability cap material will be slowly reduced from freeze thaw and drying, an imperfect cap will still substantively restrict infiltration. The benefit from including these cap performance requirements justifies the limited cost to obtain materials meeting the performance criteria.

Comment 56: Section §761.61(a)(4)(i)(A)(2) refers to concrete as a "non-porous material" when used as a cap over contaminated soil, which is inconsistent with the definition of

non-porous presented in this regulation."

Source: (C1-025, C1-139, C1-147, C1-270)

Response 56: EPA has included modified cap requirements at §761.61(a)(7). Concrete or asphalt are acceptable cap materials as long as they have a minimum thickness of 15 cm (6"). The limited permeability of the concrete to water when used as a cap, and the negligible impact on transportation of PCBS in soil under the cap when limited amounts water finally percolate through the cap, make the concrete acceptable cover over soil containing PCBs. However, different considerations apply to PCBs spilled on concrete, as the permeability of concrete to oils and water over time render surface cleaning of such spills by surface action ineffective. This issue is addressed more fully in the responses to comments on §761.30(p) and §761.79.

Comment 57: Section §761.61(a)(4)(iii) states that clean soil for capping is less than 1 ppm PCB "per Aroclor" while elsewhere clean soil is defined as 1 ppm total PCB. This should be clarified.

Source: (C1-139)

Response 57: In the final rule the language states that PCBs in the cap must be at $\geq$1 ppm PCB per Aroclor™ (or equivalent) or per congener. According to revised language at §761.1(b)(2), all PCB measurements should be based on the kind of PCBs present.

Comment 58: Requests revising the definition of "cap" to read: "Cap means, when referring to remediation activities, a uniform placement of concrete, asphalt or similar material of minimum thickness spread over the area where remediation waste was removed or left in place.

Source: (C1-161, C1-209, C1-219)

Response 58: EPA has removed the definition of "cap" from §761.3 into a new paragraph §761.61(a)(7) and responded affirmatively to this comment.

Comment 59: Recommends that the EPA revise its cap inspection schedule from monthly to quarterly or semi-annually due to the fact that it may difficult to get to remote, seldom visited areas. Also request that repair deadline be 72 hrs. rather than 48 as it may be technically or physically impossible to begin repairs in 48 hrs.

Source: (C1-242)

Response 59: In the preamble, EPA has recommended that inspections of cap for breaches

occur monthly. EPA responded affirmatively to the request to increase the amount of time allowed between the discovery and beginning of repairs of a breach of a cap.

Deed restrictions

Comment 60: The deed restrictions mentioned in §761.61(a)(4)(iv) do not work in cases of property that is operated by right-of-way easements. For example, the pipeline industry often has a right of way along the pipeline but does not own the underlying property.

Source: (C1-134, C1-111, C1-161, C1-180, C1-203, C1-242)

Response 60: Section 761.61(a)(8) provides that when a cleanup activity includes the use of a fence or a cap, the owner of the site must maintain the fence or cap, in perpetuity, and must record, in accordance with state law, a notation on the deed to the property, or on some other instrument which is normally examined during a title search, that will in perpetuity notify any potential purchaser of the property that the land has been used for PCB remediation waste disposal and is restricted to use as a low occupancy area as defined in §761.3. These requirements apply to the owner of the property, not a holder of an easement or another lesser interest. If the operator of the property is unable to cooperate with the owner to ensure that these requirements are met, the site must be cleaned to a high occupancy level.

Comment 61: The language in §761.61(5)(iv)(C) should be modified to state: "...When a remedial activity includes the use of a fence or a cap, the fence or cap must be maintained by the owner, or his successors and/or assignee, in perpetuity.

Source: (C1-203)

Response 61: EPA believes this change is unnecessary. Any person with an ownership interest in property is an "owner".

Comment 62: Requests that the deed notation be required for all remedial activity, since if the property status changes or is sold, the interested parties may not be aware that remediation was conducted on the site.

Source: (C1-061, C1-094, C1-178)

Response 62: Deed notations are required only for low occupancy areas, since EPA considers the cleanup levels for high occupancy areas to be protective against unreasonable risk under general use conditions. The final rule at §761.61(a)(4)(v) requires that, where there is an actual or proposed change in use of an area cleaned up to the levels of a low occupancy area, and

the exposure of people or animal life in or at that area could reasonably be expected to increase, resulting in a change in status from a low occupancy area to a high occupancy area, the owner of the area must clean up the area in accordance with the high occupancy area cleanup levels.

Comment 63: Under the proposed scheme, how would USEPA be made aware of a change in land use for a remediation site? Why would innocent (future) landowners be made liable for the requirements of additional cleanup?

Source: (C1-270)

Response 63: EPA has revised the language on a deed notice. Future landowners would be advised by information on the deed during title transfer of the land. The regulatory language adds to the following language details of the PCB remediation "in accordance with state law, a notation on the deed to the property, or on some other instrument which is normally examined during a title search, that will in perpetuity notify any potential purchaser of the property . . ."

**§761.61(b) -- Performance-Based Disposal**

Comment 1: EPA's proposed amendments in §761.61(b) regarding non-liquid PCB remediation waste do not list a minimum PCB level. Does EPA intend to require incineration or its equivalent of all non-liquid PCB remediation waste?

Source: (C1-071, C1-242)

Response 1: The minimum PCB concentration for PCB remediation waste to be disposed of off-site depends on the levels specified to be left on-site under the conditions in §761.61(a)(4). This waste may also be treated (disposed of or decontaminated) on-site, for example in accordance with §761.61(a)(5)(i)(A), or off-site to the levels which may be left on site. There are several options for the disposal of non-liquid PCB remediation waste in §761.61 which are not in §761.61(b). These appear in §§761.61(a)(5)(i)(B)(*3*) and 761.61(c). Section §761.61(a)(5)(i)(B)(*3*) includes several other disposal options in addition to those in approved in §761.61(b).

Section 761.61(b) provides options for the disposal of two kinds of non-liquid PCB remediation waste: non-liquids in general and dredged materials. For non-liquids in general, disposal must comply with the performance-based disposal requirements in a high temperature incinerator approved under §761.70(b), an alternate disposal method approved under §761.60(e), a chemical waste landfill approved under §761.75, or a facility with a coordinated approval issued under §761.77. This non-liquid waste may also be decontaminated in accordance with §761.79. Material containing <50 ppm PCBs that has been dredged or excavated from waters of the United

States may be managed or disposed of in accordance with a permit that has been issued under section 404 of the Clean Water Act, or the equivalent of such a permit as provided for in regulations of the U.S. Army Corps of Engineers at 33 CFR Part 320 et seq. or in accordance with a permit issued by the U.S. Army Corps of Engineers under section 103 of the Marine Protection, Research, and Sanctuaries Act, or the equivalent of such a permit as provided for in regulations of the U.S. Army Corps of Engineers at 33 CFR Part 320 et seq.

PCB remediation waste disposed of by a performance based disposal facility must be disposed of in accordance with the facility's TSCA PCB disposal approval destruction or containment standards. Mobile units may dispose of treated waste on-site in accordance with the cleanup levels established in §761.61(a)(4) or §761.61(c). Under §761.61(c) applicants can apply to the RA for a disposal approval to dispose of PCB remediation waste on-site at cleanup levels applicable to the site.

Comment 2: The commenter is concerned with the EPA's continued reliance on operating criteria for older technologies in the performance based PCB remediation provisions. The commenter believes the explicit standards are largely inapplicable to newer innovative technologies. EPA should abandon references to technical operating criteria and establish true performance standards. Urges EPA to explicitly adopt a strict DRE standard for performance based PCB remediation.

Source: (C1-086)

Response 2: Only one technology, soil washing, is approved in §761.61(a)(5)(i)(A) for self-implementing disposal (i.e., disposal without prior approval from EPA). To inform its consideration of which self-implementing disposal technologies to approval as self-implementing, EPA sought information demonstrating independent operations on a wide variety of wastes by a wide variety of operators. In the preamble to the proposed rule EPA stated:

> Based on EPA's experience with approving PCB disposal technologies, the solvent washing process is the only currently available destruction or physical separation PCB disposal process considered generally effective in a variety of situations, commercially feasible at ambient temperatures (i.e., no external heat source), and safe enough to be conducted without prior approval. EPA will consider these factors, along with the general statutory requirement to prevent unreasonable risk of injury to health and the environment, in considering the addition, under §761.61(c), of other processes, procedures, or technologies to §761.61(a). EPA specifically requests comments on the best method to expeditiously include new universally acceptable risk-based treatment technologies as self-implementing treatment options prior to amendment of §761.61(a) in the Federal Register. 59 FR 62797.

EPA received considerable information about different kinds of innovative and alternative technologies which were not authorized under §§761.60, 761.70, or 761.75. These data did not convince EPA that any of these technologies met the criteria set out in the NPRM to qualify for self-implementing disposal. Innovative technologies may be still approved on a case-by-case basis

through §761.61(c).

Comment 3: One option that is not available under §761.61(b)(2) is disposal of non-liquid remediation waste in an industrial furnace. By contrast, §761.60(a)(4) allows disposal of PCB-Contaminated liquids in industrial furnaces. By definition, this provision should include PCB-Contaminated non-liquid remediation waste. Recommends that the industrial furnace option be made available under §761.61(b)(2) for non-liquid remediation waste. If the EPA does not make this revision, there will be confusion regarding the apparent conflict between §761.60(a)(4) and §761.61(b)(2).

Source: (C1-242)

Response 3: The apparent conflict between §761.60(a)(4) and §761.61(b)(2) has been resolved. Non-metal PCB remediation wastes such as liquids, soils, sludges and dredged sediments and non-metal PCB bulk product waste such as shredder fluff and air handling system gaskets are not approved for disposal in a scrap metal recovery oven or smelter. EPA has insufficient data to make an unreasonable risk finding for disposal in such an oven or smelter of non-liquid wastes other than drained PCB contaminated articles. Waste oils containing PCBs at concentrations less than 50 ppm may be burned in scrap metal recovery ovens and smelters which qualify under specified conditions in §761.20(e).

Comment 4: The proposed rule inadvertently eliminated the chemical waste landfill as a disposal option for non-liquid wastes at §761.60(a)(4).

Source: (C1-161)

Response 4: The NPRM included high-temperature incinerators, high efficiency boilers, chemical waste landfills and alternate destruction technologies approved by the EPA as performance-based disposal options for PCB remediation waste. These options have been retained in the final rule at §761.61(b).

**§761.61(c) -- Risk-based disposal**

Comment 1: EPA's current "one size fits all" approach for addressing the disposal of PCB wastes does not provide a regulatory mechanism for obtaining EPA approval to use alternative remediation and disposal methods on a site-by-site basis.

Source: (C1-151)

Response 1: Section §761.61(c) allows the EPA Regional Administrator to approve case-by-case, risk-based cleanup, storage or disposal of PCB remediation waste as an alternative to §761.61(a) or (b). Commenters asked the EPA to codify a public comment process. EPA intends to use the public comment process in use in each respective EPA Regional PCB program office.

Comment 2: Commenters asked EPA to allow for waiver of some of the provisions of §761.61(a) or (b), particularly where a state requires minor modifications of the requirements, without having to use the case-by-case process under §761.61(c).

Source: (C1-229, C1-242)

Response 2: TSCA section 6(e) requires EPA to make unreasonable risk determinations. This function cannot be delegated to the states. However, §761.77 provides for a TSCA PCB Coordinated Approval to be based on a permit or waste management document issued by an entity other than EPA, including a state, subject to review by the EPA Regional Administrator.

Comment 3: The EPA should set minimum time frames for the submission and approval of plans for the risk-based remediation option. In order to prevent indefinite delays, it is suggested that the EPA propose default limits in which the plan(s) would automatically be approved upon expiration. Other commenters requested that an objective criterion for risk-based cleanup should be included. One commenter suggested that EPA recognize as a criterion that any remediation cleanup or disposal or any non-remediation disposal that can be shown to be equivalent to the pre-approved self-implementing or performance standards should be deemed adequate. The pre-approved standards have all been found not to pose unreasonable risk; a showing of performance equivalency thus is by definition, a showing of no unreasonable risk.

Source: (C1-147, C1-209)

Response 3: Risk-based approvals under §761.61(c) will be issued on a case-by-case basis. It is likely that each application will present unique circumstances. It is essential to the concept of risk-based approval that each application receive a thorough review, and that the review not be curtailed by expiring time limits. Applicants should work with the EPA Regional Administrator to determine how long a review of their application is likely to take. A cleanup or disposal that meets the requirements of §761.61(a) or (b) can be conducted under those provisions. A cleanup or disposal that differs from these provisions in only minor detail should easily meet the no unreasonable risk standard under §761.61(c). Differences in cleanup levels might not be considered minor.

Comment 4: The proposed rule does not address clearly whether storage incident to on-

site disposal would require the appropriate TSCA permits or whether approval pursuant to section 761.61(c) would be a *de facto* permit. Commenter recommends that an approval from the Regional Administrator operate as both a storage and disposal permit and include all applicable conditions. Requiring facilities to obtain storage and disposal permits in addition to obtaining regional approval for a proposed remediation plan would be redundant ands unnecessary. It would be far more efficient if all these issues were dealt with simultaneously during the risk-based remedy approval process.

Source: (C1-150, C1-151, C1-161)

Response 4: In the final rule, §761.61(c) has been modified to allow the EPA Regional Administrator to issue a risk-based storage approval. This storage approval could be included in a disposal approval. In addition, §761.65(c)(9) allows temporary on-site storage of PCB remediation waste under specified conditions.

Comment 5: Commenters asked for clarification on how EPA will conduct risk assessments. Several commenters referred specifically to §761.61(c). Another commenter stated that the rule contains no discussion of the method or criteria that would be used to determine that a site containing pre-'78 wastes involves a "risk exposure".

Source: (C1-087, C1-130, C1-137, C1-147, C1-150, C1-151, C1-154, C1-167, C1-242)

Response 5: Section I.D. of the preamble gives a general discussion of the factors that are involved in making an unreasonable risk determination. These factors include both costs and benefits. See Refs. 19 and 20 to the final rule for an example of how EPA evaluates specific data in a risk assessment of a PCB cleanup site.

In the final rule, §761.50(b)(3)(i)(A) allows the EPA Regional Administrator to make a finding that spills, leaks, or other uncontrolled releases or discharges, such as leaching, from a site constitute ongoing disposal that presents an unreasonable risk of injury to health or the environment from exposure to PCBs at the site. If the EPA Regional Administrator makes such a finding, then he or she may direct the owner or operator of the site to dispose of the PCB remediation waste in accordance with §761.61 such that an unreasonable risk of injury no longer exists.

Comment 6: The commenter asks EPA to rationalize and update risk-based cleanup options in light of new scientific data showing a lower PCB cancer potency.

Source: (C1-235)

Response 6: In the NPRM, EPA indicated that it was conducting a review of the toxicity

and mechanisms of action associated with PCBs and several structurally-related compounds. In September 1996, EPA completed a report on an updated cancer dose-response assessment for PCBs (Ref. 69). That report suggested several alternative cancer dose-response slope factors appropriate to different risk scenarios and using different assumptions. The upper bound cancer potency slope factors range from 0.07 to 2.0 $(mg/kg\text{-}day)^{-1}$. On page vi of the report, the author clearly recognizes that there are non-cancer health effects from PCBs by stating, "Although not covered by this report, PCBs also have significant ecological and human health effects other than cancer, including neurotoxicity, reproductive and developmental toxicity, immune system suppression, liver damage, skin irritation, and endocrine disruption. Toxic effects have been observed from acute and chronic exposures to PCB mixtures with varying chlorine content. These toxic effects should be included along with cancer in future assessments of PCBs." However, the study makes no attempt to quantify the non-cancer effects.

EPA has based the regulatory actions in today's final rule on a cancer potency slope factor of 4.0 $(mg/kg\text{-}day)^{-1}$. This slope factor value is the same as the cancer potency slope factor used in the risk data relied on in the NPRM and in earlier major rulemakings such as the TSCA PCB Spill Cleanup Policy that appears at subpart G. While the 4.0 $(mg/kg\text{-}day)^{-1}$ slope factor does not correspond with any of the cancer slope factors in the September 1996 report, it does allow for additional protection from as yet unquantified risks from non-cancer human health effects and effects to the environment. The Agency will consider additional revisions to these TSCA regulations in the future to accommodate additional new information clarifying PCB non-cancer effects and bioaccumulation factors. In addition, these rules may be amended for consistency with regulations issued under other statutes, such as the Clean Water Act (CWA), and with other EPA policies, such as those governing response actions under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). EPA will follow closely the public comment process on other rulemakings, and upon completion of a balanced assessment of both the cancer and non-cancer effects, will adjust its regulatory standards on PCBs as appropriate.

In adopting this policy position, EPA weighed the potential benefits and costs associated with revising the final rule to reflect the most recent PCB cancer potency information. Such a change at this time would delay the issuance of the final rule and its anticipated large cost savings, for likely only very marginal benefits.

## §761.62 -- Bulk Product Waste

Definition

Comment 1: A commenter suggested that the proposed definition of "PCB non-remediation waste" be removed or substantially revised. The commenter stated an opposition to the inclusion of such categories of electrical, sound deadening, or other types of insulation and gaskets potentially containing solid PCBs in the definition. The opposition was based on the commenter's belief that the proposed definition would greatly affect the construction industry. It would be impossible to assure that construction debris did not contain any of the items in the definition. For those materials that were separated from the debris, the burden to determine the

PCB levels via the TCLP would be expensive, based on the sampling protocols in Appendix II. Overall, there would be an increase in expense for the construction industry. Additionally, it would take away from the state's ability to regulate construction and demolition material under state solid waste management programs. Finally, the commenter stated, "This rule has the very real potential of forcing large volume, low risk C&D wastes into lined MSW facilities when state-permitted C&D facilities would be adequate, based on the determination of the individual state."

Source: (C1-028)

Response 1: In today's final rule, EPA has not retained the TCLP as the definitive test because commenters indicated that it was not accurate and EPA prefers to set performance standards without prescribing test methods. Instead, EPA has provided two different landfill disposal options for PCB bulk product waste (PCB non-remediation waste was renamed as PCB bulk product waste in the final rule). PCB bulk product waste containing PCBs which are tightly bound within the matrix of PCB bulk product wastes and bulk product waste which leaches <10 $\mu$g/liter measured using a procedure used to simulate leachate generation may be disposed of in a facility permitted, licensed, or registered by a state as a municipal or non-municipal non-hazardous waste landfill (§761.62(b)(1)). PCB bulk product waste containing PCBs which are not bound in a solid matrix may be disposed of in landfills which segregate the wastes from organic liquids which could mobilize the PCBs and which collect leachate generated from the landfill cell and monitor it for PCBs (see §761.62(b)(2) of the regulatory text). Disposal of these materials in accordance with the conditions specified in §761.62(b) would not result in release of toxicologically significant concentrations of PCBs to the ambient environment, including groundwater. Therefore, EPA has determined that such disposal does not present an unreasonable risk of injury to health or the environment.

While EPA is still requiring leach testing for certain materials disposed of in a municipal or non-municipal non-hazardous waste landfill (see §761.62(b)(1)(iii)), EPA has reduced the level of PCBs in the aqueous leachate from 50 to 10 micrograms/liter (approximately 10 ppb). This change is based on comments that the solubility of two major Aroclor components, 1254 and 1260, is generally less than 50 ppb. Thus false negatives concerning the presence of leachable PCBs (PCBs not bound up in the matrix of the waste) would result if EPA retained 50 ppb as the regulatory level.

It is not always necessary to determine the PCB concentration or leaching characteristics of PCB bulk product waste. For example, under §761.61(b)(1)(i) certain PCB bulk product waste may be disposed of in a facility permitted, licensed, or registered by a state as a municipal or non-municipal non-hazardous waste landfill regardless of its PCB concentration. Under §761.62(b)(4), the disposer would have to notify the disposal facility that the waste may contain PCBs $\geq$50 ppm, but could do so based on application of a general knowledge of the waste stream (or similar material) to report the PCB concentration. If the disposer could not base the §761.62(b)(4) notice on general knowledge of the PCB concentration of the waste, and needed to sample the waste, however, the disposer would have to use subpart R or another sampling method approved under §761.62(c). It would also be necessary to use subpart R or §761.62(c) for purposes of disposal of PCB bulk product waste in accordance with §761.62(a)(4) in a facility

having an upper limit on PCB concentration which can be disposed using the approval.

Comment 2: A commenter suggested that EPA include a definition of "white goods" to avoid confusion as to the meaning of this term, and to ensure that paper is not mistakenly understood to be included in the definition. The commenter suggested the following definition: "'White goods' means discarded refrigerators, ranges, washers, water heaters and other similar domestic and commercial appliances".

Source: (C1-028)

Response 2: To avoid confusion, EPA has responded affirmatively to the commenter. EPA changed the definition of PCB bulk product waste to delete the term "white goods", leaving a general description of the content of white goods. The definition of "PCB bulk product waste" now provides that it includes "PCB-containing wastes from the shredding of automobiles, household appliances, or industrial appliances." Because the term "white goods" is in use in some segments of industry, in addition, EPA included in the preamble a list of several items which are the most common white goods: refrigerators, ranges, washers, and water heaters.

Comment 3: A commenter stated that the language in II.A.6 of the preamble to the proposed rule is in conflict with the language in §761.62. The preamble appears to intend to regulate demolition debris for disposal if its concentration is less than 50 ppm. §761.62 allows the utilization of the sampling plan in Appendix III to characterize the demolition debris and determine the disposal requirements.

Source: (C1-107, C1-165)

Response 3: In final rule, EPA defines PCB bulk product waste as waste derived from manufactured products containing PCBs in a non-liquid state, at any concentration where the concentration at the time of designation for disposal was $\geq$50 ppm PCBs.

Comment 4: A commenter suggested that the definition of "PCB non-remediation waste" should include dried or solid paints and coatings, insulation materials, plastic items; rubber items, as does the definition of "PCB remediation waste".

Source: (C1-139)

Response 4: EPA has revised the definition of "PCB non-remediation waste". The revised definition includes the suggested items.

Comment 5: A commenter questioned whether the word "human-created" in the definition of PCB non-remediation waste meant "man-made". The commenter suggested that the regulations need to be clear and concise, not politically correct.

Source: (C1-158)

Response 5: EPA has revised the definition of "PCB bulk product waste" to refer to "man-made" in place of "human-created" structures.

Comment 6: A commenter suggested that EPA revise the definition of "PCB remediation waste" and "PCB non-remediation waste" to include radioactive wastes. The commenter also suggested that EPA revise the off-site disposal options in §761.62(b)(1) to allow off-site disposal of PCB non-remediation wastes which leach PCBs at less than 50 ppb as measured by the TCLP at a facility licensed by the NRC or an Agreement State for PCB/radioactive wastes.

Source: (C1-178)

Response 6: In the final rule, EPA provides the storage and disposal requirement for PCB/radioactive waste at §761.50(b)(7).

Comment 7: Commenters questioned the need to distinguish, for disposal purposes, between remediation waste and non-remediation waste, and expressed confusion about which materials fell in which definition. Another commenter stated that the types of wastes included in the definition of non-remediation wastes may be generated during remediation of a spill. The commenter suggested that since a facility's remediation activities may include those wastes defined as non-remediation waste, EPA should reconsider whether the separation via definition and separate handling and disposal requirements is necessary. The commenter suggested, at minimum, that EPA provide clearer guidance to allow distinct separation of the two types of waste.

Source: (C1-161, C1-183, C1-203, C1-239, C1-242)

Response 7: EPA has revised the definitions of "PCB remediation waste" and "PCB bulk product waste" to clarify the differences in the origin of the waste. PCB remediation waste is the result of a spill or release of regulated PCBs. PCB bulk product waste is generated at the point of disposal of certain manufactured products which contain PCBs. PCB bulk product waste may be spilled and result in PCB remediation waste. For example, a facility that shreds automobiles for metals recycling generates auto shredder fluff (or automobile shredder residue) which contains components having PCB concentrations $\geq$50 ppm. The fluff is stored in piles on the site and periodically removed for disposal at a facility permitted, licensed, or registered by a state as a municipal or non-municipal non-hazardous waste landfill. Eventually, when the site is closed, the

soil is found to contain fluff that has been pressed into the soil during operation of the facility. When the PCB bulk product waste, which was released on-site, was able to mix with the soil, it is considered a spill. Therefore, this mixture of soil and fluff is PCB remediation waste, and must be disposed of at the PCB concentration at which it is found. Disposal options for the mixture under §761.61 are different than disposal options for the original PCB bulk product waste under §761.62. Moreover, the spill of the PCB bulk product waste is subject to enforcement even though the PCB remediation waste formed on-site may now qualify for on-site disposal with no further action.

Comment 8: A commenter recommended revising the definition of PCB non-remediation waste by inserting the words "PCB-containing" immediately before "waste from the shredding of ..." in order to prevent the inference that the waste from the shredding of any automobiles, any household and industrial appliances, or any other white goods must be identified as PCB non-remediation waste even if the shredded items were known not to contain PCBs.

Source: (C1-218)

Response 8: EPA has affirmatively responded to this comment.

Comment 9: A commenter questioned EPA's rationale for regulating the disposal of shredder wastes under TSCA and disagrees with EPA's presumption that all shredder waste is subject to regulation by virtue of its PCB content. The commenter requested that EPA exclude shredder waste from the definition of PCB non-remediation waste. If EPA rejects this request, the commenter suggested that EPA add an exemption from the PCB disposal rules for shredder wastes generated at facilities that have a scrap source plan that is designed to keep PCBs that are regulated for disposal out of the waste stream.

Source: (C1-223)

Response 9: The commenter did not provide data to justify the exclusion of shredder waste from the definition of PCB bulk product waste. EPA has retained shredder waste in the definition of PCB bulk product waste because EPA's historical data shows that it can contain PCBs. Shredder waste which does not contain components having a PCB concentration $\geq$50 ppm is not PCB bulk product waste.

Comment 10: A commenter requested that EPA clarify the requirements for "debris from the demolition of buildings" in its definition of non-remediation waste. The commenter stated that the proposed definition does not appear to include building debris that contains PCBs because spills occurred in the building. However, it is not clear that such contaminated building debris would fall within the definition of PCB remediation waste. Thus, a clear determination of how

building debris is categorized should be included in the definition of non-remediation waste.

Source: (C1-239, C1-242)

Response 10: EPA has clarified the definition of PCB bulk product waste in the final rule by stating, "PCB bulk product waste does not include building debris contaminated by spills from regulated PCBs which have not been disposed of, decontaminated, or otherwise cleaned up in accordance with subpart D."

Comment 11: A commenter suggested that EPA revise the definition of "PCB non-remediation waste" as follows: "In the first parenthetical phrase, before the word 'serviced', delete the word 'or' and after 'serviced' insert 'or impregnated'." To ensure that this definition fully encompasses demolition debris, the commenter recommended the addition of "such as wood, metal, plaster, concrete, and other such building materials" immediately following the first parenthetical phrase.

Source: (C1-254)

Response 11: In the final rule, EPA has revised the definition of "PCB non-remediation waste" in its entirety. PCB bulk product waste would include non-liquid PCBs which are impregnated with PCBs. Demolition waste includes wood, metal, plaster, and other materials resulting from the demolition of buildings.

Sampling and Analysis

Comment 12: A commenter stated that §761.61 and §761.62 contain specific references to SW-846, Method 3540, as well as to a specific extraction solvent, toluene/methanol. The commenter suggested that EPA revise §761.61 and §761.62 to allow for other options besides the options stated in the proposed rule. The commenter recommended considering the language in Section 5.4.1 of Method 3550, which states, "Low concentration soil samples shall be extracted using a solvent system that gives optimum, reproducible recovery for the matrix/analyte to be measured. Suitable solvent choices are given in Table 1." The commenter suggested that the final rule allow for any sample preparation technique, including SW-846 methods 3540, 3541 and 3550, and any extraction solvent and any GC electron capture detector method including methods 8080 or 8081. This change could be accomplished by changing the language in these sections to read, "...highest concentration of PCBs (using appropriate extraction and analysis procedures for PCBs in liquid or solid wastes such as those contained in SW-846)."

Source: (C1-067)

Response 12: EPA has removed references to specific methods from the final rule for the disposal of certain waste, whether generated from products coming out use or from the cleanup of

PCB remediation waste, when this waste is destined for land disposal at a facility permitted, licensed, or registered by a state as a municipal or non-municipal non-hazardous waste landfill.

Under §761.61(a)(5)(v)(A), EPA has removed the requirement to report a PCB concentration for waste generated during the cleanup of PCB remediation waste. This waste is regulated for disposal in a facility permitted, licensed, or registered by a state as a municipal or non-municipal non-hazardous waste landfill.

Similarly, under §761.62(b), it may not be necessary to measure the PCB concentration in PCB bulk product waste. When it is necessary to measure a PCB concentration in this waste, no specific method is required. Under some conditions, PCB bulk product waste may be disposed of in a facility permitted, licensed, or registered by a state as a municipal or non-municipal non-hazardous waste landfill regardless of its PCB concentration. Preamble language is as follows:

> Under §761.62(b)(4), the disposer would have to notify the disposal facility that the waste may contain PCBs ≥50 ppm, but could do so based on application of a general knowledge of the waste stream (or similar material) to report the PCB concentration. If the disposer could not base the §761.62(b)(4) notice on general knowledge of the PCB concentration of the waste, and needed to sample the waste, however, the disposer would have to use subpart R or another sampling method approved under §761.62(c).

Comment 13: A commenter recommended that EPA include a new section in Part 761 titled, "Identification of PCB non-remediation waste candidate materials", which would allow a petitioning process for soliciting EPA approval of plans for sampling of in-use potential PCB materials. A commenter suggested a process similar to §761.62(c), "Risk-based disposal approval", amended to specify the required statistical confidence level and the information requirements that would be suitable. One commenter stated that they supported the adoption of a waste characterization plan, as proposed, but they requested a comparable sampling process for potential PCB materials which are still in use. This request is sought in order to maintain the proper operation, maintenance, and disposal of vessels and shore facilities.

