CONCISE EXPLANATORY STATEMENT (RESPONSIVENESS SUMMARY)

for the

MODEL TOXICS CONTROL ACT RULE AMENDMENTS ADOPTED JANUARY 26, 1996

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RULE AMENDMENTS
ADOPTED JANUARY 26, 1996

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January 1996

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DEPARTMENT OF ECOLOGY

Concise Explanatory Statement/Responsiveness Summary

for the MTCA Rule Amendments

Adopted January 26, 1996

REASONS FOR ADOPTING THESE AMENDMENTS

The rule amendments are intended to implement certain provisions of Engrossed Substitute Senate Bill 6123 (ESSB 6123). This bill was passed during the 1994 legislative session and amended the Model Toxics Control Act (MTCA). Specifically, these amendments are intended to implement the bill provisions related to agreed orders, industrial property cleanup standards and institutional controls/deed restrictions. In addition, the amendments include changes to other selected provisions of the rule where there has been confusion as to the intent or to correct some inconsistencies.

See description of adopted rule amendments, below, for additional discussion of the reasons for adopting these amendments.

CHANGES BETWEEN PROPOSED AND FINAL RULE

The following is a list of changes (other than editing) between the proposed and adopted rule. A description of why these changes were made is incorporated in the responses to the comments received, included later in this report.

WAC 173-340-200:

Changed definitions of industrial property and zoning
Deleted proposed definition of commercial property

WAC 173-340-440

Added state land records to example alternative mechanisms.
Added requirements related to leases where restrictive covenants are used.

WAC 173-340-440 (cont)

Changed local government notification to include sending a copy of the executed deed restriction and to address independent cleanup notification requirements.

WAC 173-340-700

Deleted references to commercial sites.

WAC 173-340-706

Deleted references to commercial sites.

WAC 173-340-740

Deleted changes expanding allowed use of commercial soil cleanup standards.
Deleted changes to recreational, agricultural and silvicultural land use cleanup standards.
Changed terminology from "site" to "property".
Changed table statement regarding cleanup standards for substances not on table.

WAC 173-340-745

Simplified criteria for evaluating land uses for compliance with industrial property definition and added additional explanation on the use of these criteria.
Deleted transition zone concept and 300 foot presumption.
Changed criteria and discussion for evaluation of off-property threats to reflect these deletions.
Changed expectation statements to reflect other changes in section.
Changed table statement regarding cleanup standards for substances not on table.

RULE PROCESS

This final rule culminates a process that started shortly after ESSB 6123 was passed in the 1994 legislative session. An early draft of these proposed amendments was mailed to Ecology's MTCA Work Group, a diverse group of some 50 individuals representing environmental, business, local government and state government interests. A meeting was also held on November 15, 1994 to discuss the proposed draft.

Based on comments received on that draft, Ecology distributed a second set of draft rule amendments on March 17, 1995. This draft was sent to the MTCA Work Group and to solicit comments. Numerous other individuals also requested and were mailed a copy of this draft.

Based on further comments received and discussions with individual Work Group members, the proposed amendments were further revised and published as a proposed rule in the August 2, 1995 State Register. A notice of rule-making was also published in the Toxics Cleanup Program's Site Register, a regular Ecology publication that is mailed to over 1000 persons. Over 200 copies of this draft rule were directly mailed to persons requesting a copy.

Public hearings on the proposed rule were held in Seattle on August 23, 1995 and on August 24, 1995 in Spokane. The rule was also discussed at several MTCA Science Advisory Board meetings.

On December 14, 1995 another draft of the proposed rule was circulated to the MTCA Work Group to solicit comments on changes made to respond to the comments received. Some further adjustments were made to the rule based on the comments received on this version.

Fourteen (14) comment letters were received on the August 2, 1995 proposed rule amendment. The following summarizes the comments received and Ecology's response to those comments. Additional information can be found in the rule files.

DESCRIPTION OF ADOPTED RULE AMENDMENTS

WAC 173-340-200 DEFINITIONS

Agreed Orders

The definition of agreed order was changed to make the definition in the rule consistent with the statutory definition in ESSB 6123.

Industrial Properties

A definition of industrial properties has been added to the rule to make the rule consistent with the statutory definition in ESSB 6123. For a property to meet this definition it must meet a two part test: (1) It must be a "traditional industrial use", examples of which are provided in the definition. For land uses that are not listed in the definition, there is a cross reference to Section 745 where criteria are provided to determine whether a land use not specifically listed in the statute would meet the requirement of "traditional industrial use". (2) The property must be "zoned for industrial use" under the Growth Management Act by the city or county with land use planning authority over the property. If the property is located in a city or county not doing land use planning under the growth management act but instead under other authorities, the property must not only be

"zoned for industrial use" but also must be adjacent to other properties currently used or designated for industrial purpose. There are no state-wide zoning standards. Thus, jurisdictions will use a variety of zoning classes to describe industrial lands. Again, there is a cross reference to Section 745 where criteria are provided to determine if a property is "zoned for industrial use".

Schools

Since the passage of the cleanup standards in 1991, as a result of contamination being found on some school properties, Ecology has been questioned on what are the intended cleanup standards for these facilities. This standard has been added to Section 740 of the rule to clarify this ambiguity in the rules. Schools are also mentioned in Section 745 of the rule when discussing land uses of concern adjoining industrial sites. Thus, this definition has been added to the rule. The intent is for the definition to encompass the normal range of public and private schools where children are taught. Universities, vocational schools, community colleges and certain private academies like ballet schools or karate schools are not intended to be included in this definition.

Zoned for (a specified) Use

At several locations in the rules the zoning of a property is discussed as one of the criterion to look at when establishing cleanup standards. This definition has been added to the rule to make it clear that, as used in this context, zoning is intended to mean permitted and conditional uses. Nonconforming uses are not considered to be zoned for that use, as is explained later in this document.

WAC 173-340-440 INSTITUTIONAL CONTROLS

Ecology has always believed it has had the authority to require imposition of institutional controls under MTCA. ESSB 6123 added this as an explicit authority under MTCA and also authorized Ecology to require deed restrictions which, as used in MTCA, are a specific type of institutional control. Subsection (3) of the preexisting rule defined what institutional controls are. Subparagraph (b) of this subsection has been updated to better reflect actual practice of how these controls have been used since passage of MTCA. Examples of these controls have also been added to facilitate understanding of their use.

It should be noted that the term "restrictive covenants" is generally used in the rule and there is no difference intended to be implied by the use of this term rather than the term "deed restrictions".

Subsection (4) of this section in the preexisting rule had a distinction between the types of institutional controls that are to be used when the owner of the property is a potentially liable person (PLP) under MTCA versus when the owner of the property is not a PLP under MTCA. This subsection required PLP-owners to execute a restrictive covenant while non PLP-owners are not required to execute a restrictive covenant. This is because Ecology does not have jurisdiction over non PLP-owners to require restrictive covenants. This subsection has been a source of confusion to PLPs since its adoption in 1991. Some have interpreted it to mean that if a lessee is doing a cleanup, restrictive covenants are not required if the owner of the property had not been named as a PLP by Ecology and was not conducting the cleanup, even if the owner could be named as a PLP under MTCA. This was not Ecology's intent in adopting the rule nor the manner in which Ecology has interpreted and applied the rule. Thus, this subsection has been modified to clarify that restrictive covenants are required any time the owner meets the liability criteria in MTCA and has been or could be named as a PLP, regardless of who is doing the cleanup. Examples have been added of institutional controls other than restrictive covenants for non PLP-owner situations to facilitate understanding of their use.

A requirement has been added to subsection (5) of this section to address a concern raised during the public comment period on the draft rule that lessees may not be aware of deed restrictions and could be inadvertently exposed to residual contamination if they did something on the property inconsistent with the restrictions. Thus, (5)(d) has been added stating that leases must be for uses and activities that are consistent with the restrictive covenant. In addition, a requirement has been added that the lessee must be notified of the restrictions. This could be language in the lease agreement or a letter or some other method. The intent of the rule is that the person leasing the property is made aware that there are restrictions on its use because of residual contamination remaining after cleanup. Ecology believes such notification is consistent with real estate practice and law but that it is important to explicitly state this in the MTCA rules to ensure that lessees comply with deed restrictions.

ESSB 6123 required Ecology to notify local governments whenever a deed restriction is being imposed under MTCA. This requirement has been added in subsection (6) of this section to make the rule consistent with this statutory requirement. In addition, since the nature of the restriction could change over the course of the cleanup decision process, a provision has been added stating that the local government should be sent a copy of the restrictive covenant, once it has been executed. Since many more sites are cleaned up independently than under Ecology oversight, a statement has been added noting that the person doing these cleanups should do these notifications.

WAC 173-340-530 AGREED ORDERS

Language has been deleted restricting the use of agreed orders in subsection (1) of this section to make this section consistent with the statutory definition of agreed order. The practical effect of this change is that agreed orders can now be used for final cleanup actions.

WAC 173-340-700 OVERVIEW OF CLEANUP STANDARDS

Subparagraph (3)(c) of this section has been changed to make this overview section consistent with, and a reflection of, the changes made in other sections of the rule allowing the use of industrial soil cleanup standards at industrial properties.

WAC 173-340-706 USE OF METHOD C

Subparagraph (1)(b) of this section has been added to allow the use of industrial soil cleanup standards at industrial properties without having to make the demonstrations listed in subparagraph (1)(a). This is intended to remove several of the constraints to industrial properties qualifying for industrial soil cleanup standards.

The term "undertaking" in subparagraph (1)(a) was replaced with "conducting" to make this read more consistent with terms defined in WAC 173-340-200 USAGE. No change in meaning is intended by this change.

Since the adoption of the cleanup standards in 1991 some have questioned whether a site that qualifies for a method C cleanup standard for one medium also qualifies for a method C cleanup standard under other media. This was not the intent of the preexisting rule and a statement has been added to subsection (1) indicating this. The reason for this is each medium is unique and must be evaluated separately to determine if that medium qualifies for a method C cleanup standard.

WAC 173-340-740 SOIL CLEANUP STANDARDS

Several subheadings have been added throughout subsection (1) to facilitate readability.

The term "site" has been replaced with "property" at several locations throughout subsection (1) in response to comments received on the draft rule. This distinction is necessary because the two do not always coincide. Property is used when referring to a parcel of land. Site is used when referring to the area of contamination. The term "land use" has been used when referring to the surface use of the land so as not to confuse this with the terms "industrial property" and "facility". These substitutions are not intended to change the intent of

these sections but rather to facilitate the readability of this and other sections.

A statement has been added to subparagraph (1)(a) of this section to clarify what methods are to be used to calculate soil cleanup standards for residential properties. This is not intended to change how standards are calculated for these properties but rather to clarify the rule to state what has been the interpretation and use since its adoption in 1991.

In subparagraph (1)(c), the word "will" has been changed to "shall" to make this read consistent with WAC 173-340-200 USAGE. No substantive change is intended by this word substitution.

In subparagraph (1)(c)(ii) the term "land uses" has been substituted for "sites" to make the distinction that the industrial land uses being referred to in this paragraph are not the statutorily defined "industrial properties". These are facilities that, for example, would normally be considered industrial in nature but do not meet the statutory definition of "industrial properties", perhaps because the land is not zoned for industrial use but instead for some type of commercial use. This subparagraph is not intended to impose a different set of cleanup standards for qualifying "industrial properties".

Subparagraph (1)(c)(iv) has been added to make it clear that properties beyond the property that is the source of the contamination do not automatically qualify for a method C soil cleanup level just because the source property does. They must be evaluated separately to determine if they meet the criteria for using a method C cleanup standard and, if they don't, a method A residential or method B cleanup level must be used on these properties.

Subparagraph (1)(d)(i) has been added to identify the soil cleanup standards for schools and childcare facilities. This has been set at the residential level because of the large numbers of children regularly present at these sites. This is consistent with the exposure assumptions upon which the residential cleanup standards were based in the 1991 rules. This has resulted in reformatting of the rest of subparagraph (1)(d). Subparagraph (1)(d)(ii)(C) has been added to clarify that when a soil cleanup standard is derived that is based on a particular set of land use assumptions, a restrictive covenant must be placed on the property restricting the use of the property to those assumed land uses.

Subparagraph (1)(e) has been amended to indicate a property that qualifies for other than a method A residential or method B soil cleanup level (such as a method C commercial soil cleanup level), does not automatically qualify for a method C cleanup level in other media. The reason for this is each medium is unique and

must be evaluated separately to determine if that medium qualifies for a method C cleanup level.

Subparagraph (b) has been added to subsection (2) to explain how cleanup standards are to be derived for substances not on the table. This is to make this section consistent with the requirements for using the tables stated in WAC 173-340-704. It should be noted that not all hazardous substances found at a site would trigger this requirement. The substance must be deemed "an indicator hazardous substance" utilizing the criteria in WAC 173-340-708 (2). In addition, this does not apply to petroleum components that are already encompassed by the TPH cleanup standard. The reason for restricting the cleanup standards for the additional indicator hazardous substances to the PQL or natural background is because the table does not take into account the additive effects of chemicals. For complex sites with substances not on the table, Ecology recommends cleanup levels be established under method B.

Subparagraph (4)(a) has been changed to reflect that often Ecology is not "approving" of method C soil cleanup levels in situations such as independent cleanup sites. Again the word "conducting" has been substituted to make this section more consistent with WAC 173-340-200 USAGE.

WAC 173-340-745 SOIL CLEANUP STANDARDS FOR INDUSTRIAL PROPERTIES

Several headings have been added to subsection (1) to facilitate readability.

The word "property" has been substituted for "site" for reasons previously explained above.

Subsection (1)(b) has been amended to add in the criteria that must be met to qualify for an industrial soil cleanup standard. There are three criteria:

> The property must meet the definition of industrial property
>
> A restrictive covenant will be placed on the property, restricting its use to industrial property uses.
>
> An evaluation must be done demonstrating the hazardous substances remaining on the property after remediation will not pose a threat to human health or the environment on the property itself or in adjacent non-industrial areas.

Subsection (1)(b)(i) provides criteria for determining if a property meets the two part test for the statutory definition of "industrial property". The lead-in paragraph to the criteria emphasizes that since the industrial soil cleanup standards are based on a specific adult worker exposure scenario (limited

ingestion of soil), any land use should be evaluated keeping this exposure scenario in mind. The criteria provide additional specifics for making this evaluation. Note that all the criteria must be considered when making this evaluation, however, there is no requirement that all criteria be met. It should also be noted that these are the minimum criteria to be considered and that other criteria may be considered in this evaluation.

Since there are no standards for what types of land uses cities and counties allow in an industrial zone under land use planning laws, this subsection requires the evaluator to review the zoning code and comprehensive plan language pertaining to the property in question to determine compliance with the MTCA definition of "industrial property". It is also required to visit the property and observe land uses on the property and within the zoning classification near the site when making this determination.

Subparagraph (1)(b)(ii) requires these properties to utilize a restrictive covenant to insure the site use remains as industrial for the foreseeable future. This has been included as a requirement because Ecology believes this is the most reliable means of assuring the land is not converted to some other use where the potential for exposure to contamination would be higher than as an industrial property.

Subparagraph (1)(b)(iii) requires that hazardous substances remaining on the property after remediation not pose a threat to human health or the environment either on the site itself or in adjacent non-industrial areas. The minimum factors to consider when making this assessment are identified here as well.

The requirement that an assessment be made of the property itself has been included because MTCA has always required that cleanups be protective of human health and the environment. Within the property itself, the use of table 3 industrial soil cleanup standards would be sufficient to assure adequate protection. If the method C formulas are used, it should include a check for exposure pathways for other than direct contact, since this is the only pathway directly considered in the formula. Similarly, an assessment should be made of potential affects of residual contamination on vegetation and wildlife. This is particularly important if residual contamination could threaten surface waters, wetlands or sediments on or near the site. Environmental pathways could also be important on site if there are significant areas of soil not covered with pavement or buildings remaining at the site after remediation. It should be noted that when assessing environmental effects, the narrative standard such cleanup standards must meet (WAC 173-340-706 (2)(b)) is "no significant adverse effects on the protection and propagation of aquatic and terrestrial life".

For off-property areas there are two additional concerns: (1) The potential for the general public, especially children, to gain access to the site from these areas and become exposed to the residual contamination and (2) The migration of contamination from the property to these off-property areas where the general public could be exposed.

Exposure to residual soil contamination can be controlled in two ways. One way is to control access to the site. This can be accomplished by distance from areas where the general public is likely to be or by having a physical barrier between these areas and the site. Examples of physical barriers provided in the rule are natural features (such as substantial water bodies or wetlands), arterial streets (where significant levels of traffic is likely to act as a natural barrier), manmade structures (such as a high retaining wall), or intervening land uses (such as a commercial/light industrial area with activities not expected to attract the general public). Fencing is not considered as a sufficient barrier to prevent access to a site over the long term based on Ecology's experience with the ineffectiveness of fences limiting access at cleanup sites. Exposure can also be controlled by choosing a remedial action that limits the likelihood of residual contamination being exposed on the ground surface or becoming exposed in the future due to construction or maintenance activities. An example provided in the rule is covering residual contamination with a substantial thickness of clean soil of sufficient thickness that it is unlikely the soil would be re-exposed through site construction or maintenance activities. Additional discussion of these factors is provided later in this document.