Source: (C1-107, C1-165)

Response 13: This comment addresses the PCB concentration of materials still in use, which will be addressed in a future rulemaking. See Response 4 for a discussion of the need to determine the concentration of PCB bulk product waste at the time of disposal.

Comment 14: A commenter stated that since both Appendix II and III protocols are highly detailed and applicable only to a limited range of situations, they should not be mandated as generic protocols. The commenter suggested that "... the rule should clearly state the requirement for representative samples and statistically valid sampling protocols, as well as when such requirements apply, and all detailed explanations should be provided in guidance, with options allowed for differences in site and material characteristics."

Source: (C1-239)

Response 14: Appendix II and III have been revised in their entireties in the final rule and are now subparts O and R, respectively. Section 761.62(c) has also been revised to allow the EPA Regional Administrator to issue case-by-case risk-based sampling approvals.

Comment 15: Several commenters expressed concerns regarding Appendix III. A commenter stated that the procedures in Appendix III are so specific to shredder waste that it would be impossible to apply them to any other type of waste. One commenter recommended that EPA delete the entire Appendix III and in place, require statistically valid sampling protocols such as in the Spill Cleanup Policy. The commenter also requested that EPA revise the rule to allow segregation of PCB items and materials from non-remediation wastes. For shredded remediation wastes which contain PCBs that cannot be separated or decontaminated, the commenter requested that EPA allow any statistically valid sampling method. Another commenter stated that EPA should not mandate that a specific protocol be used; they should only provide guidance regarding sampling methodologies. The commenter suggested that under EPA's proposal, an alternate sampling methodology could only be obtained under a risk-based disposal approval. In this manner, an approval would have to be obtained every time a sample was collected. The commenter stated that this was time-consuming and unacceptable. An additional commenter stated that Appendix III only addresses a fluff type situation. Additionally, the commenter stated that Appendix III would most likely not give a representative sample. The commenter suggested taking vertical cores of the piles from top to bottom to obtain a representative sample. Furthermore, Appendix III does not address particle size distribution from top to bottom in the pile.

Source: (C1-147, C1-151, C1-161, C1-239, C1-248)

Response 15: Appendix III has been revised in its entirety in the final rule and is now subpart R. Subpart R was designed for sampling PCB bulk product waste which is coming out of use and being processed for some other reason, usually metal recycling. The waste stream from automobile and appliance shredding probably is a reasonable worst case for a heterogeneous PCB bulk product waste stream. Unfortunately, there is no simple way to collect a representative sample of such a waste stream. Generally, little is known about the concentration of PCBs in components of the source material, or about proportions of these PCB-containing components with respect to the non-PCB containing components in the waste, either at a particular moment or over time. Thus, it can be difficult to collect a representative sample of the waste to characterize its PCB concentration using chemical analysis.

Operational difficulties will likely severely constrain use of sampling procedures applicable for other waste, such as soil, on large accumulations of PCB bulk product waste. In particular, procedures such as core sampling are at best difficult, and more likely nearly impossible, for auto shredder waste or building demolition waste. Any method to sample and analyze this kind of waste necessarily must collect a large amount of sample and reduce the size of the sample to a

small portion for actual chemical analysis. This portion may be smaller than many individual component parts. Any sampling and analysis procedure meeting this kind of requirement will lose representativeness as the size of the amount of material analyzed is reduced from a much larger heterogeneous mass. There are two expensive and cumbersome procedures to address this difficulty scientifically, neither of which was suggested by commenters: homogenize a representative large quantity of waste, or extract a large quantity of waste and concentrate the extract.

This is less of an issue in the final regulations at §761.62(b) than in the proposal, since some disposal options do not require the determination of the PCB concentration of the waste by sampling and analysis. When representative sampling is required, EPA's procedures in subpart R can provide a representative sample of a very heterogeneous waste stream, i.e., a waste stream with a wide variety in constituent materials with respect to particle size, particle shape, material density, mixing of component particles, proportion of components, and PCB content of components. Commenters did not propose alternate methods free of significant bias or extreme variation, nor provide data demonstrating that the EPA proposal would result in decisions presenting an unreasonable risk of injury to human health or the environment. The regulated community can apply for variations from subpart R or even different approaches meeting the same objectives through a risk-based approval under §761.62(c).

The Spill Cleanup Policy sampling procedure, which was designed to confirm cleanup of recently spilled liquid PCBs from surfaces and soil, would not provide a representative sample of large volumes of PCB waste derived from non-liquid products.

The sampling procedures included in subpart R can also be applied to accumulations of PCB remediation waste for which characterization for off-site disposal is necessary.

There is no prohibition from separating the PCB-containing components of PCB bulk product waste from other components using procedures approved in §761.79. For the two largest potential volume PCB bulk product waste streams, auto shredder fluff and building demolition material, separation of the non-liquid PCB components is impractical.

Shredding and Recycling

Comment 16: A commenter urged EPA to clarify and amend the proposed regulations to reflect a policy that encourages environmentally beneficial recycling activities by providing stability and certainty to the disposal options and beneficial reuses available for automobile shredder residue (ASR). The commenter suggested using ASR as landfill daily cover or as an additive to road bed material. The commenter stated that if the proposed rule were adopted without further clarification, it could be misread to prevent the current, growing practice for some states to allow use of ASR as daily cover. Furthermore, the commenter stated that the proposal implies that in all cases ASR may be disposed of in only one of two ways.

Source: (C1-141, C1-253)

Response 16: In the final rule, EPA allows shredder waste to be disposed of in a landfill as

the final daily cover, if it remains in the landfill and is not released or dispersed by wind or other action; the shredder waste may also be disposed of under asphalt as part of a road bed.

Comment 17: A commenter stated that the 50 ppb TCLP standard proposed by EPA, combined with the definition of PCB non-remediation waste, ensures that virtually all ASR will be regulated under TSCA as a PCB waste. The regulation of ASR under TSCA will inhibit the beneficial re-use of ASR. Additionally, regulating ASR under TSCA would most likely cause resistance from state and local regulators and citizens to handle ASR in any manner other that at a TSCA disposal facility. The commenter suggested that EPA revise the definition of PCB non-remediation waste and the disposal options, to distinguish between ASR and other PCB non-remediation waste.

Source: (C1-141)

Response 17: The final rule allows specified materials, including non-liquid PCB bulk product waste from the shredding of automobiles or household appliances from which PCB Small Capacitors have been removed (shredder fluff) to be disposed of in a facility permitted, licensed, or registered by a state as a municipal or non-municipal non-hazardous waste landfill. See Response 7 for a discussion of disposal options specific to this material.

Comment 18: A commenter questioned whether EPA intended to regulate all materials processed for recycling. If EPA does intend to do so, "justification should be provided as to 1) what authority by which EPA proposes to regulate all metals for recycling, 2) the extent or scope of recycling activities which would be regulated, and 3) the risk to human health and the environment which warrants regulating the recycling activities which would come under these sampling and disposal requirements."

Source: (C1-147)

Response 18: EPA is not regulating metal recycling. EPA is regulating the disposal of PCBs. If metal recyclers do not properly separate and dispose of regulated PCBs associated with metals being recycled, the metal recycling process including regulated PCBs becomes PCB disposal, which is clearly mandated for regulation under TSCA §6(e). EPA has provided for self-implementing decontamination procedures to remove or separate PCBs from metal prior to recycling the metal. EPA has provided scrap metal recyclers with flexibility to dispose of PCB-containing wastes generated in the separation process.

Comment 19: A commenter questioned EPA's proposed change which adds provisions regarding "large volume, non-remediation waste" by stating that the change may provide an

avenue for PCBs and PCB items to be disposed in a manner which was not EPA's intent. The commenter summarized a study that determined the correlation between PCBs in shredder fluff and PCBs in the original automobile parts. The commenter stated, "The results of the study indicated that the levels of PCBs in auto components was consistently lower than the levels found in the fluff. This indicates that PCBs are most likely entering this waste stream through other than shredded automobiles."

Source: (C1-249)

Response 19: In order to qualify as PCB bulk product waste, the sources of PCBs are required to be non-liquid PCBs. In EPA's study of automobile and white goods shredding, EPA could not attribute the PCBs in the shredder waste to any specific components present in the feed stream or to any other source. EPA believes that the risk from the potential introduction of liquid PCBs into shredder waste can be reduced by removing small capacitors from automobiles and white goods prior to shredding for metal recovery and recycling.

Applications and Approvals

Comment 20: A commenter stated that the requirements for individual written applications and approvals for leachability-based disposal or risk-based disposal for each project would slow down efforts and add significant administrative and procedural burdens for both the regulated community as well as EPA. The commenter suggested that EPA include a procedure where a company's leachability- or risk-based disposal plans can be preapproved to allow a company to proceed with disposal in accordance with that plan when disposal is necessary, in order to reduce paperwork and eliminate disposal delays.

Source: (C1-148)

Response 20: The final rule only requires that an individual written application be completed for risk-based disposal approval. EPA does not specify that the application for a risk-based disposal approval must be submitted at a certain time, only that it must be submitted and approved before disposal can take place. EPA has provided reasonable self-implementing and performance-based disposal options for a majority of PCB bulk product waste generated.

Comment 21: A commenter suggested that the rule should contain a provision that allows the Regional Administrator to modify any requirements in the rule, based on protecting workers or feasibility. The commenter suggested the following language, "Any person may petition and obtain from EPA a written modification or waiver of the requirements of the PCB disposal rule concerning PCB Remediation Wastes or PCB non-remediation wastes (§761.__)[sic] if : (a) the modification or waiver would not significantly affect the overall performance of the requirement; (b) the modification or waiver would not present a significant risk to human health and

environment; and (c) such modification or waiver is necessary to: (i) ensure the safety of workers or other individuals; (ii) protect the integrity of the industrial facility or equipment; or (iii) avoid remediation activities that are technically impracticable."

Source: (C1-154)

Response 21: In §761.62(c), EPA has provided the Regional Administrator with discretion to respond to requests which vary regulatory requirements for the disposal of PCB bulk product waste based on the single TSCA standard of no unreasonable risk. No unreasonable risk includes the risks to human health or the environment as well as an evaluation of the cost of disposal.

Anti-Dilution

Comment 22: A commenter stated that an anti-dilution statement in §761.1 is not needed to retain regulatory jurisdiction over certain PCB wastes with concentrations under 50 ppm (e.g. transformer leaks, shredder and demolition waste). The commenter suggested that EPA address such wastes specifically and not rely on general anti-dilution principles that create confusion with respect to other wastes. Commenters stated that the preamble and rule are unclear as to what EPA's anti-dilution policy is regarding non-remediation waste. One commenter stated that it appears that anti-dilution still applies, although they do not believe that EPA intended to retain the anti-dilution policy with respect to non-remediation waste. The commenter requested that EPA revise the proposal such that non-remediation waste is to be managed and disposed of based on as-found concentrations. Another commenter stated that the proposed rule at §761.62(b) allows the disposal of PCB non-remediation waste at any concentration level, provided that the leaching level is at 50 ppb or below, but that the preamble restricts disposal to non-remediation waste that has not been subject to treatment. The commenter further stated that the preamble and the proposed rule are unclear as to the application of the anti-dilution prohibition to shredder waste that passes the 50 ppb TCLP limit; the commenter suggested that EPA waive the anti-dilution prohibition for shredder waste or any other PCB non-remediation waste that passes this limit.

Source: (C1-161, C1-242, C1-250)

Response 22: It is the intention of TSCA that PCBs are disposed of with no unreasonable risk of injury to human health or the environment. The objective of TSCA is not to allow iterative stages of accidental or intentional disposal that successively dilute PCB concentrations, but at the same time result in more widespread environmental contamination. Because PCBs are persistent and bioaccumulative, human health and the environment would not be protected if PCBs were routinely disposed of by dilution or dispersal to concentrations below regulated levels. The purpose of the anti-dilution policy, and of subpart D as a whole, is to ensure that PCBs are disposed of in a manner that will minimize exposure as soon as practicable after they are removed from use.

This concept can be illustrated by tracking PCB waste through a series of hypothetical disposal stages. In the first disposal stage, liquid PCBs from a PCB Transformer are spilled onto concrete either intentionally or accidentally. The concentration of PCBs in the concrete is lower than in the original liquid, but more material is now contaminated. In the second stage of disposal, PCBs from the concrete are washed into a containment basin, resulting in further dilution of the PCB concentration, and additional contamination of environmental media. In the third stage, the containment basin is drained, washing PCBs into adjacent surface waters. PCB concentrations are further diluted, and another environmental medium is affected. In the fourth stage, sediments from the lagoon are mixed with excavated soil and used as fill at a residential development site. At this point, contamination in each material or medium may be below regulatory levels, but the PCBs are still present, and still available for uptake and exposure. As long as there are more expendable non-PCB waste materials than there is PCB waste, there are many ways to continue to add disposal stages for PCB waste to lower the concentration below regulated levels. The PCB regulations are designed to prohibit diluting PCBs through the intentional or accidental addition of disposal stages. EPA believes this is best accomplished through the general anti-dilution policy at §761.1(b)(5).

Comment 23: A commenter suggested that EPA specifically address the application of the anti-dilution principle to building demolition waste. The commenter stated that building owners typically separate PCB materials and dispose of them separately from other building materials, so anti-dilution issues would not exist.

Source: (C1-161, C1-239)

Response 23: The practice of waste separation would not be prohibited under the final regulation. However, this kind of separation might not be necessary. For many PCB bulk product wastes, the same disposal option is available for the waste at different stages of waste stream generation, e.g., for the dried paint scraped off a building before demolition and the same paint remaining on the building debris after demolition. This is because disposal requirements for PCB bulk product waste can be based on the characteristics of the waste and its leachability as distinct from its concentration. See Response 1 for the disposal requirement for PCB bulk product waste including demolition waste.

General

Comment 24: A commenter suggested that EPA make allowances in §761.62 or in §761.65 for storage of PCB non-remediation wastes during the course of processing for disposal.

Source: (C1-147)

Response 24: In the final rule, §761.65(c)(9) addresses the temporary on-site storage of PCB bulk product waste. Additionally, §761.62(c) addresses the procedure for obtaining case-

by-case alternate storage approvals.

Comment 25: A commenter stated that there is an inconsistency between RCRA and the proposed TSCA rules regarding non-remediation waste. The commenter suggested that EPA revise the proposed provisions for disposal of non-liquid, fixed PCB non-remediation wastes such as dried paints. The rule could require the prior removal of severable pieces of suspect equipment such as capacitors, light ballasts, etc. The commenter suggested three options for any remaining demolition wastes. For example if a wall painted with a PCB containing material was being decontaminated, the generator could: 1) remove the entire wall and manage it as a TSCA PCB waste; 2) remove the PCB containing paint from the wall and manage the paint as a PCB non-remediation waste; or 3) analyze the entire PCB painted wall using TCLP protocols.

Source: (C1-185)

Response 25: EPA has revised the requirements for disposal of PCB bulk product waste to provide for different options for the disposal of dried paint applied to surfaces in buildings intended for demolition and demolition debris in general. The commenter's first two proposals are options in the revised regulations and the last is no longer necessary.

Comment 26: A commenter stated that EPA should not promulgate a federal regulation requiring determination and compliance with state and local laws, as stated in the opening paragraph of §761.62.

Source: (C1-207)

Response 26: This provision has been moved to §761.50(a)(6). It is intended to remind the regulated community that compliance with the TSCA PCB regulations does not necessarily discharge their obligations under other federal, state, or local laws.

Comment 27: A commenter suggested that EPA should include an option to dispose of PCB non-remediation wastes in an industrial furnace.

Source: (C1-207)

Response 27: At §761.62(a)(6), the final rule contains an option for disposal of PCB bulk product waste in a scrap metal recovery oven or smelter. According to this paragraph, PCB bulk product waste, which consists of metal surfaces in contact with PCBs, may be decontaminated in an oven or smelter in accordance with §761.79(c)(6).

Comment 28: A commenter opposed applying TSCA regulations to non-remediation wastes where existing PCB concentrations are less than 50 ppm.

Source: (C1-221)

Response 28: EPA has clarified in §761.3 that "PCB bulk product waste" means waste derived from manufactured products containing PCBs in a non-liquid state, at any concentration where the concentration at the time of designation for disposal was $\geq$50 ppm PCBs. Section 761.62 does not provide for managing PCB bulk product waste at existing concentrations, therefore the anti-dilution provision (§761.1(b)(5)) applies. It is possible to control the amount of or to remove PCBs from PCB bulk process waste at the point of generation. In addition, because disposal options are available for PCB bulk product waste that are based on the characteristics of the waste or its leachability, for many PCB bulk product wastes the same disposal option is available for the waste at different stages of waste stream generation, e.g., for the dried paint scraped off a building before demolition and the same paint remaining on the building debris after demolition.

Comment 29: A commenter stated that the disposal requirements for non-remediation wastes may pose difficulties for certain types of waste being treated by ISV, due to the in situ nature of ISV. The commenter suggested that the requirements for treatment and disposal for non-remediation wastes be modified to allow the on-site treatment of such wastes under certain conditions such as: specifying that a remediation under the self-implementing option must be performed at the same site or requiring that a demolition or partial demolition would be considered a technical requirement for implementation.

Source: (C1-223)

Response 29: Section 761.62(c) allows for the issuance of risk-based storage or disposal approvals for PCB bulk product waste, based upon EPA's finding of no unreasonable risk. Absent an approval under this section or under §761.60(e), ISV is not an approved disposal option.

Comment 30: A commenter suggested adding a paragraph to §761.62 to allow the use of concrete vaults contaminated by PCBS which had leaked from electrical transformers.

Source: (C1-232)

Response 30: EPA responded affirmatively to this comment. However, the response appears as a use authorization in §761.30(p) rather than a disposal approval in §761.62. See the section of this document pertinent to §761.30.

Comment 31: A commenter suggested that the self-implementing rule and the non-remediation waste rule should be expanded to include biotreatment. The commenter stated that biotreatment is an applicable technology, as it meets the four factors used to evaluate the addition of other technologies to §761.61(a), as stated in the preamble.

Source: (C1-233)

Response 31: EPA does not have data that would support the establishment of a general protocol for the successful application of biotechnology to any form of PCB bulk product waste, i.e., a destruction capability equivalent to incineration. Any person seeking the approval of biotechnology on the basis of risk should submit an application to the Regional Administrator as required in §761.62(c).

Comment 32: A commenter stated that "there are considerable differences in the environmental risks of scrapyard wastes contaminated with free flowing askarel from ruptured small capacitors compared to demolition wastes, generally at lower PCB levels and not contaminated by free flowing liquid askarels." The commenter does not believe that EPA has addressed this difference in the proposed rules.

Source: (C1-241)

Response 32: In the final rule, EPA has regulated the disposal of PCB bulk product waste from which capacitors have been removed in the same way as demolition waste (see §761.62(b)(1)(i)). Scrap yard waste contaminated by spills of dielectric fluid from electrical equipment are regulated as PCB remediation waste in §761.61.

Comment 33: A commenter suggested that EPA should not allow the use of PCB non-remediation waste as fill material, because there is no existing regulatory scheme that would assure long-term containment of PCBs within the fill area equivalent to a landfill regulated under 40 CFR Part 258.

Source: (C1-250)

Response 33: PCB bulk product waste may only be disposed of as daily landfill cover as long as the daily cover remains in the landfill and is not released or dispersed by wind or other action. PCB bulk product waste may also be disposed of under asphalt as part of a road bed (see §761.62(d)). The preamble states:

> These disposal options have been restricted to materials that do not leach and because other potential routes of exposure have been controlled, EPA has concluded that the risk from these disposal options is the practical equivalent of disposal in a landfill as required in

§761.62(b)(1), and therefore that this risk is not unreasonable. Both of these potential disposal approaches can also be addressed in a risk-based disposal application under §761.62(c).

Comment 34: A commenter suggested that if EPA allows the disposal of PCB non-remediation waste in a well-engineered and operated municipal solid waste landfill, then EPA should allow similar handling of PCB remediation wastes with similar PCB concentrations. The commenter stated that PCB concentration, not the source of the waste, determined the relative exposure risk.

Source: (C1-257)

Response 34: EPA has based the disposal options for PCB remediation waste on the risk from disposal. The options for the disposal of liquid PCBs in a PCB transformer are not always the same as disposal options for soil or concrete upon which these same PCBs have been spilled. For many kinds of non-liquid PCB waste, disposal options are similar. For example, cleanup equipment such as rags, booties, disposable protective suits, and gloves (PCB remediation waste) may be disposed of in a facility permitted, licensed, or registered by a state as a municipal or non-municipal non-hazardous waste landfill. See §761.61(a)(5)(v)(A). The same disposal option is available for demolition debris and auto shredder fluff (PCB bulk product wastes).

EPA has data demonstrating that disposal of PCB bulk product waste in a facility permitted, licensed, or registered by a state as a municipal or non-municipal non-hazardous waste landfill does not result in an unreasonable risk based on low leachability of this waste. EPA does not have the same kind of data for PCB remediation waste, such as soil. In §761.61(c), EPA has provided an option for a person seeking an alternative disposal method for PCB remediation waste to apply to the RA for a risk-based disposal approval. Any available data on leaching of PCBs from the PCB remediation waste should be included in the application to provide the RA with useful information on the potential risk from the land disposal of the PCB remediation waste.

Comment 35: A commenter stated that EPA should only approve disposal of non-remediation waste at disposal facilities that are in compliance with 40 CFR Part 258; that are in compliance with equivalent state municipal solid waste programs where the state permitting program has been approved by the Agency pursuant to section 4005(c)(1)(C) of RCRA; or that can demonstrate compliance with the substantive design, operating, location, and administrative requirements set forth at 40 CFR Part 258.

Source: (C1-250)

Response 35: In §761.62(b), EPA has affirmatively responded to this comment.

**§761.62(a) -- Performance-based disposal**

Comment 1: A commenter suggested that EPA modify §761.62(a) to include all traditional disposal options. Specifically, the commenter requested that EPA allow disposal pursuant to an alternative method of destruction, as approved under §761.60(e).

Source: (C1-151)

Response 1: EPA has revised §761.62(a) to include this suggested disposal option, as well as additional disposal options.

Comment 2: A commenter stated that EPA has not provided an option for disposal of non-remediation waste with sufficiently low PCB concentrations in a landfill other than a chemical waste landfill, as it has for the disposal of remediation waste. The commenter suggested that EPA provide an option under §761.62(a) that allows the disposal of non-remediation waste below 500 ppm in a RCRA Subtitle C landfill.

Source: (C1-161, C1-192, C1-251)

Response 2: EPA has revised §761.62(a) to include an option for disposal of PCB bulk product waste in a RCRA Subtitle C landfill permitted by the state to accept PCB waste. However, disposal of PCBs in a RCRA Subtitle C approval is subject to the conditions of the RCRA approval, which may prohibit the disposal of PCBs above certain concentrations.

**§761.62(b) -- Leachability-based disposal**

Comment 1: A commenter stated that in the preamble to the final rule, the leachability-based disposal option is discussed as a self-implementing option, as it allows the disposal of wastes that pass the TCLP at less than 50 ppb in a municipal waste landfill. The commenter requested additional guidance regarding the leachability-based disposal option, as one is left to assume that wastes that leach greater than 50 ppb would be required to be incinerated, disposed of in a chemical waste landfill or an application for a risk-based disposal would have to be made.

Source: (C1-147)

Response 1: In the final rule, EPA has modified and expanded the leachability-based disposal options. Certain listed PCB bulk product wastes may be disposed of in a facility permitted, licensed, or registered by a state as a municipal or non-municipal non-hazardous waste landfill: plastics (such as plastic insulation from wire or cable; radio, television and computer casings; vehicle parts; or furniture laminates); preformed or molded rubber parts and components; applied dried paints, varnishes, waxes or other similar coatings or sealants; caulking; Galbestos;

non-liquid building demolition debris; or non-liquid PCB bulk product waste from the shredding of automobiles or household appliances from which PCB Small Capacitors have been removed (shredder fluff). Other PCB bulk product waste, sampled in accordance with the protocols set out in subpart R, that leaches PCBs at <10 $\mu$g/L of water measured using a procedure used to simulate leachate generation may be disposed of in the same type of facility.

PCB bulk product waste other than those materials meeting the above conditions (e.g., paper or felt gaskets contaminated with PCBs) may be disposed on in a facility that is permitted, licensed, or registered by a state to manage municipal solid waste subject to part 258 of this chapter or non-municipal non-hazardous waste subject to 40 CFR §§257.5 through 257.30 if the PCB bulk product waste is segregated from organic liquids disposed of in the landfill unit, and leachate is collected from the landfill unit and monitored for PCBs.

The disposer also has the option of disposing of PCB bulk product waste under one of the performance-based options of §761.62(a), or pursuant to a risk-based approval under §761.62(c).

Comment 2: A commenter recommended that §761.62(b) be revised to state that coal-tar enamel manufactured and applied in accordance with AWWA Standard C203 which has PCB concentrations less than 500 ppm is recognized to pass TCLP testing and may be handled and disposed of as non-leachable non-remediation waste without specific TCLP testing if it can be proven from installation specification or other documentation that the coating is in fact C203 material.

Source: (C1-139, C1-260)

Response 2: The final rule at §761.62(b)(1) allows certain specified materials, including applied dried paints, varnishes, waxes or other similar coatings or sealants, to be disposed of in a facility permitted, licensed, or registered by a state as a municipal or non-municipal non-hazardous waste landfill. Based on leachability data these commenters submitted, EPA interprets this provision to apply to this material.

Comment 3: A commenter stated that the leachability-based option will result in wastes entering landfills with contamination greatly exceeding 50 ppm, despite the 50 ppm threshold for applicability and the anti-dilution policy. The commenter recommended that EPA remove the leachability-based option from the final rule. However, the commenter suggested that EPA could allow shredder fluff containing 50 ppm or more PCBs, derived solely from small capacitors, to be disposed of in an authorized waste landfill which satisfies the double composite liner and leachate collection requirements, similar to the New York solid waste regulations.

Source: (C1-246)

Response 3: The leachability-based disposal option is based not on the concentration of PCBs in the materials, but their leaching characteristics. Data show that in many of these

materials, the PCBs are bound in a solid matrix and will not escape into the environment. For materials with a greater risk of leachability, EPA has required more stringent disposal requirements, ranging from disposal in a landfill with leachate collection to incineration. Shredder fluff containing PCBs from small capacitors would fall into this latter category, since the liquid PCBs from the capacitors would be more likely to leach than PCBs bound in solid shredded material, such as cable insulation.

Comment 4: A commenter suggested that EPA add the words "debris landfill" after the words "Industrial solid waste landfill" in §761.62(b). The commenter stated that debris generated from building demolition projects which meets the 50 ppb criterion does not represent a threat and should be allowed to be landfilled.

Source: (C1-260)

Response 4: The final rule provides more landfilling options than the proposal. Under §761.62(a), PCB bulk product waste may be disposed of in a chemical waste landfill, hazardous waste landfill, or a landfill authorized for PCB disposal under a coordinated approval. Section §761.62(b) provides additional landfilling options depending on the leaching characteristics of the waste.

Comment 5: A commenter questioned EPA's choice of 50 $\mu$g PCB/L as the criteria for the leachability test results. The commenter stated that EPA should provide technical information which supports that this level would be protective of human health and the environment. If EPA allows this criterion for treated materials, it should also allow it for contaminated materials which are untreated. Additionally, the commenter suggested that PCB non-remediation waste which meets the leachability-based disposal criteria should be allowed to be left on the site where it was generated.

Source: (C1-142)

Response 5: EPA has reduced the leachability-based disposal criteria from 50 to 10 $\mu$g PCB/L in the final rule. EPA has determined that disposal under these conditions does not present an unreasonable risk to health or the environment; EPA has provided references for this statement. In the final rule, PCB non-remediation waste which meets this criterion must still be disposed of, it may not be left on the site where it was generated unless in accordance with a risk-based disposal approval under §761.62(c). It is important to note that merely leaving a material on-site does not constitute proper disposal. This provision was developed to address large quantities of waste, where on-site disposal was not a desirable option.

Comment 6: Commenters believed use of a 50 ppb TCLP leachate standard, based on a

100-fold dilution and attenuation factor (DAF) and the MCL for PCBs (0.5 ppb), is overprotective and it be increased. One commenter noted that the standard was calculated using a worst case scenario and in practice, most if not all of these conditions are unlikely to apply when a highly immobile constituent such as PCBs is placed in a municipal or industrial landfill. Moreover, new municipal or industrial waste landfills have stringent siting, design, operating and closure requirements that in many areas parallel the requirements for chemical waste landfills under §761.75.

Source: (C1-161, C1-209)

Response 6: While EPA is still requiring leach testing for certain materials disposed of in a municipal or non-municipal non-hazardous waste landfill (see §761.62(b)(1)(iii)), EPA has reduced the level of PCBs in the aqueous leachate from 50 to 10 micrograms/liter (approximately 10 ppb). This change is based on comments that the solubility of two major Aroclor components, 1254 and 1260, is generally less than 50 ppb. Thus false negatives concerning the presence of leachable PCBs (PCBs not bound up in the matrix of the waste) would result if EPA retained 50 ppb as the regulatory level.

Comment 7: A commenter suggested that exceptions to the particle size reduction requirement in the TCLP should be included in §761.62(b) to allow use of this procedure for many of the waste types for which it is intended. The commenter stated that the type of particle size reduction required in TCLP is neither physically possible not practically achievable in most laboratories. The commenter also suggested revising §761.62(b) as follows: after "Method 1311", add "to the extent possible consistent with the particle reduction requirements of the Method." Then, delete the sentence that reads, "The representative sample shall be collected according to the procedures in Appendix III of this part", as well as subsections (2) and (3). Another commenter stated that the use of the TCLP is inappropriate for industrial landfill disposal, as leachate may not be acidic.

Source: (C1-239, C1-242)

Response 7: EPA has not retained the TCLP as the definitive test in the final rule. Leach testing is still required for some waste, using any method that simulates leachate generation.

Comment 8: A commenter posed several questions regarding the TCLP test. The commenter first questioned EPA by asking, "What studies have been conducted to show that equilibrium conditions will occur during the 18 hour TCLP extraction procedure? If equilibrium is not reached then the true analytical result may be biased low and materials may pass out from under regulation with the proposed rule change." The commenter stated that if a PCB mixture contains some of the more soluble PCB congeners, averaging of the peak quantitation information could lead to materials passing out from under the regulation with the proposed rule change. The

commenter then stated that it would be unlikely that PCBs would be found to exceed the proposed 50 $\mu$g/L level, and questioned the need to perform the expensive TCLP extraction and analyses of these samples.

Source: (C1-267)

Response 8: In the final rule, EPA has removed the requirement to use the TCLP test as the definitive test. Additionally, EPA has reduced the leachability level from 50 to 10 $\mu$g PCB/L.

Comment 9: Commenters suggested that EPA should not require statistical sampling and analysis to determine PCB content in addition to TCLP testing. The commenters stated that the requirements in §761.62(b)(2) and (3) imply that both must be done when characterizing wastes for leachability-based disposal. A commenter stated that the requirement in §761.62(b)(2), which allows for alternate sampling procedures, eliminates the use of the self-implementing leachability-based disposal option for all PCB non-remediation wastes. The commenter does not believe that it was EPA's intent to do so.

Source: (C1-161, C1-222, C1-239)

Response 9: EPA has revised §761.62(b) in the final rule, such that in some cases it may not be necessary to determine the PCB concentration or leaching characteristics of the waste. In those cases where it is necessary to characterize the waste, the sampling methodologies in subpart R are to be used. Subpart R is the revised Appendix III. Additionally, other sampling methodologies can be approved of by a risk-based application under §761.62(c).

Comment 10: A commenter suggested that EPA eliminate the requirement for a representative sample in §761.62(b)(1) and change the wording to require a sample which gives a conservative estimate ("biased toward showing leaching") of the leachability of PCBs and requires the sampling and testing of the source material of the PCBs, not the final material after it has been mixed with non-contaminated material. The commenter stated that non-remediation wastes can be non-homogeneous and difficult to sample in a representative manner.

Source: (C1-248)

Response 10: EPA has removed this requirement from §761.62(b)(1) in the final rule. All sampling for §761.62 is now discussed in subpart R, which provides three levels of random sampling. EPA's procedures in subpart R can provide a representative sample of a very heterogeneous waste stream, i.e., a waste stream with a wide variety in constituent materials with respect to particle size, particle shape, material density, mixing of component particles, proportion of components, and PCB content of components. Commenters did not propose alternate methods free of significant bias or extreme variation, nor provide data demonstrating that the EPA

proposal would result in decisions presenting an unreasonable risk of injury to human health or the environment. Additionally, if an alternate sampling methodology is desired, §761.62(c) allows for application for a risk-based approval for an alternate sampling method.

Comment 11: Several commenters requested the deletion or revision of the proposed 15 day notification requirement. A commenter stated that this should be an arrangement made between the generator and the disposer. One commenter stated that holding waste for 15 days prior to shipment would only increase the possibility of a release. The commenter suggested that EPA revise this requirement to allow notification to occur within 24 hours of shipment. Another commenter suggested deleting the written notification requirement for disposal of non-remediation waste found to leach less than 50 $\mu$g PCB/L. A commenter also suggested that EPA adopt a one-time notification to the disposal facility, with the requirement that the generator provide updated TCLP data to the facility quarterly. Several commenters stated that an adequate amount of space is not available to store waste during the 15 day notification period and, thus, were in favor of either a one-time or a rolling notification requirement. Additionally, a commenter requested that EPA make an exemption from the 15 day notification requirement for waste that is disposed of in landfills owned or operated by the same entity that generates the waste.

Source: (C1-062, C1-107, C1-141, C1-151, C1-161, C1-165, C1-179, C1-207, C1-222, C1-239, C1-242, C1-253, C1-260)

Response 11: EPA has retained this requirement in the final rule. It has been modified in response to the comments, and notice is not always required with each waste shipment. The 15-day notice requirement should not result in waste being retained on the site awaiting disposal. The disposer should anticipate the need to dispose of the waste and file the notice sufficiently in advance of disposal. Where temporary storage is necessary, §761.65(c)(9) provides for temporary storage of PCB remediation waste or PCB bulk product waste on-site prior to disposal. The following is the relevant text from the preamble:

> Generators of PCB bulk product waste must provide prior notification to PCB waste management facilities not having commercial PCB storage or disposal approvals. The notice must state that the PCB bulk product waste may include components containing PCBs at 50 ppm or greater. There are three options for determining the concentration of the waste: analysis of a representative sample of the waste in the shipment selected in accordance with subpart R; application of a general knowledge of the waste stream (or similar material) based on prior testing by the disposer or others; or the presumption that the unsampled, unanalyzed waste contains ≥500 ppm PCBs (see §761.50(a)(5)). For PCB bulk product waste disposed of under §761.62(b)(1), the notice must state that the waste is known or presumed to leach <10 µg/L PCBs. For PCB bulk product waste disposed of under §761.62(b)(2), the notice must state that the waste is known or presumed to leach ≥10 µg/L PCBs.
>
> In addition, §761.62(b)(4) requires different notification procedures for waste

disposed of under §761.62(b)(1) than for waste disposed of under §761.62(b)(2). For waste disposed of under §761.62(b)(1), notice is required only in advance of the first shipment from the same disposal waste stream. For example, a new notice would be required where a shredding operation changed its feedstock from automobiles to plastic-insulated electrical cables or to white goods (i.e., household appliances or industrial appliances, such as refrigerators, ranges, washers, and water heaters). A disposer of demolition waste would have to submit a new notice for demolition waste from a new demolition project. For example, where a disposer was delivering waste from a demolition project in more than one load, a notice would not be required for each load from that project. Where the disposer began delivery of waste from a different demolition project, a new notice would be required. For waste disposed of under §761.62(b)(2), notice is required in advance of the first shipment from the same disposal waste stream and with each subsequent shipment.

Comment 12: A commenter stated concern that although certain wastes that pass the TCLP test could be disposed of in a municipal waste landfill, the proposed rule would still require the handling, manifesting, and storage and transportation of such materials prior to disposal as PCB waste. Compliance with this requirement is costly. The commenter stated that RCRA does not require wastes that pass the leachability test to be handled, manifested or stored as hazardous waste. The commenter suggested that the proposed rule parallel all of the RCRA rules, not just a portion of them. The commenter recommended the following language: "§761.62 (5) PCB non-remediation waste found to leach less than 50 $\mu$g PCB/L, as measured by Toxicity Characteristic Leachate Procedure (TCLP), 40 CFR part 261, Appendix II, Method 1311 method, shall not be subject to the handling, manifesting, and storage and transportation requirements for PCB Wastes which are contained in this rule."

Source: (C1-107, C1-165)

Response 12: In the revised rule, EPA has stated that wastes disposed of under paragraph (b) of §761.62 do not have to comply with the requirements of subparts C (Marking of PCBs and PCB Items) and K (PCB Waste Disposal Records and Reports) of part 761. The final rule at §761.65(c)(9) also provides for temporary on-site storage of PCB bulk product waste in a facility that does not meet the requirements of §761.65(b).

Comment 13: A commenter stated that §761.62(b)(4) of the proposed rule states "The applicable record keeping provisions of §761.180 must be adhered to with regard to all sampling and analysis of PCBs under this section." The commenter stated that it was not clear which record keeping requirements EPA considers applicable as §761.180 requires the maintenance of a PCB Annual Document Log and Annual Records.

Source: (C1-147)

Response 13: In the final rule, EPA has revised paragraph (b). The record keeping requirements are now discussed in §761.62(b)(5). EPA now requires that written records of all sampling and analysis of PCBs or notifications made must be kept for 3 years from the date of the waste's generation. These records must be made available to EPA upon request. In the final rule, EPA does not reference §761.180 for record keeping requirements in the revised §761.62.

Comment 14: A commenter suggested that EPA add language under §761.1 which states, "Coatings manufactured and applied in accordance with American Water Works Association (AWWA) Standard C203, installed prior to 1 January 1990, are allowed," and, "Materials which contain less than 1 ppm of any PCB or less than 50 $\mu$g/L PCB when tested under the TCLP are not regulated under this section."

Source: (C1-260)

Response 14: While these types of materials may present a lesser risk when properly managed, certain disposal scenarios, such as open burning, could cause exposure to PCBs. Therefore, the final rule provides more disposal options for these materials than the existing rules, but does not exempt them from all disposal requirements. Consideration of use authorizations for these materials is being deferred to a future rulemaking.

Comment 15: A commenter stated that because PCBs and PCB materials in electrical cable are not easily visually discernable, EPA should require owners of non-liquid PCBs in cable insulation to chemically analyze the materials to determine whether PCBs are present before disposal.

Source: (C1-036)

Response 15: EPA has very little data that provides a representation of the original industrial production and use of non-liquid PCBs. EPA has recently done testing on some of these materials and some testing data was provided by other commenters. This testing data indicates the PCBs do not leach out of these materials when the test used to simulate disposal in a State-approved solid waste landfill is applied. The chemical analysis burden is far in excess of the risk of release to the environment from disposal of PCBs in rubberized and plasticized materials.

**§761.62(c) -- Risk-based disposal**

Comment 1: Commenters stated that the preamble to the proposed rule discusses §761.62(c)(4) on page 62800, in noting limitations the Regional Administrator may place on disposal of non-remediation waste that is not uniform in concentration. The text of the proposed regulation does not contain a paragraph (4).

Source: (C1-062, C1-242)

Response 1: The citation should have been §761.62(c)(2). However, EPA has revised paragraph (c) and this citation is not included in the preamble to the final rule. These provisions can be found in the text of the final rule at §761.62(c)(1).

Comment 2: Commenters stated that they supported the proposed risk-based option, but found it cumbersome to have Regional approval, rather than National approval. The commenters suggested revising the language of §761.62(c) similar to §761.61(c), which requires Regional approval when the disposal will occur in one EPA Region and requires National approval when the disposal will occur in more than one EPA Region.

Source: (C1-107, C1-165)

Response 2: EPA has revised §761.62(c) in the final rule, such that approval from an EPA Regional Administrator is necessary when disposal or storage will only occur in a single EPA Region and approval from the Director of the National Program Chemicals Division is necessary when disposal or storage will occur in more than one EPA Region.

Comment 3: A commenter stated that §761.62 does not require a disposal facility to contact the State, thus, a facility could receive EPA approval for disposal without contacting the state. The options in §761.62 do not provide for integration of RCRA and CERCLA, as the options in §761.61 do. The commenter suggested revising §761.62 such that it parallels §761.61.

Source: (C1-130)

Response 3: EPA has revised §761.62 in the final rule such that it contains some options consistent with PCB remediation waste. One option added to the final rule is the option of disposal in a RCRA Subtitle C landfill, permitted by the state to accept PCB waste.

Comment 4: A commenter suggested that the time frame to allow EPA approval for an application for risk-based disposal should be considered in the determination of compliance with notification, storage and disposal time frame requirements specified in §761.65.

Source: (C1-142)

Response 4: The final rule gives EPA the authority to approve storage methods other than those prescribed in §761.65, including extending the time limit for storage for disposal.

Comment 5: A commenter suggested that EPA include language which acknowledges that disposal of PCB non-remediation waste generated at CERCLA corrective action sites can be approved under the normal CERCLA decision making process without confusing the approval

process by the duplicative requirements.

Source: (C1-147)

Response 5: A TSCA approval is not required for the on-site cleanup and disposal of PCBs under the CERCLA Superfund program. Such an approval may be needed for CERCLA off-site actions involving PCBs.

Comment 6: Several commenters requested that EPA specify criteria and provide more detail regarding the process for obtaining risk-based disposal approvals. One commenter recommended adding a sentence to §761.62(c) that specifies that the application will be approved if it demonstrates that the proposed disposal method poses no unreasonable risk of injury to the



health or the environment, or if the method is equivalent to a disposal method that has already been approved.

Source: (C1-147, C1-161, C1-242)

Response 6: EPA has revised the preamble to §761.62, as well as the regulatory text, in the final rule such that more detail has been provided regarding the process for obtaining risk-based disposal approvals for PCB bulk product waste. In the preamble to the final rule, EPA states that the evaluation for each application will be based on whether the proposed storage or disposal method or location would pose an unreasonable risk of injury to health or the environment. EPA has also provided several examples of criteria that may be used in the evaluation for each approval. However, EPA does not specify the exact criteria that will be used for evaluation so as to provide for flexibility. In the revised §761.62 of the final rule, EPA reiterates that the application must contain information that the proposed method or location will not pose an unreasonable risk or injury to health or the environment. Additionally, paragraph (c) states that EPA may request any other information it believes is necessary to evaluate the application.

Comment 7: A commenter suggested that one should not have to go through the time-consuming risk-based approval process to receive authorization to use an alternative sampling protocol. The commenter stated that under EPA's approval, an authorization to use an alternative sampling protocol would have to be obtained every time a sample had to be collected. The commenter suggested that the risk-based disposal option should be used only when seeking a variance from the 50 ppb TCLP threshold established in §761.62(b).

Source: (C1-151)

Response 7: EPA asked for data and suggestions for alternative sampling plans. The commenter had an opportunity to provide and justify alternate sampling plans during the comment

period, but did not. EPA has revised the disposal requirements in §761.62(b) such that sampling is not always required for many of the more common PCB bulk product wastes. In addition, to clarify requirements and to make the requirements more straight forward, EPA has revised the sampling protocols, originally in Appendix III, in the final rule into subpart R. However, if these methodologies are not acceptable, an approval to use an alternate methodology must be obtained, as outlined in §761.62(c). An applicant wishing to avoid having to request a new approval each time a sample is taken should include in their application information on additional sampling to be conducted at a later time. However, EPA expects that most applications will be for a one-time sampling episode to characterize a waste stream to provide "historical" data, or for a method to address the continuous generation of waste having an extremely variable feed source, rather than sporadic sampling at irregular intervals.

Comment 8: A commenter suggested that EPA should require "risk-based thresholds as triggers for regulatory control throughout the disposal program". The commenter stated that EPA is inconsistent by stating that all wastes containing 50 ppm or greater PCBs are regulated for disposal, but then proposing that, because of the anti-dilution provision, non-remediation waste resulting from processing PCBs regulated for disposal are also regulated for disposal even when the resulting concentration of the processing wastes is less than 50 ppm. The commenter recommended that EPA require consistency with the anti-dilution provisions.

Source: (C1-205)

Response 8: PCB bulk product waste is defined as waste derived from manufactured products containing PCBs in a non-liquid state, at any concentration where the concentration at the time of designation for disposal was $\geq$50 ppm PCBs. The disposal requirements of §761.62(a) and (b) apply to these wastes. A disposer may request approval of an alternative, risk-based disposal approval under §761.62(c).

Comment 9: A commenter suggested that EPA apply the assessment approach (published August 1994 EPA 823-R-94-001) under a risk-based disposal option for PCB sediment remediation waste. The commenter stated that this approach considers the combination of all chemical and biological effects rather than specifying single chemical action and clean-up levels.

Source: (C1-219)

Response 9: Risk-based disposal approvals under §761.62(c) are issued on a case-by-case basis. A disposer's application for a risk-based approval may reference the cited risk assessment approach, or any other supportable grounds for analyzing risks from the particular disposal method proposed.

Comment 10: A commenter stated that the preamble contains a reference to "extending the risk-based philosophy of the disposal requirements for municipal sludges and dredged materials under proposed §761.60(a)(5)." The commenter questioned why EPA would discuss sludges and dredged materials in the section of the preamble that concerns non-remediation waste. Additionally, §761.60(a)(5) does not exist.

Source: (C1-242)

Response 10: This statement should have referred to §761.60(a)(5) of the existing rules. Section 761.60(a)(5)(iii) of the existing rules allows case-by-case, risk-based disposal of these materials. This concept has been included in §§761.61(c) and 761.62(c) of the final rule.

**§761.63 -- PCB Household Waste Exemption**

Comment 1: Commenter questions EPA's ability to enforce the PCB household waste exemption provision, particularly if office buildings, during routine maintenance, unknowingly and inadvertently discard light ballasts in the municipal waste stream.

Source: (C1-027)

Response 1: EPA assumes that owners of light ballasts either know or have made a determination that the potting material in the ballasts is not regulated for disposal (i.e., contains PCBs at less than 50 ppm). It is the building owner's responsibility to ensure that PCBs are managed in accordance with all applicable federal, state and/or local requirements. Lack of knowledge is not a defense for a violation of the regulations.

Comment 2: EPA should re-evaluate whether imposing a 25-ballast limit is enforceable.

Source: (C1-036)

Response 2: The proposed provision has not been included in this final rule.

Comment 3: EPA should include commercial office buildings in the PCB household waste exemption (HWE). Commenter questions whether an exemption should be developed for households which are the major source of white goods and suggests EPA consider removing the definition and disposal restrictions for non-remediation waste (aka PCB bulk product waste) or apply standards to households.

Source: (C1-027, C1-028, C1-131, C1-222)

Response 3: EPA does not agree that homeowners should be held to the same set of disposal requirements as commercial and industrial entities that own, use or process PCBs and PCB Items. The PCB household waste exemption continues the Agency's long-standing policy of recognizing that certain regulated items will be found in individual households and that door-to-door enforcement of environmental regulations for relatively small amounts of regulated material is both impracticable and impossible (see the TSCA provision at §761.60(b)(2)(ii) concerning the disposal of PCB Small Capacitors and the RCRA household waste exclusion at §261.4). Providing a mechanism to homeowners for disposing of regulated waste is a much better option than ignoring the likelihood that these wastes could be handled indiscriminately and potentially result in needless personal and environmental harm.

Comment 4: EPA may lose the opportunity to compel remediation in those scenarios where well pumps contain a leaking PCB capacitor; EPA should clarify its intent regarding leaking small capacitors.

Source: (C1-094)

Response 4: EPA disagrees. A leaking small capacitor is considered to be illegal disposal. §761.3 states that "...Disposal includes spills, leaks, and other uncontrolled discharges of PCBs..." EPA can still pursue violations associated with the improper disposal of PCBs and compel remediation.

Comment 5: EPA should explicitly state that: 1) municipal collection programs and treatment and storage facilities that can satisfy the exemption criteria can operate under the PCB household waste exemption, and 2) landfill and incineration requirements do not apply to PCB household waste (commenter collects household waste for municipalities).

Source: (C1-196)

Response 5: EPA agrees and has made the requested modification at §761.63.

Comment 6: EPA should include a requirement that written test results of the PCB concentration should be provided to the MSWL facility so that an informed decision can be made by the facility about accepting the waste (e.g., decision may impact post-closure development of the site, for example, as a public park).

Source: (C1-249)

Response 6: Although the provision at §761.63 does not require written test results, a MSWL interested in obtaining PCB test results, may certainly require that information prior to

accepting the waste.

Comment 7: Commenter feels EPA should include automobiles (both personal and fleet), used appliances collected by retailers and sold to scrap processors, and all items substantially the same as PCB household waste whether from commercial or private sources. Commenter offers revised definition for PCB household wastes and suggests that individual scrap metal processors with source control programs should not be viewed as a "regulated" entity.

Source: (C1-151, C1-253)

Response 7: EPA disagrees and in making revisions to the provisions at §§761.3 and 761.63 to codify a household waste exemption is excluding wastes that do not originate in temporary or permanent residences.

The second part of the comment regarding the "status" of scrap metal processors is best addressed by another provision of the rule; i.e., §761.79(b). Under this provision, activities such as chopping, filtering, spraying, scraping to remove or separate PCBs from contaminated surfaces do not require a disposal approval. EPA believes this provision eliminates the barrier that existed in the late 1980s when the scrapping industry detected PCBs in fluff as a result of processing household appliances and other items. The initial burden of ensuring compliance with this rule is placed upon the individual processor. A processor's non-compliance with these regulations would be subject to the assessment of a penalty.

Comment 8: If the PCB household waste exemption is not broadened to encompass commercial materials which are traditionally recycled by the scrap processing industry, the Agency should specifically authorize the processing of scrap, including motor vehicles, appliances and other scrap commodities by facilities having a viable source control program in place (i.e., shredding, baling or shearing of PCB Items which are excluded from the PCB household waste exemption would be authorized under TSCA).

Source: (C1-253)

Response 8: Activities traditionally conducted by shredding, baling and shearing are considered decontamination (i.e., separating PCBs from contaminated surfaces) under the provision at §761.79(b) and do not require a TSCA approval. The commenter is reminded that wastes resulting from the shredding, baling or shearing of PCB household waste which result in PCB-containing residue (i.e., fluff) are required to be handled pursuant to the disposal requirements for PCB bulk product waste under §761.62.

Comment 9: EPA should extend the PCB household waste exemption to individuals engaged in "do-it-yourself" activities which result in fluid waste when those wastes are managed

separately or by a collector who has a management system to track and identify the source of the waste.

Source: (C1-268)

Response 9: EPA disagrees. TSCA regulations concerning the collection and reuse (i.e., marketing and burning) of used waste oil containing 2-49 ppm PCBs can be found at §761.20(e). These requirements, in conjunction with applicable requirements under 40 CFR Part 279, currently establish procedures for the collection of used waste oil. The PCB household waste exemption does not apply to liquids.

Comment 10: Commenter would like EPA to require ballasts to be separated from construction and demolition debris; otherwise, processing the ballasts would result in contamination at the shredding site.

Source: (C1-272)

Response 10: Many states require small capacitors to be removed prior to shredding. In addition, the shredding industry has voluntarily established procedures to screen and remove such items. Construction and demolition debris which is contaminated with regulated levels of PCBs is required to be disposed of in a chemical waste landfill. The recycling of ballasts, although encouraged by EPA, is an individual decision.

**§761.64 -- Disposal of R&D Wastes**

Comment 1: Commenters requested that the 54 cu. ft./1000 kg limit/year on disposal of wastes generated as a result of research and development activities authorized under §761.30(j) and chemical analysis of PCBs (lab waste) be deleted. Commenters argued that keeping track of such a limit would be difficult for the labs, and that the proposed quantity limits would be restrictive to large volume labs, possibly discouraging comprehensive PCB sampling and discretionary remediation work. They suggested allowing non-liquid lab wastes resulting from the normal operation of laboratories to be disposed of as a remediation waste at its existing concentration, as long as no wastes from any other source were commingled with lab wastes for disposal.

Source: (C1-107, C1-139, C1-161, C1-165, C1-171, C1-260)

Response 1: The intent of the maximum quantity was to provide regulatory relief for individuals who generate small quantities of lab waste and to provide incentives to minimize generation of PCB lab waste. Based on these comments, EPA has determined that the cost of recordkeeping to demonstrate compliance with the annual maximum amounts is not justified in

terms of the potential increment of additional lab waste above those amounts that would be disposed of each year. Therefore, EPA has deleted the annual limit of 54 cubic feet in volume or 1,000 kg in weight from the final rule. EPA still encourages all disposers to practice lab waste minimization.

Comment 2: The commenters noted conflicting language between the preamble and the proposed rule. The preamble states that "all samples including extracted material, remain regulated for disposal but may be returned to the point of generation for disposal according to the concentration measured in the sample." But in §761.64 it states that the extracted portion of the sample is unregulated for disposal.

Source: (C1-107, C1-165)

Response 2: The final rule has been clarified to state at §761.64(a), "Portions of samples of a size designated in a chemical extraction and analysis method for PCBs and extracted for purposes of determining the presence of PCBs or concentration of PCBs are unregulated for PCB disposal under this part."

Comment 3: Sections §761.64 and §761.60(j) appear to be overlapping. They need clarification. Does §761.60(j) only cover R & D work while §761.64 only covers commercial PCB analytical wastes?

Source: (C1-139)

Response 3: Section 761.64 addresses laboratory wastes from research and development activities authorized in §761.30(j) as well as the chemical analysis required in part 761, including §§761.30, 761.60, 761.61, 761.62 and 761.79. EPA believes these two types of activities present similarly minimal risk because of the quantities and concentrations of the lab waste and the controlled environments in which they activities take place. Wastes from research and development for disposal, generated or used in accordance with §761.60(j) or another TSCA research and development (R&D) for PCB disposal approval, other than chemical analysis performed in as part of these approvals, is regulated for disposal in accordance with §761.60(j) or the other approval, respectively.

Comment 4: Several commenters recommended that EPA allow lab waste to be disposed of at its existing concentration. One suggested that the EPA allow samples (and their associated waste streams) that are analyzed for other constituents and are later found to contain PCBs be allowed to be managed at their existing concentration, not the concentration of PCBs in the original sample. Another commenter would like a provision stating disposal options to cover biological/toxicological waste generated from PCB research projects. The waste stream would

include carcasses, bedding and excretions. They also requested that the wastes be allowed to be disposed of in municipal, industrial or radiological landfills at their existing concentrations. Metabolic processes in these cases should not be considered dilution. Other commenters asked for clarification on decontamination and disposal of aqueous and organic solvents used in the analysis of PCBs.

Source: (C1-135, C1-139, C1-147, C1-178, C1-260)

Response 4: Aqueous and organic liquids, and non-liquid wastes (including non-liquid wastes generated from laboratory biological/toxicological studies conducted under §761.30(j)) covered by §761.64 may be disposed of under §761.61(a)(5). Disposal under §761.61 is based on the concentration of the lab waste at the time of disposal. Section 761.61(a)(5) allows decontamination under §761.79(b) or (c) as a disposal option for these lab wastes.

Comment 5: Requests that laboratory equipment dedicated to use in the analytical laboratory be considered unregulated for use and disposal, particularly in the case of GC/ECDs. Another commenter stated that the design and operation of the equipment prevents contamination from occurring. All of the sample injected moves through the instrument and the detector is vented to the atmosphere. If the instrument did not operate in this way, it would not produce valid data. Another commenter requests clarification of what is meant by the statement "analytical instrumentation is contaminated and therefore regulated if regulated PCBs are analyzed". The commenter would like to know what instrumentation is considered contaminated. Another commenter requests that the "EPA clarify that gas chromatographs may be re-used for non-PCB work without decontamination. Gas chromatographs essentially decontaminate themselves as an inherent part of their operation. The commenter stated that forcing industry to dedicate such expensive equipment solely for the purpose of analyzing PCBs is not necessary or cost effective.

Source: (C1-147, C1-163, C1-178, c1-185)

Response 5: The equipment is authorized for use in accordance with §§761.30(j) and (k). If PCBs $\geq$50 ppm or >10 $\mu$g/100 cm$^2$ remain on the equipment after it is no longer used for the analysis of PCBs, the equipment is regulated for disposal in accordance with §761.61. If the equipment is decontaminated or found to have PCBs below the levels in §761.79(b), the equipment may be reused without restriction in accordance with §761.20(c)(5).

Comment 6: Commenters recommended the restrictions on distillation apply to a specific laboratory or building instead of specifying a room. This would allow labs to take advantage of this disposal option in a safe, efficient and cost-effective manner, and to operate at a maximum rate. Another commenter stated that the distillation rate in paragraph (d)(2) should be determined by equipment, not by regulation. Another commenter requested that EPA allow distillation of

spent solvents containing PCBs for disposal as well as for re-use in order to avoid RCRA/PCB mixed waste issues. Another commenter requested that solvents be regulated for disposal at their existing concentration, to allow labs the option of using off-site solvent recyclers to dispose of low concentration PCB wastes. Finally, a commenter asked what the applicable concentration of PCBs is for disposal of still bottoms.

Source: (C1-147, C1-161, C1-178, C1-240, C1-260, C1-266)

Response 6: The final rule does not restrict the location of decontamination activities which includes distillation. There also is no restriction on the rate of distillation. In general, solvents and distillation still bottoms are regulated for disposal at their existing concentration. See §761.79(b) and (g).

Comment 7: Recommends that the EPA use a 5 day or 100 liter storage limit to allow large volume generators to operate in a more efficient manner.

Source: (C1-147)

Response 7: This limitation has not been retained at §761.64. Restrictions on the quantities of lab waste solvents contacting PCBs regulated for disposal and stored for disposal are regulated as any other PCB waste at §761.65.

Comment 8: Commenters requested clarification on provisions of the proposal stating that certain lab wastes are unregulated for disposal. Commenters asked whether portions of samples that are unregulated for disposal can be disposed of in a municipal or industrial waste landfill. They also asked that high surface area copper and other reagents be included among the cleanup materials that were proposed to be unregulated for disposal under §761.64(e).

Source: (C1-161, C1-178)

Response 8: EPA has revised and simplified the language of this section in response to this and other comments. "Unregulated for disposal" includes disposal in a municipal or industrial waste landfill, but does not include use. In the final rule at §761.64(b)(2) copper and other lab waste materials besides sulfuric acid and elemental mercury may now be decontaminated in accordance with §761.79. In accordance with §761.64(b)(1), lab waste solvents may be distilled in accordance with §761.79.

Comment 9: Requests and option to manage lab samples and expired standards of less than 1 liter that are between 50 and 500 ppm PCBs as RCRA wastes not TSCA. This lab waste would comply with all RCRA requirements except for Land Disposal Restrictions. This would

allow the samples to be composited with other lab waste streams under normal lab procedures (i.e., in 55 gallon drums) analyzed and the resulting mixture managed at the concentration level of the total drum contents.

Source: (C1-266)

Response 9: The final rule provides for several disposal options for non-liquid lab waste. Liquid lab waste samples may not be blended with non-liquids for purposes of avoiding disposal regulations. However, lab waste liquids such as samples and standards may be blended with like lab waste materials: organic solvents with organic solvents and aqueous solvents with aqueous solvents. These blended lab waste liquids may be decontaminated for purposes of waste minimization.

Comment 10: The commenter notes that §761.64(c) allows the decontamination of non-liquid lab wastes under §761.79. However it is not clear how §761.79 addresses these lab wastes. EPA should clarify whether non-liquid lab wastes must meet the definition of non-porous in order to be decontaminated."