Another factor identified in this subparagraph is the potential for transport of residual contamination off-property. This could be, for example, through leaching and ground water transport, vapor movement, runoff or windblown dust. These factors will need to be evaluated on a site-by-site basis.

WAC 173-340-745(1)(c) identifies Ecology's expectations of the outcomes resulting from the various factors and requirements listed in paragraph (b).

WAC 173-340-745(1)(d) has been amended to eliminate the requirement that industrial soil cleanup levels be as close as practicable to residential soil cleanup levels. Ecology believes this language was inconsistent with the intent that industrial properties establish cleanup standards using methods consistent with industrial land uses.

WAC 173-340-745(1)(e) has been amended to reflect that off-property areas cannot use industrial soil cleanup standards unless they meet the same criteria that on-property areas are

required to meet. This includes the requirement for restrictive covenants limiting land use to industrial property uses.

WAC 173-340-745(1)(f) has been amended to make this language consistent with other previously discussed sections of the rule.

WAC 173-340-745(1)(g) has been amended to make this paragraph consistent with section 740.

WAC 173-340-745(2)(b) has been amended to add a description of how cleanup levels are to be set for contaminants not on table 3. See the earlier discussion under section 740 for a discussion of this addition.

GENERAL COMMENTS

Scope

Several persons expressed concerns that the proposed rule amendments went beyond the scope of the statutory intent by incorporating changes to the commercial site and other land use cleanup standards described in WAC 173-340-740 (Heart of America, Sierra Club, Washington Environmental Council). Others (Weyerhaeuser, Heller Ehrman White & McAuliffe) expressed similar concerns, without referencing these specific sections. For example:

> ...there is no authority in the statute, and the legislative history of 6123 makes it clear that the legislature did not intend to have a lower standard for commercial properties. The basic rule of statutory construction applies that if the legislature had intended to have a lower rule for commercial properties when they passed a lower rule for industrial properties, they would have known how to say so, and they did know how to say so, and they chose not to. (Gerald Pollet--Testimony at Seattle rule hearing)
>
> Although the legislature authorized the department to promulgate rules regarding the application of industrial cleanup standards (RCW 70.105D.030 (2)(e)), the extensive amendments and modifications encompassed in the Proposed Rules are, as a matter of law, beyond the statutory authority granted to the department by the legislature. (Ralph Polumbo--Heller Ehrman White & McAuliffe)
>
> WEC opposes the application of reduced cleanup standards to commercial properties. There is no foundation in the statute for the establishment of a commercial property category, or for the exemptions

> from the existing regulations for commercial properties. Commercial properties are extremely difficult to distinguish from residential properties, particularly where mixed commercial and residential uses occur. Equally important, it is very difficult if not impossible to preserve the long term separation in these types of uses in the absence of significant oversight and enforcement activity. We believe that this distinction should be eliminated from the regulations. (Peter Hurley, Washington Environmental Council)
>
> We believe Ecology has--in several specific instances--proposed "surgical" regulatory revisions which go beyond either the statutory intent of SB 6123 or are not supported by other statutory provisions--within SB 6123--authorizing such rulemaking. (Kevin Godbout--Weyerhaeuser)

And in reference to provisions pertaining to environmental aspects of cleanup, Mr. Godbout went on to further state:

> Ecology has chosen to use this final rulemaking package to further its agenda of assessing ecological impacts and implementing ecological cleanup standards.

These opinions were not uniformly held, however. For example:

> We also agree with the decision of the Department to encourage commercial categories of land within this rule proposal. While not specifically referenced by name in ESSB 6123, one clear intention of that bill -- stated repeatedly by its advocates and legislative sponsors -- was to give more authority and flexibility to the Department of Ecology to create incentives for cleaning up and re-using urban land. Because MTCA's strong safeguards are left in place, these commercial policies are sensible and will lead to urban cleanups that will not otherwise occur. (Eric Johnson--Washington Public Ports Association)

Response

Ecology believes it has the statutory authority to promulgate the proposed changes to the regulations. All of the changes that were proposed were to already existing sections of the MTCA rules, previously authorized by the broad grant of rule making authority in RCW 70.105D.030. This includes the authority to establish cleanup standards. As such, Ecology believes these changes are entirely within its statutory authority.

With respect to ecological impacts, it was not Ecology's intent in these rule amendments to establish ecological cleanup standards beyond what is already required when establishing cleanup standards at a site. Ecology believes it has the statutory authority to establish such requirements but this issue is currently under review by the MTCA Policy Advisory Committee (PAC). Due to the concerns raised, Ecology has withdrawn most of the language related to ecological considerations in establishing cleanup standards. The term "surgical changes" in Ecology's letter was used to point out that for most sections only limited revisions were proposed, with most of the current language remaining intact.

Ecology also agrees that the focus of ESSB 6123 was on industrial property redevelopment and the changes to the commercial and other land use (i.e. recreational & agricultural) categories have not had the benefit of full debate. This is evident from the numerous concerns raised about these proposed revisions and lack of consensus on how the existing cleanup standards for these types of land uses should be revised (ARCO, Heller Ehrman White & McAuliffe, Landau Associates, City of Seattle, Westinghouse, Weyerhaeuser, Western States Petroleum Association). Several persons suggested that these issues should be deferred to the MTCA PAC, established in the 1995 legislative session. For these reasons, most of the proposed revisions to the soil cleanup standards for commercial and other land use categories have been withdrawn in the final rule. Ecology plans to recommend these issues to the MTCA PAC for its consideration.

Complexity of Rule

Several persons expressed concern with the complexity of the rule revisions (Boeing, Washington Public Ports Association, Weyerhaeuser, Western States Petroleum Association). For example:

> One overarching observation about this rule is that it is too long and complex. We understand the many intricate issues that arise when developing these policies. But the Department will need to be very vigilant to prevent the cumulative weight of the rule's many qualifying statements and modifiers from leading to site cleanup decisions that either discourage or entirely prevent industrial cleanups. Some of these rule amendments may be best reserved for policy documents. (Eric Johnson--Washington Public Ports Association)
>
> and

> As a general comment, the rulemaking package is too long, complex and contains overly prescriptive language. (Kevin Godbout--Weyerhaeuser)

Others expressed support for the level of detail in selected parts of the rule, especially as it pertained to providing clarification on which land uses would qualify for industrial and commercial sites and with regard to a specific transition zone distance. (City of Seattle, Landau Associates, Science Advisory Board)

Response

Given the general nature of the statutory criteria, Ecology does believe it is within its authority to provide specific criteria in the rule to facilitate interpretation of the statutory requirements. While some of the criteria could be deferred to guidance, this is not preferable since many users of the rule may not have ready access to such guidance. For these reasons the final rule does contain considerable detail.

However, Ecology agrees that the proposed rule was rather lengthy and complex. In the process of making certain other revisions, as discussed in other parts of this document, it has been possible in the final rule to simplify selected provisions. In addition, parts of the final rule have been reformatted and given subheadings to help make the rule more readable.

Environmental Review

Three persons questioned the appropriateness of Ecology's Determination of Nonsignificance, especially those changes targeted at non-industrial land uses. (Heart of America, Sierra Club, Washington Environmental Council) For example:

> The degree of Ecology's consideration of the impacts of the proposed revision is clearly inadequate on its face. The proposed revisions are not accompanied by an Environmental Impact Statement (which would permit informed consideration of the impacts of these proposals and alternatives to them) despite the clear admission by Ecology that: "...these rule changes are expected to result in significantly less stringent soil cleanup standards being applied at many commercial and industrial sites." ... An EIS or equivalent involving the MTCA Policy Advisory Committee, of all the impact of revisions affecting site cleanups at other than industrial properties is essential before embarking on such a dramatic change in cleanup standards that will affect so many contaminated sites in our state. (Gerald Pollet--Heart of America)

Response

In response to the concerns raised on this issue, and as a result of other concerns discussed in other parts of this document, the provisions amending the soil cleanup standards applicable to commercial and other land uses have been withdrawn in the final rule. This will result in the cleanup standards for these land uses remaining as is under the current rule. The remainder of the rule amendments are required by statute (e.g. definition of industrial property) and/or will not result in probable significant adverse environmental impacts. Therefore, Ecology believes a determination of nonsignificance is appropriate.

Ecology Role in Site Decisions

Two persons expressed concern that the rule revisions could require a larger Ecology role at independent cleanup sites (Spokane rule hearing, Boeing). For example:

> Lastly, much of the new language is written as if Ecology will be making "determinations" on the applicability of land use categorizations and the "appropriateness" of particular restrictive covenants, which is not the case for the vast majority of cleanups in Washington. They are usually proceeded as independent remedial actions. (Hannah Kimball--Boeing)

Response

It is not Ecology's intent to be any more involved in independent cleanups under these rule revisions than currently occurs. One of the reasons for including the level of detail and criteria in the rule is to facilitate independent decisions at sites. The language of the final rule was carefully reviewed to reflect this approach. An example of a change that was made to respond to this concern is contained in WAC 173-340-440(6). This section discussed local government notification requirements for deed restrictions/restrictive covenants. A statement was added to this subsection indicating that, for independent cleanups, this notification is the responsibility of the person doing the cleanup (not Ecology).

Risk-Related Comments

Some commentors used this rule revision to express concerns regarding risk-related issues. (Sierra Club, Heller Ehrman White & McAuliffe, Weyerhaeuser) For example:

> Looking at the chart comparing residential, commercial and industrial soil cleanup standards, one can see that the amounts of toxics left on site for commercial are

very high for some materials such as DDT and penta (dangerous materials that can be spread through dust). The "ten to the minus five" residual risk for carcinogens at commercial sites is not acceptable. (Doris Cellarius--Sierra Club)

The process for choosing and using methods A, B, and C is well thought out and has worked well. Recent findings about the many noncancer effects of contaminants at low levels, both on wildlife and people, suggest that Ecology should proceed with great caution in relaxing standards. MTCA does not yet do a good enough job of adding up noncancer risks, because there are often not established numbers for many of the chemicals we know are dangerous -- much less the one's that are not suspected of having endocrine and immune system impacts. (Doris Cellarius--Sierra Club)

We continue to believe that the risk levels and methods and assumptions set forth in the MTCA Cleanup Regulation for determining cleanup levels are unjustified scientifically and legally, and unworkable as a practical matter. The department should make every effort in the current rulemaking and in subsequent rulemakings to increase flexibility and the use of site specific information in setting cleanup levels and cleanup standards. (Ralph Polumbo--Heller Ehrman White & McAuliffe)

Response

To the extent these commentors are challenging the existing cleanup standards, those were adopted in 1991 and are not part of this rule proposal. When ESSB 6123 was under consideration by the legislature, the testimony focused on the need to allow broader application of the **already existing** industrial soil cleanup standards, not to change the level of risk or how cleanup levels are calculated. Ecology believes these revisions accomplish this legislative intent. As for the commercial site cleanup standards, withdrawing the proposed revisions returns this to the pre-existing rule language.

With regard to other noncancer effects of chemicals, the MTCA rules do provide for consideration of such effects, should information be available.

Public Notice

Several persons expressed concern that inadequate public notice had been provided for these rule revisions. (Seattle rule hearing, Heart of America, Sierra Club, Weyerhaeuser) For example:

> I'm here on behalf of the Duwamish Committee. However, there are even broader concerns than (sic) beyond concerns that we may have. The first concern is the fact that, until a couple of days ago we had not been part of this ongoing process. Until a couple of days ago, I knew nothing about this. (Shirley Mesher--Testimony at Seattle rule hearing)

> We're also similarly disturbed with the lack of notice to people who are affected by those sites. People are living around sites with a reasonable expectation that they will be cleaned up according to current standards. This rule change, notice of which you said was mailed to 100 people for the hearing, and no notice was given to people who are affected around sites. This rule change will affect their lives. It will affect their property values. It will affect their ability to sell their homes. It will affect the health of their children. (Gerald Pollet--Testimony at Seattle rule hearing)

Response

As noted earlier in this summary, three draft versions of this rule amendment were directly distributed by Ecology to persons indicating an interest in cleanup program issues or this rule. The August 2, 1995 proposed rule was directly mailed to **over** 100 persons. In addition, all legal notice and publication requirements pertaining to this rule revision were met. Ecology also used its SEPA Register, MTCA Site Register and display ads to reach the broadest audience possible at reasonable cost. This included sending copies of the proposed rule to several of the Duwamish Coalition members. Ecology believes that all public notification requirements pertaining to this rule amendment were met or exceeded.

Dangerous Waste Exemption

One person (Kevin Godbout--Weyerhaeuser) expressed concern that this rule revision does not contain language from ESSB 6123 pertaining to an exemption from the State Dangerous Waste Regulations for MTCA sites.

Response

This comment requests rule amendments outside the scope of Ecology's rule proposal. Since the criteria and process for meeting this exemption are stated in the statute, and given the limited application of this exemption to date (two sites to date), Ecology sees no need for a MTCA rule amendment to implement this exemption at this time. The availability of this exemption has been publicized in information Ecology has distributed describing the provisions of ESSB 6123.

Applicability of ESHB 1010

One person (Kevin Godbout--Weyerhaeuser) expressed concern that the provisions of ESHB 1010, passed in the 1995 legislative session, were not complied with--in particular, sections 103 and 118 (Grants of Authority), section 201 (Rulemaking Criteria), section 402 (Small Business Economic Impact Statement), and section 502 (Petitions to JARRC).

Response

Ecology has complied with sections 103 and 118 of ESHB 1010. Ecology has not relied on the purpose and intent section of MTCA (RCW 70.105D.010) or on Ecology's enabling statute (Chapter 43.21A RCW) for statutory authority to adopt the rules. Ecology is relying on the express rule-making authority in MTCA (RCW 70.105D.030). Sections 201 and 402 of ESHB 1010 do not apply because Ecology filed a statement of proposed rulemaking prior to the effective date of the Act (See ESHB 1010, Section 1102). Section 502 of ESHB 1010 deals with petitions to the Joint Administrative Rules Review Committee, and imposes no rule-making requirements on Ecology. Ecology has fully complied with all applicable requirements of the Administrative Procedures Act and the Regulatory Fairness Act.

Terminology

One person (Kris Hendrickson--Landau Associates) expressed concern with the interchangeable use of the terms "site" and "property" in the rule. This was also the subject of considerable discussion with the MTCA Science Advisory Board, in its review of the rule. The concern was that, under MTCA, "site" is defined as any place where contamination has come to be located. Whereas, "property" is commonly used to refer to a particular parcel of land. Given this distinction, a site could encompass only a small portion of a property or extend beyond property lines to encompass several properties. Since the statute requires a **property** to meet certain requirements (for

example, be zoned industrial), these terms become confusing when used interchangeably.

Phil Hertzog (Department of Natural Resources) noted that the term "ecological" has not been defined in the rule and suggested this be replaced by the term "environment".

Internal review of the rule by Ecology staff identified the use of the term "daycare" as potentially confusing since this term is sometimes used to refer to eldercare as well as childcare facilities.

Response

Ecology agrees that the interchangeable use of the terms "site" and "property" is confusing. The final rule has been revised to reflect the use of the word "site" when the area of contamination and any threatened surrounding area is being referred to. The word "property" has been used when referring to a parcel of land. In addition, the term "land use" has been used when the surface use of the land is being referred to, to distinguish from statutorily defined terms.

Ecology concurs that the term "environment" is probably the more correct term to use and this has been substituted for "ecological" in much of the final rule. Where "ecological" has been retained, it is intended to refer to biota.

The intent of the term "daycare" as used in the proposed rule was intended to apply to childcare facilities, not eldercare facilities. The term "childcare" has been substituted for "daycare" in the final rule.

DEFINITIONS

(See later sections for comments and responses on the definitions of commercial and industrial property and the transition zone concept.)

Schools

One person (Gerald Pollet--Heart of America) questioned the definition of schools as being too narrow, citing several land uses that could be allowed in commercial zones where children would be present in a school-like setting (ie gym, playground, dance school, after-school play group etc.). Internal Ecology review also generated a question regarding whether this definition applied to colleges and universities or similar institutions of higher learning.

Response

"Schools" is used in the final rule in two contexts. First, it is used with regard to cleanup standards on the school property itself (required to use residential standards). Second, it is one of the adjoining land uses to an industrial property pointed out as needing special consideration when evaluating off-property threats posed by residual contamination. In both cases, schools are of concern because of the long-term, regular presence of large numbers of children.