Source: (C1-266)

Response 10: Other than the option to apply for an alternative decontamination procedure from the Regional administrator in §761.79(h), there is no option for the decontamination of non-liquid wastes other than non-porous lab waste surfaces. The final rule at §761.64(b)(2) allows the disposal of porous surfaces (non-liquid lab waste) in a facility permitted, licensed, or registered by a state to manage municipal solid waste subject to part 258 of this chapter or non-municipal non-hazardous waste subject to §§257.5 through 257.30 of this chapter. This option is likely to be more economical than decontamination.

Comment 11: Clarify the phrase "return to site of generation" and how it pertains to lab waste standard solutions. Must they be returned to the manufacturer for disposal according to the concentration of the standard?

Source: (C1-270)

Response 11: Waste standard solutions are lab waste and may be disposed in accordance with liquid PCB remediation waste (see §§761.64(b)(1) and 761.61(a)(5)(iv)). Returning waste standard solutions to "the site of generation" such as a standard manufacturer or other preparer of standard is not a disposal option for this lab waste. The provision for returning to a site of generation applies to waste samples sent back to the waste site for disposal with the rest of the waste from which it was taken.

Comment 12: A commenter would like to retain the option of disposing of waste as PCB waste if desired to expedite handling and disposal without further testing, treating or sorting.

Source: (C1-257)

Response 12: In the final rule it is not necessary to measure the PCB concentration when disposing of non-liquid lab waste.

**§761.65(a) -- Storage for Disposal**

Comment: Extending the 1 Year Storage for Disposal to 2 Years to Accumulate a Full Load. Several commenters indicated that the one year storage for disposal requirement should be extended to 2 years to allow for contracting for waste disposal or allowing generators to accumulate waste in amounts that permit cost savings. These cost savings would occur by allowing larger amounts, i.e., truckloads of waste, to be accumulated prior to shipment to a disposal facility.

Source: (C1-114, C1-122, C1-159, C1-161, C1-251)

Response: The Agency has amended the one year storage for disposal requirement by allowing generators to request extensions from the Regional Administrator or the Director, National Program Chemicals Division. The regulatory requirement does not prohibit using cost as a reason for requesting an extension. The regulatory language does provide some flexibility to the Regional Administrator or the Director, National Program Chemicals Division so cost could be used to obtain an extension to the one year storage for disposal requirement. Since the extension option is available, the Agency has not changed the requirement for one year storage for disposal to two years.

**§761.65(b) -- Radioactive Waste**

Comment 1: Nuclear safety standards. The commenters indicate that EPA has set out standards relating to nuclear safety. The standards for nuclear safety should be enforced by the appropriate Agency. Another commenter stated that they believe that PCB/radioactive waste should only be subject to NRC regulations.

Source: (C1-011, C1-161)

Response 1: The regulatory requirements set out in 40 CFR 761.65 relate to PCBs, not nuclear safety. The problem of PCBs being contaminated with radioactive material was raised by the Department of Energy in connection with their facilities. They indicated that if our storage for disposal requirements were followed for certain types of radioactive waste contaminated with

PCBs, a criticality issue could develop. In response to this issue, the Agency is modifying the storage for disposal requirements at §761.65(b) to allow, for instance, a curb that is less than 6" in height.

The Toxic Substances Control Act states that the term "chemical substance" does not include any source material, special nuclear material or byproduct material, as those terms are defined in the Atomic Energy Act and implementing regulations. However, materials such as naturally occurring radioactive, residual, accelerator produced and any material managed (or made) radioactive may not be subject to NRC regulations. Such material can also contain PCBs and may not be regulated by NRC.

This final rule has been developed in consultation with the Department of Energy and with the approval of the Nuclear Regulatory Commission.

Comment 2: Who makes 1-year extension notifications. The commenter, a contractor at a federal facility, questioned who needed to make the notification for the extension of the one year storage for disposal requirement for the federal facility: the generator (the federal entity to whom the EPA identification number was issued) or the contractor operator running the facility for the federal entity.

Source: (C1-183)

Response 2: The notification for the extension of the one year storage for disposal requirement can be made by either the federal entity or the contract operator for the federal entity.

**§761.65(b)(2) -- Alternate Storage of PCB Waste**

Comment: It is not clear whether the allowance to store in RCRA permitted facilities includes 90 day generator storage areas and/or satellite accumulation areas.

Source: (C1-242)

Response: The allowance to store in a RCRA permitted facility does not include the 90-day generator storage provision or the storage in satellite accumulation areas.

**§761.65(b)(5) & (b)(8) -- Storage Requirements for PCB Article Containers**

Comment 1: Commenter concurs with proposal to include Article Containers in §761.65(b)(5) and (b)(8); this is currently the commenter's business practice.

Source: (C1-188)

Response 1: EPA is finalizing the proposal.

Comment 2: Proposed use of the term "PCB Item" would include small capacitors and light ballasts; EPA should instead add the term "PCB Article Container" to §761.65(b)(5) and (b)(8).

Source: (C1-263)

Response 2: The commenter's proposed change does not alter the meaning of the regulatory language. The commenter seems to believe that EPA is imposing a new requirement that each individual article in an article container be dated. This is not the case. Provided an article container is dated with the date the first contained article was removed from service, each individual article contained is considered to be covered by, and subject to, the date on the article container. This has always been EPA's policy on §761.65(b)(8).

**§761.65(c)(1) -- Temporary Storage of Liquids >500 ppm PCBs**

Comment: Must an SPCC plan be in place regardless of the volume of oil stored?

Source: (C1-122, C1-136, C1-144, C1-147, C1-273)

Response: Yes. The existing PCB storage requirements amend the SPCC storage capacity requirements unless some fraction of the stored liquids are oils as defined by section 311 of the CWA (see §761.65(c)(7)(ii)). Any facility temporarily storing PCB liquids at 50 ppm or greater must have prepared and implemented a SPCC plan regardless of the volume of oil.

**§761.65(c)(6) and §761.60(b)(2)(vi) --**
**DOT Containers for Storage of PCB Waste**

Comment 1: EPA should retain references at §761.65 to specific DOT container types to ease compliance.

Source: (C1-027, C1-139)

Response 1: EPA believes such an approach would defeat EPA's objectives in amending the PCB rules, which are to provide flexibility to industry and to minimize the resource burden associated with updating the PCB regulations each time DOT modifies its requirements.

Comment 2: Old DOT specification containers (e.g., 17C and 17E drums) should be allowed for continued storage of PCBs, particularly in §761.65(b) storage areas. Such containers are adequate, and prohibiting their use would impose unnecessary costs.

Source: (C1-038, C1-043, C1-085, C1-136, C1-144, C1-147, C1-188, C1-198, C1-257)

Response 2: EPA agrees with this comment and has modified the final rule to allow the continued use of these containers in storage and transportation situations that are not regulated by DOT.

Comment 3: Allowing PCB/fissionable radioactive waste to be placed in non-DOT approved packaging invites unnecessary repackaging of the materials prior to transportation. Such repackaging increases the risk of exposure and release.

Source: (C1-047)

Response 3: This allowance is necessitated by the physical properties of the waste. Fissionable material must be specially stored in a way that does not promote nuclear chain reactions in the material. Packaging such waste in standard type DOT containers would often cause releases of radiation.

Comment 4: The container types specified for waste below 20 ppm is more restrictive than that allowed for above 20 ppm.

Source: (C1-179)

Response 4: EPA is imposing equivalent, not more restrictive, standards on waste below 20 ppm PCBs. Since DOT does not regulate waste below 20 ppm, EPA is specifying that container types that are required by DOT for waste above 20 ppm must also be used for waste below 20 ppm.

Comment 5: EPA should authorize the use of 17C and 17E containers for transportation until September 30, 2005.

Source: (C1-264)

Response 5: EPA is conforming to DOT provisions, which control the use of these containers for transport. As noted above, these container types may continue to be used

indefinitely for storage and transport activities not regulated by DOT.

## §761.77 -- Coordinated Approval

Comment 1: Commenter suggests that unless TSCA is willing to forego its rules and accept RCRA-style rules for PCB disposal, EPA should forego this rulemaking and use its discretion concerning enforcement in states that regulate PCBs for disposal.

Source: (C1-013)

Response 1: EPA disagrees. As the preamble to the final rule indicates, the TSCA PCB Coordinated Approval is not a federal mandate. In other words, there is no requirement to use the coordinated approval provision. The provision is there as a mechanism to avoid redundancy and wasted time and resources in obtaining a TSCA PCB approval when another, equally protective permitting process has addressed, or is about to address, the risks of injury to health or the environment associated with the mismanagement of PCB waste.

Comment 2: If the recommendation listed above is not adopted, the commenter suggests moving the authority for PCB disposal from TSCA to RCRA. It would result in one set of disposal rules for PCBs, States would have to modify hazardous waste programs to maintain their RCRA authorization and concurrent permitting would be eliminated.

Source: (C1-013)

Response 2: On the surface, it might appear that by moving the PCB disposal requirements from TSCA and placing them under the RCRA hazardous waste umbrella would simplify matters and eliminate confusion. This is not a novel concept; EPA has investigated this option on more than one occasion and has concluded that the costs, to both the regulated community and the Agency, and related statutory and administrative burdens outweigh the benefits.

Comment 3: Commenter indicates that he has a problem with being required to submit paperwork for a TSCA PCB Coordinated Approval and feels that TSCA will be used to review decisions made under other environmental statutes. The example cited by the commenter involved using the legal authority of a state, e.g., state RCRA program, and still being required to obtain approval under TSCA from the Regional Administrator.

Source: (C1-107, C1-165)

Response 3: This comment suggests that the coordinated approval concept is not well

understood. Currently, the primary authority for activities involving PCBs resides under section 6(e) of the Toxic Substances Control Act (TSCA), where implementing regulations prescribe the requirements (and in many instances, prohibitions) for the manufacture, processing, distribution in commerce, use, marking and disposal of PCBs. Other legislative actions dealing with issues related to chemical wastes and remediation activities have resulted in additional requirements as it relates to PCB waste (e.g., RCRA corrective action, CERCLA cleanups, NPDES discharges, air emissions, etc.). However, unlike many of these other programs, the TSCA PCB Program is not implemented under an EPA-approved state program. Under TSCA, PCB issues are regulated at the federal level and a choice does not exist as to which requirements must be met.

If the issue is whether and how PCBs can be manufactured, processed, distributed in commerce, used and disposed of, one must first look to TSCA. If the issue is a remediation issue, it may be addressed under TSCA, but if the PCB remediation activity is sufficiently large enough to warrant listing on the National Priority List, it may become a CERCLA issue and TSCA would be considered an "applicable, relevant and appropriate requirement" (ARAR). That is, the Superfund Program would look to TSCA before making a determination regarding aspects of the remediation project. On the other hand, if there is PCB contamination at a RCRA permitted facility, the issue might be addressed under a corrective action order. As a result, adequate and appropriate coordination has always been a factor in the management of PCB wastes.

The determination as to whether waste management documents issued under another statute are sufficient to reduce or eliminate risks can only be made on a case-by-case basis since waste management scenarios often vary from incident to incident or from site to site. To obtain this determination, EPA must first be asked to evaluate the non-TSCA prescription, as is often done for CERCLA and RCRA actions, for example.

Under the provision at §761.77, if the TSCA PCB waste requirements have been satisfied, the Regional Administrator could issue a TSCA PCB Coordinated Approval, which would be the equivalent of a TSCA PCB approval. On the other hand, if the process for issuing the non-TSCA approval did not include a substantive requirement that has to be met in order to get a TSCA approval, for example a trial burn was not required to obtain approval for an incinerator, the Regional Administrator could do one of two things. He could attach conditions (i.e., require certain actions be taken) before the non-TSCA approval could be accepted under the coordinated approval process. Or, he could take enforcement action against the owner of the incinerator if a TSCA PCB Approval for the disposal of PCBs has not been obtained.

EPA believes that state and other federal programs are protective of health and environment, even though a line-by-line comparison would identify differences in approaches. In order to assess the similarities between TSCA PCB and other requirements, TSCA officials will need to review non-TSCA waste management documents and determine to what extent those requirements reduce or eliminate unreasonable risks of injury from PCBs, and whether concerns commonly experienced in the management of PCB wastes have been addressed. TSCA officials will eventually be able to streamline this process and reduce the amount of time and effort required to process TSCA PCB Coordinated Approvals as they gain more experience with and insight into non-TSCA waste management activities.

Comment 4: Commenters would like to be able to submit a request for a TSCA PCB Coordinated Approval to EPA Headquarters and suggest that a special authorization under the new rule should be permitted for single, nationwide approvals.

Source: (C1-107, C1-165)

Response 4: EPA disagrees. Determinations regarding waste management activities can only be made on a case-by-case basis since waste management scenarios often vary from incident to incident or from site to site. A single, nationwide approval, therefore, would either have to be very general in nature or overly prescriptive. In either case, such a document may be inadequate to sufficiently remedy risks of injury to health or the environment from the exposure to PCBs.

Comment 5: Commenters suggest a TSCA PCB Coordinated Approval should be available only when existing non-TSCA permits do not address PCB contamination.

Source: (C1-107, C1-165)

Response 5: As in Comment #3 above, the commenters do not understand the coordinated approval provision. Since the result of granting a TSCA PCB Coordinated Approval is the equivalent of saying the non-TSCA document adequately addresses the risks associated with PCB wastes, a non-TSCA permit which does not address PCB contamination cannot be used for that purpose.

Comment 6: Commenter requests EPA clarify whether non-commercial storage facilities require a TSCA approval in order to be included in the coordinated approval process.

Source: (C1-147)

Response 6: The TSCA PCB Coordinated Approval is available only when a requirement exists for individuals to obtain EPA's approval under TSCA for their PCB activities.

Comment 7: Commenter expresses concerns regarding potential overlapping enforcement authorities with a TSCA PCB Coordinated Approval and suggests that EPA should develop rules (i.e., incorporate provisions in the regulatory language) stating which Agency or EPA Office has lead or secondary enforcement authority (i.e., eliminate redundant authorities and clearly define the roles, responsibilities and authorities of each Agency/Office).

Source: (C1-147)

Response 7: EPA agrees that clarification regarding enforcement authorities is

appropriate, but disagrees that such language is necessary in the regulation itself. EPA has the same rights to enforce violations of a TSCA PCB Coordinated Approval that it has to enforce violations of a TSCA PCB Disposal Approval. As a matter of policy, EPA believes that the authority that issued the non-TSCA waste document that serves as the basis for the Coordinated Approval should be the lead enforcement authority for violations of the conditions of that document. EPA, therefore, as a matter of policy, generally will consult with that authority prior to initiating enforcement action for violations of the Coordinated Approval. EPA is not required, however, to seek or obtain the agreement or concurrence of that authority prior to initiating enforcement action.

In considering this clarification, EPA also recognized that other scenarios may require clarification. Therefore, EPA has added a provision at §761.77(a)(3) which deals with changes in the conditions of a non-TSCA waste management document that has been used to obtain a TSCA PCB Coordinated Approval, and changes in the ownership of a facility for which a TSCA PCB Coordinated Approval has been issued. EPA is requiring that the Regional Administrator be notified in writing of all changes in the conditions of a non-TSCA waste management document which affect PCB waste requirements. The Regional Administrator should have in his possession a copy of the waste management document and all changes made thereto that affect the conditions for the treatment of PCB wastes when that document is used to replace PCB waste requirements found at 40 CFR part 761. As an implementation matter, the question will surely arise as to procedures for changes in ownership. Therefore, EPA has determined that changes in ownership at a commercial storage facility holding a TSCA PCB Coordinated Approval are to be handled pursuant to the procedures established at §761.65(j).

Comment 8: Commenter opposes EPA issuing TSCA PCB Coordinated Approvals for incinerators and landfills because of differences in technical requirements and costs already incurred by existing TSCA facilities. The commenter suggests a correlation exists between the commitment to compliance and environmental protection based on a facility's financial ability and that the coordinated approval proposal would undermine the relationship between investment and compliance as it relates to landfills and incinerators.

Source: (C1-178)

Response 8: EPA is not required to issue a TSCA PCB Coordinated Approval. A TSCA PCB Coordinated Approval will only be issued when the concerns, if any exist, associated with the efficacy of the non-TSCA disposal technology have been addressed and the use of that disposal technology will not result in an unreasonable risk of injury to health or the environment. The Regional Administrator may obtain any additional information which he determines is needed (§761.77(a)(1)(ii)(A)(1)) or, he may deny the request for a TSCA PCB Coordinated Approval (§761.77(a)(1)(ii)(A)(2)). As indicated in the response to Comment #3 above, if the process for issuing the non-TSCA approval did not include a substantive requirement that has to be met in order to obtain a TSCA approval, e.g., a trial burn was not required prior to obtaining approval for an incinerator, the Regional Administrator could attach conditions (i.e., require certain actions

be taken) before the non-TSCA approval could be accepted under the coordinated approval process (§761.77(a)(1)(ii)(B)).

EPA acknowledges that the TSCA PCB Coordinated Approval mechanism may not be appropriate for some disposal technologies. The concerns being raised by the commenter were considered prior to developing the proposal, and appropriate safeguards (as identified here) have been incorporated. However, to the extent that the use of a non-TSCA waste management document does not result in an unreasonable risk of injury to health or the environment, it becomes less necessary to devote limited TSCA PCB resources to developing a separate approval that will not result in a significantly increased level of protection. EPA disagrees with the commenter's assumption that a correlation exists between a facility's financial investment and its ability to comply with the regulations. EPA is less concerned that the financial investment made by facilities may be smaller than the investment by existing facilities as long as the Regional Administrator can make the determination that the facility is capable of disposing of PCBs in a manner that does not result in an unreasonable risk of injury to health or the environment. EPA wants to encourage the remediation of PCB environmental contamination as quickly and as efficiently as possible, in an environmentally responsible manner.

Comment 9: EPA received a number of inquiries regarding the interface between the TSCA PCB Coordinated Approval and RCRA and CERCLA permits.

Source: (C1-242, C1-266)

Response 9: The coordinated approval mechanism is available for those laws that are administered in whole or in part by the Administrator. The basis for this provision is found at TSCA section 9(b) which requires that other authorities eliminate or reduce the risk(s) to health or the environment to a sufficient extent. In order for a TSCA PCB Coordinated Approval to be considered a viable alternative, state RCRA waste management programs must actually regulate the management of PCB waste. In those states where RCRA facilities are not authorized to handle PCB wastes, the TSCA PCB Coordinated Approval is not an option unless appropriate RCRA permit modifications have been implemented. Then there are instances where a TSCA PCB approval is not required; i.e., for CERCLA PCB remediation activities such as an on-site PCB disposal project. In those instances, a TSCA PCB Coordinated Approval is not appropriate, necessary or required. However, for off-site CERCLA PCB waste management scenarios, not otherwise authorized by the CERCLA decision and enforcement document (e.g., Record of Decision), TSCA PCB waste management requirements would be viewed as being "applicable, relevant and appropriate" (i.e., ARAR) and the requisite coordination between the CERCLA and TSCA will occur (see the response to Comment #3). As a result of the preemption provision under Section 18 of TSCA, the TSCA PCB Coordinated Approval is also available to States that maintain authority over PCB waste management programs which are no less stringent in protection of health or the environment than the TSCA PCB requirements.

Comment 10: Commenter inquires how the RA can make a determination that some other waste management document is protective when the RA will not be getting the same type of information (or demonstration) generally provided to EPA when an individual is applying for a TSCA disposal approval.

Source: (C1-178)

Response 10: See the response to Comments #8 and 9.

**§761.79 -- Decontamination**

Comment 1: Scope/applicability. Commenters with PCB disposal authorizations opposed EPA "de-regulating" most decontamination activities due to the time and costs these companies had spent to obtain disposal authorizations. Some raised concerns about ensuring protection of health and the environment. One commenter wanted EPA to make clear that the decontamination standards are not an alternative to the disposal standards in §761.60 for PCB materials with specific disposal standards, such as PCB transformers, PCB capacitors, and debris. Two commenters further stated that such items may not be decontaminated without an alternate disposal authorization or unless an exemption is granted.

Others were very supportive of self-implementing decontamination procedures that did not require EPA alternate disposal permits/authorizations. However, some pointed to the need to clarify that decontaminated materials can be distributed in commerce for use, reuse, or disposal, and that these materials would not be regulated for disposal under Part 761 subpart D. Some wanted clarification that decontamination procedures could be used for porous surfaces for reuse, especially in-place building structures. One commenter asked whether existing disposal approvals would need to be modified by the EPA Regions to incorporate reuse conditions for decontaminated materials. Others wanted to know if existing disposal approvals covering these and other activities would need to be modified or whether one would be required to reapply for a new approval.

One commenter wanted EPA to allow the decontamination standards to be applied to decontamination of demolition and debris waste. Another commenter wanted EPA to include decontamination activities for reuse and disposal that occur in RCRA containment buildings to also be exempt from needing a PCB disposal authorization. A few wanted clarification on whether testing and decontamination would be required for equipment used in servicing electrical equipment, such as for oil collection which are used intermittently; they felt such an authorized use did not warrant decontamination after every use. One commenter wanted to be able to decontaminate natural gas pipe that is internally coated.

Some commenters wanted EPA to specify disposal options (e.g., a leachability based disposal option under §761.62(b)) for decontaminated materials including liquids and non-liquids, while others didn't want EPA to be that specific in §761.79(a).

Source: (C1-038, C1-055, C1-112, C1-113, C1-136, C1-144, C1-147, C1-155, C1-161, C1-165, C1-165, C1-171, C1-172, C1-179, C1-180, C1-186, C1-188, C1-189, C1-198, C1-200, C1-209, C1-212, C1-218, C1-239, C1-241, C1-242, C1-257, C1-260)

Response 1: In the final rule, EPA has made some modifications in §761.79 from the those proposed as a result of public comments and EPA's scientific studies. The Agency clarifies that: 1) decontamination standards and procedures can be used for purposes of disposal and decontaminated materials can be distributed in commerce and used or reused; 2) specified decontamination activities no longer need a PCB disposal approval; 3) materials meeting the applicable decontamination standards or procedures are unregulated for disposal under subpart D of Part 761; and 4) most wastes and residues from decontamination activities can be managed based on their existing PCB concentration. EPA is requiring that persons conducting decontamination activities comply with general environmental and worker safety standards in §761.79. Additionally, decontamination procedures do not supersede other applicable federal, State, and local requirements.

The decontamination procedures in §761.79 do not apply to all wastes. These procedures can be used for decontamination of: liquids; non-porous surfaces; recent spills to concrete; coated non-porous surfaces where the coating is removed as a part of the decontamination procedure; and metal components of electrical equipment (e.g., metal cans from transformers (casings), core laminations from transformers, and bare metal coil from transformers). However, the decontamination procedures for non-porous surfaces do not apply to intact electrical equipment such as transformers, voltage regulators, capacitors, and rectifiers. The surface areas in this kind of equipment are very large and in many cases there are numerous laminations with a high contact, low volume space limiting the solvent contact necessary for complete decontamination. Additionally, porous components cannot be adequately decontaminated. The decontamination procedures are not appropriate for or applicable to: 1) bulk PCB remediation waste as described in §761.61(a)(4), which includes wastes such as soil, debris, dredged materials, sludges, and sediments; 2) PCB bulk product waste (as defined in §761.3) that is non-liquid bulk wastes or debris, such as building demolition wastes and automobile shredder fluff; and 3) most porous surfaces and porous materials such as wood or paper. These materials can generally only be disposed of in accordance with Part 761 subpart D or a PCB disposal approval under §761.60(e); however, in some rare cases, an alternative decontamination approval may be an option under §761.79(h).

Persons with existing disposal approvals will not need to reapply to conduct new or additional decontamination activities that are covered under §761.79; they can simply follow the regulations. For those who have disposal approvals for decontamination activities that will be exempt as of the effective date of the final rule, they should request EPA to modify their disposal approvals to relieve them of any unnecessary responsibilities.

More specific comments and responses are discussed further below.

Comment 2: Anti-dilution rule and decontamination. Some commenters wanted

clarification that the anti-dilution provisions do not apply to decontamination residues whether non-liquids or liquids, i.e., that all decontamination residues may be disposed of based on actual concentration rather than the concentration of the material that was decontaminated. Commenters wanted clear prefatory language in §761.79 on this point. One commenter said that the decontamination provisions were contrary to the anti-dilution provisions.

Source: (C1-113, C1-178, C1-212, C1-242)

Response 2: The Agency has made it clear in the preamble that it is finalizing several variances to the anti-dilution provisions while retaining the original provision to ensure that intentional dilution does not otherwise occur. One of these variances is decontamination. Thus, the anti-dilution provisions do not apply to decontamination liquid or non-liquid residues except those identified in §761.79(g)(2). Most wastes and residues from decontamination may be disposed of based on the existing PCB concentration in the waste/residue per §761.79(g). As an alternative to disposal, wastes and residues may be decontaminated in accordance with §§761.79(a) and (g).

Comment 3: Notification of decontamination. A commenter said that EPA should require notification of decontamination activities so EPA is able to monitor compliance with the regulations. Another commenter wanted EPA to clarify whether existing generators need to notify if they conducted decontamination activities, but this commenter felt that this was not necessary.

Source: (C1-055, C1-242)

Response 3: In the final rule, EPA is not requiring persons conducting the decontamination procedures specified in §761.79 to notify EPA or to obtain a PCB disposal approval. EPA believes that these decontamination activities are standard industrial practices with low environmental or health impacts when the general environmental and worker safety provisions in the decontamination section are followed, i.e., preventing direct PCB releases to the environment and protecting workers against dermal or inhalation exposure of PCBs.

Comment 4: New generators. A number of commenters said that EPA's proposed language in §761.79(a) stating that the person conducting decontamination activities was a "new generator" was problematic as contractors performing decontamination work would be discouraged from doing this work or would raise prices due to liability concerns. One person said that the decontamination contractor should be able to use the customer's generator identification number because the contractor was acting on behalf of the customer. Others questioned what this term meant for those who were already generators and whether EPA expected existing generators to file a notification for decontamination activities which they felt was unnecessary.

One commenter stated that because EPA allowed solvents to be used repeatedly for

decontamination until reaching 50 ppm PCBs, a person should not be considered a generator if the PCB concentration never reached 50 ppm.

Source: (C1-111, C1-112, C1-147, C1-148, C1-161, C1-178, C1-242)

Response 4: EPA has dropped the proposed language regarding "new generator" status for persons conducting decontamination activities because they are no different than other generators. The Agency is not requiring a new generator notification from existing generators; additionally, a PCB disposal approval is not needed for conducting the decontamination activities specified in §761.79(a).

On the issue of generator status, either the contractor or the customer can be the generator based on what is worked out in their contract. Additionally, a person will not be a generator if the solvent used in decontamination contains less than 50 ppm PCBs.

Comment 5: Record keeping. Some commenters were supportive of the proposed record keeping requirements in §761.79(a)(3) and the flexibility to maintain records at the decontamination site or another central facility. One commenter raised concerns about the burden of records to the decontamination of hand tools or sampling equipment that is used and decontaminated daily or several times a day. Another person stated that the decontamination process for a particular type of surface should be documented but not every individual surface that is decontaminated. One commenter pointed out the need for consistency on specifying the types of records needed and clarifying that the requirement to substantiate performance-based decontamination should apply to any "person" as defined in the regulations rather than "anyone" as proposed.

Source: (C1-062, C1-147, C1-161, C1-180, C1-225, C1-257)

Response 5: EPA has retained the proposed record keeping requirement now at §761.79(f) and clarified that records are only required to be maintained for 3 years after decontamination that requires confirmatory sampling (e.g., wipe test results) under §761.79(b). The records must show sampling locations and analytical results and can be retained at the site of decontamination or elsewhere provided copies are made available to EPA in a timely manner, upon request. For performance-based decontamination under 761.79(c), EPA is not requiring confirmatory sampling. However, EPA has clarified that "any person" must retain records for three years to document compliance with the decontamination procedures(e.g., records, photographs, video recordings, etc.) per §761.79(f)(2).

Regarding records of decontamination of hand tools and equipment which is conducted on a daily basis, these activities would most likely be conducted under the performance-based procedures in §761.79(c)(2) and the record keeping requirements in §761.79(f)(2) are met as discussed above. However, daily records are not necessary.

EPA agrees that a person need not keep records for individual surfaces when decontaminated and stored on site; persons may keep records that groups of materials or pieces of

equipment were decontaminated. However, there should be a record that a material has been decontaminated before it is sent off- site.

Comment 6: Distillation. One commenter stated that distillation should not be an exempted decontamination activity because it is currently regulated and if exempted, such units may not be closed properly. Other commenters supported distillation as an exempted decontamination activity because of the reduced administrative burden; they further stated that this would support waste minimization efforts. These commenters said that air release should not be a concern provided this activity was covered by a state air permit. Another person said that EPA could easily establish performance standards for distillation to address any concerns, but noted that the proposed requirement to meet all federal, state, and local requirements would minimize any potential distillation release concerns.

Source: (C1-055, C1-147, C1-161, C1-242)

Response 6: EPA has added distillation to the list of decontamination procedures under §761.79 which do not need a PCB disposal approval. The Agency agrees with comments that potential air release concerns associated with distillation will be adequately addressed by the Clean Air Act and any other federal, state, or local requirements (e.g., RCRA).

Although final closure plans that would otherwise be required under a PCB disposal approval, will no longer be needed for distillation units used for decontamination, operators of distillation units will still need to properly close the unit when decontamination activities are terminated, i.e., decontaminate the unit or manage it as a PCB waste.

Comment 7: Other decontamination methods. A commenter requested that EPA expand the list of physical separation methods to allow for additional methods that do not involve distillation, heat, or chemical reactions. Others wanted EPA to include wire chopping which is used in the scrap processing and recycling industry in order to clarify that such operations are not subject to PCB disposal permits/authorizations.

One commenter felt that all decontamination methods should be allowed without disposal approvals. The commenter said that EPA stated in the proposed preamble that any decontamination activity did not need a disposal approval but limited the types of decontamination activities in the regulations. The commenter supported adding distillation. One commenter wanted EPA to clarify that other decontamination methods such as filtering, soaking, wiping, stripping of insulation, chopping, scraping or use of abrasives to remove or separate PCBs from contaminated surfaces or liquids never required a disposal approval. Another commenter wanted clarification on decontamination of structures that do not contain remediation waste, e.g., whether abrasive blasting of old paint to prepare a metal surface for new painting would be decontamination.

One commenter stated that there were a number of decontamination methods that EPA should consider and provided information on: 1) $CO_2$ pellet cleaning process; 2) thermal

desorption; 3) strippable coatings; 4) chemical extraction; 5) physical abrasion; 6) scarification; 7) impervious coatings; 8) hydroblast; 9) ultrasonic solvents; and 10) surfactant cleaning. Another commenter wanted a regulatory provision that would allow EPA regions or headquarters to approve additional decontamination methods, in particular for non-porous surfaces.

Source: (C1-139, C1-147, C1-165, C1-186, C1-242, C1-253, C1-253, C1-257)

Response 7: EPA has added distillation, scarification of surfaces, and wire chopping to the list of as decontamination procedures that were proposed under §761.79. The decontamination methods that no longer require a PCB disposal approval now include: chopping (including wire chopping), distilling, filtering, oil/water separation, spraying, soaking, wiping, stripping of insulation, scraping, scarification or the use of abrasives or solvents to remove or separate PCBs from contaminated non-porous surfaces, concrete or liquids. EPA has included methods where one can more easily contain PCB releases to environment and protect workers from dermal exposure or inhalation of PCBs. Other specific methods mentioned in the comments, such as: $CO_2$ pellet cleaning, physical abrasion, surfactant cleaning, ultrasonic solvents, strippable coatings, and hydro blasting would fit within some of the general decontamination categories.

EPA did not include impervious coatings, chemical extraction, and thermal desorption (which oxidizes PCBs) as suggested by one commenter because the Agency did not believe there would be a way to easily contain a PCB release to the environment or because the efficacy of the suggested method was not demonstrated. Persons wishing to conduct decontamination methods not covered by the categories in §761.79(a) must apply in writing to the Regional Administrator in the region where the activity will occur in accordance with the provisions of §761.79(h). Each application must describe the material to be decontaminated and the decontamination method, and demonstrate that the proposed method is capable of decontaminating the material to the levels set out in §761.79(b). For performance- based decontamination procedures, however, a proposed validation study to confirm performance must be included. EPA may request additional information and will issue a written decision on each application if EPA believes the proposed activity will not pose an unreasonable risk of injury to health or the environment. Any procedure or method needing approval under §761.79(h) may not be conducted until EPA issues its written approval.

Comment 8: Kerosene and other solvents. Commenters had a variety of suggestions regarding acceptable solvents for decontamination purposes. Some stated that EPA should not specify solvents because that would limit flexibility. Others wanted EPA to provide a list of solvents that meet the 5% solubility requirement or to state what test data are needed to support using a particular solvent. One commenter recommended that terpenes and terpene alcohols be recommended for use as decontamination solvents because these materials have similar properties to petroleum solvents and are natural products which are biodegradable. Another commenter requested that EPA allow the use of cleaning products, primarily aqueous detergents, which may not meet EPA's requirement that PCBs to be at least 5% soluble in a decontamination solvent, but which had a proven record in removing PCB contamination from solid surfaces. One commenter wanted EPA to allow the use of xylene, toluene, and other solvents in which PCBs are

readily soluble for decontaminating non-porous surfaces because these solvents are already allowed for draining and flushing of PCB Articles prior to disposal in a chemical waste landfill under §761.60.

With respect to kerosene, many commenters had concerns about its use and safety in certain applications. Some urged that other solvents, including chlorinated solvents which may be more aggressive cleaners, and other hydrocarbons such as diesel fuel for decontaminating air compressors, be considered acceptable for cleaning non-porous surfaces. Another commenter questioned the 5% solubility criterion because there are other factors (e.g., toxicity, volatility, viscosity, cost, recovery potential from pipes, etc.) that were considered more relevant to selecting a solvent for decontamination.

A commenter suggested that EPA add a definition in §761.3 for "decontamination fluid" rather than specifying a particular solvent or group of solvents for decontamination, and a definition was provided. One commenter wanted a method to petition EPA for using other solvents without involving rulemaking.

Source: (C1-001, C1-046, C1-055, C1-107, C1-122, C1-134, C1-136, C1-142, C1-144, C1-147, C1-161, C1-154, C1-155, C1-165, C1-171, C1-178, C1-180, C1-186, C1-198, C1-209, C1-229, C1-241, C1-254, C1-255, C1-257, C1-273)

Response 8: EPA agrees with many of these commenters and has allowed for the use of other solvents in addition to kerosene for performance-based decontamination of non-porous surfaces contaminated with mineral oil dielectric fluid (MODEF). Although EPA has not tested the solubility of PCBs in terpenes and terpene alcohols, EPA assumes that PCBs are soluble at greater than or equal to 5% in these solvents. EPA has included these solvents as performing equivalent to kerosene due to the similarity of solvent properties between kerosene and the terpenes and terpene alcohols.

EPA conducted scientific studies to evaluate decontamination of non-porous (impervious) surfaces with aqueous-based solvents. The success of EPA's limited performance-based validation testing convinced EPA to provide a self-implementing procedure under §761.79(d)(4) to qualify additional performance-based decontamination fluids. The testing and validation criteria for these fluids have been included as subpart T of Part 761 and reflect the successful testing EPA performed through a contract laboratory. These procedures may also be followed for decontamination of non-porous surfaces contaminated with PCB liquids other than MODEF. Hence, EPA does not see the need for adding a definition for decontamination fluid.

Comment 9: Triple rinsing. A commenter asked EPA to clarify that triple rinsing is still acceptable as a decontamination method. Also, a commenter wanted clarification that confirmation sampling is not needed for triple rinsing. Others pointed out that based on the proposed decontamination procedures, this section should be supplemented with a provision allowing any decontamination procedure to be used if the wipe sample standard of 10 micrograms/100 $cm^2$ can be met or the proper procedure is followed.

Source: (C1-111, C1-161, C1-164, C1-242)

Response 9: Triple rinsing as described at §761.79(c)(1) is still allowed as a decontamination procedure for containers. Confirmation sampling is not needed for performance-based procedures under paragraph (c) per a new §761.79(f)(2). One could use any decontamination procedure to meet the measurement-based standard (e.g., 10 micrograms/100 $cm^2$) for non-porous surfaces in §761.79(b) as an alternative to triple rinsing.

Comment 10: Decontamination levels/use of water. Most commenters stated that EPA's proposed limit of 0.5 micrograms per liter for water was not appropriate in cases where the discharge would be subject to different permit or concentration limits for discharges under the Clean Water Act (CWA) National Pollutant Discharge Elimination System (NPDES) in 40 CFR 117 or indirect discharges to Publicly Owned Treatment Works (POTWs) authorized under approved pretreatment programs because these standards and permit conditions were set with prior public comment and justifications. Other commenters wanted clarification of the impact of the proposed 0.5 microgram per liter limit for water at facilities that had a higher limit set under the facility's PCB disposal approval. One commenter, however, supported EPA's proposal because of varying and sometimes more stringent state requirements. One commenter said that a risk-based approach should be used to set the water limits as in the PCB Spill Cleanup Policy, e.g., drinking water standards would not be used where there would be no drinking water uses.

Some commenters wanted clarification on the applicability of the 0.5 ppb standard for non-potable water uses such as in a fire suppression system, closed loop cooling or other similar uses where such a standard was not needed and wanted a higher number. One person suggested a 3 ppb standard in such cases because they stated that EPA considered this an acceptable discharge limit in PCB disposal approvals. One commenter raised the need for setting decontamination limits for using water in dust control at remediation sites.

Source: (C1-027, C1-147, C1-155, C1-161, C1-162, C1-185, C1-207, C1-209, C1-241, C1-242, C1-254, C1-209)

Response 10: EPA has finalized the PCB decontamination limit for water of $\leq$0.5 micrograms PCBs per liter (i.e., approximately $\leq$0.5 ppb PCBs) for unrestricted use at §761.79(b)(1)(iii). However, EPA agrees with setting different limits for some water uses and has provided for higher PCB concentration limits for water in the decontamination, use and disposal provisions of the rule.

According to the decontamination standard in §761.79(b)(1)(ii) and the disposal requirements at §761.50(a)(3), EPA is allowing discharge of water containing PCBs to treatment works as defined in 40 CFR 503.9(aa); to navigable waters at <3 micrograms per liter (approximately <3 ppb); and to facilities which discharge to surface waters in accordance with the applicable Clean Water Act (CWA) standards and permit limits under section 402 or 307(b) of the CWA. Additionally under §761.61(a)(5)(iv), liquid PCB remediation wastes may be decontaminated to the levels specified in §761.79(b)(1) or (2).

Under the decontamination standard in §761.79(b)(1)(i) and the use provisions at §761.30(u)(3), water meeting the decontamination standard of ≤0.5 micrograms PCBs per liter may be reused without restriction. In §761.30(u)(4), water containing less than 200 micrograms PCB per liter (i.e., <200 ppb PCBs) may be used for non-contact uses, such as cooling water, in a closed system where there are no releases.

Comment 11: Organic liquids (<2 mg/L). Commenters generally supported the proposed standard for organic liquids, but some suggested that EPA change the limit for organic liquids of <2 mg/L to mg/Kg because the volume is dependent on the specific gravity of the liquid and concentration by weight is more conventional and consistent with EPA methods. One commenter recommended that mg/L be used for aqueous matrices only; otherwise, mg/Kg should be used.

A commenter raised a concern about a possible conflict between the proposed §761.79 (a)(1) and (h) for hydrocarbon solvents. In paragraph (a)(1), the hydrocarbon solvent may be decontaminated per the standards in §761.79; however, paragraph (h) says the decontamination standards for organic liquids containing PCBs do not apply to remediation wastes. Commenters wanted EPA to allow the same decontamination levels for all hydrocarbon solvents regardless of use and to delete the exception for remediation. Others wanted clarity regarding what is covered as an "organic liquid" subject to the 2 mg/liter standard.

Source: (C1-107, C1-148, C1-161, C1-165, C1-178, C1-241, C1-242)

Response 11: EPA has revised the organic liquids limit from less than 2 milligrams per liter (mg/L) to less than 2 milligrams per kilogram (mg/kg) by weight to be more consistent with the PCB concentration measurements as required at §761.1(b)(2). "Organic liquids" include non-aqueous liquids such as hydrocarbon solvents. EPA is also applying this decontamination standard of <2 mg/kg to non-aqueous inorganic liquids.

Additionally under §761.61(a)(5)(iv), liquid PCB remediation wastes may be decontaminated to the levels specified in §761.79(b)(1) or (2).

Comment 12: Non-porous surface standard(<10 µg/100 $cm^2$). Commenters said that the proposed decontamination standard of <10µg PCB/100 $cm^2$ in §761.79(d) for non-porous surfaces was more stringent than the PCB Spill Cleanup Policy and current regulations (e.g., allowing certain materials containing between 10 and 100µg/100 $cm^2$ to be decontaminated and encapsulated). One commenter wanted EPA to allow encapsulation and alternate clean-up levels. The Department of Defense (DOD) wanted EPA to add the Spill Cleanup Policy level of 100µg/100 $cm^2$ for industrial areas because access to DOD equipment and vessels is restricted and controlled; DOD provided exposure data to support its claim. DOD agreed with a 10µg/100 $cm^2$ limit for areas designated for high contact living areas such as food preparation and eating, crew bunks, and office furniture. Other commenters supported the concept of higher concentration levels for restricted access, low-contact outdoor surfaces.

Commenters stated that the standard in paragraph (d) which required using a wipe test

was not feasible for either: 1) small equipment or parts with surface areas <100cm$^2$; or 2) equipment that has irregular surfaces because a 10 cm by 10 cm template for the wipe test does not work in these cases. Another problem raised was equipment that contained a complex of piping or tubing that is contaminated with PCB liquids but which is not accessible without dismantling a shell or internal parts (e.g. meter devices). Alternative regulatory language was provided to allow for decontamination procedures involving draining or removing the free-flowing liquids, submerging equipment or filling the tubing or piping with decontamination solvent for 15 hours at 20 degrees Centigrade or greater, and draining and disposing of the solvents properly with no confirmation testing required.

Source: (C1-107, C1-112, C1-134, C1-154, C1-165, C1-179, C1-207, C1-242, C1-254)

Response 12: The intent of the decontamination standards is to reduce the PCB concentration to a level that is safe if the material is subsequently used in an unrestricted manner or disposed of in a non-PCB disposal unit. In general, EPA was not attempting to establish levels and conditions for a use authorization for restricted uses of materials with the exception of water which was discussed in Comment/Response 10. Clean-up of low occupancy sites is discussed in §761.61.

For materials where a wipe test is not feasible or a submerge and soak method is more appropriate, persons may use the self-implementing performance provisions in §761.79(c), or (d)(4) and subpart T of Part 761. Other methods for decontamination or sampling may be approved under the conditions specified in §761.79(h). Also, alternative disposal methods for destroying PCBs may be pursued in accordance with §761.60(e), or under a risk-based approval in §761.61(c) for PCB remediation (non-porous surfaces) waste.

Comment 13: Porous surfaces. Commenters asked what decontamination standards applied to surfaces that did not meet the definition of "non-porous" in the proposed rule. One raised concerns about inadequately decontaminated surfaces being introduced into commerce for reuse while another said that decontamination procedures were needed to allow for continued use of in-place building structures. A commenter stated that the decontamination levels for continued reuse of non-porous materials should be based on the risk of exposure in that reuse.

Another commenter raised concern with respect to natural gas pipelines that are internally coated as well as sealed concrete, which if considered "porous" would not be allowed to be decontaminated thereby negating beneficial and cost-effective changes for natural gas pipelines. One commenter asked for a standard for painted tanks (e.g., no decontamination needed if it passes a wipe test) which would be "porous" under the definition in the proposal. One suggested a double wash/rinse procedure used in the Spill Cleanup Policy at §761.125 with wipe tests; the concern was that porous surfaces that were contaminated in the past would need to be removed. Others raised the issue of allowing decontamination of surfaces like sealed building stone or aggregate concrete, rubber tires and painted metal in remediation or rented equipment, so that once this equipment is decontaminated, no PCB use or disposal restrictions apply. A commenter

suggested a decontamination standard of 100 µg/100 $cm^2$ for smooth, low contact, porous surfaces.

Source: (C1-046, C1-134, C1-137, C1-154, C1-055, C1-164, C1-180, C1-188, C1-192, C1-199, C1-227, C1-242)

Response 13: In response to comment, EPA has added a decontamination standard for concrete which has been contaminated within 72 hours of an initial spill of PCBs (see §761.79(b)(4)). This standard is the same as the decontamination standard for non-porous surfaces of 10 micrograms/100 $cm^2$ or less. EPA has not established decontamination levels for other porous materials such as wood or for older spills on concrete because of the wide variety of porosity of these materials and the likelihood that the materials have absorbed PCBs to an extent that the PCBs cannot be adequately removed. These contaminated porous materials may be managed in accordance with the continued use provisions of §761.30(p) or the PCB disposal provisions in §761.60 and §761.60(e) and §761.61(a)(5)(iii) for bulk materials rather than surfaces. Some porous materials may qualify as PCB remediation waste subject to the §761.61(c) or as PCB bulk product waste subject to §761.62(c) risk-based disposal provisions.

Comment 14: Mineral oil standards and PCB Spill Clean-up Policy. Commenters stated that EPA should establish a less strenuous decontamination procedure for materials that have been in contact with mineral oil containing less than 500 ppm PCBs and either make the standard less rigorous or cross-reference the standards in §761.125 for the clean-up of spills. Another commenter stated that other PCB contaminated liquids should be addressed and that the procedure shouldn't be limited to soaking situations because there were cases where the exterior of machinery was exposed to PCB contaminated liquids.

Source: (C1-009, C1-144, C1-165, C1-198, C1-257)

Response 14: EPA believes that it has provided a sufficient variety of decontamination options for materials contacting mineral oil containing <500 ppm PCBs in the decontamination standards and procedures in §761.79, and, where applicable, in §761.125 for spill clean-up. None of these methods is as "strenuous" as for materials in contact with PCBs at ≥500 ppm. Any decontamination procedure in §761.79 can be used, so long as achievement of the applicable decontamination standard in §761.79(b) is verified by sampling. In addition, the self-implementing decontamination procedures in §761.79(c) are applicable to some types of PCB Items and do not require confirmatory sampling.

The PCB Spill Cleanup Policy, which was strongly supported in the comments, was the first use of expanded decontamination provisions. This rulemaking is a further expansion of the Policy and is based on the success and acceptance of the Policy. As an example, all decontaminated contact materials, except impervious(non-porous) surfaces in §761.125 require confirmatory sampling. However, in §761.125, confirmatory sampling was not required for recently discovered spills because of the assumption of limited time of contact, immediate clean-

up, and the inadvertent dilution of the PCB concentration as a result of the spill. Differences between 40 CFR 761.79 and subpart G for spill clean-up are based on the larger universe served by §761.79 and especially the part of that larger universe which consists of old spills and spills with repeated deposition of PCBs over longer periods of time with no remediation.

For use of other solvents than those specified in the regulations, §761.79(d)(4) and subpart T of Part 761 provide a way to qualify use of another solvent. If only the exterior of a piece of equipment is contaminated, then the measurement-based standards in §761.79(b) would be appropriate with confirmation sampling. Additionally, other sampling or decontamination procedures may be approved on a case-by-case basis in accordance with the procedures in §761.79(h).

Comment 15: MODEF- §761.79(e) & (f). Commenters said that the presumptive decontamination procedures in (e) and (f) for non-porous surfaces in contact with MODEF should be allowed for all non-porous surfaces in contact with PCB liquids, e.g., natural gas pipelines exposed to condensate that contains PCBs. One commenter supported EPA's proposed non-aggressive approach for surfaces contaminated with MODEF $\leq$10,000 ppm but felt that the 15 hour soaking and draining of solvent and dielectric may be difficult to implement. Some raised concerns that a soak would not be feasible for steel structures and suggested a wash/rinse instead. One commenter stated that an alternative to the 15 hour soak time should be provided for decontamination at lower temperatures. Another person pointed out inconsistencies in the temperature allowed for soaking and suggested that both (e) and (f) should say "20$^{o}$ Centigrade or greater."

Another felt that these provisions would allow for unconfirmed decontamination which would circumvent the disposal authorization process needed to show meeting or exceeding incinerator standards for efficiency.

Some offered regulatory language to combine paragraphs (e) and (f), including additional provisions for decontamination at lower temperatures, and a requirement to keep records that decontamination occurred (but no confirmatory sampling required). Some commenters asked for an alternative to using 800 ml. of decontamination fluid as that was thought to be an excessive quantity in some cases or that it was difficult to calculate the exact amount of contaminated surface area and thus the correct amount of kerosene for use in decontaminating complex interior surfaces.

Source: (C1-029, C1-062, C1-107, C1-112, C1-158, C1-161, C1-171, C1-178, C1-186, C1-195, C1-199, C1-209, C1-212, C1-227, C1-242, C1-257, C1-262)

Response 15: EPA has finalized the self-implementing decontamination procedures in §761.79(c)(3)-(6) for non-porous surfaces contaminated with mineral oil dielectric fluid (MODEF) with some modifications. EPA has expanded the options for performance-based decontamination to specify other organic solvents having similar properties to kerosene. EPA has also clarified that the temperature for solvent soaking is 20$^{o}$ C or greater.

EPA disagrees with the comment that the Agency should not allow decontamination of

surfaces contaminated with MODEF with unconfirmed results because the Agency has tested and confirmed these procedures. Therefore, EPA is allowing everyone else to use these procedures. Further, the success of EPA's limited performance-based validation testing convinced EPA to provide a self-implementing procedure under §761.79(d)(4) to qualify additional performance-based decontamination fluids. The testing and validation criteria for these fluids have been included as
subpart T and reflect the successful testing EPA performed through a contract laboratory. These procedures may also be followed for decontamination of non-porous surfaces contaminated with PCB liquids other than MODEF. Under §761.79(f), EPA clarifies that performance-based decontamination conducted under the conditions in §761.79(c) does not require confirmatory surface measurements.

For decontamination of steel structures or other structures that cannot be conveniently soaked, the measurement-based procedures for non-porous surfaces in §761.79(b) should be followed. Finally, §761.79(h) allows one to seek approval by the Regional Administrator for use of other decontamination methods or sampling approaches.

Comment 16: Confirmation testing. One commenter stated that EPA should require sampling of non-porous and other surfaces to confirm that decontamination levels have been met because this was required in all PCB disposal operations; further, records of such testing should be required for all decontamination activities. Other commenters stated an opposing view that such confirmation testing wasn't needed in cases where a specified protocol or performance standard was followed, such as triple rinsing of containers or for movable equipment. Another commenter wanted to know what happens if the decontamination procedure is followed but the results were still >10 micrograms/100cm$^2$.

One commenter wanted EPA to allow means other than a wipe test for performing surface testing, such as using a thermal desorption sampler. Another commenter wanted a procedure for small surface areas <100 cm$^2$ to accommodate small parts and equipment.

Source: (C1-055, C1-062, C1-107, C1-111, C1-112, C1-154, C1-155, C1-161, C1-165, C1-178, C1-242, C1-254)

Response 16: Under §761.79(f)(2), EPA clarifies that performance-based decontamination conducted under the conditions in §761.79(c) does not require confirmatory surface measurements. However, anyone claiming that a surface is decontaminated must be able to substantiate that claim by keeping records for three years showing that a performance-based procedure was conducted. When sampling is required for the measurement-based provisions in §761.79(b), written records must also be maintained for three years from the date of decontamination per §761.79(f)(1). Copies of records may be maintained at the decontamination site or elsewhere as long as they are made available to EPA in a timely manner, if requested.

Comment 17: Transformers. A commenter wanted to know if the proposed mineral oil

decontamination standards in §761.79(e) and (f) superseded the standards in the Spill Cleanup Policy for decommissioning transformers for resource recovery, regardless of concentration. The commenter also wanted confirmation that these procedures would allow the transformers to be sent to smelters and industrial furnaces for recovery without conducting wipe tests.

Another commenter was concerned that the decontamination procedures for non-porous surfaces ≤10,000 ppm PCBs at paragraph §761.79 (e)(3) which include a 15 hour soak in kerosene may apply to transformer carcasses and stated that such procedures were stricter than current requirements if the carcass was retrofilled; also, concerns were raised about the logistics of soaking based on the size of unit and whether there were alternatives.

Source: (C1-148, C1-158, C1-262)

Response 17: The performance-based decontamination procedures for non-porous surfaces contaminated with mineral oil was not intended to be universal. These provisions were not intended to address large flat external surfaces. Such surfaces would be more appropriately decontaminated by measurement-based procedures in §761.79(b). The performance-based decontamination procedures have been demonstrated to be effective for non-porous surfaces, but not necessarily practical or economical for all such surfaces or all equipment.

The decontamination procedures for non-porous surfaces do not apply to intact electrical equipment such as transformers, voltage regulators, capacitors, and rectifiers. The surface areas in this kind of equipment are very large and in many cases there are numerous laminations with a high contact, low volume space limiting the solvent contact necessary for complete decontamination. The decontamination procedures may be appropriate for transformer metal casings, core laminations, or bare metal coil. A new paragraph §761.79(h) allows persons wishing to use different methods of decontamination or sampling to seek approval from the Regional Administrator.

Finally, the decontamination procedures and spill clean-up standards are not intended to apply to both use and disposal for all materials. See §761.79(a). There may be different standards (e.g., concentration levels for PCBs) depending upon whether the PCB material will continued to be used or disposed of in a regulated or unregulated manner.

Comment 18: Relationship to reclassification of electrical equipment. A commenter wanted clarification on the applicability of the decontamination standards to electrical equipment that will be addressed under the proposed reclassification rule.

Source: (C1-027)

Response 18: The reclassification rule will be finalized after the PCB disposal amendments. The decontamination standards do not apply to intact electrical equipment, including electrical equipment that is reclassified, i.e., drained and refilled with lower concentration PCBs or non-PCB dielectric fluids prior to reuse.

Comment 19: Cleaning/disposal of wood and concrete in electrical uses. A commenter expressed concern that the rule did not allow for cleaning and sampling of porous surfaces like wood and concrete which serve as foundations, pads, and poles in electrical equipment systems. Some items are in restricted (e.g., fenced) areas and involve low contact uses. The commenter said these items have long life spans and should be allowed to be used even if contaminated. When designated for disposal, the commenter suggested a sampling method of taking three core samples of one inch diameter and one inch deep and having the option of cleaning or cutting away the contaminated area.

Source: (C1-111)

Response 19: As discussed in Response 13, the decontamination standards do not apply to porous surfaces with the exception of PCB spills on concrete that are readily cleaned up. Under §761.79(b)(4), EPA has set a decontamination standard of $\leq$10 µg/100 $cm^2$ for PCBs spilled on concrete if decontamination commences within 72 hours of the spill and a wipe sample under §761.123 is used to confirm the PCB surface contamination level. The decontaminated concrete could then be used in accordance with §761.30(u).

Under §761.30(p), contaminated porous surfaces at PCB concentrations >10 µg/100 $cm^2$ may continue to be used for their remaining useful life if the source of PCB contamination is removed and other specified conditions are met.

Comment 20: Air compressors. Commenters supported performance-based decontamination procedures for air compressors so that an alternate disposal authorization would not be necessary and offered suggestions for improving the regulations. One commenter suggested moving the air compressor decontamination provisions from §761.30 to §761.79.

One commenter said that the decontamination procedures should only apply to piping with an internal diameter of ½ inch or greater consistent with alternate disposal permits.

Another commenter expressed concern that the scope was too narrow by not covering all sizes of air system volume tanks and bottles. Additionally, some wanted EPA to allow decontamination for all air system volume tanks and bottles. Some commenters said the decontamination procedure was not logical for large tanks where cranes are needed. A commenter suggested using the decontamination procedure once and using confirmation surface sampling for small volume bottles and tanks only. Some suggested that record keeping apply.

Other commenters suggested that other hydrocarbon solvents such as diesel fuel or even water-based cleaners be allowed in lieu of kerosene because of equivalent or better performance and less volatility. One person criticized a kerosene soak as not effective in cold weather and said that agitation, spray and flow methods were more effective than soaking by removing debris and scale which in turn removed the PCBs.

Some wanted the rule to clarify that once decontaminated, air compressors would be

unregulated for disposal and that air system appurtenances, other than air compressors, piping, air receivers and large volume tanks, could be decontaminated as well; appurtenances would include items such as air compressor parts, relief valves, regulators, flanges, other air system volume bottles and tanks. Some commenters suggested that when surface contamination of PCBs is <100 micrograms/100 $cm^2$, compressors be unregulated for use or disposal. One commenter wanted a procedure to reclassify an air compressor crankcase in a manner similar to electrical transformer reclassification.

Source: (C1-042, C1-134, C1-142, C1-180, C1-186, C1-195)

Response 20: In response to comments, EPA is not finalizing all of the performance-based decontamination procedures for air compressor systems proposed at §761.30(i). Because the operating conditions are too varied to make some procedures self-implementing or are impractical(e.g., rotating large tanks), EPA has revised its approach to air compressor systems. The self-implementing decontamination procedures for air compressor piping and air lines are now found at §761.79(c)(5) and are based on the Agency's confidence in these procedures which have been demonstrated in PCB disposal approvals. There is no diameter limit for pipes or tanks so long as performance specifications are met. For air compressors and air dryers, paragraph (c)(5) refers to the decontamination procedures at §761.79(b), (c)(1)-(4) or (6). These standards include surface contamination levels for non-porous surfaces and performance-based procedures under paragraph (c).

There is also a new provision in §761.79(h) that will allow operators of these systems to apply to the Regional Administrator for approval to perform a particular decontamination or sampling procedure not addressed in the regulations. Once this equipment is decontaminated, it is generally unregulated for use or disposal under TSCA unless otherwise specified in the regulations; hence a "reclassification" is not needed.

At §761.79(c)(7)(iii), EPA specifies a broader range of solvents than proposed in response to comments and EPA's experience in issuing alternate disposal approvals for air compressor systems. For decontamination using different solvents or conditions than those in the final regulations, one can follow the self-implementing decontamination provisions of §761.79(d)(4) and subpart T of Part 761 or seek the Regional Administrator's approval in accordance with §761.79(h).

According to §761.20(c)(5), decontaminated materials are not regulated for use or distribution in commerce. For general use outside of an air compressor system where exposure cannot be controlled, the decontamination level for metal or non-porous surfaces has been kept at 10$\mu$g/100 $cm^2$ per §761.79(b)(3). Use of PCBs at concentrations of 50 ppm or greater in the air compressor system is addressed at a new paragraph §761.30(s) which specifies the conditions for use.

Comment 21: RCRA land disposal standards. One commenter said that EPA should harmonize the TSCA decontamination standards and procedures with those for land disposal restrictions for hazardous wastes under the Resource Conservation and Recovery Act (RCRA).

Another commenter pointed to the RCRA debris treatment standards and procedures that allow unregulated use or disposal of treated debris using specified technology performance standards with no confirmatory testing required. The commenter pointed to the RCRA 10 mg/kg universal treatment standard for total PCBs in 40 CFR Part 268.

Source: (C1-011, C1-172)

Response 21: The RCRA hazardous waste standards, including the debris requirements at 40 CFR 268.45 only apply to PCB wastes that are also defined as hazardous wastes under RCRA. For hazardous waste debris that is also a PCB waste, the RCRA regulations require that the more stringent standards apply whether under Part 761 for TSCA or Part 268 for RCRA.