As used in the rule, the term schools is not intended to apply to businesses like ballet schools, karate schools, indoor sports complexes or similar facilities where the activity is expected to occur indoors and the frequency and duration of exposure would be expected to be significantly less than in a traditional school yard.

It is also important to clarify that schools are not intended to include vocational or professional institutions of higher education such as community or junior colleges, universities or trade schools. These uses would require a site-specific evaluation under the "other land uses" category since parts of these campuses could be essentially residential areas while other areas could be more like recreational or even commercial.

Since the commercial and other land use cleanup standard language has been largely withdrawn in the final rule (leaving the cleanup standard for these land uses to start with the presumption of the residential cleanup level), Ecology does not see a need to revise the definition of "school" at this time. However, this definition will need to be reexamined if further changes are made to the commercial or other land use soil cleanup standards.

<u>Zoned for (a specified) Use</u>

Several persons expressed concern with this definition; in particular, the statement indicating land uses inconsistent with the current zoning but allowed through a variance or grandfather clause would not be considered to be zoned for that use. (Seattle hearing, ARCO, Heller Ehrman White & McAuliffe, Western States Petroleum Association) For example:

> One of the things that somebody else brought up also was the precluding, which is historically against the grain, the precluding of grandfathered property. Grandfathered property means that it was legal at the time. It was legally zoned for that purpose at the time that it began, and it has uninterrupted, at least not more than a year past, when it was used for that purpose. To now change the rules to say, but we are not going to include grandfathered property I think

raises a whole lot of legitimate questions as to fairness and legalities and everything else. (Shirley Mesher, Testimony at Seattle rule hearing)

Although it is important to use zoning as a criterion in determining whether a property qualifies for commercial land use, the real issue is how people could be exposed. The requirements to qualify for commercial land use (WAC 173-340-740(1)(c)(i)(A), (B), and (C)) address current and potential future exposure pathways adequately. It is possible that Method C Cleanup Levels would be sufficiently protective for a site with a zoning variance or grandfather clause. Since it would be the PLP's responsibility to demonstrate to Ecology's satisfaction that Method C was sufficiently protective, it is unnecessary to place further restrictions on the ability to qualify for commercial land use. The second sentence of the zoning definition above should be stricken. (Charles Hutchens--ARCO)

The legislature specifically provided "zoned for an industrial use" to mean zoning "by a city or count conducting land use planning under chapter 36.70A RCW." The definition in the proposed rules should be the same definition used by the legislature. The department does not have the authority to change the legislative definition. (Ralph Polumbo--Heller Ehrman White & McAuliffe)

Response

As a result of the concerns raised about this definition, Ecology has reviewed numerous city zoning codes for how zoning variances and grandfathered uses are addressed. First, zoning variances generally are not used to allow land uses at variance to the underlying zoning, but rather to allow a land use that is consistent with the underlying zoning to vary from some specific requirement in that zoning (such as building setback requirements). Second, the term "grandfathered uses" is not commonly used. Rather, preexisting land uses not in conformance with the underlying zoning typically are referred to as nonconforming uses. It is this later case that Ecology was attempting to address in this definition.

In Ecology's opinion, nonconforming uses are not zoned for that use. Rather, the area is zoned for some other use with which the nonconforming use does not comply. Nonconforming uses are not favored in the law because they conflict with the public health, safety and welfare interests upon which the zoning is based. The policy of zoning is to phase out nonconforming uses. They are expected to eventually discontinue and that the land use will transition into a use consistent with the underlying zoning. Ecology believes the legislature included the zoning requirement

in the definition of "industrial properties" in addition to the industrial use requirement to ensure a long term commitment of the property to industrial use. Cleanup standards are based on not just the current, but also the future anticipated land uses. It makes little sense to set a cleanup standard based on a land use that is **expected** (and required by local law) to change so that the site would have to be cleaned up again. Thus, Ecology believes its definition is consistent with the statutory language and intent of ESSB 6123.

Thus, in the final rule the second sentence has been reworded to refer to nonconforming uses but otherwise remains intact.

.....

In addition to the above concern, the Department of Natural Resources requested that this definition be altered to recognize the authority of the Harbor Line Commission to set harbor lines and establish harbor areas. (Phil Hertzog--DNR)

Response

This definition is for the purpose of determining when property has been "zoned" for a use, and is not intended to address which entities may conduct zoning.

The definition of "industrial properties" in ESSB 6123 refers only to zoning conducted by a city or county, not the designation of harbor areas by the Harbor Line Commission and thus Ecology believes such a designation could not be used to demonstrate compliance with the statutory definition.

INSTITUTIONAL CONTROLS

Leases

Two commentors (Heart of America, Washington Environmental Council) expressed concern that property covenants won't be protective. For example:

> And the last major point on this is that deed restrictions are not going to be effective tools for guaranteeing that there isn't a change of use and that a subsequent employee population isn't inappropriately exposed along with their children, etc. And to do that you should require that leases must disclose the restrictions for the property. Commercial properties typically change use by lease, not sale, and there is nothing in these rules that would require the owner to inform the lessee of these restrictions. (Gerald Pollet--Heart of America)

> Similarly, WEC has grave concerns regarding the ability of the general public, and even of subsequent users of property which has been cleaned up under industrial or commercial standards, to become aware of the limited degree to which cleanup has occurred. This problem is particularly acute for lessees, who do not necessarily ordinarily check on deed restrictions for underlying property. The regulations do not adequately take account of this, and should be modified before issuance to provide for an enforcement mechanism and a notice mechanism to subsequent users of the property. (Peter Hurley--Washington Environmental Council)

Response

Ecology believes that under the current deed restriction requirements, property leases must be limited to uses consistent with the deed restrictions. However, given the concerns raised in the above comments, an explicit statement to this effect has been added to the final rule.

Ecology believes that under current deed restriction requirements, notification of lessees is already necessary in many instances in order to ensure compliance with the restrictions. Ecology also believes that notification of lessees of deed restrictions is consistent with real estate practice and law. However, to address this concern, an explicit statement requiring such notification has been added to the final rule.

Posting/Warning Signs

Two comments were received requesting a posting/warning sign requirement be added to this section.

> Ecology's rules, if any are adopted allowing for greater residual contamination of commercial properties, but for both commercial and industrial properties, need to include provisions guaranteeing the public right to know that the property is not as safe as a residential cleanup site, and that the Department's cleanup order did not include consideration of children using the site nor use by other potentially high risk populations. This requires including the adoption of rules that require the prominent posting of notices at the entrance to the property, entrance to the buildings, postings for all employees. (Gerald Pollet--Heart of America)

> In addition to covenants noting impermanent cleanups, maps of the areas should indicate contaminated areas and warning signs should be placed in areas where

> workers and other citizens may come into contact with an area where excess risks remain. Those who fail to comply with covenants and neglect to inform buyers of land and users of sites should be subject to large fines and criminal penalties. (Doris Cellarius--Sierra Club)

Response

Under current rule language, Ecology can require posting of a site. This has been done, for example, when dangerous conditions exist at a site prior to cleanup and in tideland areas with shellfish harvesting restrictions due to pollution. Maintaining such signs is extremely difficult due to vandalism. For this reason Ecology does not believe this is a practical alternative to require at all sites.

Ecology currently does not have the capability to maintain a map of contaminated sites state-wide. Site locations are identified on our various lists and data bases. Maps showing the extent of contamination are often in individual site files.

Where a covenant has been established under an order, agreed order or consent decree, a violation of the covenant would subject a PLP to the sanctions that currently exist under MTCA. This could include significant fines but would not include a criminal penalty.

Non-owner Cleanups/Institutional Controls

Section 440 (4) of the MTCA rules currently requires PLP-owners to use property covenants where the cleanup relies on property use restrictions to minimize future exposure. In situations where the land owner is not a PLP, other legal and administrative mechanisms are allowed. The proposed rule kept this distinction but added clarifying language including examples of what other legal and administrative mechanisms could consist of. Several persons objected to this new language. (ARCO, Boeing, Heller Ehrman White & McAuliffe, Landau, Department of Natural Resources, Washington Environmental Council, Western States Petroleum Association) For example:

> The proposed regulations would unacceptably broaden the use of institutional controls as a substitute for real cleanups. Indeed, the proposed regulations would permit and arguably encourage the use of simple public notices and educational mailings as a substitute for actual cleanups. This is inconsistent with the statute, and threatens to drastically undermine the cleanup element of the cleanup program. Relaxation of the institutional controls requirements should not be

included as any portion of this regulatory package. (Peter Hurley--Washington Environmental Council)

There are situations where a PLP is not the owner of the property undergoing a cleanup action and is unable to execute a deed restriction (e.g. property transfer). In such cases, the PLP may need to use alternative mechanisms to a deed restriction, such as a contractual agreement, which would be prohibited by the proposed language. (Charles Hutchens--ARCO)

"...the proposed rules should be changed to permit PLP to use all forms of institutional controls, rather than limit PLPs to the use of restrictive covenants only, and to permit use of institutional controls that cover only those portions of a property which contain contaminants above cleanup levels that would present a risk to human health or the environment in the absence of institutional controls. There are no facts in the administrative record which establish that institutional controls should be different for PLPs than for other property owners, nor are there facts to establish a rational basis to require institutional controls be placed on portions of the property that do not present human health or environmental risks." (Ralph Polumbo--Heller, Ehrman, White & McAuliffe).

It is not clear if this subparagraph (440 (4)(b)) is meant to apply to private or public property whose owner does not agree with the placing of restrictions on the property. A property owner whose property has been contaminated by another party should not be forced to accept restrictions on his use of the property. (Kristy Hendrickson--Landau Associates)

Response

First, as discussed above, these changes were intended to clarify already existing requirements and do not change the effect of the rules. Ecology continues to believe (as it has since the rules were adopted in 1991) that deed restrictions/property covenants are necessary to protect human health and the environment from releases of hazardous substances remaining on site after cleanup. Deed restrictions are the most effective way to ensure future land owners are aware of and abide by such restrictions. Where an operator cannot secure agreement with a PLP-owner on such a restriction, the site will need to be cleaned up to a level where such restrictions are unnecessary or Ecology can require the PLP-owner to record a restrictive covenant.

The addition of examples of other legal and administrative mechanisms is not intended to expand their use. It is intended

only to provide examples. The reason the rule allows these mechanisms in place of deed restrictions is that these are situations where the owner of the contaminated property is not a PLP under MTCA and thus Ecology has no jurisdiction to require the owner to implement a deed restriction. Ecology has utilized some of these methods such as posting of beaches due to contamination, or educational notices in state fishing regulations to advise on fish contamination. While not preferred to deed restrictions, options like this may be the only practical alternative in instances where Ecology has no jurisdiction to require deed restrictions under the law. Also, sometimes such notices are combined with deed restrictions on sites where Ecology has the jurisdiction to require such restrictions.

The use of private contracts, as suggested, would not be an acceptable alternative to a deed restriction because such contracts are not enforceable by Ecology and do not run with the land and generally are not public documents. Thus, future owners, developers and lenders would not be aware of the property use restrictions. The same is true for other alternative notification methods, and this is the reason Ecology requires deed restrictions where it has the jurisdiction to do so.

Restrictive covenants normally are filed on parcel(s) of land and become part of the public record for the deed to that parcel. The restrictions on use of the property may cover the entire parcel or only a portion of the parcel. They may extend beyond the current zone of contamination if there is a concern that the contamination could migrate into currently uncontaminated areas, or an activity in these nearby areas could, for example, accelerate migration of the contamination (such as installation of a water supply well that could alter the rate and direction of ground water contamination). This rule amendment is not intended to change this current practice, nor for these reasons does Ecology believe that such restrictions should be limited to areas where contamination is above some cleanup level, as has been suggested.

In addition to the above issues, the Department of Natural Resources requested that the examples of legal and administrative mechanisms be expanded to include the option of placing notices in state lands records. That change has been made in the final rule.

Enforcement

Two persons questioned the enforceability of deed restrictions.

> Deed restrictions are enforceable by whom??? If a property changes tenants and a sublease is given to a tenant who decides to open a commercial business that is barred by a deed restriction, who will know that it is barred, and who could enforce the restriction??? Deed restrictions are not generally enforceable by any one without a property interest affected. (Gerald Pollet--Heart of America)

> WEC believes that the mechanisms for enforcing restrictive covenants for industrial and commercial properties are insufficiently established. WEC believes that regulations should be put in place to enable parties other than DOE to enforce such restrictive covenants, as DOE does not have the capability or plans to enforce such covenants over the long term. (Peter Hurley--Washington Environmental Council)

Response

Deed restrictions have been the primary method of enforcing institutional controls since the MTCA rules were adopted in 1991. The focus of these rule amendments is to clarify existing rules regarding the persons who must use deed restrictions. Ecology believes it has the ability to enforce deed restrictions under MTCA. Ecology can use its enforcement authority to require additional remedial actions if it becomes aware of a property use that is inconsistent with a deed restriction.

Local Government Notification

A few comments were received on the local government notification requirement. In addition, this subsection was reexamined in light of the general comments received, discussed above.

> I agree with the proposed change. Ecology should consider the comments of the local government but should make the final cleanup decisions. (Kristy Hendrickson--Landau Associates)

> "... the state should be provided notification of potential deed restrictions established under this chapter..." (Philip Hertzog--Department of Natural Resources)

Briefing and buyoff from local government is important, but it must be recognized that these governmental decisions can be politically manipulated for short-term benefits, ignoring long-term hazards. Some form of expanded citizen and worker notification and meaningful participation should be part of this. Brownfields laws in other states take these issues into consideration. (Doris Cellarius--Sierra Club)

The notification of local government per 173-340-440 (6) is unnecessary. This seems to add another layer of government review in return for no value and may slow down the cleanup process. This requirement also seems to be juxtaposed to SSB 6639 which exempts MTCA cleanups from state and local permits in order to expedite cleanups. (Kevin Godbout--Weyerhaeuser)

Response

The provision for local government notification was added to the regulation because this is a requirement of ESSB 6123. Ecology believes that while the statute clearly requires local government to be notified and provided an opportunity to comment on proposed land use restrictions that may result from a cleanup, Ecology has final decision-making authority on the cleanup.

As for state (or federal) government notification, Ecology believes such notification normally would occur in situations where the land is owned and managed by the state (or federal government) since, as owner, these agencies would have to execute and record any deed restriction. Thus, there is no need for an additional notification requirement in the MTCA rule.

In reviewing this notification requirement in light of Boeing's earlier comment about the role of Ecology at independent cleanups, it became apparent that there will be independent cleanups occurring that would like to take advantage of the industrial soil cleanup standards. In these cases, Ecology believes the local government notification should be the responsibility of the person doing the cleanup, and a statement clarifying this has been added to the final rule. In adding this requirement, it is not Ecology's intent that local governments determine what cleanup standards or deed restrictions should be used at an independent cleanup site. Ecology retains MTCA enforcement authority at these sites and could use this authority it becomes aware of inappropriate remedial actions being taken. Of course, under state laws, any proposed development of the site would have to be consistent with local zoning. Thus, it makes sense for a PLP conducting an independent cleanup to closely coordinate with the local government with land use jurisdiction over the site so that any land use restrictions are consistent

with local zoning requirements and so building permits can be obtained to enable the land to be returned to a productive use after cleanup is completed.

In response to the Sierra Club's concerns, Ecology acknowledges that local governments are subject to many political pressures when making land use decisions. However, the statute requires notice to local governments. It is not expected that local governments will be changing zoning to conform with cleanup decisions. Rather, it is expected this notification will identify the current zoning or potential upcoming zoning changes that could affect cleanup decisions. Sites conducting cleanups under Ecology oversight are required to prepare a public participation plan to solicit public review and comment. Ecology attempts to reach and seek input from all citizens in the area potentially affected by the cleanup.

Other

An additional comment related to the use of land use restrictions was expressed by Boeing:

> Boeing believes that zoning and coordination with zoning processes are the most direct and effective means of limiting land use to industrial purposes. Rather than relying on deed restrictions (which currently are placed primarily on properties with Ecology oversight of cleanup, and which are absent entirely when no cleanup has been conducted at all - the least protective situation), Ecology should coordinate more closely with zoning authorities during rezoning proceedings. Further, if SB 6123's directive to "Apply industrial cleanup standards at industrial properties" were complied with, then the presumption would be that industrial facilities will generally not clean up to residential standards. Why, then, does it make any sense to have industrial facilities file deed restrictions confirming that they have not cleaned up to residential standards? (Hannah Kimball--Boeing)

Response

Ecology concurs that zoning can be a very effective tool for limiting land uses, however, local zoning ordinances do not always exclude other land uses and Ecology does not have the authority to zone property under MTCA. Further, restrictive covenants often require restrictions on property other than limiting it to industrial use. Ecology believes deed restrictions are the most effective, enforceable method of ensuring future property owners, developers and lenders are aware of any necessary land use restrictions resulting from contamination.