Under the new §761.79 decontamination standards for PCBs, any material that is decontaminated in accordance with the applicable performance-based procedures or that meets the applicable concentration level (with confirmatory testing) may generally be reused or disposed in a manner that is not regulated under TSCA because these procedures or levels were established to assure no unreasonable risk. There are some cases where higher levels or restricted uses are specified for the use or disposal of specific materials (e.g., use of water as a non-contact cooling water at <200 ppb vs. ≤0.5 ppb for unrestricted use).

However, debris and non-liquid waste from buildings and structures that is considered "PCB bulk product waste" under TSCA is generally not allowed to be decontaminated under §761.79, except non-porous (e.g., metal) components of such debris. The same is true for "bulk PCB remediation waste," whereas liquid remediation waste may be decontaminated.

Comment 22: Solvent and waste residue disposal. Some commenters stated that all liquids and solvents used in decontamination should be allowed to be disposed of based on their actual PCB concentration and not, as EPA proposed in §761.79(a), as if they were at concentrations of 500 ppm or more. One stated that there was no good reason for requiring all chlorinated solvents to be disposed of in TSCA incinerators nor for requiring residues from decontamination to be disposed of based on the concentration of the material that was decontaminated. Another commenter felt that EPA should not allow non-chlorinated decontamination solvents to be used in waste oil or exempted from the more stringent disposal standards in §761.60(a) unless there was no disposal capacity; the commenter felt there was a disparity between non-chlorinated and chlorinated solvents which would be subject to the more stringent disposal standards. One commenter stated that chlorinated solvents should be allowed to be decontaminated rather than required to be disposed of. A commenter stated that allowing for decontamination and reuse of solvents used in decontamination activities would help to reduce waste and encourage reuse.

One commenter stated that EPA needed to clarify the standards for the disposal of kerosene. The commenter was confused about general provisions regarding reusing solvents for decontamination until the PCB concentration was 50 ppm, while the decontamination level was <2 ppm for kerosene and organic liquids.

Source: (C1-062, C1-161, C1-178, C1-179, C1-180, C1-242, C1-270)

Response 22: In §761.79(g), EPA clarifies that most solvents and waste materials contaminated during use in decontamination are to be managed and used at their existing concentration. Unless specifically addressed elsewhere, disposal options do not depend on the original concentration of PCBs in the contacted material which is decontaminated. One exception is for chlorinated solvents where EPA is requiring them to be disposed as PCB waste regardless of their concentration in order to discourage their use and to minimize adverse consequences from uncontrolled air releases potentially resulting in contributions to ozone depletion. However, EPA is allowing all solvents to be decontaminated unless another specified disposal option is chosen. For example, hydrocarbon solvents containing <50 ppm PCBs may also be burned and marketed in accordance with the used oil provisions of §761.20(e) because such use does not pose an unreasonable risk; additionally, these solvents could be disposed of in accordance with §761.60(a) or (e).

Another exception to management based on the existing concentration is addressed under §761.79(g)(2). This provision states that PCBs physically separated from regulated waste by means such as chopping, shredding, scraping, abrading, or oil/water separation (as opposed to solvent rinsing and soaking) must be disposed of based on their original concentration. EPA has required this to prevent the possibility of intentional dilution of waste residues during these simple separation processes.

Kerosene and other solvents may be reused in decontamination until the concentration reaches 50 ppm; then the PCB subpart D disposal regulations apply to the disposal of these contaminated solvents. The 2 ppm decontamination level for organic liquids and non-aqueous inorganic liquids in §761.79(b)(2) is for unregulated use or disposal. This would mean that solvents used in decontamination would need to be decontaminated to <2 ppm before other uses or unregulated disposal could occur.

Comment 23: Solvent in waste oil. Comments were mixed on the proposed provision to allow the mixing of solvent containing <50 ppm PCBs after use in decontamination activities with waste oil for burning. A commenter further stated that the provisions allowing hydrocarbon solvents used for decontamination to be marketed as waste oil if <50 ppm PCBs would encourage dilution and disposal in inefficient boilers rather than PCB incinerators. Another commenter supported such solvent use in waste oil and asked that EPA allow solvents containing >50 ppm to be reused by adding to waste oil for burning to reduce the amount of solvent waste and the high costs of disposal. Another commenter felt that EPA should not allow non-chlorinated decontamination solvents to be used in waste oil or exempted from the more stringent disposal standards in §761.60(a) unless there was no disposal capacity; the commenter felt there was a disparity between non-chlorinated and chlorinated solvents which would be subject to the more stringent disposal standards.

Source: (C1-179, C1-178, C1-212)

Response 23: EPA is retaining the option to burn and market hydrocarbon solvents

containing <50 ppm PCBs in accordance with the used oil provisions of §761.20(e) because burning organic liquids or oils with <50 ppm PCBs in used oil burners does not pose an unreasonable risk (see 6/27/88 Federal Register on used oil standards (FR 53 FR 24218)). Also, EPA is allowing natural gas condensate which is largely composed of hydrocarbons to be burned as used oil in accordance with §761.20(e) provisions.

The disposal options for hydrocarbon solvents also include §761.60(a) and (e) and decontamination under §761.79.

Comment 24: Emissions and worker safety standards. Some commenters opposed EPA's proposed requirements at §761.79(a)(5) requiring that workers wear or use protective clothing or equipment to protect against PCB exposure because they felt these EPA requirements were duplicative of OSHA standards and were unnecessary. Others expressed concern that they would be subject to both EPA and OSHA enforcement for worker safety. Some pointed out that the proposal implied a zero emission discharge limit which was impossible to meet or could lead to costly NESHAPS type requirements for negative pressure enclosures as required for asbestos work. Some commenters suggested changing the proposed language in §761.79(a)(5) regarding "no solvent, dust, or particulate emission..." to be revised to include a "reasonable precaution" standard or simply referring to OSHA and Clean Air Act regulations.

Source: (C1-062, C1-147, C1-148, C1-161, C1-179, C1-185, C1-199, C1-207, C1-242)

Response 24: Under a new §761.79(e), EPA has added the general provisions from the proposal requiring persons conducting decontamination activities to take measures to protect against direct releases of PCBs to the environment and to protect workers from dermal contact or inhalation of PCBs or materials containing PCBs. Although many commenters felt that these requirements were duplicative of OSHA standards, EPA believes that these standards are necessary in the PCB regulations for two reasons. First, OSHA standards do not apply to all persons and settings where decontamination activities may occur. Secondly, because EPA is no longer requiring PCB disposal approvals for specified decontamination activities, these general safety standards are needed to ensure there is no unreasonable risk of injury to health or the environment from decontamination activities.

## §761.80 -- Exemptions for Manufacturing, Processing and Distribution in Commerce

Comment 1: EPA should extend the exemption period to 2, 3 or 5 years or consider the automatic renewal of these provisions.

Source: (C1-161, C1-242, C1-270)

Response 1: TSCA Section 6(e)(3)(B) provides that PCB exemptions may be granted by rule for a period of not more than one year. Therefore, granting multiple year petitions is not possible. However, in response to previous concerns with the timeliness of this process, EPA amended the Interim Procedural Rules at 40 CFR Part 750 to address renewal requests. A properly filed renewal request will allow the exempted activity to continue until EPA responds to the request through rulemaking.

Comment 2: Manufacturing limit should be increased to 10 pounds. The proposed 1 pound limit is overly restrictive.

Source: (C1-242)

Response 2: EPA believes 500 grams (1.1 pounds) of pure PCB is sufficient for most R&D purposes, and is reluctant to increase this level ten-fold as suggested. In a special instance, the Director, National Program Chemicals Division may approve a one time increase in the amount produced. Where the quantity limitations of a class exemption are not sufficient to address the needs for an ongoing R&D activity, an individual may petition the Agency under TSCA Section 6(e)(3)(B) to grant an individual petition outside the class petitions. In this instance, the petitioner is prohibited from engaging in the requested activity until and unless EPA grants such a petition request in a separate final rule.

Comment 3: Regarding §761.80(e)(1), please clarify whether each person desiring to be a part of the class should submit a petition or if just one petition will suffice for the entire class exemption.

Source: (C1-147)

Response 3: Each person desiring to participate in the class exemption must initially submit an individual petition prior to engaging in the exempted activity. However, for annual renewal of the class petition, EPA will accept a renewal request from any member of the class as a renewal request for the entire class, and every member does not need to file a renewal request.

Comment 4: The difference between processor and distributors of limited quantities of PCBs in §761.80(g) and processors and distributers of media containing PCBs in §761.80(i) is unclear.

Source: (C1-188)

Response 4: The most significant difference in these two scenarios is that 761.80(i) includes the processing and distribution in commerce of waste material containing PCBs

(formerly referred to as contaminated media) as analytical reference samples. Section 761.80(g) is restricted to "small quantities for research and development" which does not include samples derived from PCB waste. Another difference between these two provisions is the quantity -- §761.80(g) allows individuals to engage in these activities, but establishes a 100 gram limitation without the submission of a petition. In contrast, §761.80(i) allows individuals to process and distribute in commerce up to 500 grams of PCBs provided a petition is submitted to EPA. Export for research and development is also permitted under the §761.80(i) class exemption. ( Note that the proposed modifications to existing §761.80(g) were not finalized.)

Comment 5: How will members of the class be notified that a renewal request or increase has been filed?

Source: (C1-161)

Response 5: According to the procedures at §750.11, EPA will respond to the request to increase or renew through rulemaking. However, requests for increases are handled on an individual basis and would only be granted to the individual requesting the increase. On the other hand, the receipt of at least one request for renewal from any member of the class will allow all members to continue the exempted activity for an additional year. In both instances, until EPA responds through rulemaking the existing exempted activity may continue provided the activity conforms to current exemption. Prior to the initiation of the rulemaking activity to renew the class exemption, EPA will not make an official notification. However, anyone who seeks to determine whether EPA has received a request for renewal may visit the TSCA Non-Confidential Information Center (docket) to see if a notice has been received by EPA. EPA anticipates that submitters may wish to coordinate renewal notification through a trade association or similar group. A class member may always plan on submitting their own annual renewal notice if it does not wish to check of the status of the docket.

Comment 6: The provision at §761.80(g)(2) that allows persons to request approval to exceed the 100 gram limitation for processing and distributing for R&D should be added to §761.80(i)(2) to allow quantity limit exceedances for processing and distribution for R&D for disposal.

Source: (C1-161, C1-242)

Response 6: A similar provision has been included in the final regulations at §761.80(i)(4).

Comment 7: EPA should establish a single, unified R&D authorization covering the activities under §761.30(j), §761.60(j) and §761.80.

Source: (C1-072, C1-161, C1-242)

Response 7: EPA is constrained by TSCA Section 6(e) as to how it regulates each of these activities. Uses must be approved under the conditions and authority of §6(e)(2)(B); disposal prescribed under §6(e)(1)(a); and processing and distribution in commerce exempted under a third set of conditions at §6(e)(3)(B). It is therefore not possible to authorize all R&D activities using one common procedure.

Comment 8: The §761.80(e) class exemption requires the results of research to be disposed of based on the original PCB concentration before use in the study. This is unnecessary; the anti-dilution provision should not be applied in this provision.

Source: (C1-161, C1-242)

Response 8: EPA disagrees. The anti-dilution provision is necessary and is being included at §761.80(e)(6). The intent of §761.80(e) is to allow research into new disposal methods, not to circumvent existing disposal requirements for the PCB waste involved in the study. New methods may be used for treatment and disposal of PCB waste only after they have been demonstrated to EPA to be effective and authorized by EPA for disposal use. Given the limited amounts of PCBs involved, the costs of proper disposal of any R&D waste at pre-treatment concentration should be minimal.

**§761.99 -- Other Transboundary Movements**

Comment 1: Transit. Commenters wanted clarification that certain transit situations would not be considered exports or imports ( i.e., where PCBs shipped from Alaska via the ocean to Hawaii, or where PCBs are shipped in the Great Lakes area from a point in the U.S. across Canadian waters to another point in the U.S.).

Source: (C1-122, C1-242)

Response 1: EPA agrees with commenters and has modified the language in §761.99(a) to address these transit situations which are not considered exports or imports under 761 subpart F. In §761.99(b), EPA also clarifies that PCB waste shipments transiting the U.S. (e.g., from Mexico to Canada) are not exports from the U.S. or imports into the U.S..

Comment 2: Broaden Scope. Commenters argued for a broader interpretation of shipments not considered by EPA to be exports or imports, i.e. when PCBs are procured here, sent overseas for use and returned to the U.S. for disposal. Some asked why EPA's proposal discriminates between U.S. companies and the U.S. Government (USG) by only exempting

shipments from being considered exports or imports when under the control of the U.S. Government. Commenters said that EPA should give U.S. companies the same consideration because they also had concerns about lack of facilities abroad for the proper management of PCBs. Some language was offered for exceptions from what is considered exports or imports for different cases where: 1) U.S. companies bring in PCB equipment for repair and return to other countries; 2) for importing a company's own PCB waste from another country; and 3) for movement of totally enclosed PCB equipment between US, Canada, and Mexico.

Source: (C1-061, C1-161, C1-231, C1-242)

Response 2: EPA will address this issue in a future rule on exports and imports.

Comment 3: Origin of PCBs. Commenters said that sometimes the U.S. Government does not know whether PCBs were procured domestically or overseas; even when it does know, however, the U.S. government needs to return the PCBs to the U.S. for proper management. Variations of alternative language were provided. Commenters also said that since the U.S. is not a party to the Basel Convention, the import from another country which is a Basel party may be prohibited without a waste agreement.

Source: (C1-107, C1-165, C1- 218, C1-231, C1-260)

Response 3: EPA will address this issue in a future rule on export and import.

**§761.125(a)(1) -- Requirements for PCB Spill Cleanup**

Comment 1: Changes in the RQ from 10 pounds to 1 pound. A commenter indicated that aside from changing 10 pounds to one pound in §761.125(a)(1), the Agency should also consider changing 10 pounds to one pound in §761.125(a)(1)(iii) and (iv).

Source: (C1-147)

Response 1: Since the Agency only proposed changes to §761.125(a)(1), that was the only section changed. The requirements for reporting spills of 10 pounds more or less to the Regional Administrator remain unchanged.

Comment 2: How to determine the amount of PCBs spilled. A commenter indicated that changing the RQ from 10 pounds to 1 pound would cause inconsistencies in reporting because of the difficulty in determining the amount of PCBs spilled.

Source: (C1-054)

Response 2: In the PCB Q & A Manual (1994) the Agency indicates that low concentration spills 50-499 ppm which involve less than 1 pound of pure PCBs by weight or less than 270 gallons of untested mineral oil would be required to be spilled to trigger the RQ reporting requirement. Since the average size transformer contains approximately 220 gallons all the fluid from more than one transformer would need to be spilled to trigger the RQ. Since determining if all the dielectric fluid has spilled from a transformer is relatively simple, the applicability of the RQ reporting requirement should not require additional training for personnel responding to spills.

**§761.180(a)(1) & (b)(1) and §761.65(c)(5)&(8) -- Storage Unit Recordkeeping**

Comment 1: The proposed written inventory should be allowed to be maintained at a location other than the storage unit, such as at a central office or other suitable location.

Source: (C1-029, C1-055, C1-147, C1-155, C1-161, C1-164, C1-183, C1-185, C1-257)

Response 1: EPA did not anticipate the difficulties that commenters associated with the maintenance of a written, on-site inventory at a storage unit, in particular those encountered by high-volume commercial storage operations with centralized recordkeeping. EPA believes the maintenance of the inventory off-site is impractical, because the intent of the proposal was to assist EPA or State inspectors with on-site inspections, including spot inspections. In light of these comments and other objections to the written inventory log proposal, EPA has decided not to finalize this proposal.

Comment 2: One or both proposed regulations are burdensome and/or of questionable usefulness.

Source: (C1-049, C1-055, C1-085, C1-087, C1-134, C1-155, C1-161, C1-179, C1-189, C1-194, C1-199, C1-209, C1-227, C1-255)

Response 2: As discussed in the preamble to the final rule, EPA acknowledges that the proposed inventory maintenance requirement would be more burdensome than the Agency anticipated. EPA believes that this burden exceeds the benefit access to such an inventory would provide to an inspector, and is not finalizing this proposal.

However, EPA is finalizing the requirement to maintain records of inspections and cleanups conducted under §761.65(c)(5). Such records are essential if EPA inspectors are to verify operator compliance with these provisions. Moreover, in contrast to comments on the inventory proposal, no demonstration of an undue burden associated with this recordkeeping requirement was made by commenters.

Comment 3: The 30-day inspection requirement (§761.65(c)(5)) should be changed to one calendar month, and requirement to locate containers by date (§761.65(c)(8)) should be eliminated.

Source: (C1-147)

Response 3: Commenter seems to be unaware that these requirements are in existing §761.65(c)(5)&(8), and have been in effect since 1978. EPA did not propose to amend these provisions of §761, and sees no need to do so at this time.

Comment 4: Proposed spill cleanup records are duplicative of those required by §761.125.

Source: (C1-188, C1-194)

Response 4: EPA disagrees. The spill cleanup policy is not a regulation and does not mandate records of spill cleanups performed in compliance with §761.65(c)(5). Note that one set of records can satisfy the requirements of both §761.125 and §761.180; duplicate copies of spill cleanup records are not required by §761.180.

## Notification & Manifesting Rule

### §761.3 -- Definition of Commercial Storer

Comment 1: EPA should amend the definition of commercial storer to clarify that a contractor working for another company is to be considered a "related" company to avoid scenarios where a remediation contractor, for example, conducting decontamination activities is a new generator of PCB waste.

Source: (C1-193)

Response 1: EPA is not adding "contractors working for another company" within the parameters of a related company. It would be impossible for the Agency to effectively define the myriad of potential contractual arrangements between two parties to adequately cover the various scenarios where waste is generated and determine who is the generator of that waste. As has been EPA's practice in the past, the Agency will look at contractor/contractee scenarios on a case-by-case basis to make a determination on generator/commercial storer status.

Comment 2: The definition of commercial storer should be modified so that a facility may store up to 500 gallons or 70 cubic feet of wastes not owned by the facility without seeking

approval from the EPA.

Source: (C1-009)

Response 2: This has always been the case. Regardless of the total amount of waste the facility stores that is generated by that facility, a commercial storage approval is not needed if that facility stores no more than 500 gallons of liquid and/or non-liquid material generated by others.

Comment 3: Can a facility storing both less than 500 gallons of liquid PCB waste and less than 70 cubic feet of non-liquid PCB waste generated by others be exempt from the need to seek approval as a commercial storer of PCB waste? Commenters also feel that setting an annual maximum would be beneficial.

Source: (C1-155)

Response 3: In the final rule the language has been changed to make it clear that the volume requirements are not cumulative. A storage approval is not needed if storage of PCB waste generated by others at no time exceeds a total of 500 gallons of liquid and/or non-liquid material contaminated with PCBs at regulated levels. An annual maximum would in effect set a definitive limit on what a facility could store without seeking a commercial storage approval from EPA. If the 500 gallons were used, it would limit the annual maximum to the equivalent of two average size transformers which is more restrictive than the requirement in this final rule. The commenter did not suggest an annual volume level nor did EPA solicit comment on such a level. EPA is not compelled to change the criteria to a more restrictive annual average.

Comment 4: EPA should consider other units of measure than the 70 cubic feet, such as kilograms of pure PCBs. Otherwise, the 70 cubic feet limit applies equally to high and low concentration solids.

Source: (C1-185)

Response 4: If other units of measure were used, such as amount of pure PCBs it would have to be applicable to both liquids and solids. Calculating the amount of pure PCBs in the waste adds an additional burden to PCB waste handlers and is in conflict with the rest of the PCB regulations that do not require a calculation to pure PCBs but instead deal with the amount of material contaminated with PCBs at a certain level. EPA is not compelled to make this change.

**§761.65(j)--Change in Ownership of Commercial Storage Facilities**

Comment 1: EPA Should allow for a compliance schedule or other procedure to be entered into with the Agency for resolving deficiencies.

Source: (C1-61, C1-183)

Response 1: If the schedule in this final rule for resolving deficiencies cannot be adhered to, the Agency will look at each facility on a case-by-cases basis to determine whether additional flexibility in schedule is needed to correct the deficiencies.

**§761.207 -- No Manifest for Pre-78 Spills**

Comment 1: In cases where one discovers an historical spill of less than 50 ppm PCBs, where no records are available to determine the exact date of the spill, can the owner assume it to be a pre-1978 spill and less than 50 ppm? How can the owner certify this condition if no records are available?

Source: (C1-027)

Response 1: As was indicated in the proposed rule, the burden would be on the site owner or operator to establish to the Regional Administrator through persuasive evidence that the spill was indeed pre-1978. The owner cannot assume it to be a pre-1978 spill and originally less than 50 ppm. The Regional Administrator will review the evidence presented by the owner or operator on a case-by-case basis.

Comment 2: Regardless of the date, waste less than 50 ppm should not have to be manifested and waste greater than 50 ppm should. Waste prior to 1978 should not have to be manifested at all.

Source: (C1-122)

Response 2: Waste that is less than 50 ppm and not the result of dilution from a source greater than 50 ppm does not need to be manifested. Waste that is greater than 50 ppm PCBs, including pre-1978 waste, does need to be manifested since it is subject to the TSCA PCB disposal regulations.

**§761.215 -- Exception Reporting**

Comment 1: Recommends that the exception reports be submitted annually when the PCB Annual Document is prepared.

Source: (C1-087)

Response 1: In keeping with the other reports tied to the manifest (manifest discrepancies and unmanifested waste reports), which must be submitted within 30 days of the occurrence, and to allow more immediate follow-up by the regional office, EPA is not changing this requirement to an annual submission. The final rule has been changed, however, from requiring submission within 30 days to requiring submission within 45 days.

**§761.202(b)(2) -- Notification by Transporters**

Comment 1: Detailed comments from American Trucking Association and Environmental Technology Council that EPA's regulatory interpretation regarding this issue is highly problematic and should be reconsidered.

Source: (C1-047, C1-234)

Response 1: EPA has revised its regulatory interpretation on this issue in light of comments received. The current policy on this issue is explained in detail in the preamble to the final rule under section IV.M, and further elaboration in this document is not required.

**Appendix I (Subpart M)**

Comment 1: A commenter stated that EPA's use of the words "pipe", "pipeline", and "length of pipe" is confusing. The commenter suggested that the terms be generally defined as they are in the alternative disposal permits. The commenter recommended the following definitions. "Pipe or pipe segment" refers to pieces, approximately forty feet or less in length, cut from the pipeline during the process where the pipeline is being removed from its use to transport natural gas. "Pipeline" refers to the pipeline, metering, and pressure reducing facilities and compressor facilities. "Length of pipe" refers to a continuous section of removed or abandoned pipeline.

Source: (C1-134, C1-161, C1-179, C1-180)

Response 1: Section 761.240 defines the following terms. "Pipe segment" means a length of natural gas pipe that has been removed from the pipeline system to be disposed of or reused, and that is usually approximately 12.2 meters (40 feet) or shorter in length. Pipe segments are usually linear. "Pipeline section" means a length of natural gas pipe that has been cut or otherwise separated from the active pipeline, usually for purposes of abandonment, and that is usually longer than 12.2 meters in length. Pipeline sections may be branched. These terms are used consistently throughout the final rule.

Comment 2: A commenter suggested that EPA revise the definition of "porous surface" to exclude natural gas pipeline, so Section 3.3.2 would apply.

Source: (C1-134, C1-161, C1-179, C1-180)

Response 2: In the final rule at §761.3, EPA has included natural gas pipe with a thin porous coating originally applied to inhibit corrosion in the definition of "non-porous surface".

Comment 3: Commenters stated that the sampling procedure in Section 3.4.2.1, which requires that a pipe having seven or fewer segments be sampled at each end of each segment removed for purposes of disposal, does not correspond to the sampling procedure in the alternative disposal permits, nor is it very clear.

Source: (C1-134, C1-161, C1-179, C1-180)

Response 3: In the final rule, EPA has revised this requirement. Now only one sample from one end of each segment is required.

Comment 4: In reference to Section 3.4.2.2, commenters suggested that when a length of pipe having multiple contiguous segments less than 3 miles in length is removed for purposes of disposal, samples should be collected at evenly spaced intervals instead of at each end and at five randomly chosen segments in between.

Source: (C1-134, C1-161, C1-179, C1-180)

Response 4: EPA has retained, but revised, this requirement. In §761.247(b) of the final rule, EPA provides two options for determining the five samples, in addition to the samples taken from each end of the pipe.

Comment 5: Commenters stated that the requirement in Section 5.1.3 does not seem reasonable for removal projects greater than three miles in length, where more than seven samples are collected. The commenter suggested that each sample should characterize only the three mile section from which it was taken.

Source: (C1-134, C1-161, C1-179, C1-180)

Response 5: The commenter did not provide data to justify sampling intervals as large as three miles as opposed to the one half mile proposed in the original Appendix I. Section 761.247(b) now requires, that when removing a length of pipe having multiple contiguous segments more than 3 miles in total length for purposes of disposal, samples should be taken at

each segment that is one-half mile distant from the segment previously sampled. Sample a minimum of seven segments.

Comment 6: Commenters stated that the requirement in Section 3.4.3.2 to sample both ends of all pipe to be abandoned in place is impossible. The commenter suggested that EPA change this requirement such that one sample from each end of the pipe is required instead of two samples from each end.

Source: (C1-134, C1-161, C1-179, C1-180)

Response 6: EPA has revised this requirement such that sampling must be done at the ends of the section to be abandoned. The sampling unit is designated to be between the pressure side of the compressor station and the suction side of the next compressor station downstream of the gas flow. (See §761.250(b).)

Comment 7: Commenters stated, in reference to Section 3.4.2, that when more than two segments are removed, there would be samples taken within one foot of each other. The commenter suggested that if every segment is sampled, one sample per segment of pipe should be sufficient to characterize each segment.

Source: (C1-135, C1-161, C1-254)

Response 7: In the final rule, EPA has revised this requirement, such that now only one sample from one end of each segment is required.

Comment 8: Commenters stated that the requirement in Section 3.4.3.4 that samples be taken every 50 miles from the downstream end of the abandonment goes against the convention in the alternative disposal permits of sampling from the upstream end. The commenter suggested rewording the provision to read “upstream”.

Source: (C1-134, C1-161, C1-179, C1-180)

Response 8: Section 761.247(c)(1) now directs that samples be taken at the end upstream of the former gas flow of each pipe segment removed for disposal. Under §761.250(b), pipeline sections to be abandoned in place must, at a minimum, be sampled all ends of all abandoned sections.

Comment 9: Commenters suggested various revisions to Section 3.3.1. Some suggested that the sample be taken approximately 6" inside the end of the pipe or pipe segment. One

commenter suggested that EPA revise Section 3.3.1 such that sampling occur 15 centimeters (6") inside the end of the pipe or pipe segment when cut with a torch, but that the location be unrestricted when the pipe or pipe segment was cut with a saw. In the case of small diameter pipe, less than 6" in diameter, the commenter suggested taking the sample as far inside the pipe as practicable. A commenter suggested the use of a hexane-saturated cotton bore mop with a diameter slightly larger than that of the pipe to be sampled, for the purpose of wipe sampling of small diameter dry pipe; after pushing and pulling this mop several times in the pipe over a known distance, the residue could be extracted in a known volume of solvent which would be tested for PCBs. This procedure will also allow the use of a PCB field screening test.

Source: (C1-134, C1-161, C1-179, C1-180, C1-195, C1-229, C1-254)

Response 9: The final rule at §761.247(c)(2) through (4) requires, for pipe segments being removed for disposal, that if the pipe segment is cut with a torch or other high temperature heat source, the sample must be taken at least 15 cm (6") inside the cut end of the pipe segment. If the pipe segment is cut with a saw or other mechanical device, the sample must be taken at least 2 cm (1") inside the end of the pipe segment. If either of these sample site locations is a porous surface (for example, there is significant corrosion so that the wipe material will be shredded), then the sample site must be moved further inside the pipe segment (away from the end of the pipe or pipe segment) until there is no such porous surface. Pipe having a nominal inside diameter of 4" or less, and containing PCBs at any concentration but no free-flowing liquids, may disposed of without sampling. This pipe may be abandoned in the place it was used to transport natural gas if each end is sealed closed and the pipe is either included in a public service notification program, or filled to 50% or more of the volume of the pipe with grout (such as a hardening slurry consisting of cement, bentonite, or clay) or high density polyurethane foam. This pipe may also be removed and disposed of in a facility permitted, licensed or registered by a State to manage municipal solid waste subject to 40 CFR Part 258, or non-municipal non-hazardous waste subject to §§257.5 through 257.30 (excluding thermal treatment units); a scrap metal recovery oven or smelter operating in compliance with the requirements of §761.72; or a disposal facility approved under Part 761. (See §761.60(b)(5).)

EPA has not approved of the use of “mop” sampling because it is less efficient at sampling a specified area and will sample the entire interior surface of the pipe rather than the bottom where condensate is more likely to collect. At §761.253(a), alternative sample extraction and chemical analysis methods may be used in accordance with subpart Q.

Comment 10: A commenter suggested that EPA revise the sampling protocols such that larger sampling areas can be used, as long as the results are reported as the PCB mass per 100 square centimeters. The commenter stated that EPA has previously approved this method.

Source: (C1-142)

Response 10: In the final rule, §761.243 states that a surface sample must be collected

from a minimum surface area of 100 square centimeters.

Comment 11: Commenters suggested smaller samples be allowed where a standard 100 square centimeter sample cannot be taken.

Source: (C1-195, C1-229)

Response 11: EPA has chosen 100 square centimeters to coincide with a common surface sampling area used by industrial hygienists. This surface size reasonably represents most surface areas of one square meter and less. For areas smaller that 100 square centimeters, all attempts should be made to represent the area. Depending on other materials present on the surface, the detection limit for PCBs in a surface wipe may be close to 1 microgram per sample, and therefore, surface areas smaller than 10 square centimeters may not be able to measure PCBs to demonstrate that a measurement is $\leq 10$ $\mu$g/100 cm². For the decontamination of small surfaces in accordance with §761.79, §§761.310 and 761.316(c) allow wipe sample measurements from surface areas smaller than 100 $cm^2$.

Comment 12: Commenters suggested that samples be composited, rather than averaged, for analysis to determine the level of contamination in a segment. The commenter stated that compositing would achieve the same result, with half the number of analyses and less cost.

Source: (C1-134, C1-161, C1-179, C1-180)

Response 12: EPA has revised the requirements for determining the regulatory status of sampled pipe. Two options are provided for pipe that is removed for purposes of disposal. If the unsampled pipe is between two segments which have been sampled, the unsampled segment is assumed to have the same PCB surface concentration as the nearest sampled segment. Alternatively, if the unsampled pipe segment is equidistant between two pipe segments that have been sampled, the PCB surface concentration of the unsampled segment is assumed to be the arithmetic mean of the PCB surface concentrations measured in the two equidistant, sampled pipe segments.

For abandonment, where only ends of pipeline sections are sampled, the pipeline section is regulated based on the arithmetic mean of the concentrations at the ends of the segment. If all wipe samples surface the same surface area, then all of the samples from the abandonment pipeline section may be composited for chemical extraction and analysis and the PCB concentration of the composite sample would be the equivalent of the arithmetic mean of all end samples in the composite.

Comment 13: Commenters stated that the term “highest measured average sample result” in Section 5.2.1 does not make sense, because only two samples are taken for purposes of

abandonment. The commenter suggested that EPA clarify that the average of the two sample results is used to classify the abandonment.

Source: (C1-134, C1-161, C1-179, C1-180)

Response 13: EPA has clarified this requirement in the final rule by stating, "For purposes of abandonment of a pipeline section, assume that the PCB surface concentration for an entire pipeline section is the arithmetic mean of the PCB surface concentrations measured at the end of the pipeline section." (See §761.257).)

Comment 14: A commenter stated that the requirement in Section 3.4.2.2 that a total of seven segments be sampled can present a problem if one of the segments has a high analysis, because Section 5.3.1 requires that the unsampled segments be presumed to be contaminated at the concentration of the segment with the high analysis. The commenter suggested that EPA modify Section 3.4.2.2 to read, "a minimum of seven segments" in order to clarify this potential problem.

Source: (C1-195)

Response 14: Representative sampling only requires sampling of a small proportion of the overall potentially contaminated area. If one of these samples is contaminated, the entire area represented is contaminated and must either be decontaminated or shortened (this creates a new area to represent) followed by resampling the shortened segments. For example, a 2.9 mile pipe segment would be divided into two equal 1.45 mile segments and seven samples taken in each segment. The samples taken from the segments at the ends of the original 2.9 mile would not have to be recollected, but six other new samples would have to be collected in each of the two new segments.

Comment 15: Commenters suggested the addition of the following new sections to Appendix I: 6.0-Sampling Metering Facilities, 7.0-Sampling Valves, 8.0-Wipe or Liquid Sampling Related Equipment, 9.0-Sampling Frequency and Sample Site Selection of Removed Pipeline Appurtenances, 10.0-Sampling Compressors, 11.0-Sampling Filter Media, 12.0-Sampling Scrubbers or Drips and Procedures for Sampling Non-Standard Areas. The commenters included a very detailed outline of these suggested sections.

Source: (C1-134, C1-179, C1-180)

Response 15: Some of these items may be sampled through §761.79 and subpart P. If none of the procedures provided in §761.79(b) or (c) are selected, any person may submit an alternative decontamination procedure or sampling procedure to the RA in accordance with §761.79(h).

Comment 16: A commenter suggested that EPA use 50 feet instead of 40 feet as the limit set in Section 3.4.1., as a typical joint of natural gas pipe is between 40 and 50 feet in length.

Source: (C1-195)

Response 16: EPA has revised the definition of pipe segment. In subpart M at §761.240(b), pipe segment means a length of natural gas pipe that has been removed from the pipeline system to be disposed of or reused, and that is usually approximately 12.2 meters (40 feet) or shorter in length.

Comment 17: Commenters suggested that Section 4.1 be revised by adding to the end of the section, "...unless alternative methods have been developed which are acceptable according to §761.60(g)."

Source: (C1-067, C1-229)

Response 17: In the final rule, EPA has revised the requirements for chemical analysis and extraction which now appear at §761.253(a) to read: Extract PCBs from the standard wipe sample collection medium and clean-up the extracted PCBs in accordance with either Method 3500/3540B or 3500/3550 from EPA's SW-846, Test Methods for Evaluating Solid Waste or a method validated under subpart Q. Use Method 8082, or a method validated under subpart Q, to analyze these extracts for PCBs.

Comment 18: A commenter suggested that EPA present more evidence of environmental risk exposures from PCBs in natural gas distribution lines before imposing the significant cost that would result from proposed Appendix I. The commenter stated that there is no need to sample pipe that has been surveyed before to find no PCBs. The commenter further stated that wipe samples are not practical for inside pipe diameters and there is no correlation between wipe samples and PCB concentration. The commenter suggested deleting Appendix I.

Source: (C1-257)

Response 18: There are some situations where the uncontrolled disposal of PCBs, not present as freeflowing liquids, on surfaces of natural gas pipeline systems and appurtenances can result in an unreasonable risk to human health and the environment. EPA has provided for many disposal options which do not present an unreasonable risk and which do not require surface measurements in this equipment. To clearly eliminate the potential risk from other situations, it is necessary to be certain that residual levels are known by measurements. EPA provided in final subpart M a method to characterize these systems. This method balances cost and risk by reflecting the kind and source of contamination and the extensive potential areas of contamination

which could be disposed in normal pipeline removal and abandonment operations.

## Appendix II (Subpart O)

General

Comment 1: A commenter suggested that EPA revisit the whole issue of sampling prior to issuance of the final rule to determine the approach EPA should take to ensure that reasonable sampling requirements are adopted.

Source: (C1-242)

Response 1: EPA has provided a method to obtain a representative sample for many sites. Any person may submit an application for an alternative risk-based sampling plan to the RA in accordance with §761.61(c).

Comment 2: A commenter suggested that EPA not impose a mandatory requirement to perform site characterization; especially where the contaminated area is discrete, characterization may not be necessary. Other commenters stated that Appendix II fails to recognize the distinctions between sampling for characterization and sampling for verification. The commenters suggested that EPA limit the sampling requirements to what is required for verification of cleanup. A commenter stated that §761.61(a)(4) requires the use of the sampling frequency in Appendix II, Section 4.0 for site characterization. The commenter stated that sampling frequency for site characterization purposes should be based on best engineering judgement. Commenters also objected to the requirement in Section 3.0 that waste which is picked up during remediation be sampled. One commenter stated that in most situations it is known that the concentration of PCBs is high enough that sampling is not necessary and disposal must be in a TSCA approved facility. The commenter suggested that EPA not require remediated waste to be tested before disposal when it is routed to a TSCA approved disposal facility. Another commenter stated that this section should be deleted, since it refers to materials which were removed for purposes of disposal and Appendix II applies only to cleanup verification.

Source: (C1-131, C1-134, C1-142, C1-161, C1-209, C1-242, C1-251)

Response 2: The final rule distinguishes between site characterization (see §761.61(a)(2) and subpart N) and cleanup verification (see §761.61(a)(6) and subpart O). Site characterization must be adequate to allow the EPA Regional Administrator to assess the type and extent of contamination at the site and the adequacy of the cleanup plan. Characterization may be based on historical sampling. Subpart N provides an optional method for collecting new data at a cleanup site. Cleanup verification is more comprehensive, and is intended to confirm that all areas of the site have been cleaned to permissible levels.

Sampling of waste as it is removed from the site is not required, but may in some cases be

prudent because receiving off-site disposal sites may have limits on the concentrations and amounts of PCBs waste which can be disposed of. There is no requirement to determine PCB concentration in PCB remediation waste sent off-site to a disposal facility having no PCB concentration limit in its PCB disposal approval for the type of PCB remediation waste to be disposed. EPA provided for sampling of accumulated PCB remediation waste, when necessary, at subpart R. Other proposed sampling plans maybe submitted to the RA in accordance with §§761.61(c), 761.62(c), or 761.79(h). Disposal options for PCB remediation waste are set out at §761.61(a)(5). If the disposer wishes to dispose of the waste without determining its concentration, §761.50(a)(5) provides a presumption of a waste concentration for unanalyzed waste to be land disposed.

Comment 3: A commenter questioned how proposed Appendix II will affect the existing verification guidelines found in the "Field Manual for Grid Sampling of PCB Spill Sites to Verify Cleanup". The commenter requested that EPA clarify this.

Source: (C1-194)

Response 3: The manual is guidance for the Spill Cleanup Policy and would apply to spills qualifying for cleanup under the Policy. In the final rule EPA has established different procedures to verify cleanup. Any person may propose to use the manual as a site-specific sampling option in an application to the RA according to §761.61(c) for an alternative risk-based sampling procedure.

Comment 4: A commenter recommended that EPA adopt performance-based requirements for cleanup verification instead of the standards proposed in Appendix II.

Source: (C1-161)

Response 4: The commenter did not propose any performance-based requirements. EPA believes that the concentrations, distributions, types and amounts of PCB remediation waste at each individual site will vary so widely it would be extremely difficult to provide such performance-based site cleanup requirements. For individual wastes, §761.79 provides self-implementing, performance-based disposal options for a number of kinds of PCB remediation waste.

Number of samples and collection locations

Comment 5: Commenters noted that the minimum number of samples to be taken appears to have been omitted from Section 2.0. Another commenter stated that it appears EPA intended to write, "Regardless of the amount of each type of PCB remediation waste present at a PCB

remediation site, a minimum of three samples shall be taken." A commenter requested that EPA provide a rationale for the choice of the minimum of three samples required for a PCB remediation site. Commenters also asked for clarification of the example in Section 2.3. One commenter asked how finely the material being remediated needs to be classified. Another asked what was meant by "procedure 3.0 of this appendix".

Source: (C1-147, C1-207, C1-270)

Response 5: Appendix II has been revised in its entirety. The minimum number of samples required is now discussed in §761.283. A minimum of three samples must be collected, but these samples may be composited for a single chemical extraction and analysis. Three samples provides a smoothing of the potential variability in the residual PCB levels remaining after cleanup and also provides for a more representative coverage of the waste than would be provided by a smaller number of samples. The commenters did not provide data showing that a minimum of three samples were not cost effective. Where sampling is required in the Spill Cleanup Policy a minimum of seven samples is required. In the final rule, §761.283(a)(2) provides guidance on how to classify the waste. The submission to the RA required in the notification at §761.61(a)(3)(i) should describe what PCB remediation waste media are present at the site and which media will be sampled in the cleanup verification sampling. Procedure 3.0 in Appendix II began the process for determining the minimum total number of samples to be collected at the site. The language has been revised and clarified.

Comment 6: Commenters suggested that EPA revise Section 4.1, which requires that the interval between adjacent sampling points be one meter, and Section 4.2, which does not have an upper limit to the number of samples. A commenter stated that because of the variety of and size of the sites that would be sampled, one protocol cannot adequately prescribe numbers of samples to be taken. The commenter suggested that Appendix II just require statistically valid sampling. Another commenter suggested that it may be more appropriate and statistically defensible to use a sampling interval of less than one meter in a relatively small area and a sampling interval of greater than one meter in a relatively large area. Another commenter stated that the requirement is impractical in all but small remediation projects. For large projects, an extraordinary amount of samples would be unnecessarily taken. The commenters suggested that the rule be revised to allow for alternate sampling methods that will show that the average residual PCB level is below an acceptable risk-based standard with 95 percent confidence. A commenter suggested mentioning the "Field Manual for Grid Sampling of PCB Spill Sites to Verify Cleanup" as guidance. A commenter recommended that EPA provide a more simplified grid or sampling method for pre-May, 1987 historical spills, in place of the method proposed in Section 4.1.

Source: (C1-098, C1-111, C1-142, C1-161, C1-185, C1-194, C1-207, C1-209, C1-242, C1-251)

Response 6: In the final rule, EPA has revised the interval between sampling points to be

1.5 meters. An alternate procedure is provided for cleanup sites that are sufficiently small or irregularly shaped that a grid interval of 1.5 meters will not result in a minimum of three sampling points for each type of PCB remediation waste at the site. While §761.283 specifies that a minimum of three samples for each type of PCB remediation waste must be taken at each cleanup site, there is no upper limit to the number of samples required or allowed. Section 761.61(c) allows the EPA Regional Administrator on a case-by-case basis to approve a risk-based sampling plan that does not conform to subpart O, such as a plan based on the Field Manual.

Comment 7: Several commenters expressed views on methods for selecting sample locations. Commenters suggested that the reference in Section 4.1 to sample locations based on the hexagonal grid system should stand without amendment, such that the interval between sampling points is based on the remediation site and the maximum number of samples required is 37. Another commenter stated, in reference to Section 4.0, that it is more technically defensible based on statistical evaluations to conduct random sampling in areas of unknown potential contamination and biased sampling (grid sampling) in areas of known contamination, and that this approach has been approved by EPA at other TSCA sites. A commenter suggested that EPA provide evidence for the use of the Cartesian coordinate system instead of the hexagonal grid system, or remove all references to the Cartesian system due to the excessive amount of samples it requires. The commenter stated that the need for the Cartesian system has not been documented and would result in excessive sample collection on small or irregularly shaped sites that could be adequately sampled using adaptation of the hexagonal grid system.

Source: (C1-134, C1-142, C1-161, C1-209, C1-251)

Response 7: EPA revised the proposed sampling to require a square-based grid rather than a hexagonal(triangular)-based grid. The small efficiencies in area covered per sample (over a square-based grid) gained by the hexagonal-based grid are overcome by the complexities setting up the sampling grid and in determining the areas of inference of an individual sample or a composite sample. EPA believes that a square based grid is just as simple to overlay on an irregularly shaped site as a hexagonal grid. For either grid system it will be necessary to shorten the grid interval for smaller sites. The final rule includes compositing of samples. It might also be prudent to decrease the grid interval and composite samples collected for irregularly shaped sites.

There are advantages and disadvantages to random sampling and grid sampling. Random sampling might be preferable in areas of unknown potential contamination, and grid sampling might be better in areas of known contamination. However, a cleanup site is not likely to be a site of unknown contamination, even after cleanup. EPA disagrees that grid sampling is biased. When the objective of sampling is to address the potential exposure to PCBs from the site, area sampling with an unbiased orientation provides an effective estimate of the average concentration from the site. EPA expects that the sampling procedure for verification of PCB remediation waste site cleanup will be applied to a wide variety of sites, contamination levels, and contamination distributions. The commenters did not provide a random sampling scheme. Any person may submit a random sampling plan to the RA for consideration for an approval under

§761.61(c).

Comment 8: A commenter recommended that for small spills, EPA should require no more than one sample per 100 square centimeters of an area to be sampled. The commenter also requested that EPA clarify the term "sufficiently small" in Section 4.3 as well as how to handle these types of areas, and that EPA eliminate the term "oddly configured" and replace it with "irregularly shaped" in order to be more consistent with the MRI guidance document.

Source: (C1-131)

Response 8: In the final rule, EPA provides two options for selection of sample locations for small or irregularly shaped cleanup sites (see §761.283(c)). A grid interval smaller than 1.5 meters may be used, following the procedures in §761.283(b). Additionally, the coordinate-based random sampling scheme, as presented in §761.283(c)(2) may be used. A one hundred square centimeter surface is one percent of a square meter surface. EPA believes that for most kinds of contamination a one percent area sample is a minimum ratio of sample size to cleaned area represented by a sample. For situations such a large, uniform, homogeneous, flat surface contaminated by a single source, or other special situation, EPA has provided at §761.61(c) for a person to submit an application to the RA for a risk-based sampling approval.

Comment 9: A commenter recommended that EPA change Section 4.3.3 to read "so that its origin is in the south west corner of the area to be sampled", so that it is oriented correctly on the map.

Source: (C1-270)

Response 9: EPA has affirmatively responded to this comment at §761.283(c).

Comment 10: A commenter suggested that the random number generator must be specific for the length of the axes of the sample site, as referred to in Section 4.3.5.

Source: (C1-270)

Response 10: This sampling procedure has been revised to account for the random number selection for positions along axial directions, limiting the random numbers to the length of the axes. In addition, for irregularly-shaped small sites, a selected coordinate pair must fall within the cleanup site in order to be eligible for sample collection.

Comment 11: A commenter requested that EPA clarify the inconsistency in Sections 4.3.5

and 4.3.6. Section 4.3.5 states that two sample coordinates will be selected for each of the minimum of three samples to be taken, while Section 4.3.6 states that a third coordinate is not necessary. Additionally, EPA should clarify that the procedure for sampling after cleanup in this type of area is to be conducted in accordance with Section 4.3, if this is EPA's intent. Another commenter suggested, in reference to Section 4.3.6, that a third coordinate would serve as a measure of the depth of the remediation so that final grading would result in sufficient soil cover if that was needed.

Source: (C1-142, C1-270)

Response 11: In the revised sampling procedure, EPA has accounted for the depth of sample collection at a location selected on the surface of the site.

Collecting samples

Comment 12: A commenter stated that Section 5.2 is too detailed and confusing for field use and should be deleted or revised. The commenter stated that there are too many variables in the settings and types of materials to be sampled to require one precise sampling method.

Source: (C1-111)

Response 12: EPA has revised the protocol for collecting samples. The revised protocol is now found in §761.286 in the final rule.

Comment 13: A commenter stated that the requirement in Section 5.1 of "no smaller than 100 square centimeters" may not always be possible. The commenter stated that an item may have some selectively flat non-porous surfaces that are less than 100 square centimeters in size, and it may be more appropriate to characterize what has accumulated on the surfaces.

Source: (C1-142)

Response 13: Surface samples should be taken when there is no freeflowing liquid or insufficient surface coating to collect a sample large enough to measure PCBs at the applicable cleanup levels in §761.61(a)(4) or decontamination levels at §761.79(b). In subpart P at §§761.310 and 761.316(c) provisions are made for sampling surface area when the entire surface is $<100$ $cm^2$.

Comment 14: A commenter suggested that EPA add language to Appendix II which informs the reader that blanks and duplicates are required.

Source: (C1-131)

Response 14: EPA believes that collection and preparation of blank and duplicate samples is important to inform analysts of problems occurring during chemical extraction and analysis. A useful number of blanks and duplicates depends on the type of sample matrix and the analytical method. EPA recommends that approximately 5% of samples analyzed are blanks and five percent of samples analyzed are duplicates.

Comment 15: A commenter stated that core sampling may not be possible for some types of PCB waste. The commenter suggested that EPA not specify exact diameters of core samplers, since larger diameters may be more appropriate. Additionally, EPA should not limit the depth of a sample to 2.5 centimeters below the surface or to a depth related to the particle size of the PCB waste. Another commenter stated that Section 5.2.2.2.2 states that "Each core sample shall be taken to a depth of 2.5 centimeters below the surface." However, Section 5.2.2.3.2 states that "The depth of the core sample shall be two and a half times the estimated average diameter of the particles in the wastes." The commenter requested clarification regarding this discrepancy. Another commenter recommended revising Section 5.2.2.2.2 to include the requirement that sampling be done at a depth greater than 2.5 cm. The commenter stated that this change is necessary, as an old spill may have migrated farther than 2.5 cm through the soil, or the old spill may be covered with one inch of material that would conceal the subsurface concentrations. The commenter stated that the depth of the core sample should reflect the porosity of material contaminated, age of spill and likelihood of cover material being on top of the spill.

Source: (C1-142, C1-147, C1-163)

Response 15: In the final rule, EPA has revised the requirements for core sampling. A core sampler must have a diameter $\geq$2 cm and $\leq$3 cm. Additionally, waste must be collected to a maximum depth of 7.5 cm. This core size requires little subsampling before analysis. In the final rule, EPA requires that waste be collected to a maximum depth of 7.5 cm. If PCBs are still present in this 7.5 cm sample or composite above the applicable cleanup level in §761.61(a)(4), the area of inference does not meet the cleanup level. The 7.5 cm depth meets a general no unreasonable risk standard. Larger core sample sizes and depths greater than 7.5 cm may be submitted to the RA according the requirements at §§761.61(c) or 761.62(c).

Comment 16: A commenter recommended that EPA not require that all concrete surfaces in low exposure areas be cored to test for PCB concentrations. The commenter suggested that wipe sampling be allowed for intact concrete surfaces. If a wipe sample indicates a PCB level of $\leq$100 $cm^2$, then the commenter believes that it does not pose an unreasonable risk of injury to health or the environment.

Source: (C1-131)

Response 16: Commenters' major objections to core sampling usually are that it is

invasive to concrete and mars areas where reuse of the concrete is desired, to the extent that surface restoration is required. The use authorization at §761.30(p) should reduce the need to core sample concrete until it is time to dispose of the contaminated concrete, at which time invasive sampling is not a workplace impediment or obstacle and the surface does not have to be restored.

Comment 17: A commenter stated that the sampling requirements in Section 5.3.1 for porous surfaces are excessive and burdensome, and they will result in an insufficient sample size for Method 8080A analysis. The commenter suggested using the prior guidance for collecting porous media surface samples, which required chipping the surface to a 1 cm depth using a hammer and chisel/saw to obtain a 30 gram sample. Another commenter suggested using wipe samples for these types of surfaces.

Source: (C1-134, C1-207)

Response 17: Chip sampling is not as reproducible as core sampling, which is retained in the final rule. Liquid PCBs spilled onto concrete continually over long time periods can penetrate far deeper than one centimeter, the depth that EPA estimated would be sufficient for a recent one-time spill. For PCB spills, and the PCB remediation waste generated as a result of the spills, where the PCBs have penetrated the immediate surface of concrete, wipe samples do not evaluate the presence of all PCBs in the concrete and all PCBs available for future entrainment and exposure.

Compositing samples

Comment 18: Commenters had varying views on the desirability of compositing samples. One commenter stated that the sampling scheme proposed in Appendix II applies cleanup goals on a "point-by-point basis", requiring every point to be shown to have achieved the cleanup goal. The commenter suggested that cleanup be concerned with average PCB concentrations over an area. Another commenter stated that EPA's requirement that a composite action level be met when compositing bulk PCB remediation wastes would result in additional unnecessary sampling and analysis costs as well as delays in completing site cleanup. The commenter stated that the requirement would most likely result in some composite sample PCB concentrations being above the action level when all samples in the composite have PCB concentrations below the concentration of interest. Another commenter stated that EPA's proposed composite action level is not technically feasible and would not result in accurate measurements on many sites if the action level is below 50. Another commenter suggested using an arithmetic mean and other statistical evaluations of results from several samples to establish the average site remediation concentration. A commenter recommended that Section 6.0 reference the EPA publication "Verification of PCB Spill Cleanup by Sampling and Analysis (EPA-560/5-85-026)."

Source: (C1-029, C1-142, C1-161, C1-209, C1-242, C1-270)

Response 18: EPA has responded affirmatively to commenters seeking to composite samples to give an approximation of an averaging of the concentrations of the component samples. EPA agrees that the average concentration of the area is representative of potential exposure at the site after cleanup. EPA continues to allow individual grid point analysis, because composite sampling does not provide information on the location of a sampled "hot spot" which may drive a composite analysis over a cleanup level when most of the composite area is under the cleanup level. Alternative compositing schemes such as those in the PCB Spill Cleanup Manuals can be submitted to the RA in accordance with §761.61(c).

Comment 19: A commenter stated that the compositing of a bulk sample, as required in Section 5.3.1, is not practical and will not result in a representative sampling or analysis. The commenter suggested obtaining discrete grab samples instead.

Source: (C1-185)

Response 19: Grab sampling is not representative sampling unless the all of the waste from which the sample is taken is homogeneous with respect to PCBs. Since most non-liquid PCB remediation waste is the result of a spill, EPA concludes that the waste, especially waste in place, is not homogeneous and must be sampled in a representative manner. EPA provides in the final rule one general way to collect a representative sample and an option for any person to apply to the RA according to §761.61(c) for an alternative risk-based sampling procedure.

Comment 20: A commenter recommended that EPA revise Appendix II to allow averaging of site PCB concentrations within an area of concern as well as to allow the use of concentration gradients, which would be certified by confirmatory sampling at or near the site boundary of the subject property or as otherwise deemed appropriate.

Source: (C1-203)

Response 20: EPA's risk assessment assumes uniform concentrations of PCBs at the clean site at the completion of the cleanup. Any person could submit a sampling procedure employing concentration gradients in an application to the RA according to §761.61(c) for an alternative risk-based sampling procedure or cleanup levels.

Comment 21: A commenter suggested that Section 6.1 be revised. The requirement in 6.1 that individual samples to be composited be of the same weight requires the use of a portable scale. The commenter suggested that if the samples being composited are similar, then collecting similar volumes should be adequate.

Source: (C1-111)

Response 21: EPA has responded affirmatively to this comment. The final rule requires that composite samples be prepared using equal volumes of each constituent sample.

Chemical extraction and analysis

Comment 22: Commenters suggested revising Section 6.2 by deleting the requirement that chemical analysis be by means of gas chromatography and allowing extraction and analysis by field analysis tests and other appropriate methods for PCBs for liquids and solids such as those contained in SW-846, available from NTIS.

Source: (C1-067, C1-080, C1-142)

Response 22: In the final rule, EPA has revised the section on chemical extraction and analysis. The new §761.292 requires that either Method 3500/3540B or Method 3500/3550 from EPA's SW-846, or a method approved under subpart Q be used for chemical extraction. Method 8082 or a method approved under subpart Q may be used for chemical analysis.

Cleanup verification

Comment 23: Several commenters stated that EPA's proposal to resample an entire site after the cleanup has been completed to verify only one area's additional cleanup work is impractical. They and suggested that EPA allow cleaning a portion of the site and sampling only that portion which was recleaned. A commenter recommended that EPA allow the analysis of the individual samples compromising the composite sample when the composite results are above EPA's action level. Another commenter stated that guidance similar to the 1987 spill policy, which included recommended use of the MRI Sampling Protocol for verification sampling, should be developed for these situations in which EPA requires the resampling of the entire grid. One commenter suggested that when a spot warrants recleaning, verification sampling should be implemented by using that spot as the center sampling point of the hexagonal grid; it is not necessary to resample the entire site again.

Source: (C1-029, C1-108, C1-134, C1-142, C1-161, C1-185, C1-188, C1-207, C1-209, C1-242, C1-251)

Response 23: EPA has revised this requirement. The final rule states that when a composite does not meet the cleanup requirements, the area that must be recleaned and reanalyzed is an area equal to one grid interval larger than the area in which the composite failed. Since a sample is collected in a small area relative to the overall area it represents, it is the represented area that must be recleaned, and not just the sample location(s).

Reporting Concentrations

Comment 24: A commenter stated that reporting PCB concentrations on a dry weight basis would increase costs and sample turn-around time, because percent moisture would have to be conducted on every sample processed.

Source: (C1-134)

Response 24: EPA has retained this requirement in the final rule. Percent moisture does not have to be calculated. Non-liquid waste samples can be dried in the chemical analysis laboratory prior to analysis. The dried waste can then be analyzed. Accounting for the amount of water in the waste is not the objective of the PCB disposal regulations; accounting for the amount of PCBs in the waste is the objective of the PCB disposal regulations. PCB concentrations are required to be reported as the weight of PCBs in the total weight of the waste (on a weight-weight basis). Using this weight-weight basis to report concentrations, the PCB concentration of wet waste is lower (the more water, the lower the concentration) when compared to the PCB concentration in the same waste, when water is removed.

Comment 25: A commenter stated that the requirement in Section 7.0 that all sample concentrations be reported on a dry weight basis is inconsistent with the requirements of §761.1, given the inclusion of aqueous wastes in the definition of PCB remediation waste. The commenter suggested that this paragraph is unnecessary and should be deleted, in light of the criteria for wet and dry weight basis in §761.1.

Source: (C1-147)

Response 25: Representative samples of PCB remediation waste taken from multiphasic liquid waste and mixtures of liquid and non-liquid waste must have the phases separated before chemical analysis. Depending on the concentrations found in the different phases, it may not be necessary to separate the waste for disposal so long as the disposal option is approved for all wastes in the mixture. Here are some examples:

A mixture of 90% water at 10 ppb and 10% oil at 60 ppm may be disposed of in an approved high temperature incinerator without separation. The mixture could not be sent to a facility having an applicable NPDES permit for the water, because the facility could not accept the oil. Distillation of the mixture could be occur in accordance with §761.79.

A sludge containing a mixture of 90% water at 3 ppb and 10% organic solid at 60 ppm could only be incinerated at an approved high temperature incinerator or otherwise disposed of only after separation of the phases.

A mixture of 5% water at 0.4 ppb and 95% oil at 40 ppm may be burned in accordance with §761.761.20(e) without separation.

A mixture of 95% sand at 15 ppm and 5% oil at 45 ppm could, in accordance with

TSCA, be land disposed on-site in a low occupancy area.

## Appendix III (Subpart R)

Comment 1: A commenter stated that the title of Appendix III appears to be misnamed, because Appendix III describes a sampling scheme for metal-containing wastes. The commenter suggested that EPA revise the name to read, "Sampling Non-Liquid, Non-Remediation Waste...".

Source: (C1-207)

Response 1: The title and the content of proposed Appendix III have been revised. The sampling procedures are now in subpart R which is entitled, "Sampling Non-Liquid, Non-Metal PCB Bulk Product Waste for Purposes of Characterization for PCB Disposal in Accordance With §761.62 of this Part, and Sampling PCB Remediation Waste Destined for Off-Site Disposal, in Accordance With §761.61 of this Part."

Comment 2: A commenter suggested that EPA not mandate that a specific sampling protocol be used. If EPA includes sampling protocols in the final rule, they should be intended only as guidance. The commenter suggested that any sampling method that would result in the collection of a "representative" sample should be permitted. The commenter recommended that EPA not require the application for a risk-based disposal option for alternate sampling methodologies, because an approval would have to be obtained each time an alternative sampling methodology was used to collect a sample.