COMMERCIAL PROPERTY CLEANUP STANDARDS

Commercial Property Definition and Criteria

Several persons raised concerns about the definition itself (in WAC 173-340-200) and the criteria for determining compliance with this definition (in WAC 173-340-740). (Heart of America, Heller Ehrman White & McAuliffe, Landau Associates, Westinghouse Hanford, Science Advisory Board) Several of these concerns are common to both the commercial and industrial sections of the rule and are addressed in other parts of this document. Examples of some of the comments made on commercial sites are as follows:

> ARCO believes application of method C Cleanup levels could be protective for commercial areas adjoining residential areas, particularly in the case of a gas station in a residential area. Although gas stations are specifically listed in the definition of commercial site (WAC 173-340-200), the proposed language in WAC 173-340-740(1)(c)(iv) could limit the use of commercial cleanup levels if the gas station is adjacent to a residential area. (Charles Hutchens--ARCO)
>
> The effort to define commercial properties is inconsistent with local zoning laws and practice. IT (sic) is doomed to fail--resulting in significant exposure to children, without analyses of the impact of such exposures being calculated for determining the degree of cleanup at these sites. Local zoning allows (as a permitted use, no variance needed) in commercial zones:
>
> gyms dance classes for children
> playgrounds hotels with play areas and swimming pools
> museums medical clinics for children
> after school play group activities .....etc...
>
> This means children are likely to be exposed to toxics and carcinogens, terratogens, mutagens, etc...--without either NOTICE nor (sic) without appropriate consideration of these possible future uses for the site in determining risk and exposure assumptions prior to cleanup. (Gerald Pollet--Heart of America)
>
> The definition in the proposed rules should be simplified to delete specific examples of commercial uses, e.g. mini-storage, offices, professional services, etc., because local comprehensive plans and zoning codes list other uses as "commercial". Failure to delete the listed examples will inappropriately favor those uses over other equally legitimate

commercial uses. In addition, references to mixed uses should be deleted since the determination of whether a property is "commercial", "industrial", or "residential" should be determined solely by reference to local comprehensive plans and zoning ordinances. (Ralph Polumbo--Heller Ehrman White & McAuliffe)

The subsection should also be deleted because the characteristics set forth are arbitrary and capricious. For example, human health risks are not necessarily related to whether the general public purchases goods or services on the property, or to whether access is infrequent (many commercial properties are fully paved and the contaminants are located at depth where exposure risk the general public are nonexistent), or to whether access is closely controlled or supervised. Similarly, food may be grown at commercial sites without human health risk if exposure to soils during gardening is limited in frequency or if the contaminants are located at depth. Moreover, properties should not be excluded from the use of commercial cleanup levels based on the presence of wildlife habitat. A case in point -- New York City is the habitat with the largest population of peregrine falcons per square mile in the world....Under the department's proposed rules, New York City would not qualify as "commercial property". (Ralph Polumbo--Heller Ehrman White & McAuliffe)

As the definition is currently written, however, many blocks in the downtown Seattle core would not qualify as commercial because of the presence of residences or a day care center in a high rise building within 300 ft. In most cases, it is appropriate that residential assumptions should be used for sites with nearby residences, schools or day care centers but there may be situations, such as when the location makes soil contact by children virtually impossible, in which other assumptions should be used. (Kristy Hendrickson--Landau Associates)

WEC opposes the application of reduced cleanup standards to commercial properties. There is no foundation in the statute for the establishment of a commercial property category, or for exceptions from the existing regulations for commercial properties. Commercial properties are extremely difficult to distinguish from residential properties, particularly where mixed commercial and residential uses occur. Equally important, it is very difficult if not impossible to preserve a long term separation in these types of uses in the absence of significant oversight

and enforcement activity. We believe that this distinction should be eliminated from the regulations. (Peter Hurley--Washington Environmental Council)

Response

As discussed above, Ecology has withdrawn most of the changes pertaining to commercial property cleanup standards as a result of the concerns raised on this section. This results in the cleanups standards for these land uses remaining as is under the current rule. Thus, a gas station next to a residential area and the mixed uses cited by Ms. Hendrickson, do not qualify for commercial soil cleanup standards. The uses cited by Mr. Pollet **may** qualify for a commercial soil cleanup standard, but the standard still would be required to be as close as practicable to a method B (residential) standard.

As noted earlier, given the complexity of issues raised by the above comments and the widely divergent opinions on what standards should prevail in commercial areas, Ecology believes the best solution is to seek further guidance from the MTCA PAC before proceeding with further rule revisions for these areas.

Commercial Cleanup Standards--Other Issues

All references to "industrial property (and parts of industrial properties) not qualifying under WAC 173-340-745" should be deleted. The department may not promulgate rules that require properties that meet the statutory definition of an "industrial property" to use commercial cleanup levels because the statute expressly provides that industrial properties shall use industrial cleanup standards. (Ralph Polumbo--Heller Ehrman White & McAuliffe)

Response

The above phrase was added to Section 740 to provide another possible option for some industrial land uses that may not meet the technical definition of "industrial property" in the statute or the conditions for using industrial soil cleanup standards. It is not intended to circumvent statutory intent for properties that qualify for industrial soil cleanup standards. To clarify this, the final rule refers to these as "industrial land uses" rather than "industrial properties".

.....

One commentor pointed out a typographical error in this section:

> Finally, the language at WAC 173-340-740(4)(c) appears to have a typographical error: it refers to subsection (3)(c), which does not exist. The reference was probably intended to be to subsection (3)(b). (Del Folgelquist--Washington State Petroleum Association)

Response

It appears this reference was in error in the original rule and this change has been made in the final rule.

INDUSTRIAL PROPERTIES CLEANUP STANDARDS

General

A number of the more general comments pertaining to the industrial soil cleanup standards were summarized and responded to earlier in this document. One comment not responded to earlier has to do with whether method C should be a presumptive cleanup standard at industrial sites, a concern expressed by ARCO and WSPA. For example:

> The proposed revisions are inconsistent with the intent of SB 6123 to streamline the cleanup process by making it easier for sites to qualify for Method C Cleanup Levels. Method C should be the presumptive cleanup standard for industrial and commercial sites. This would be consistent with the intent of SB 6123. The proposed language is lengthy and convoluted, and it contains many redundancies that are discussed under specific comments below. These redundancies are not just stylistic, but add undue emphasis and additional burden of proof on the PLPs. (Del Fogelquist--Western States Petroleum Association)

Response

Ecology concurs that this section is quite lengthy and complicated. This is brought on, in part, by the attempt to incorporate a presumptive protective distance. As will be discussed in more detail later, this presumption has been eliminated. This and other changes to this section have considerably streamlined this portion of the rule and should make it easier for PLP's to demonstrate that their sites can qualify to use industrial soil cleanup standards.

Ecology disagrees, however, that Method C should be the presumptive cleanup standard for all industrial sites. The statute is very specific that a site can qualify for an

industrial soil cleanup standard only if it meets certain criteria. Ecology believes that it is necessary for a site to demonstrate it can meet these criteria, and the rule is intended to guide PLPs through that demonstration. It should be noted it is Ecology's expectation that many more industrial sites will qualify for the use of industrial soil cleanup standards, and it is not Ecology's intent to require sites to go through a demonstration not already required by the statute.

Industrial Property Definition and Criteria

Several persons commented on the definition itself (in WAC 173-340-200) and on the criteria for determining compliance with this definition (in WAC 173-340-745).(Boeing, Heller Ehrman White & McAuliffe, Landau Associates, Westinghouse Hanford, Science Advisory Board, DNR, Weyerhaeuser) For example:

> The provision which states, "See WAC 173-340-745 for additional criteria to determine if a land use meets the definition of industrial property" should be deleted since the legislature defined "industrial property" in the statute and the department does not have the authority to change the legislature's definition....The department may not impose restrictions on the definition of "industrial property" that are more limiting than the definition set forth in the statute. (Ralph Polumbo--Heller Ehrman White & McAuliffe)
>
> ...For example, there may be cases where property meets the statutory definition of an "industrial property" contained in Senate Bill 6123, but the property has some commercial use. The statute requires that cleanup of such a property accord to industrial cleanup standards, unless the hazardous substances remaining on the property after the remedial action pose a threat to human health or the environment in adjacent nonindustrial areas. (Ralph Polumbo--Heller Ehrman White & McAuliffe)
>
> The definitions and criteria for determining which sites qualify as industrial ... sites, on the surface, appear reasonable. However, it is important to marry these with the exposure scenario contemplated by the exposure assumptions currently in the rule. For example, the industrial soil cleanup standards are based on an adult worker exposure scenario. This should be stated in the criteria for evaluating whether a site qualifies for an industrial soil cleanup level. (MTCA Science Advisory Board)

Further the additional "characteristics" identified are problematic. For instance, security personnel at a facility with 24-hour operations may sleep on site. Does this constitute "living" at an industrial facility? Does this prevent the industrial facility from being industrial, even though such persons are protected from exposure (e.g., by impervious cover)? Similarly, does the proviso that there is "no or minimal wildlife habitat" require an ecological survey? What wildlife is "characteristic of highly urbanized areas" (e.g., migratory birds which are typical in all areas of western Washington)? Again, this listing of characteristics makes applicability decisions complicated for independent remedial actions. (Hannah Kimball--Boeing)

The language in these two passages should specify that not all of the characteristics must be met at a given property. For example, a property not mostly covered by buildings, structures, pavement, or landscaping might still appropriately use Method C Cleanup Levels. The last sentence before the bullets in each passage should be revised as follows: "When evaluating land uses to determine if a site meets the definition of [commercial] property, the following characteristics shall be considered (but not all need apply):" (Del Fogelquist--Western States Petroleum Association)

At WAC 173-340-200 it is not clear how mixed commercial, residential and or mixed commercial, industrial uses are defined and what the associated soil cleanup level may be. This definition may result in the application of overly restrictive cleanup requirements in the case where, for instance, one city block contains residential and commercial uses or commercial and industrial uses. It appears that a site manager could choose to apply the more restrictive cleanup level to the entire property even if the area is legally zoned for and currently operated in a different land use. A more appropriate approach would be to clean up the portion of the property to the current property use, place administrative controls on the contaminated portion and demonstrate that the cleanup remedy is protective of adjacent uses (ie. there is no unacceptable impact to the adjacent land use that is commercial) based upon site-specific conditions. (Kevin Godbout--Weyerhaeuser)

The occasional references to ecological standards as factors to consider when making commercial or industrial properties eligible for a certain category of standard also need to be taken out of this rule

proposal. Phrases such as "ecological impacts due to biota contact" in Section 740(1)(c)(i)(C)(I) should be removed, because these values are accounted for later in the process, at the time the actual cleanup standards are calculated. (Eric Johnson--Washington Public Ports Association)

Response

The definition of industrial property in ESHB 6123 has a two-pronged test: (1) The property must be used for "traditional industrial uses" (or committed to these uses in the future). Specific examples of "traditional industrial uses" are provided in the statutory definition. (2) The property must be "zoned for industrial use".

While the legislature has provided a definition for industrial property in the statute, these two key components of the definition are not defined and are subject to some interpretation as discussed below. To the extent there is ambiguity in the statute and room for interpretation, Ecology believes it is within its authority to provide criteria in the MTCA rules to determine if a property meets the statutory definition. Ecology also believes this is essential to ensure proper application of the industrial soil cleanup standards since, as noted by the SAB, the exposure scenario that these standards are based on is an adult worker scenario.

As part of the rule development process, Ecology staff reviewed numerous city zoning ordinances throughout the state. This review revealed that jurisdictions have widely varying approaches to zoning and allowed land uses within a given zone. Some jurisdictions don't even use "industrial" zone classifications, but instead apply various commercial zones to industrial districts. Others have various types of industrial zoning classifications (e.g. light industrial vs heavy industrial), some of which allow land uses that are clearly not "traditional industrial use", such as residential.

While the legislature provided specific examples of "traditional industrial uses" in the statute, this short list of examples clearly doesn't capture the universe of such uses. To determine how we might go about evaluating other land uses for compliance with this definition, Ecology staff visited various facilities, reviewed standard industrial code definitions, and reviewed the definition of "manufacturer" in the state tax code. This information revealed that these types of land uses have several common characteristics. (See September 16, 1994 memo to TCP staff, signed by Carol Kraege.) This information was then used to develop the list of characteristics in the proposed rule amendments.

Some viewed these criteria as being too prescriptive and resulting in an overly complex rule. To address these concerns the final rule includes a revised lead-in paragraph to more clearly explain how the criteria are to be used. Also, a statement has been added noting that the industrial soil cleanup standard is based on an adult worker exposure scenario and land use and zoning evaluations need to include consideration of this. The criteria also have been reworded to make it clearer that these are typical characteristics to be considered when evaluating land uses, but not all industrial properties would necessarily have to meet all criteria to qualify as an industrial property. The final rule also contains reworded and reformatted expectation statements to help rule users understand Ecology's intent in applying this section.

A specific question raised in the above comments is whether a 24-hour security arrangement would disqualify a property for an industrial classification, since security personnel could be residing on the site overnight. Ecology does not view such an arrangement as disqualifying a site, provided the security person does not permanently reside on the property.

The proposed rule contained a criterion that for industrial property: "There is no or minimal wildlife habitat on the developed portions of the property and what wildlife there is, is characteristic of highly urbanized areas." It was not intended that this criterion result in the need for an ecological survey. Rather, the intent was to point out that industrial areas are developed areas, not natural areas. However, some commentors pointed out that even developed property can offer habitat for wildlife and that significant wildlife can be present on such properties. Also, including this as a screening criterion could have the unintended effect of building in an incentive to destroy, rather than preserve, what habitat there is. For these reasons this criterion has been dropped from the final rule.

The phrase "ecological impacts due to biota contact" has been removed from the final rule. However, environmental considerations remain as a factor to evaluate when determining if the use of industrial soil cleanup standards pose a threat on or off the property. This is because the statute (prior to ESSB 6123) requires cleanups to be protective of the environment and ESSB 6123 added a requirement of an evaluation of environmental threats as a condition to the use of industrial cleanup standards.

Ecology disagrees that the industrial designation should be determined solely by reference to local comprehensive plans or zoning ordinances. As noted above, local zoning ordinances do not always make such a clear distinction. Also, this ignores the first part of the statutory definition of the land having to be used for "traditional industrial use".

Mr. Fogelquist noted a concern with the criteria stating that industrial sites are covered mostly with buildings or paving and that this should not be a precondition for all industrial properties. Ecology agrees and this criterion has been modified in the final rule to reflect this. It should be noted, however, that when discussing this criterion with the MTCA SAB, it was pointed out that the assumptions for the soil ingestion pathway may not be the critical pathway if workers are working in an unpaved, dusty parking lot (e.g. driving fork lifts to move pallets around an unpaved parking lot). In this type of situation, for chemicals that are known to cause respiratory problems, the dust inhalation pathway could be a critical pathway and should be carefully evaluated in addition to the soil ingestion pathway.

As for how mixed uses should be treated under the industrial property definition, Ecology believes the intent of the statute was to allow industrial cleanup standards in truly industrial areas, not commercial or residential areas, or where these uses are commingled with industrial uses on the same property. However, even the "traditional industrial" examples provided in the definition often have other non-industrial support facilities incidental to the industrial operations. This could be administrative offices, employee services like restaurants or credit unions, or outside break areas/lunch areas. It is not Ecology's intent that a property be disqualified from using industrial soil cleanup standards due to the presence of such facilities, although this could affect the remedy selected. It is expected that a property with comparable types of commercial uses incidental to what are otherwise predominately industrial uses could qualify for an industrial soil cleanup standard.

Properties with mixed industrial and residential uses would not be expected to qualify for an industrial soil cleanup standard since the property would not be considered to be used for traditional industrial uses and industrial cleanup standards are not based on assumptions that are protective for a residential setting.

Transition Zone

The rule proposed to establish a presumption that if an industrial site was more than 300 ft from residential areas, daycare facilities and schools, industrial soil cleanup standards would not pose a threat to off-property areas for the direct contact pathway. This presumption was proposed based on a suggestion made on early drafts of the rule. This presumption received support from several commentors (Weyerhaeuser, Landau Associates, City of Seattle, Port of Seattle and the MTCA Science Advisory Board). However, several others objected to this approach (Boeing, Heller Ehrman White & McAuliffe, Sierra Club,

and Western States Petroleum Association). Some examples of comments received follows:

Support:

> Having a presumed transition zone between industrial and residential land uses should streamline the application of industrial cleanup levels at sites more than 300 ft from residential areas, schools, or daycare facilities. It is important, however, that Ecology staff understand that a transition zone of less than 300 ft may be appropriate at some sites, especially if access to the soil by children is very unlikely. (Kristy Hendrickson--Landau Associates)

> In keeping with environmental justice principles and general protection of public health, the City supports the concept of a buffer or transition zones around commercial/industrial areas. We also believe there needs to be a large degree of flexibility in setting the size of the zone. The 300 ft distance contained in the proposed rule change may not be practical in all instances, such as in many of City Light's substations. In other situations, even wider buffers may be appropriate. We believe that the language currently proposed provides sufficient flexibility. (Tom Tierney--City of Seattle)

Oppose:

> Boeing is unaware of any basis for selecting 300 ft as the buffer distance, and does not understand why fencing is insufficient to reduce the buffer pursuant to proposed WAC 173-340-745(1)(b)(iii)(c), especially at a paved site. It is also unclear what is the intended safeguard to be provided by requiring "consideration" of the likelihood of future utility work or building construction exposing residual hazardous substances. Worker safety is protected during short-term exposures under WISHA regulations. Residential cleanup standards are not necessary to protect such workers. Finally, it is again difficult to apply this provision effectively for independent remedial action, since it calls for "consideration" of factors and an exercise of discretion unless a 300 foot transition zone can be accommodated (which is not always the case, since existing structures may prevent remediation within the zone.) (Hannah Kimball--Boeing)

> For example, the Proposed Rules create the presumption that there must be a 300 foot "transition zone" between

properties that qualify for industrial cleanup standards and neighboring resident areas, and the Rules provide further that the presence of fencing to limit access to the industrial property is not sufficient to overcome the presumption that a 300 foot transition zone is necessary to protect human health in adjacent residential areas. While there may be situations where a 300 foot transition zone would be appropriate, it is clearly unnecessary in a situation, for example, where the soil contamination at the industrial property is located at depth in the soil column and the area is paved and fenced. In such a case, there is no risk that contaminants will be blown onto adjacent properties or that persons who may reside in adjacent areas will dig up the contamination and be exposed. (Ralph Polumbo--Heller Ehrman White & McAuliffe)

There will be buffer and transitional zones, but all must be set at residential limit: allowing commercial-level buffers for industrial sites should not be proposed. Also, the suggested buffers should be larger--one quarter mile or more--since the buffer size can be modified if it can be demonstrated that there are physical barriers to limit access. (Doris Cellarius--Sierra Club)

Phil Hertzog (Department of Natural Resources) suggested that the persistence and toxicity of the chemical be added as criteria to consider when determining if industrial soil cleanup levels will pose a threat to off-property areas.

Response

The industrial soil cleanup standards are based on an adult worker exposure scenario. They are not considered protective of children. Since contamination can (and often does) extend up to the property boundary at an industrial facility, use of industrial soil cleanup levels could result in bare soil at these contaminate levels up to the property boundary, since capping the soils is not a prerequisite to the use of industrial soil cleanup standards. Even if the facility is paved or landscaped so that the soil is not exposed at the completion of the cleanup, maintenance and future site construction activity could easily result in soil at depth being brought to the surface and left exposed for many months or even permanently if workers were unaware of the contamination. It has been Ecology's experience that exposed soil, especially piles of exposed soil are like a magnet, attracting children from nearby neighborhoods. In fact, in one park design book (Play for all Guidelines, 1987) it is even suggested that piles of dirt be purposely constructed in parks for children to play on. Ecology's experience with cleanup sites has been that fences are not effective in

preventing access by children to these sites, and this is the reason for the rule statement to this effect.

In addition to the potential for direct contact exposure, contamination in exposed soil can be transported to nearby neighborhoods as dust and via runoff. Soil contamination at depth can be transported off property via vapor transport and ground water migration.

The 300 ft distance was selected because it is believed to be unlikely that small children (pre-bicycle age children) would routinely wander greater than this distance from home to play and thus become exposed to residual soil contamination, should the soil be exposed. While no studies could be found that directly address such a distance, park planning guidance and parking requirements suggest this as a reasonable distance people can be expected to walk to reach a destination. It should be noted that other park planning guidance suggest that this distance could comfortably be as far as 1/4 to 1/2 mile, so this number may not be conservative in all instances. It has also been Ecology's experience older children (i.e. children old enough to ride a bicycle or a dirt bike), have been found on contaminated sites much farther than this from residential areas.

The concept of the use of a transition zone was proposed in an attempt to make it easier for sites to qualify for industrial soil cleanup standards. However, given the complexity this results in and the lack of consensus on this issue, the 300 ft presumption has been dropped from the final rule. Ecology remains concerned that the use of industrial soil cleanup standards in close proximity to residential areas, daycare facilities and schools would pose a threat to children in these areas. This concern is reflected in an expectation statement in the final rule where it has been noted that a higher level of protection is expected for these areas.

Ecology agrees the toxicity of a chemical is an important factor when evaluating threats to off-property areas. This is already factored into the cleanup standard calculation through the reference dose or cancer potency factor. Ecology also agrees persistence of the chemical could be an important factor to consider when evaluating threats to off-property areas, especially where a chemical is expected to rapidly degrade and not pose a long-term threat. However, given the concerns raised by others about the length and complexity of this section, this factor is not being listed in the final rule. It should be noted that the factors in the rule are identified as minimum criteria. Thus, this factor can still be considered when conducting an evaluation of off-property threats.

Application of Industrial Standards to Other Media

The proposed rule revisions addressed industrial cleanup standards in the context of a soil matrix. Some persons objected to this interpretation of the statute, stating that industrial cleanup standards should apply to other media as well. (ARCO, Boeing, WSPA) For example:

> When the land use qualifies as commercial or industrial, cleanup levels for all media should generally be derived using Method C. For example, if a property qualifies for commercial, Method C Cleanup Levels are likely to be appropriate for both soil and ground water, since it is unlikely that drinking water wells would be drilled in commercial areas. Method C is also likely to be appropriate for surface water and air. (Charles Hutchens--ARCO)

Others (Sierra Club) expressed support for this concept:

> Separate evaluation of standards for each media is important and should be preserved. Ecology's option to require more stringent standards based on excess combination of hazards must be preserved.

Response

Ecology disagrees that surface land use should be a determining factor for cleanup standards for media other than soil such as ground water, surface water or air. Surface water cleanup standards are determined largely by water quality standards, which are a function of the use of the water, not the zoning of the land adjoining the water. Air cleanup standards are determined largely by ambient air quality criteria, which are not based on the zoning of the land at a given location. Ground water cleanup standards are based primarily on the potential productivity of the aquifer underlying a site, and this is independent of surface land use. Contrary to the above statement, many commercial and industrial areas throughout the state are underlain by highly productive aquifers. Examples are the Airdustrial Park area in Tumwater, the Nalley Valley in Tacoma, Ponders Corners in Lakewood, the Spokane Valley sole source aquifer and, municipal water supply wells for the Cities of Vancouver, Richland and Union Gap. This is also apparent from the number of public water systems that have become contaminated by nearby industrial and commercial sites.

For these reasons, the final rule retains the approach of industrial surface land use affecting only soil cleanup standards.

In response to the above Sierra Club comment, this rule revision did not change the current approach of adjusting cleanup standards where a combination of hazards exist.

Effect of Surface Land Use on Pathways Other Than Direct Contact

Included as part of the expectation statement in the proposed rule was a "note" explaining that surface land use was expected to affect primarily the direct contact pathway. Where the soil cleanup level is driven by ground water protection, ecological or other pathways, surface land use would probably not affect the cleanup level. Several persons commented on this statement (ARCO, Boeing, Landau Associates, WSPA) For example:

> The "note" proposed for WAC 173-340(1)(c) and WAC 173-340-745(1)(c) is unduly restrictive in light of the statutory directive to apply industrial cleanup standards at industrial properties. The typical industrial facility is mostly covered by buildings or pavement, greatly reducing the potential for leaching of constituents from soils to ground water, and preventing significant surface soil exposures to plants or wildlife. Further, most industrial facilities are subject to stormwater management requirements and, again, typically are mostly covered by impervious surfaces. (Hannah Kimball--Boeing)
>
> Additionally, the function of the "Note" is unclear. For instance, the Method A table under WAC 173-340-740 states that the cadmium level is 2 mg/kg (based on "plant protection"), and the Method A table under WAC 173-340-745 states that the cadmium level is 10 mg/kg (based on "protection of ground water"). Does the "Note" mean that the industrial soil level for cadmium in WAC 173-340-745 cannot be used at all because it is based on "protection of ground water'? What should be consulted to determine what the cleanup level for a hazardous substance is "primarily based upon"? As just noted, two different Method A tables give two different answers for cadmium. (Hannah Kimball--Boeing)
>
> The concepts of protecting against human contact, off-site transport, and ecological impacts are address in WAC 173-340(1)(c)(I)(C)(I), so subsection WAC 173-340-740(1)(c)(iv), including the note, is redundant. It is inappropriate to discuss Ecology's expectations in a regulation. The regulation already indicates the PLP has the burden of satisfying Ecology that human contact, off-site impacts, and ecological impacts will be prevented. (Charles Hutchens--ARCO)

Response

Ecology has used expectation statements in the existing rule to help MTCA rule users to interpret the rule. Ecology believes inclusion of such statements in the rule amendments is important since not all users of the rule will have ready access to other guidance that may be available.

The function of this note is to emphasize to readers of the rule that several pathways must be considered when establishing a soil cleanup level such as direct contact, leaching to ground water and surface water, and effects on ecological receptors like plants and wildlife.

The leachability of a contaminant is primarily a function of its chemical properties and the properties of the soil it is passing through, neither of which is related to surface land use. The rate of infiltration also influences how fast the contaminant will leach. While it is true industrial facilities are often covered mostly by buildings or pavement this is not always true nor does this necessarily limit infiltration. Even well maintained pavement can be very permeable (USEPA). And for more recent developments, stormwater typically is required to be retained on-site. This results in water from roofs and paved areas being conveyed via pipes or swales (which typically are not designed to be water tight) into french drains, infiltration galleries, infiltration ponds or similar structures intended to maximize on-site infiltration. So the potential for contamination to leach is a very real possibility in an industrial setting.

As for potential ecological effects, a parallel situation exists. If, for example, the site is located near areas such as surface water, wetlands or greenbelts, the potential for impacts on wildlife and plants in these areas could be an important factor in developing a soil cleanup standard. For chemicals that are more toxic to wildlife and plants than humans, these considerations may control the acceptable level of contamination rather than the human health direct contact exposure pathway. This is true under the current rules and is not changed by these rule amendments.

The cadmium example pointed out above can be used to illustrate this concept. The soil ingestion pathway for cadmium in an industrial setting would calculate out to be 3,500 ppm using the industrial site assumptions in WAC 173-340-745. Table 3 in this same section, however, indicates that no more than 10 ppm of cadmium should be left in the soil to ensure adequate protection of ground water. As noted above, Table 2 indicates cadmium above 2 ppm could present a problem where food crops are of concern. Since food crops normally are not grown on an industrial property, this cleanup level is not a relevant cleanup standard.

To address the potential for leaching causing ground water contamination, a cleanup level of 10 ppm could be used. Thus, this drives the cleanup level. It should be noted that if ground water protection wasn't a pathway of concern at the site, one would probably need to also evaluate the dust inhalation pathway since cadmium is a respiratory carcinogen and this could be a more critical pathway than the soil ingestion pathway.

For this reason the "note" remains in the final rule. However, to make it clear that this statement is an expectation, this section of the rule has been reformatted.

OTHER LAND USE CLEANUP STANDARDS

Included in the proposed modifications to the commercial soil cleanup standards were revisions to the subsection describing cleanup standards for other nonresidential site uses such as recreational and agricultural land uses. Included in this subsection was a statement that residential assumptions should be used when determining soil cleanup standards for daycare facilities and schools. No one objected to this provision. However, the portion of this subsection addressing recreational and agricultural lands was the subject of many comments. (Association of Washington Business, Heller Ehrman White & McAuliffe, Landau Associates, Washington Environmental Council, Weyerhaeuser) For example:

> Changes to the process of identification of cleanup levels for nonresidential sites such as recreational, agricultural, or silvicultural should not be made as part of this proposal but should be deferred to the MTCA Policy Advisory Committee. (Kristy Hendrickson--Landau Associates)
>
> The proposed regulations would also allow agricultural, silvicultural and recreational properties to be treated under standards other than the residential soil cleanup standards. This is entirely inappropriate. These types of properties have historically been the subject of aggressive conversion to residential use. The presumption should be that <u>all</u> properties are available and likely to be used as residential property, unless and until proven to the contrary. (Peter Hurley--Washington Environmental Council)
>
> The proposed changes to this item would require use of residential cleanup standards "unless it can be shown that this presumption is clearly inappropriate." Addition of this provision is unacceptable. Clearly recreational, agricultural, and silvicultural land uses exist within the state. To require a demonstration

that the residential use presumption is "clearly inappropriate" imposes an excessive burden of proof that will be difficult to satisfy, particularly in the absence of objective criteria. Without such criteria, opinions as to when the residential use standard is clearly inappropriate will undoubtedly vary from individual to individual, resulting in a highly subjective and arbitrary application of the requirement. The proposed language in this section should be deleted and not reconsidered until such time as Ecology identifies specific, objective criteria that can be use to satisfy the proposed demonstration. (Nancy Darling--Westinghouse)

The proposed rules unnecessarily restrict the department's exercise of judgement on a case-by-case basis in determining soil cleanup levels for nonindustrial site use, such as recreational, agricultural or sivicultural uses. There is nothing in the original MTCA legislation or in Senate Bill 6123 that requires the department to apply residential cleanup levels to nonresidential properties where the potential risks and exposures may be significantly different. The proposed rules create a strong presumption that residential cleanup standards will apply to nonresidential properties and require that cleanup levels for recreational properties be no less stringent than Method C cleanup levels. Neither provision is consistent with the legislative intent and neither is supported by the administrative record. (Ralph Polumbo--Heller Ehrman White & McAuliffe)

We are concerned about allowing the use of commercial soil cleanup standards for agricultural and recreational sites. These land uses could have considerably different levels of exposure and types of exposure pathways than commercial sites. We recommend these land uses be addressed separately. (MTCA SAB)

Response:

As noted earlier, Ecology has withdrawn most of the changes pertaining to cleanup standards for "other nonresidential land uses". This withdrawal leaves existing language in WAC 173-340-740 intact. This includes retaining the pre-existing presumption that the cleanup standard for these land uses be based on residential land use unless a demonstration can be made under subsection 740 (1)(a).

Several of the commentors have questioned the appropriateness of a residential assumption for agricultural, recreational or other

land use categories. This presumption was in the preexisting rule (see WAC 173-340-740 (1) (a)) and does not change with these amendments. There are several reasons for this presumption: Residential uses typically are a permitted use in these areas; Agricultural and sivicultural lands are converting to residential uses at a very fast rate in many parts of the state (DCTED); and, Many recreational lands such as parks and open space areas in urban areas are sited and designed to encourage regular use by children in the neighborhoods they serve.

Messrs. Godbout and Polumbo also expressed considerable concern that it is inappropriate to consider ecological pathways when setting cleanup standards for these land uses. The very nature of most of these land uses (few areas covered by buildings and pavement) attracts wildlife, making ecological considerations relevant when setting cleanup standards for these areas. In addition, for agricultural lands, the growing of food is an important pathway that needs to be considered in establishing cleanup standards. This was one reason cited by the SAB for objecting to allowing the use of less stringent cleanup standards for these types of land uses unless explicit language addressing the food ingestion pathway was added to the rule. The withdrawal of the proposed changes to this subsection results in reversion to the preexisting language which requires consideration of environmental pathways for these land uses.

SUBSTANCES NOT INCLUDED IN THE SOIL CLEANUP TABLES

The proposed rules added a statement to Tables 2 & 3 indicating that for substances not on the table, the cleanup standard is natural background or the practical quantification limit. This statement was added to make the sections describing use of these tables consistent with an earlier section (WAC 173-340-704). A few commentors objected to this statement. (Boeing, Heller Ehrman White & McAuliffe, Landau Associates) For example:

> The additional note proposed for Table 2 (and Table 3 in WAC 173-340-745) should not be added. The explanation given is that the added note would make the subsection consistent with WAC 173-340-704. That section is a summary of the use of method A that specifically says if there are any inconsistencies between section 704 and referenced sections, the referenced section shall govern. When Table 2 and # were developed, it was not intended, for example, that at TPH sites, cleanup levels for any constituents not listed on the table should be set at background or practical quantitation limits. In situations such as that, a combination of method A and method B cleanup levels should be used. (Kristy Hendrickson--Landau Associates)

Response:

As noted in the opening remarks to this topic, the additional language added to Tables 2 & 3 is viewed by Ecology as a technical correction necessary to correct an inconsistency between these tables and the introductory language in WAC 173-340-704. The reason for selecting natural background or the PQL as the cleanup standard for substances not on the table in the original MTCA rules was because these tables do not take into account additive effects of like chemicals as is done in Methods B & C.