Source: (C1-151)

Response 2: EPA has provided a method to obtain a representative sample for many sites. Any person may submit an application for an alternative risk-based sampling plan to the RA in accordance with §761.62(c).

Comment 3: A commenter requested clarification on how Appendix III would apply to demolition wastes made up of many types of materials. The commenter stated that the proposed Appendix III appears to only apply to shredder waste and homogeneous, single feed source streams. Additionally, the commenter suggested that EPA establish a process and criteria for adding new sampling provisions to the rule as they are developed or as they are needed to analyze newly-discovered PCB sources.

Source: (C1-242)

Response 3: EPA has designed the revised and retitled subpart R (proposed Appendix III)

to sample the most commonly expected sources of bulk product waste which will require sampling.

Comment 4: A commenter suggested that EPA amend Section 1.2 to require periodic testing of PCB non-remediation waste, in addition to testing at the beginning and when the waste stream changes. The commenter stated that with the large volume and variability of shredder wastes that are processed, a requirement for periodic testing is reasonable to protect the environment. Another commenter stated that using a one time only characterization will not provide an accurate description of an ongoing process. Additionally, this approach does not consider volume. The commenter suggested that characterization should be done on a volume basis, or at the very least, on a time schedule that will pick up the variability in the waste stream. A commenter stated that the requirement for the frequency of testing in Section 2.2 is unclear. The commenter suggested that EPA require sampling on a one-time basis, or alternatively, no more than once per quarter. Several commenters recommended that EPA approve the use of an alternative sampling procedure such as quarterly sampling of automobile shredder residue from representative scrap streams. The commenters stated that the proposed sampling method is too burdensome.

Source: (C1-094, C1-151, C1-163, C1-222, C1-252, C1-253)

Response 4: EPA has determined that the PCB concentration historically found to be in auto and white goods shredder waste and the nature of the formulation of these PCBs is such that changes in the concentration of the waste are not critical to land disposal because the PCBs do no leach from this waste. Therefore, periodic sampling is not necessary. EPA's risk assessment for the land disposal of auto and white good shredder waste, in accordance with the requirements in §761.62(b), indicates that there is no unreasonable risk from PCBs leaching into ground water.

EPA expects that the proportion of PCBs in auto and white goods shredder waste will decrease as time progresses. The decrease will result from the exhaustion of stocks of PCB materials manufactured in the mid-1970s and the cessation of use of PCBs in automobiles and white goods after the mid-1970s.

Comment 5: A commenter stated that the sampling procedures in Appendix III are not adequate for porous/non-porous vertical and horizontal painted surfaces. The commenter suggested that EPA consider paint systems as a single waste stream and EPA should reconsider the application of the preamble language found on 59 FR 62800, "Under the TSCA PCB program, EPA will not accept any sampling method that mathematically masks or dilutes areas of PCB contamination." The commenter suggested the addition of a new section, Appendix IV, entitled, "Sampling Painted Vertical and Horizontal Porous and Non-Porous Surfaces to Determine In-Place Management or Disposal Requirements". See commenter letter #139 for the suggested format of this addition.

Source: (C1-139)

Response 5: EPA has clarified that removed dried paint, painted porous surfaces, and non-porous surfaces are PCB bulk product waste (PCB non-remediation waste in the proposed rule). Disposal of most of these surfaces is regulated under §761.63 (household waste) or demolition waste at §761.62(b)(1)(i). Sampling is not necessarily required. EPA does not anticipate that there will be a substantial amount of removed dried paint, painted non-porous surfaces, and painted porous surfaces which will not qualify as demolition waste. At §761.79(b)(3)(i)(B) and (ii)(B) in the final rule, EPA has provided a visual inspection- based sampling procedure for determining whether a coated non-porous surface has been decontaminated sufficiently for disposal.

Comment 6: A commenter suggested that EPA revise the definition of a single feed source in Section 1.0. The definition should be revised to eliminate the requirement for a fixed ratio of automobiles plus white goods. The commenter suggested replacing the phrase "fixed ratio" with the phrase "a combination". Another commenter stated that the definition was too restrictive and that most scrap processors do not shred "fixed ratios of automobiles plus white goods".

Source: (C1-141, C1-151, C1-253)

Response 6: EPA has substantially revised §761.62, which in the proposed rule required additional sampling when the waste stream changed. In the final rule, it may not be necessary to sample this waste at all. Auto and white goods shredder waste is regulated for land disposal at §761.62(b)(1)(i) in the final rule.

As stated in the preamble of the final rule, generators of PCB bulk product waste must provide prior notification to PCB waste management facilities not having commercial PCB storage or disposal approvals. The notice must state that the PCB bulk product waste may include components containing PCBs at 50 ppm or greater. There are three options for determining the concentration of the waste: analysis of a representative sample of the waste in the shipment selected in accordance with subpart R; application of a general knowledge of the waste stream (or similar material) based on prior testing by the disposer or others; or the presumption that the unsampled, unanalyzed waste contains $\geq$500 ppm PCBs (see §761.50(a)(5)). For PCB bulk product waste disposed of under §761.62(b)(1), the notice must state that the waste is known or presumed to leach <10 µg/L PCBs.

For waste disposed of under §761.62(b)(1), notice is required only in advance of the first shipment from the same disposal waste stream. For example, a new notice would be required where a shredding operation changed its feedstock from automobiles to plastic-insulated electrical cables or to white goods (i.e., household appliances or industrial appliances, such as refrigerators, ranges, washers, and water heaters).

Comment 7: A commenter suggested that EPA provide a basis for taking seven samples, as opposed to any other number, regardless of the size of the pile to be sampled, as proposed in Section 3.1.

Source: (C1-141, C1-178, C1-252, C1-253)

Response 7: EPA has made significant revisions to the requirements to sample certain kinds of PCB bulk product waste and also to the sampling procedure proposed as Appendix III and finalized as subpart R.

Eight samples are now required to be collected, but the samples are composited and subsampled to the extent that only one chemical analysis is required. Eight samples provides a compromise between a very small number and a very large number. Commenters favor a small number for reduced sampling and analysis costs, however, these same commenters do not address the ability of a very small sample to represent a very large amount of very heterogeneous waste. An extremely large number of samples is needed to represent the waste. A large number is necessary because of the extreme variability in the components which could contain PCBs, and the differences in PCB concentrations in these components, most often based on how, when, and where the source of the waste was manufactured. EPA has addressed both the commenters' objectives and has addressed representativeness by requiring collection of a number of large volume samples, compositing of the samples, and subsampling of the composite sample for a single analysis.

Comment 8: A commenter requested that EPA justify the choice of size of the subsample, as required in Section 3.1. The commenter stated that EPA has consistently recognized the need for a large sample in order to properly characterize shredder residue.

Source: (C1-252, C1-253)

Response 8: The process necessarily has to reduce a large volume sample representing the waste to a much smaller volume which can be tested to evaluate leachate generation. EPA revised this sampling procedure to collect 19 liter (5 gallon) samples which are composited and a 19 liter sample is selected from the composite. The 19 liter sample is subsampled, quartered, and one fourth is sorted and large particles size-reduced until all waste passes though a 9.5 mm mesh screen. A sample of sufficient size for the leach test is selected from the material which passes through the screen.

Comment 9: A commenter requested that EPA revise Sections 3.1 and 3.2 by giving the sample size a solid measurement requirement (e.g., cc or grams) in place of the proposed 100 milliliter size.

Source: (C1-207)

Response 9: The samples collected for the first level of sampling (eight or more 19 liter samples), second level (a 19 liter subsample), and the third level (one quarter subsample of the second level subsample), are approximate. The last (fourth level) subsample is generated at a

volume or weight needed for the leachate test. This procedure attempts to balance the logistical difficulties with the management of a large sample in a laboratory with the technical requirement to maintain the character of the overall waste in a smaller sample.

Comment 10: A commenter suggested that EPA explain or justify the provision in Section 3.2 to disregard any sample material over 25 mm. Another commenter stated that this exclusion will exclude between 20% and 30% of shredder waste, thus preventing the collection of a representative sample.

Source: (C1-141, C1-151, C1-252, C1-253)

Response 10: All material in the original sample is eligible to be in the final subsample tested for leachate, regardless of the particle size as collected in the first level of sampling.

Comment 11: Several commenters had comments regarding Section 4.0. One commenter stated that Section 4.3 of Appendix III is complicated and needs to be simplified. The commenter suggested that EPA perform the procedures presented in Section 4.3 for a generic waste pile of "x" thickness and "y" diameter and present the results as the required sampling methodology. Another commenter suggested using random x, y, z coordinates to sample populations of materials such as non-remediation waste. The commenter stated that the use of a compass, the placement of markers in a pile, using string from one marker to the next sampling point, and determining whether or not a pile should be flattened prior to analysis complicate the procedure and do not ensure safety or representative sampling. An additional commenter stated that fluff is an unstable, compressible material that would not stand up to the sampling techniques described in Section 4.3. The commenter suggested using the methods described in "U.S. Environmental Protection Agency Fluff Pilot Program In-Field Sampling and In-Laboratory Subsampling Procedures, Post Sampling and Analysis Phase, April 26, 1989" for sampling unflattened piles. Another commenter suggested that EPA replace the sample site selection procedures in Section 4.0 with contemporary or technically sound procedures. One commenter stated that Section 4.3 is very confusing and impractical for field personnel to implement. The commenter suggested that EPA delete the entire section and replace it with a more reasonable sampling scheme.

Source: (C1-139, C1-142, C1-163, C1-178, C1-207, C1-260)

Response 11: Sampling auto and white good shredder waste may not be necessary if historical data are available (see the response to comment 5). EPA has provided for sampling from contemporaneous generation of waste and from pre-existing piles. Although the methods may not be simple and some samplers may not be comfortable with the procedures, the procedures in the final rule are straightforward, statistically based, and unbiased with to samplers' preferences or convenience. EPA agrees with the commenter that this waste may not be as amenable to sample collection as other wastes. Care should be taken to protect samplers from injury on soft piles of

deep waste. EPA would prefer sampling flattened piles or sampling from contemporaneous generation and provided sampling methods for both situations. Piles will not always be flattened and could be cone-shaped as generated by a shredder. As an option for sampling these cone-shaped piles, rather than flattening the piles, EPA provided the sampling procedure.

Comment 12: A commenter recommended that EPA cite references for Sections 4.2.1.1 and 4.2.2.2.

Source: (C1-178)

Response 12: These sections are no longer present in the final rule.

Comment 13: A commenter requested clarification regarding the proposed requirement in Sections 4.2.1.2 and 4.2.1.3. The proposed requirement to collect a 50 gram sample contradicts with Section 3.1 which requires a 100 gram sample.

Source: (C1-207)

Response 13: These sections have been significantly revised, with the final sample size dependent on the amount of material needed by the leach test or chemical analysis procedure.

Comment 14: A commenter requested that EPA demonstrate that the proposed technique of pile sampling will produce better data than the pile sampling guidance contained in SW-846. The agency should prove that the proposed technique will either produce more representative data or equivalent data at a reduced cost. The commenter stated that if EPA believes that the pile sampling data in SW-846 needs revision, then EPA should solicit comments from the consultants and laboratories that deal with waste sampling issues on a daily basis. Another commenter suggested that should EPA require pile sampling, the proposed procedure in Section 4.2 is better than the procedure proposed in Section 4.3. Several commenters provided sampling protocols for automobile shredder residue and recommended that EPA adopt them in place of Appendix III. Several of the commenters recommended that EPA allow contemporaneous sampling and provided sampling protocols outlining contemporaneous sampling.

Source: (C1-141, C1-151, C1-252, C1-253)

Response 14: The commenters did not provide sampling data using the SW-846 method on auto and white good shredder waste to support the claim that the SW-846 method was representative of the waste in piles at a shredder. In this type of shredder waste, every item of the hundreds shredded at a facility on a daily basis has a different potential PCB concentration and formulation. Sampling of this kind of variable waste stream cannot be compared to sampling a

very homogeneous waste stream where much is known about the characteristics of the waste and the consistent process generating that waste.

EPA does not believe that there is sufficient data of the exact contents of even one large shredder pile where the components have been identified and what the PCB concentration is of each individual component, or even the average component, in that pile. EPA emphasizes that such a pile is still only one pile from one site on one day out of an enormous overall volume of this waste generated annually. Since the PCB characterization information is not even known for a small part of a very large heterogeneous universe, EPA does not believe that any person could use personal judgement to pick out a sample any pile that would be representative of its PCB concentration. Even if the characterization information was known, EPA believes that components and concentrations are so variable in this material that judgmental characterization cannot be proven to be more accurate than random sampling without comprehensive sampling data.

Subpart R incorporates some of the non-judgement aspects of one of the sampling methods provided by the commenters.

Comment 15: A commenter stated that it is unclear whether EPA intends to require shredder residue that is collected for sampling purposes to be stored on-site until the test results are returned. The commenter recommended that sampling piles be permitted to be shipped to a municipal or industrial landfill for disposal, provided that the scrap processor has no reason to believe that the shredder residue would exceed the 50 ppb TCLP threshold.

Source: (C1-151)

Response 15: In the final rule, if the waste is being sent to a disposal facility which does not have a PCB disposal approval issued under 40 CFR 761 subpart D, the waste generator must notify the disposal facility of the PCB contents of the waste. See the response to comment 5 for details of the notification.

Comment 16: A commenter questioned EPA's establishment of a composite sample as the only acceptable sample for analysis. The commenter stated that the use of a composite sample for analyzing shredder residue does not produce statistically verifiable data. Additionally, the commenter stated that it is contrary to the guidance in SW-846 and the Sampling Guidance for Scrap Metal Shredders: Field Manual (EPA 747-R-93-009), August 1993.

Source: (C1-252, C1-253)

Response 16: The commenters did not provide data to justify claims that a composite sample does not produce statistically verifiable data. The commenters also did not provide data showing that any other sampling or compositing method produced or did not produce statistically verifiable data.

Comment 17: A commenter suggested that EPA amend Appendix III to address chemical analysis.

Source: (C1-067)

Response 17: In the final, rule subpart R at §761.358 requires the use of either Method 3500/3540B or Method 3500/3550 from EPA's SW-846, Test Methods for Evaluation of Solid Waste, or a method validated under subpart Q, for chemical extraction of PCBs from individual and composite samples of PCB bulk product waste. Use Method 8082, or a method validated under subpart Q, to analyze these extracts for PCBs.

## LIST OF COMMENTERS

| | |
|---|---|
| C1-001 | Environmental Solvents Corporation |
| C1-002 | McCrone Research Institute |
| C1-003 | Michigan Department of Natural Resources |
| C1-004 | Midwest Electric Membership Corporation |
| C1-005 | Columbus Department of Public Utilities |
| C1-006 | USEPA/OPPTS |
| C1-007 | City of Caldwell |
| C1-008 | Madison Metropolitan Sewerage District |
| C1-009 | Otter Tail Power Company |
| C1-010 | Lansing Board of Water & Light |
| C1-011 | Goldfetter, J. |
| C1-012 | Cloverland Electric Co-Op |
| C1-013 | Central Vermont Public Service Corporation |
| C1-014 | Baltimore Gas & Electric Company (BGE) |
| C1-015 | Fruit Belt Electric Cooperative |
| C1-016 | Wolverine Power Supply Cooperative |
| C1-017 | Eastman Kodak Company |
| C1-018 | City of Los Angeles |
| C1-019 | Dynex Industries, Inc. |
| C1-020 | Williams & Vanino, Inc. |
| C1-021 | U.S. Environmental Protection Agency |
| C1-022 | U.S. Environmental Protection Agency |
| C1-023 | Deere & Company |
| C1-024 | Metro Wastewater Reclamation District |
| C1-025 | Gardere & Wynne |
| C1-026 | Cintec Environment Inc. |
| C1-027 | The Association of Texas Electric Cooperatives, Inc. |
| C1-028 | Eastman Chemical Company |
| C1-029 | American Electric Power Service Corporation |
| C1-030 | Top O'Michigan Electric Company |
| C1-031 | Sierra Pacific Power Company |
| C1-032 | Indiana Department of Environmental Management |
| C1-033 | Rural Electric Cooperative, Inc. |
| C1-034 | Terra Eco Systems |
| C1-035 | City of Gresham Department of Environmental Services |
| C1-036 | Alabama Department of Environmental Services |
| C1-037 | County Sanitation Districts of Los Angeles County |
| C1-038 | Montana-Dakota Utilities Company |
| C1-039 | City of Anaheim, CA, Public Utilities Department |
| C1-040 | Northwest Biosolids Management Association |
| C1-041 | Knollenberg, J., Congress of the United States |

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|---|---|
| C1-042 | Vector Group, Inc. |
| C1-043 | Central Iowa Power Cooperative (CIPCO) |
| C1-044 | Spokane Wastewater Management |
| C1-045 | Dan River, Inc. |
| C1-046 | Public Utility District #1 of Clallam County |
| C1-047 | American Trucking Associations |
| C1-048 | AEP Indiana Michigan Power Company |
| C1-049 | Kansas Electric Cooperatives, Inc. |
| C1-050 | Salesco Systems |
| C1-051 | Lincoln Electric System (LES) |
| C1-052 | San Diego Gas & Electric |
| C1-053 | Association of Metropolitan Sewerage Agencies (AMSA) |
| C1-054 | Minnkota Power Cooperative, Inc. (MPC) |
| C1-055 | Trans-End Technology |
| C1-056 | Eastern Iowa Light & Power Cooperative |
| C1-057 | Cougan, Karen A. |
| C1-058 | Lighting Resources, Inc. |
| C1-059 | EnSys |
| C1-060 | Association of American Railroads |
| C1-061 | Laidlaw Environmental Services, Inc. |
| C1-062 | Eli Lilly & Company |
| C1-063 | H.E.L.P.E.R. |
| C1-064 | The Composting Council |
| C1-065 | Boise City of Trees |
| C1-066 | Columbus Southern Power, Ohio Power |
| C1-067 | Quanterra Environmental Services |
| C1-068 | Seattle City Light |
| C1-069 | Chugach Electric Association, Inc. |
| C1-070 | Colorado Springs Utilities |
| C1-071 | St. Regis Mohawk Tribe |
| C1-072 | University of Wisconsin, Madison |
| C1-073 | City of Kennewick Washington Civic Center |
| C1-074 | Taunton Municipal Lighting Plant |
| C1-075 | North Florida Shipyard, Inc. |
| C1-076 | Laidlaw Environmental Services |
| C1-077 | Westinghouse Electric Corporation |
| C1-078 | City of Auburn |
| C1-079 | SDTX Technologies, Inc. |
| C1-080 | Oak Ridge National Laboratory |
| C1-081 | Nebraska Public Power District |
| C1-082 | Transformer Service, Inc. (TSI) |
| C1-083 | Environmental Protection Services |
| C1-084 | Norfolk Southern Corporation |

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| C1-085 | Law Offices, Sullivan & Ward, P.C. |
| C1-086 | Molten Metal Technology, Inc. |
| C1-087 | Reynolds Metals Company |
| C1-088 | City of San Bernardino Municipal Water Department |
| C1-089 | County of San Diego, Department of Public Works |
| C1-090 | City of Portland, Environmental Services |
| C1-091 | Omaha Public Power District |
| C1-092 | County Sanitation Districts of Orange County, CA |
| C1-093 | J&L Specialty Steel, Inc. |
| C1-094 | Wisconsin Department of Natural Resources |
| C1-095 | Michigan Electric Cooperative Association (MECA) |
| C1-096 | Ramona Municipal Water District |
| C1-097 | Sacramento Regional County Sanitation District (SRCSD) |
| C1-098 | Terra-Kleen Response Group, Inc. |
| C1-099 | Terra-Kleen Response Group, Inc. |
| C1-100 | Terra-Kleen Response Group, Inc. |
| C1-101 | Terra-Kleen Response Group, Inc. |
| C1-102 | County of San Diego, Department of Public Works |
| C1-103 | Roy F. Weston, Inc. |
| C1-104 | U.S. Environmental Protection Agency |
| C1-105 | Shell Chemical Company |
| C1-106 | Cherryland Electric Cooperative |
| C1-107 | U.S. Department of the Navy |
| C1-108 | Cytec Industries, Inc. |
| C1-109 | U.S. Environmental Protection Agency, Region VIII |
| C1-110 | Quebec Industry |
| C1-111 | Union Electric |
| C1-112 | The Peoples Natural Gas Company |
| C1-113 | Trans-Cycle Industries, Inc. |
| C1-114 | Commonwealth Edison |
| C1-115 | Water Environment Federation |
| C1-116 | Oceana Electric Cooperative |
| C1-117 | National Institute of Ecology |
| C1-118 | Kentucky Power Company |
| C1-119 | Appalachian Power Company |
| C1-120 | Twin Valleys Public Power District |
| C1-121 | S.D. Myers, Inc. |
| C1-122 | Northwest Public Power Association |
| C1-123 | The Upjohn Company |
| C1-124 | Washington Suburban Sanitary Commission |
| C1-125 | PacifiCorp. |
| C1-126 | Regulatory Compliance Services, Inc. |
| C1-127 | Texas Department of Health |

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| C1-128 | Lewis County Public Utility District |
| C1-129 | Matanuska Electric Association, Inc. |
| C1-130 | California Environmental Protection Agency |
| C1-131 | Eastman Chemical Company |
| C1-132 | Al-Jon, Inc., United Division |
| C1-133 | Sierra Club, Lone Star Chapter |
| C1-134 | Interstate Natural Gas Association of America (INGAA) |
| C1-135 | Williston Basin Interstate Pipeline Company |
| C1-136 | Northern States Power Company |
| C1-137 | Oxychem |
| C1-138 | G&S Motor Equipment Company, Inc. |
| C1-139 | U.S. Department of the Army |
| C1-140 | Florida Power & Light Company (FPL) |
| C1-141 | New Jersey Auto & Metal Recyclers Association (NJ-AMRA) |
| C1-142 | Conestoga-Rovers & Associated Limited (CRA) |
| C1-143 | U.S. General Services Administration |
| C1-144 | Cooperative Power Association |
| C1-145 | National Rural Electric Cooperative Association |
| C1-146 | Northern Indiana Public Service Company |
| C1-147 | U.S. Department of Energy |
| C1-148 | American Iron & Steel Institute |
| C1-149 | Bridgestone/Firestone, Inc. |
| C1-150 | Specialty Steel Industry of North America |
| C1-151 | Steel Manufacturers Association |
| C1-152 | Chemical Manufacturers Association (CMA) |
| C1-153 | U.S. Department of the Energy |
| C1-154 | Tenneco Gas & Tennessee Gas Pipeline Company |
| C1-155 | Sola/Hevi-Duty Electric |
| C1-156 | Natural Gas Pipeline Company of America |
| C1-157 | Portland General Electric Company (PGE) |
| C1-158 | New Hampshire Department of Environmental Services |
| C1-159 | Cinergy Environmental Services |
| C1-160 | Virginia Electric & Power Co. |
| C1-161 | Chemical Manufacturers Association (CMA) |
| C1-162 | American Petroleum Institute (API) |
| C1-163 | U.S. Environmental Protection Agency, Region V |
| C1-164 | The Dow Chemical Company |
| C1-165 | U.S. Department of Defense |
| C1-166 | Steel Manufacturers Association |
| C1-167 | Florida Steel Corporation |
| C1-168 | Kirkland & Ellis |
| C1-169 | Electronic Industries Association |
| C1-170 | The Boeing Company |

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| C1-171 | ENSR Operations |
| C1-172 | DuPont |
| C1-173 | Blasland, Bouck & Lee, Inc. |
| C1-174 | Stanford University |
| C1-175 | New York Power Authority |
| C1-176 | Envirosafe Service of Idaho, Inc. |
| C1-177 | T&R Service Company |
| C1-178 | Chemical Waste Management, Inc. |
| C1-179 | Consumers Power Company |
| C1-180 | Texas Eastern Transmission Corporation |
| C1-181 | Minnesota Pollution Control Agency |
| C1-182 | Brooklyn Union |
| C1-183 | Daily, N. S. |
| C1-184 | Union Camp Corporation |
| C1-185 | Westinghouse Electric Corporation |
| C1-186 | American Gas Association (AGA) |
| C1-187 | Panhandle Rural Electric Membership Association (PREMA) |
| C1-188 | City Public Service of San Antonio |
| C1-189 | South Dakota Rural Electric Association, Inc. (SOREA) |
| C1-190 | The Coastal Corporation |
| C1-191 | Integrated Waste Services Association |
| C1-192 | Texas Utilities Services, Inc. |
| C1-193 | Jersey Central Power & Light Company |
| C1-194 | Bangor Hydro-Electric Company |
| C1-195 | The East Ohio Gas Company |
| C1-196 | Heritage Environmental Services, Inc. |
| C1-197 | Solite Corporation |
| C1-198 | Mid-Continent Area Power Pool (MAPP) |
| C1-199 | City of Los Angeles, Department of Water & Power |
| C1-200 | Potomac Electric Power Company |
| C1-201 | NJ Department of Environmental Protection, Division of Water Quality |
| C1-202 | The New England Gas Association |
| C1-203 | New Jersey Department of Environmental Protection |
| C1-204 | Bovar Corporation |
| C1-205 | Southwestern Public Service Company |
| C1-206 | Public Service Electric & Gas Company (PSEG) |
| C1-207 | GenCorp, Inc. |
| C1-208 | Okanogan County Public Utility District #1 |
| C1-209 | Southern Company Services |
| C1-210 | Pacific Gas & Electric Company |
| C1-211 | Louisville Gas & Electric Company |
| C1-212 | Trans-Cycle Industries, Inc. |
| C1-213 | Pepper Hamilton & Scheetz |

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| C1-214 | Massachusetts Department of Environmental Protection |
| C1-215 | El Paso Electric Company |
| C1-216 | Enron Operations Corporation |
| C1-217 | Northeast Utilities System |
| C1-218 | U.S. Department of the Air Force |
| C1-219 | Tennessee Valley Authority (TVA) |
| C1-220 | Electricities of North Carolina, Inc. |
| C1-221 | Central Main Power Company (CMP) |
| C1-222 | Chaparral Steel Company |
| C1-223 | Geosafe Corporation |
| C1-224 | Sacramento Municipal Utility District |
| C1-225 | Amtrak |
| C1-226 | Brazos Electric Cooperative |
| C1-227 | Ohio Edison Company |
| C1-228 | Oklahoma Wildlife Federation |
| C1-229 | Southern California Gas Company (SoCalGas) |
| C1-230 | Sacramento Municipal Utility District |
| C1-231 | Ford Motor Company |
| C1-232 | Gardere & Wynne |
| C1-233 | Biotechnology Industry Organization |
| C1-234 | Environmental Technology Council |
| C1-235 | American Automobile Manufacturers Association |
| C1-236 | Wisconsin Ballast, Inc. |
| C1-237 | South Dakota Department of Environment & Natural Resources |
| C1-238 | Texas Department of Health |
| C1-239 | Aluminum Company of America (ALCOA) |
| C1-240 | Duke Power Company |
| C1-241 | S.D. Myers, Inc. |
| C1-242 | General Electric Company |
| C1-243 | U.S. Department of the Navy |
| C1-244 | Central & South West Services, Inc. |
| C1-245 | Rural Electric Company |
| C1-246 | New York State Department of Environmental Conservation |
| C1-247 | Stanley Citizens Opposed to Toxic Chemical Hazards |
| C1-248 | U.S. Environmental Protection Agency, Office of Enforcement |
| C1-249 | State of Connecticut Department of Environmental Protection |
| C1-250 | Browning-Ferris Industries (BFI) |
| C1-251 | Detroit Edison Company |
| C1-252 | W.Z. Baumgartner & Associates, Inc. |
| C1-253 | Institute of Scrap Recycling Industries, Inc. (ISRI) |
| C1-254 | Columbia Gas System Service Corporation |
| C1-255 | Georgia Power Company |
| C1-256 | Hands Across the River Coalition |

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| C1-257 | Iowa-Illinois Gas & Electric Company |
| C1-258 | Commodore |
| C1-259 | Wheelabrator Clean Water Systems, Inc. |
| C1-260 | U.S. Department of the Army |
| C1-261 | U.S. Department of Transportation |
| C1-262 | AK Steel Corporation |
| C1-263 | International Business Machine Corporation (IBM) |
| C1-264 | East River Electric Power Cooperative |
| C1-265 | EET, Inc. |
| C1-266 | Safety-Kleen |
| C1-267 | U.S. Environmental Protection Agency, Region X |
| C1-268 | National Oil Recyclers Association |
| C1-269 | U.S. Environmental Protection Agency, Office of Enforcement |
| C1-270 | Spill Control Association of America |
| C1-271 | Dallas Water Utilities |
| C1-272 | FulCircle Ballast Recyclers |
| C1-273 | Midwest Power |
| C1-274 | Shipbuilders Council of America |
| C1-282 | Trans Ind |
| C1-283 | S.D. Myers |
| C1-284 | (see C1-256) |
| C1-285 | Water Environment Federation |
| C1-286 | Eastman Chemical Company |
| C1-287 | United Technologies |
| C1-288 | Kirkland & Ellis |
| C1-289 | Chemical Manufacturers Association PCB Panel |
| C1-290 | General Electric Company |
| C1-291 | T&R Service |
| C1-292 | SCE&G |
| C1-294 | Texas Eastern Transmission Corporation |
| C1-295 | Southern California Gas Company |
| C1-296 | Williston Basin Interstate Pipeline Company |
| C1-297 | Kirkland & Ellis |
| C1-298 | Hogan & Hartson |
| C1-299 | Chemical Waste Management, Inc. |
| C1-300 | Interstate Natural Gas Association of America |
| C1-301 | General Electric |
| C1-302 | Enron Operations Corp. |
| C1-303 | General Electric |
| C1-304 | Sonnenschein Nath & Rosenthal |
| C1-305 | PUD #1 of Clallam County |
| C1-306 | American Gas Association |
| C1-307 | S.D. Myers |

C1-308 ENSR Operations