Ecology believes some of the concern raised about this additional language was whether a trace amount of any chemical contaminant at a site could result in cleaning up the site to natural background. This is not the intent of this statement. Cleanup standards typically are established only for "indicator" chemicals at a site. The process for determining which chemicals should be determined to be indicator chemicals is described in WAC 173-340-708. Also, for chemicals that are components of total petroleum hydrocarbons (TPH), the TPH cleanup level in the tables covers them, and chemical-specific cleanup levels need not be established for these chemicals since they are already addressed by the TPH cleanup standard.

Lastly, it should be pointed out that for complex sites with more contaminants than are on these tables, the option of establishing cleanup levels under Method B remains.

OTHER COMMENTS

Ms. Mesher, at the Seattle Hearing, noted that contaminated site issues is just one issue limiting the economic vitality of the lower Duwamish area of Seattle. She noted that problems with air quality, street maintenance, drainage and the promoting of big development at the expense of smaller existing businesses were other concerns.

Response:

Ecology acknowledges that these other concerns could be contributing to limiting the economic vitality of the lower Duwamish area. These regulations only deal with contaminated site issues. Ecology also participates in Duwamish Coalition committees where these other issues are being discussed. Ecology encourages residents and business owners in this area to express their concerns though the Duwamish Coalition process.

.....

Mr. Campbell, at the Seattle Hearing, expressed the opinion that air concerns need to be considered in contaminated site cleanup.

Response:

Ecology does take air concerns into consideration when evaluating cleanup standards and selecting remedies under MTCA. Specifically, the process for establishing air cleanup standards is described in WAC 173-340-750.

.....

The City of Seattle expressed concern that for the full potential of these changes to MTCA to be realized, Ecology must address the issue of how clean must aquifers be that are not being used for drinking water.

Response:

Ecology acknowledges that the issue of ground water cleanup standards and restoration has been a difficult issue at many sites. This issue has been identified as an important issue the MTCA PAC will be addressing in 1996, and Ecology will participate and contribute information to that process as requested.

.....

The Sierra Club expressed concern that relaxing cleanup standards could lead to less permanent cleanups and cautioned against this approach.

Response:

Ecology acknowledges that broader use of industrial soil cleanup standards could result in these residual levels of contamination being left at more sites. However, this was the mandate of the state legislature. Ecology has developed a process for establishing cleanup standards at industrial sites that it believes will be protective of human health and the environment for the land use and exposure conditions present at these sites.

APPENDIX

APPENDIX

I. Comment Letters Received on August 2, 1995 Proposed Rule

ARCO Products Company
Association of Washington Business
The Boeing Company
Heart of America
Heller Ehrman White & McAuliffe
Landau Associates, Inc.
MTCA Science Advisory Board (Several Letters)
City of Seattle
Sierra Club
Washington Environmental Council
Washington Public Ports Association
Washington State Department of Natural Resources
Western States Petroleum Association
Westinghouse Hanford Company
Weyerhaeuser (Several Letters)

II. Hearing Transcripts and Public Notices

Seattle Hearing--Copy of Notices from Post-Intelligencer and Seattle Times

Testimony of:

Mr. Gordon Campbell
1514 Bellevue Avenue
Seattle, WA

Mr. Tom Newlon
P.O. Box 1209
Port of Seattle
Seattle, WA 98111

Mr. Gerald Pollet
Heart of America NW
1305 4th Ave
Seattle, WA 98101

Ms. Shirley Mesher
5001 First Ave. So.
Seattle, WA 98134

Spokane Hearing--Copy of Notice from Spokesman Review

(No One Testified)

III. Copy of Full Text of Rule Amendment as Submitted to Code Revisor on January 26, 1996

Appendix I. Comment Letters Received on August 2, 1996 Proposed Rule

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Association of Washington Business
The Boeing Company
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Heller Ehrman White & McAuliffe
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Washington State Department of Natural Resources
Western States Petroleum Association
Westinghouse Hanford Company
Weyerhaeuser (Several Letters)

The comment letters are not included in this document. A paper copy of this document that includes comments letters can be obtained from:

Department of Ecology
Publication Distribution Center
PO Box 47600
Olympia, WA 98504-7600
Telephone: (360) 407-7472

Appendix II. Hearing Transcripts and Public Notices

The public notices are not included in this document. A paper copy of this document that includes these notices can be obtained from:

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Olympia, WA 98504-7600
Telephone: (360) 407-7472

DEPARTMENT OF ECOLOGY

October 2, 1995

TO: MTCA Rule File

FROM: Pete Kmet
Toxics Cleanup Program

SUBJECT: Seattle Hearing Transcript

Below is the transcript from August 23, 1995 Hearing on the MTCA rule amendments held at the Port of Seattle Commission Chambers.

Marianne Deppman, Hearings Examiner:

Tonight's hearing is on behalf of the Department of Ecology, thank you for coming. We're here to discuss rule revisions to the Model Toxics Control Act. Tonight's meeting has had three parts. We had a presentation to explain the proposed revisions. We opened the floor to questions for about 45 minutes, and we're now about to begin the formal hearing section of the meeting, and to receive your comments for the public record.

Let the record show it is 8:15 p.m. on August 23, 1995. This hearing is being held in the Port of Seattle Commission Chambers in Seattle, WA. A legal notice of this hearing was published in the Washington State Register on August 2. Paid notices were published August 18 in the Seattle Post Intelligencer and Seattle Times. In addition, notices of the hearing were mailed to about, or more than, 100 interested people. We'll now open the floor to formal public comments. We like people to come to the table here and state your name for the record.

The first is G. Campbell.

My name is Gordon Campbell, and I was just going to mention a discovery which I believe is quite relevant in the toxics control field. This is a discovery regarding the air. Because of the air's movement, it's not fully understood, which makes it possible or, better yet, probable, that the air is actually alive, an intelligent form of life. Well, it could be God or part of God, blowing and moving with life just like a human being with life. In other words, the cause of the air's movement is not understood. You're not certain what causes it to move, therefore, it becomes possible and, as I say, better yet, probable, that the air is actually alive and an intelligent form of life blowing and moving of life just like a human being walks or runs in his own life. This is very relevant in your toxic controls, maybe not in the ground, but in, well, in the ground

too, and the air also, but at least if the air about the state, well the nation for that matter, is actually alive and intelligent form of life with live voluntary controlled movement, it is very relevant when you try to control these toxics, so I believe that should be noted in this field. Thank you.

Marianne Deppman

Thank you. Tom Newland.

I'm Tom Newland. I'm here on behalf of the Washington Public Ports Association and the Port of Seattle - an employee of the Port of Seattle. The basic thrust of our comments, and I'll be brief, is to be supportive of Ecology's efforts here. We think you've done a good job of trying to implement what the Legislature directed to be done in ESSB 6123 in order to encourage redevelopment of contaminated industrial properties.

The Legislature was or did speak very loudly and clearly and unanimously in that bill in directing Ecology to apply industrial standards to industrial sites unless there's a threat to human health and the environment in applying those standards. It's a simple enough message to be self-implementing and I know you received some comments to that effect that you didn't necessarily need new regulations to have that apply, but I think you did the right thing in promulgating new regulations in order to clean up a lot of the - what would have been inconsistencies between the statute and the regs if you leave them the way they are. So it's a good idea to avoid that conflict.

We'd commented earlier with some concerns on the 300 foot buffer. We're still a little concerned about that. There'll be specific written comments coming, but really, now the presentation you gave, and I'm sure, if applied in a - when it's applied in a kind of rational common sense fashion, by site managers, that is the idea to make it easier to apply that by having this presumption that as long as it is something that can be overcome and rebutted in specific instances based on the facts that you have on the ground in front of you. For example, if the site is 299 feet from a residential area and it's paved, guarded, fenced, under deed restrictions and an Ecology consent decree to maintain the integrity of the paving, I suspect that a good site manager, such as Ching P. Wong would definitely say that that's probably okay to apply an industrial cleanup standard there. But we are concerned that it not be applied in a mechanistic fashion that it becomes an irrebuttable presumption.

Finally, just a general comment that the Port Association is very strongly supportive of efforts to encourage industrial site redevelopment, both for the jobs and the fundamental mission of port districts, but also for the environmental benefits. Our view is that these industrial site redevelopments and property transactions generally - commercial property transactions, are sort of a goose that lays the golden egg for environmental

benefits, and to the extent that is not encouraged or is sort of actively discouraged if, for example, you had an overly mechanistic application of a 300 foot buffer and you had an unpaved contaminated site that therefore didn't have a transaction that occurred and sat there and lay fallow for decades with the contamination blowing around through the adjoining neighborhood. That's a very real environmental threat that can be dealt with through commercial transactions and coherent responsible development all across the state, using that kind of economic engine for environmental good in a way that Ecology just doesn't have the resources to do in a command and control approach and just kind of ordering cleanups at all of the hundreds and hundreds of contaminated sites throughout the state. I know you're aware of that. This regulation is pushing in that direction to help make that happen, and we're very supportive of that approach. Thank you.

Marianne Deppman: Gerald Pollett.

I am testifying on behalf of Heart of America Northwest and Legal Advocates for Washington, and we were deeply involved, as was the prior speaker, in the negotiations that lead to passage of SB 6123, and that law dealt solely with industrial properties.

I've gone through my notes, as well as looking at the law, and it is very clear that the law wouldn't have passed if it had been broad enough that it dealt with every commercial property, as well as industrial property. In fact, there is no authority in the statute, and the legislative history of 6123 makes it clear that the Legislature did not intend to have a lower standard for commercial properties. The basic rule of statutory construction applies that if the Legislature had intended to have a lower rule for commercial properties when they passed a lower rule for industrial properties, they would have known how to say so, and they did know how to say so, and they chose not to.

More fundamentally, this is a set of issues that belong in front of the MTCA policy advisory committee at this time. Instead of rushing forward and adopting these rule changes as they relate to the commercial and nonindustrial properties, and I do want to differentiate in my comments between the industrial section and the nonindustrial section. In fact, we believe that the industrial section clearly is within the legislative authority and intent, and we have specific comments that apply to both sections, but we're not saying that you should not go forward with industrial rules. For all the reasons that we testified that why we agreed that 6123 was a good idea as negotiated.

The MTCA Policy Advisory Committee is going to be examining how standards are applied, how risks are applied to a site and studied, and it makes no sense to preclude a major policy issue which sets the stage before the Policy Advisory Committee is asked to consider what is in fact the stage notes, and that is - insult is added to injury here, I think, in rushing forward with

this given the legislative history of 6123 in that, the degree of Ecology's consideration of the impacts of the proposed revisions is clearly inadequate on its face.

There should be an environmental impact statement done for those rule changes that go beyond the industrial site mandate of the Legislature. In your July 24 memo you note "These rule changes are expected to result in significantly less stringent soil cleanup standards being applied at many commercial and industrial sites." Previously tonight, you said that these rule revisions, because of coupling with the commercial issue with the industrial sites, would affect "the vast majority" of contaminated sites in the state of Washington. It is clear that you could evaluate the threats and increased environmental and health risks at the sites that are known in the state of Washington, if a lower standard were applied to those sites per this rule. In fact, SEPA requires you to conduct that analysis and make it public, and before you adopt the rule change like this, consider that environmental and human health impact for that vast majority of sites that are known to be contaminated.

We're also similarly disturbed with the lack of notice to people who are affected by those sites. People are living around sites with a reasonable expectation that they will be cleaned up according to current standards. This rule change, notice of which you said was mailed to 100 people for the hearing, and no notice was given to people who are affected around sites. This rule change will affect their lives. It will affect their property values. It will affect their ability to sell their homes. It will affect the health of their children. It has a calculable risk increase for every site. It is your responsibility to evaluate that and consider it before you adopt this rule change. That analysis should be provided to the Policy Advisory Committee, and that should be the stage for consideration of a reasonable set of rules to accommodate a balance between the need to reuse property and the need to protect public health and the environment.

I would like to note that the reuse of property is a wonderful goal, but property does not get cleaned up by being reused or being sold. Property gets cleaned up when there's a statute that says you have to clean it up, and there's an agency to enforce it if there isn't a voluntary cleanup and there is an incentive, and if there is insurance. The insurance commissioner has adopted rules that would encourage and do far more probably for the reuse of property then anything in this statute, given the fact that these related rules will ensure that in many more cases, the cleanup can be paid for. Paying for the cleanup is the issue.

Now, let me move into some more substance. The rule changes allow commercial property's cleanup to lower standards which will create significant impacts on sensitive populations and previously tonight you highlighted the most important, I think, sensitive populations, children. The effort to define commercial

properties is inconsistent with local zoning laws and practice, and we believe it's doomed to fail, resulting in significant exposure to children without analyses of the impact of such exposures being calculated for determining the degree of cleanup of these sites.

Now, I did a little checking. Local zoning, typically, as a permitted use, no variance required, allows in commercial zones: gyms, playgrounds, dance classes for children, museums, hotels with play areas and swimming pools, medical clinics for children, libraries, after school play group activities, which are not day care facilities. A long, long list, which is not considered in the proposed rule for commercial properties. This means that children are likely to be exposed to toxics, carcinogens, teratogens, mutagens, etc., without either notice or without appropriate consideration of these possible and allowed future uses for the site in determining the risk and exposure assumptions prior to cleanup. These again, would be allowed uses for which there would be no notice ever required to the Department of Ecology.

In fact, we believe that one rule change for both industrial and commercial properties should be that if there is a change in the nature of the use, or if there is a sale of the property or a change in the overlying zoning, that the Department of Ecology should be notified. I'm going to make this point repeatedly. Deed restrictions are not the answer, they are one little piece of the answer. But Ecology needs to have notice if there is a change in use, or in zoning. And again, deed restrictions are simply inadequate protections.

I cannot stress enough, the public has a right to know that commercial property cleaned up under this new standard is contaminated and not safe for children. A deed restriction does not meet the public's right to know. Employees must be informed that the commercial area where they work was not cleaned up to the same degree as the residential area. In fact, I ate lunch in a mixed commercial industrial area today with a picnic area and sand box in a, what would qualify as an industrial area according to your proposal. The employees need to be informed about the added degree of risk, which is not the same as they might expect from residential cleanups. The visiting public must also be informed.

Ecology's rules, if any are adopted allowing for greater residual contamination of commercial properties, but for both commercial and industrial properties, need to include provisions guaranteeing the public right to know that the property is not as safe as a residential cleanup site, and that the Department's cleanup order did not include consideration of children using the site, nor use by other potentially high risk populations. This requires including the adoption of rules that require the prominent posting of notices at the entrance to the property, entrance to the buildings, postings for all employees.

And the last major point on this is that deed restrictions are not going to be effective tools for guaranteeing that there isn't a change of use and that a subsequent employee population isn't inappropriately exposed along with their children, etc. And to do that you should require that leases must disclose the restrictions for the property. Commercial properties typically change use by lease, not sale, and there is nothing in these rules that would require the owner to inform the lessee of these restrictions.

We're going to give you a lot of our comments. I wanted to say that the WAC 173-340-740(1)(a)(4) which would create a presumption of large industrial areas, business parks, and office parks, could qualify as an industrial site cleanup, is not acceptable, nor is it what was intended. The Legislature intended for areas such as the Duwamish to qualify for these relaxed standards, not a large, say, office park that's a plan unit development. Not an office park, let's say like - I haven't been out to Northwest Regional Office, but a few years ago I knew it was in an office park with some trees where people could sit in the grass, not an office park where there may be a children's library or some other children's activities, and which is going to be created in such a fashion as to invite the public to use it. Thank you.

I guess I should conclude saying that we believe that the declaration of nonsignificance should be thrown out and an EIS done and the issue of commercial properties referred to the Policy Advisory Committee, along with questions about up-zoning, which have not been adequately considered, and the comments that I've given on leases and on notice to the public and employees applied industrial properties as well as commercial. Thank you.

Marianne Deppman: Shirley Mesher.

I'm hear on behalf of the Duwamish Committee. However, there are even broader concerns then beyond concerns that we may have. The first concern is the fact that, until a couple of days ago we had not been part of this ongoing process. Until a couple of days ago, I knew nothing about this. The thing that is ironic, that Mr. Blocker is here and myself and several other members of our committee are also part of the Duwamish Coalition. I have no recollection of any of this ever coming before the Duwamish Coalition, the steering committee, or in particular, the regulatory committee, subcommittee, or any of those bodies. If there is to be some concern and consideration for the various factors going into all of this, and certainly there should have been some coordination. I called Olympia late yesterday, got your epistle of many pages of obviously with working and everything else, it was a matter of taking a few minutes here and there to review it. Obviously we have a large number of questions, a large number of things that do not equate or deal with the reality of circumstances, not only in the Duwamish, but

elsewhere in the state and elsewhere in the city. There are some very important - this is extremely important.

One of the things that somebody else brought up also was the precluding, which is historically against the grain, the precluding of grandfathered property. Grandfathered property means that it was legal at the time. It was legally zoned for that purpose at the time that it began, and it had uninterrupted, at least not more than a year past, when it was used for that purpose, to now change the rules to say, but we are not going to exclude grandfathered property I think raises a whole lot of legitimate questions as to fairness and legalities and everything else.

I think there are a lot of basic questions that are not being dealt with. We have found that a very serious problem as to liability and as to the effects of cleanup or not cleanup. For instance, in the Duwamish and in many other sections, is the fact that there is no drainage, so that this raises, as I touched on only generally, a vast number of questions as to how you impose regulations when one doesn't know where the contamination came from, who's responsible. I think these things need to be looked at and laid out.

Beyond the question of groundwater that Mr. Black brought up, there are numerous situations, the lack of distinction between areas, I think, is of concern, and if rules are going to be written, they need to be more broadly applicable so people have some certainty as to what is going to happen. One of the things that we have heard, particularly concerning any regulation, is the uncertainty and the fear and the economic pressure of that uncertainty. Right now people are running around saying, oh, you can't do anything with your property. You can't sell it, and we're talking about the industrial area.

Also, I would say, one has to be very careful how you separate. I don't know how you separate commercial and industrial, because I would classify a great part of the industrial as commercial. So that I think one wants to be very careful about, as was suggested, not that he didn't make some very good points of saying that you can't deal with commercial, because in fact, a lot of functions that go on within the industrial area are effectively commercial. The term industrial may be a misnomer, even historically in Seattle. Technically there's very little industrial in fact, but the - also I think there's a problem if one is going to say, ah, but you can't have any restaurants there.

We have health concerns. We have concerns that are not dealt with here such as air pollution, which we find to be far more intolerable then ground pollution, and nobody is doing anything about the fact that this is a nonattainment area, and getting worse, not better; that developments that are far too large for the whole area and endanger people working there and coming

there, are not being dealt with. We'd like to see more dealt with in air pollution. We'd like to see more requirements for the city itself, and for the county, to pave the roads, because a great part of that comes from dirt and unkept roads that are stirred up. I guess what I'm getting at is that there's a much broader picture that I think needs to be looked at. I also think that there is much more coordination that needs to go on, not just between government entities, but also with the local communities, and that's where I would join in saying that we don't see it. We don't see - I'm both a resident and in business here. There are problems both ways. Nobody seems to think anything about allowing high-tech, such as computer chips and biotech next to residential, which don't have a smoke stack, but are known to be extremely and dangerously contaminating industries. Something has to be dealt with. I'm also astounded at the ramifications, and I was just briefly reviewing. Was your department consulted concerning the plans for the commons?

Pete Kmet: I can't speak for that. It wasn't something that I worked on.

Shirley Mesher: There are formidable questions that are being raised, and in just reviewing their economic analysis very quickly, and all sorts of functions, I don't believe that any consideration has been given to the cleanup requirements, or to the impacts, economic impacts, let alone health impacts, but I think that this goes to the point that I'm trying to make is we have all this disjointed work going on. I'm not sure what it amounts to. Besides development, the most critical factor here in Seattle is to protect and allow the businesses and the jobs to remain in Seattle, not to be pushed out, not to be replaced by new development, and there are numerous, numerous questions here. I think that a lot more consideration and exposure needs to be given to this, rather then going forward immediately with adoption. I don't know procedurally where it stands. As I said, it's only within the last few days that I knew anything about this, which rather took us by surprise and as a matter of fact, if somebody hadn't called me on the phone and faxed me the notice, I wouldn't have known anything about it. So what I'm suggesting, I think this needs further consultation. I think it needs further review. I think there are some very, very serious and sticky problems in there that will create, in many directions, hardships and effectively unilaterally change long established laws and expectations, and I think that one may be making things worse by trying to make things better. Generally, I applaud the effort which this is trying to deal with because these are certainly concerns that we have had.

The other thing that I think needs to happen is, I don't think that these can be separate - done separately. I notice that you said that the cleanup standards are going to be dealt with by a policy advisory committee. I think these things need to mesh. I think they need to be done together. I can't imagine that the

geographical distinctions or area distinctions or factor distinctions can be done separately from the standards themselves.

So basically, and I appreciate this opportunity to speak, and as I say, we are certainly applaud the fact that efforts are being made to deal with what has become a nightmare and a mess, but we think that more time needs to be taken, probably for private and public input, and more - somehow more of this information getting out generally. I certainly would have appreciated and would have liked to have time not only to further digest this mammoth amount of in the document, and there are things that need to be referred to beyond that, but also there was no time really to discuss this, even with other people that we normally work with. So I appreciate being able to at least make these comments, and I hope that we can hear more about how this is going to be conducted in the future. Thank you.

Marianne Deppman: I'm going to close the hearing. All testimony received, as well as the other hearing that will be held in Spokane, along with all comments that are received before September 8, will be part of the official hearing record for this proposal. Following the close of the comment period, the agency director or his or her designee will look at all public comment and a responsiveness summary will be written, addressing all comments received, and adoption is currently scheduled for the fall of 1995, and on behalf of the Department of Ecology, I'd like to thank you for coming tonight, and I appreciate your cooperation and courtesy. Thank you.

rule.wp

DEPARTMENT OF ECOLOGY

October 16, 1995

TO: MTCA Rule File

FROM: Pete Kmet
Toxics Cleanup Program

SUBJECT: Transcript from Public Hearing held in Spokane on August 24, 1995. Proposed Rule Changes to Model Toxics Control Act.

MARY GADDY:

Welcome to tonight's meeting. My name is Mary Gaddy and tonight I'll be serving as your hearing officer. My job is make sure that you have an opportunity to speak and be heard, and to get a clear recording of the formal testimony for the record.

The purpose of tonight's meeting is to discuss the proposed Rules Changes to the state's Model Toxics Control Act.

We have a very short Agenda for tonight's meeting. There'll be three main parts. First Mr. Pete Kmet from Ecology, he's an Environmental Engineer with Ecology's Toxics Cleanup Program, will give a brief presentation to quickly explain the proposed rule changes. Then we'll open the floor for question and answer period, for well as long as it takes, since there are only a few people here, so we won't set a time limit on that. And after that we'll take just a few minutes break, and we'll set up for the formal testimony segment where we record your comments for the public record.

So, does that Agenda sound ok? Adequate? Ok.

We have a few ground rules designed to support common courtesy and keep order, so I'll quickly go over those. First is about speaking in order. And since there are not very many of you I don't think we'll have a problem. I'll call you by name from your card which you gave me here. If you want to give testimony, I ask that you come up here and speak near the microphone so we can get a record of the testimony. And please state your name before you start your comments. After I've called all the names, there's nobody else to hear me, but I will, after everyone has been called, open the floor, if you want to come back up or if anyone

else comes in, they'll have the opportunity to speak also.

Second, we usually set time limits on the comments, but since there are so few people here, we won't be real specific about timing. We'll just make sure that everyone gets to say what they want to say.

Third, is about questions. Following Pete Kmet's presentation there'll be the question and answer period. And this is the time for you to ask questions and clarify any points you may not understand or would like explained further, and get some answers right now because once the formal testimony portion of hearing begins, it is formal testimony and we can't enter any discussion nor can we answer any questions during that period of time.

After we adjourn the formal portion of the hearing, you are free to come up and talk with Ecology personnel or raise more questions if you'd like to do so at that time. Does that sound ok?

Well then, let the record show that it is 7:15 pm on August 24, 1995 and this public hearing is being held in the Spokane County Public Health Building in the city of Spokane in Spokane County. Notice of this meeting was published in the Spokesman-Review on August 17, 1995 on page A-2. This is a copy of that ad (showing ad). And in addition, notices were mailed to many interested parties.

And now it is my pleasure to introduce Mr. Pete Kmet, who is an Environmental Engineer with the Department of Ecology, and also serves as the legislative liaison for Ecology's Toxics Cleanup Program. Also present is Ms. Flora Goldstein, Section Manager of the Toxics Cleanup in Ecology's Eastern Regional Office here in Spokane. Mr. Kmet, the floor is now yours.

PETE KMET:

Thank you, Mary.

I'm often accused of not being very brief, but I'll try to be brief tonight. What I'd like to do is just, using the overheads that I've prepared, which you have a copy of them, walk you through these revisions and what I view are the implications of these proposed rule revisions. And hopefully can give you some framework with which you can then provide us with comments either verbally tonight or written later on.

The rule revision that we're talking about here is one that was published in the State Register on August 2nd. It modifies the rules that govern the cleanup of contaminated sites here in Washington State under the Model Toxics

Control Act. These rules were published in 1991 and have had one minor revision since that time. This is probably the most significant revision since we first promulgated them. We're actually not doing a wholesale revision of the rules, we're just targeting select sections to address requirements in a statutory amendment to the Model Toxics Act that was passed in the 1994 legislative session: a bill called Senate Bill 6123. I'm not sure what it's been codified as since then, but that's the Senate bill that was passed in 1994, and it was intended to promote the reuse and redevelopment of industrial lands. Just to remind you, comments can be submitted to me, Pete Kmet. I work for Ecology over in the Olympia office and I'm largely responsible for the work you're going to hear about tonight, for better or for worse.

Again, the purpose of these rule revisions is to promote the reuse and redevelopment of industrial areas and to provide for consistency between the commercial and industrial site soil cleanup standards that are currently in the rules already. Again this revision has several components. One is, there is a sort of technical change allowing us to use Agreed Orders in a more expanded way. It would greatly expand the number of sites, or types of sites that would be eligible to use industrial soil cleanup standards and similarly for commercial soil cleanup standards. And it would provide in the rule for local government notification when we put land use restrictions on properties where the future land uses are restricted because of contamination left behind after the cleanup.

I mentioned that the Agreed Orders, this is kind of a technical change, but currently we can only use Agreed Orders, or we call them Consent Orders sometimes, for Interim Cleanup Actions or study phases of cleanup, and this amendment will allow us to use them for final cleanups.

The commercial and industrial site revisions are very significant, and they accomplish a number of things. Basically what they do, is they change how we define what types of commercial and industrial sites, or what types of sites can use industrial or commercial soil cleanup standards. And you'll see from these overheads, that those standards are significantly less stringent than the current standards that are based on a residential setting. And if you think about this, almost all the sites we work on are contaminated because of commercial or industrial activity. So, by just changing the definition of what sites qualify, we significantly change the types of cleanup standards that could apply to many or a vast majority of the cleanup sites that we work on as a program. We're not actually changing any of the assumptions in how you calculate cleanup standards or any of the language, or any of the table numbers or any of that. But we are changing how we define

what sites are eligible for those, to use those different techniques.

I'll talk a little bit here about how we do cleanup standards and then come back to this overhead and I believe you have this in your packet. Soil cleanup standards in the Model Toxics Act are based on a pretty fundamental principle, and that is we try to figure out how much residual contamination we can leave behind at a site so that if somebody inadvertently comes in contact with that somewhat contaminated soil in the future, they're not going to get sick or get cancer, above a certain level of risk for those sorts of things. And people are exposed to soil contamination in a couple of ways. One is, we all ingest soil either, kids sometimes voluntarily, but mostly involuntarily through a number of ways. Scientists have actually figured out approximately how much dirt we ingest, and there are assumptions in the rule that are used to calculate how much contamination can safely be left in the soil so that if a kid or an adult inadvertently ingest that soil in the future they would not get cancer above a certain level of risk or have other health effects.

Another potential pathway for exposure of contamination is, many chemicals can leach through rain percolating through soil, or ground water flow through the soils, and these can ultimately get into ground water supplies or surface water and affect humans or the environment.

And the third thing we do look at, although not as much, is environmental pathways. And this is particularly true where the contamination might affect a surface water body or sediments. Then environmental pathways are looked at.

Those factors all come into play in the rule to define what cleanup standards we use for sites. And again the practical affect of this change is by opening up the sites that can use commercial soil cleanup standards, we end up with, for the direct contact pathway, a number that is about four times higher for non-carcinogens and 40 times higher for carcinogens. For chemicals and substances that are highly leachable, where the cleanup standard's controlled by how much contamination can you leave behind and not cause ground water problems, probably these changes will not affect those because those are not related to land use. Land use does not affect how leachable a contaminant is. And the same thing if the cleanup standard is driven by environmental considerations, it really doesn't matter if its an industrial site or a residential site if we're concerned about adjoining surface water being impacted, then the same, probably the same standard would be applied. But it does very much affect, potentially, chemicals that are not all that leachable or where there are environmental considerations that are not predominant.

I have included in your handouts a discussion paper that explains how these soil cleanup standards work. It's actually in your other handout. Now I just want to point out there's a table there that illustrates how, by using different assumptions for these different land uses, how it affects the direct contact pathway. And, so again, by allowing more sites to qualify for commercial and industrial soil cleanup standards, you can see how that cleanup, or chemical concentration, is significantly different and much higher as I pointed out.

Industrial site changes are very similar. It would allow more industrial sites to qualify for the Table 3 or Method A table we use for industrial sites. The direct contact formula values that are in the rules would be 44 times higher for non-carcinogens and 131 times higher for carcinogens. Those are kind of oddball numbers, but it just so happens that's what the assumptions worked out to and that's what you end up with. By changing the amount of dirt someone ingests or the level of risk, that's how those numbers get affected. Again, we don't think that the standard would change significantly if the compound is highly leachable or the cleanup standard is being driven by environmental considerations.

I'll first talk about the industrial soil cleanup standards and what the provisions of this law would provide for. Currently we do provide for industrial site cleanup standards but how we define industrial cleanup site is very narrow in the rules right now. What this revision, which is really a statutory revision that we are trying to implement with this rule, would do is set three conditions for a site being able to use industrial site cleanup standards.

First it must meet the definition of industrial property. Second, that the future uses of the property must be restricted to industrial uses, and thirdly, and this is a key one, hazardous substances remaining at the property after remediation must not pose a threat to human health or the environment either on site or to off site areas, to use those terms loosely.

I have included in your handout a copy of the definition that's proposed. This definition is identical to the one that is now in statute. It lists a number of land uses and talks about basically that the land has to be zoned for industrial use. And you'll note in here, there's a distinction between cities and counties that are under the Growth Management Act (GMA) and those that are not. For the sites that are in cities and counties that are planning under GMA, more of them could qualify than if the county or city is not planning under the GMA. The reason for that distinction is because, the feeling was that cities and counties that plan under GMA, because they have to go

through so many hoops to establish the land uses and the zoning, that it's much more difficult to change them. Thus, there is more certainty that the land would remain in industrial use for the future, whereas non-GMA counties, often they don't have zoning or the zoning is very easy to change. So that distinction has been, is reflected in the statute and it's reflected in the rule.

Now, one of the things you know if you've worked on any zoning or land use comprehensive plans is that different cities and counties use different criteria or have different definitions of what's industrial and what's commercial. There is not statewide standard for what qualifies as industrial land. In fact, it can get quite confusing. And so, what we've tried to do is include in the rule some criteria to help people evaluate whether a piece of land would fall within the industrial site definition. And in there, we've included that you have to look at the comprehensive plan and zoning and look at the land uses within that zoning category to see if would meet the intent of the definition. And then we provided some characteristics of typical industrial property to help guide you in making those evaluations in the department. And they include things like typically people don't live on industrial property, access is generally restricted to those areas and some others, food is not typically grown in industrial areas, usually the area is covered by buildings or paved parking lots and roads, so there's less opportunity for soil exposure to occur. There's minimal wildlife habitat, what little wildlife there is, it's a pretty urbanized setting, so environmental considerations are less likely. There may be, however, offices or restaurants or other commercial facilities, what one would think of as commercial but are really part of an industrial complex, either support facilities or ancillary to the industrial operations, and those would qualify for an industrial cleanup standard if they are part of a bigger industrial operation. So it's not uncommon for a large manufacturing facility to have offices within that facility, and that wouldn't rule it out for using industrial cleanup standards.

I mentioned that one of the criteria is that residual contaminants cannot pose a threat to human health or the environment. And here's where we tried to provide some more guidance on how that is determined. First, there are three things that are required to be looked at. One is the potential for human contact with residual hazardous substances. The second is the potential for transport of residual substances to adjacent areas, and the third is the potential for ecological impacts. So those are the broad things we need to look at, and in more detail, what we've decided to propose is a presumption in the rule, and the presumption goes something like this. If an industrial property has an area that is contaminated, and you want to

use an industrial soil cleanup standard in that area, if its more than 300 feet from residential areas, schools or daycare centers, then the presumption is that it would qualify for an industrial soil cleanup standard unless there were some unique situation where Ecology felt it necessary to impose a more stringent requirement. And that begs the question about "well what happens if I'm less than 300 feet from these areas?" And we've included, again, in the rules some criteria on how to look at and evaluate whether or not you might be able to use a lesser setback than 300 feet from residential areas. And I want to talk a little bit about that here in a minute, so I won't go into that in detail.

We do an interesting thing in the Model Toxics rule where we put in some expectation statements. These are kind of unique to rules, but we felt, given the complexity of the rule and how all this ties together, that it was important to tell people what our expectations were as to these standards and how we view them working. And for the industrial site area, we've included the following expectations.

First for GMA counties and cities, it is our expectation that properties that are zoned for heavy or high-intensity industrial should generally meet the definition of industrial property. I think that is consistent with the statutory intent and that those high-intensity uses seem to line up with the types of uses that are in the statutory definition. For properties that are not in GMA counties though, there is another requirement that they be part of a larger area, larger industrial area. And so, spot zoned industrial properties probably would not qualify in a non-GMA county, whereas they might in a GMA county. So that's the distinction there. But for both GMA and non-GMA counties, you run into a lot of light industrial or commercial zones that the language is not clear whether it's heavy industry or not. We think that many of those zones will qualify if they have comparable land uses to some of the other land uses that are mentioned in the definition and meet those criteria that are actually listed that we provided in the rule. And of course, we think support facilities within those area will also be able to meet that definition as well.

I want to talk a little bit about this 300 foot presumption and how it might work, and I've included an illustration in your packet to try to help you visualize this. Here we have a site that, for discussion purposes, we'll assume it's zoned industrial, and it has some different situations around it that I want to talk about. We have on this side, a river with a residential area on the other side, but it's less than 300 feet away. To the north, we have a commercial area between the industrial site and a residential area. On this side (pointing) perhaps a major arterial street,

residential area and industrial. And to the south, the residential area abuts the industrial area.

Well the first thing is, the rule says that if you're more than 300 feet from residential area, and for the time being we'll leave out schools, but assume you're more than 300 feet from residential areas, everything within this dotted area is presumed to be protective of these surrounding residential areas, unless there is something unique. So, right off the bat, if your cleanup is occurring within these dotted lines in the middle here, then you pass that presumption and you can use the industrial soil cleanup standard unless some unique site condition exists.

These other situations pose some interesting questions. What we're looking at and what we're concerned about is in residential areas the primary concern is exposure of small children, whereas the industrial cleanup standard is based on a healthy worker adult, if you will. So the level of contamination could be much higher. So what we're looking at is trying to look what would be protective of adjoining residential area should the fences come down or should the facility become abandoned at some point in the future and people forget that this area is contaminated. And maybe the soil, which was covered over, gets brought to the surface through construction or just abandonment, or whatever reasons, and what is the likelihood that children could be exposed.

Well, I think, with residential area across the river, I think it's pretty clear that, unless there's really something unique here, it's unlikely that small children are going to go across a substantial body of water. So while this area may be closer than 300 feet to this residential area, it's our expectation under this rule that you could use an industrial soil cleanup standard within that area.

To the north, it's going to be a more qualitative evaluation. Here we have a situation that's commercial development between the industrial development and the residential area. A judgment would have to be made and it would be possible under the rule to take an approach that this intervening commercial use would preclude small children from being able to get over to this property. And that is one of the allowances allowed under the rule, and so, even though it's less than 300 feet from the residential areas, it's possible to demonstrate that industrial soil cleanup standards could be used in that area.

Similarly on this side, we have a residential area that's clearly closer than 300 feet, but we also have a major arterial, well-traveled street. In this situation, again, the way the rule talks about this is that, this is something that would be evaluated by Ecology but the idea being that

where there is a major arterial street between the residential area and the industrial area, that would minimize the chances of children coming over and playing in this area, small children at least. And so again, one might be able to use industrial soil cleanup standards within that area.

To this side though, here we have a residential area that is immediately abutting the industrial area, and really the only thing preventing children or for that matter adults from coming into this area, is a fence. I think there's a general feeling that while a fence might work today there's no guarantee that it will be there for the foreseeable future. And so this is where we will look at this 300-foot transition zone that's talked about in the rule, and would likely require in this transition zone either a residential soil cleanup standard or a commercial soil cleanup standard if the residual contamination was covered over with clean soil so that there couldn't be exposure to that residual contamination. So hopefully that helps you visualize how some of these criteria come together. And there is some judgment involved obviously in making these decisions.

You've got some other pieces in the packet that I won't read. I just want to briefly talk about the commercial soil, because I'm already over my time. The criteria for commercial are very similar. We have, again the site must be commercial property, it must be expected to remain commercial for the foreseeable future, and hazardous substances remaining at the property will not pose a threat to human health and the environment. There's a definition very similar to the industrial definition. We don't make the distinction between GMA and non-GMA counties, but we list typical land uses and talk about zoning and comprehensive plans. We do talk about mixed uses: mixed residential and commercial or mixed residential and industrial would not qualify for either an industrial or commercial soil cleanup standard under this definition. Again there is criteria where we would look at the plan and zoning land uses and a number of criteria. I think probably the biggest distinction here is if you think about it, commercial properties, by their very nature, are either selling something to the general public--either a service or a retail sale, something like that--and so by their very nature these sites are going to have public on them, and so that doesn't mean that they cannot qualify for a commercial soil cleanup standard under this definition.

The cleanup standard for commercial sites is based on a child being exposed to the residual contamination, but we used less conservative assumptions, the assumption being that because the children are not actually living there, there is going to be less exposure to the contamination. There is a similar presumption, or similar approach, again

when we look at the potential for human contact, transport, and ecological impacts, and we use the same 300-foot transition zone concept. And again, the factors I've provided you are very similar to the industrial ones.

The bottom line of all this is that, because of the types of land uses that you'd expect to see in these types of area and their general separation from residential areas, we would expect that large commercial business districts and say office parks, those types of uses that are well separated from residential areas, would readily qualify for a commercial soil cleanup standard. But many commercial areas are adjoining directly residential areas; either strip zoning or spot zoning commercial properties. And in those cases, if they're within 300 feet of the residential areas, we would not expect them to qualify unless some of those conditions like I talked about on the industrial sites were there, say a stream or a major street, or something. But they could qualify if Ecology judged the soil had been adequately contained and covered over so that future exposure was unlikely. This is the first time that we mix cleanup standards and remedy selection, if you're familiar with that distinction in the code.

That's the general framework that is proposed in this rule. As I mentioned, it would significantly increase the number of commercial and industrial sites that would qualify for less stringent cleanup standards, and we're looking for comments on these proposed revisions. Are there any questions before we get into the formal hearing comment period?

QUESTIONS AND ANSWERS

Q. What about value loss if you publish or identify environmental problems or oil? Like a hotel or something?

A. Do your mean for adjoining properties? (Yes.) We do not look at that as part of this. Of course, one of the difficulties is that Ecology is an environmental agency, not an economic, you know, tax assessment type agency. And I think you'd find even tax agencies have a hard time figuring out how to devalue property based on contamination. And so, because there just isn't hard science out there to know how to do that, we haven't really included it in the rule. But for private damage actions, that's the crux of a lot of private law suits out there. But as far as whether Ecology could use that, I think it would be very difficult to factor that into the rule. I wouldn't know how to do that.

Q. What about contaminated soil that is in the way of the proposed freeway? Could that be paved over now?

A. Frankly, it's pretty common practice now on a lot of

these site to not, I mean it's very difficult in many of these areas that are so contaminated to dig up and remove or treat all the contamination that is there to begin with. So often, we're relying on trying to treat or remove the hot spots and then cover over the remainder of it to prevent any future contact with it. In a road construction I could see the same thing happening. One of the additional considerations you might get into to , is if you knew there were going to be utility lines going in that area, you might want to make sure that there was clean soil down to the depth where likely utility construction might be, but I think it's entirely possible and is often done today to build roads over contaminated area. We'd want to make sure that those areas were recorded on the deeds, and that we may, if Ecology were involved in a settlement, there might be restrictions on what could be done as far as reconstructing in that area, or working in that area.

Other questions?

Q. Are these provisions a response to or somehow related to a Brownfields initiative?

A. The whole idea behind this again is in the '94 session was the feeling that the industrial cleanup standards were so restrictive in Ecology's rule that it was limiting the ability to redevelop industrial areas. And so that was the reason for the statutory change. It is part of a package of changes that were made to the statute. So, yeah, the same idea. We have, as you can see, gone beyond that and tried to address commercial areas and I can tell you that's somewhat controversial because commercial areas are often mixed with residential areas and there's a lot of concern about that approach and whether it's appropriate or not. But to make the rule read consistently, at least I felt we had to at least propose to try to make this commercial section line up with the industrial section. So that's why you see it the way it is right now. But that's the idea behind it.

Q. It just seems in general that your allowing the using of risk assessment a little bit more than you did in the past in determining type of remediation or level of remediation that's appropriate.

A. Well, again, the standards and the formulas don't change and the same constraints are there, but by allowing land use considerations to come in more, I think you're right. We're acknowledging that land use does affect risk and thus are factoring that in more in to how we do business. But the formulas and the assumptions are still the same. If you're not aware, there is a legislative committee that's been formed from a bill that was passed just this last session, a 22-member committee which includes legislators that part of

their charge is to look at the Model Toxics regulations as a whole, including how we handle risk and how we calculate cleanup standards. And while this is just affecting the definition, what could come out of that discussion might be things that could also affect the tables or numbers or the formulas or assumptions we use for doing risk. So this is really just part of that review that will ultimately occur.

Other questions?

Q. Was this addition a result of 164?

A. No, this was actually again driven from the 1994 session and there was no, at that time, no discussion about a takings initiative in the legislature.

Ok. We'll turn it back over to Mary and we'll start the formal comment period now.

Q. Let me ask just one other question. In terms of the making of the call as to whether this or that definition applies, will that be Ecology's call or will you work with the proponent or the proponent's consultant or attorney?

A. Well, for a site where we are overseeing the cleanup or evaluating the adequacy of the cleanup, and maybe for an IRAP site, it is very much Ecology's call on that. But as you know, there are lots of independent cleanups that occur out there and we do not generally give directions or get involved in making those determinations right now. So it would be up to you to use these criteria as a consultant and make some judgment on them. And hopefully they are clear enough so that they can help people do that. If they're not, then I need to know that and need to have some additional suggestions on how to make this as clear as we can. Part of the reason for the 300-foot presumption is we're hoping that will handle say 85 percent of the situations out there. I don't know if that's true or not, but for the larger commercial and industrial areas, there's clear presumption in there, then hopefully that will make it a pretty black and white line as to who qualifies and who doesn't. But it's those areas that are adjoining residential areas where there is going to be a lot of judgment call. We could make it real black and white, and just say if you're less than 300 feet, you don't qualify, but as you can see there are a variety of situations where that wouldn't make sense. And so we try to provide some criteria and some expectation statements to help explain what we're getting at here.

Mary Gaddy:

Does anybody want to take a break or should we just move on since everything is moving along so quickly, to the formal hearing?

For the record, let the record show that is it now 7:50 p.m. and we are moving into the formal public comment period. Does anyone wish to make formal testimony for the public record?

No one wishes to testify for the formal record, so let it be known that the meeting, the formal hearing, is now adjourned.

I would like to also remind everyone that the formal comment period will be open until September 8, 1995. Following that, Ecology staff will review and consider all comments submitted both orally at public hearings and in writing, and staff will prepare a responsiveness summary. If you have filled out a card tonight, you will receive a copy of this summary.

Thank you all for coming to tonight's meeting, and you're welcome to stay and talk with Ecology staff. Thank you very much.

mtcahear.wp

COPY OF FULL TEXT OF RULE AMENDMENT

AS SUBMITTED TO THE CODE REVISOR

JANUARY 26, 1996

AMENDATORY SECTION (Amending WSR 91-04-019, filed 1/28/91, effective 2/28/91)

WAC 173-340-200 Definitions. For the purpose of this chapter, the following definitions shall apply:

"Act" means the same as the "Model Toxics Control Act" and "chapter 70.105D RCW."

"Acute toxicity" means the ability of a hazardous substance to cause injury or death to an organism as a result of a short-term exposure to a 'hazardous substance.

"Agreed order" means an order issued by the department under WAC 173-340-530 with which the potentially liable person receiving the order agrees to comply. An agreed order may be used to require or approve any cleanup or other remedial actions but it is not a settlement under RCW 70.105D.040(4) and shall not contain a covenant not to sue, or provide protection from claims for contribution, or provide eligibility for public funding of remedial actions under RCW 70.105D.070 (2)(d)(xi).

"All practicable methods of treatment" means all technologies and/or methods currently available and demonstrated to work under similar site circumstances or through pilot studies, and applicable to the site at reasonable cost. These include "all known available and reasonable methods of treatment" (AKART) for discharges or potential discharges to waters of the state, and "best available control technologies" for releases of hazardous substances into the air resulting from cleanup actions.

"Applicable state and federal laws" means all legally applicable requirements and those requirements that the department determines, based on the criteria in WAC 173-340-710(3), are relevant and appropriate requirements.

"Area background" means the concentrations of hazardous substances that are consistently present in the environment in the vicinity of a site which are the result of human activities unrelated to releases from that site.

"Bioconcentration factor" means the ratio of the concentration of a hazardous substance in the tissue of an aquatic organism divided by the hazardous substance concentration in the ambient water in which the organism resides.

"Carcinogen" means any substance or agent that produces or tends to produce cancer in humans. For implementation of this chapter, the term carcinogen will apply to substances on the United States Environmental Protection Agency lists of A (known human) and B (probable human) carcinogens, and any substance which causes a significant increased incidence of benign or malignant tumors in a single, well conducted animal bioassay, consistent with the weight of evidence approach specified in the United States Environmental Protection Agency's Guidelines for Carcinogen Risk Assessment as set forth in 51 FR 33992 et seq. as presently published or as subsequently amended or republished.

"Carcinogenic potency factor" or "CPF" means the upper 95th percentile confidence limit of the slope of the dose-response curve and is expressed in units of (mg/kg-day)-1. When derived from

human epidemiological data, the carcinogenic potency factor may be a maximum likelihood estimate.

"Chronic reference dose" means an estimate (with an uncertainty spanning an order of magnitude or more) of a daily exposure level for the human population, including sensitive subpopulations, that is likely to be without an appreciable risk of adverse effects during a lifetime.

"Chronic toxicity" means the ability of a hazardous substance to cause injury or death to an organism resulting from repeated or constant exposure to the hazardous substance over an extended period of time.

"Cleanup" means the implementation of a cleanup action or interim action.

"Cleanup action" means any remedial action, except interim actions, taken at a site to eliminate, render less toxic, stabilize, contain, immobilize, isolate, treat, destroy, or remove a hazardous substance that complies with WAC 173-340-360.

"Cleanup action plan" means the document prepared by the department under WAC 173-340-360 which selects the cleanup action and specifies cleanup standards and other requirements for the cleanup action.

"Cleanup level" means the concentration of a hazardous substance in soil, water, air, or sediment that is determined to be protective of human health and the environment under specified exposure conditions.

"Cleanup process" means the process for identifying, investigating, and cleaning up hazardous waste sites under chapter 70.105D RCW.

"Cleanup standards" means the standards promulgated under RCW 70.105D.030(2)(d). Establishing cleanup standards requires specification of the following:

Hazardous substance concentrations that protect human health and the environment ("cleanup levels");

The location on the site where those cleanup levels must be attained ("points of compliance"); and

Additional regulatory requirements that apply to a cleanup action because of the type of action and/or the location of the site. These requirements are specified in applicable state and federal laws and are generally established following the selection of a specific cleanup action.

"Closure site assessment" means a site assessment required for closure of an underground storage tank pursuant to rules adopted under chapter 90.76 RCW.

"Compliance monitoring" means a remedial action that consists of monitoring as described in WAC 173-340-410.

"Containment" means a container, vessel, barrier, or structure, whether natural or constructed, which confines a hazardous substance within a defined boundary and prevents or minimizes its release into the environment.

"Contaminant" means any hazardous substance that does not occur naturally or occurs at greater than natural background levels.

"Curie" means the measure of radioactivity defined as that quantity of radioactive material which decays at the rate of 3.70×10^{10} transformations per second. This decay rate is nearly equivalent to that exhibited by 1 gram of radium in equilibrium with its disintegration products.

"Day" means calendar day; however, any document due on the weekend or a holiday may be submitted on the first working day after the weekend or holiday.

"Decree" means consent decree under WAC 173-340-520. "Consent decree" is synonymous with decree.

"Department" means the department of ecology.

"Developmental reference dose" means an estimate (with an uncertainty of an order of magnitude or more) of an exposure level for the human population, including sensitive subgroups, that is likely to be without an appreciable risk of developmental effects.

"Direct contact" means exposure to hazardous substances through ingestion or dermal contact.

"Director" means the director of ecology or the director's designee.

"Environment" means any plant, animal, natural resource, surface water (including underlying sediments), ground water, drinking water supply, land surface (including tidelands and shorelands) or subsurface strata, or ambient air within the state of Washington or under the jurisdiction of the state of Washington.

"Exposure" means subjection of an organism to the action, influence, or effect of a hazardous substance (chemical agent) or physical agent. Exposure is quantified as the amount of the agent available at the exchange boundaries (e.g., skin, lungs, gut) and available for absorption.

"Exposure parameters" means those parameters used to derive an estimate of the exposure to a hazardous substance.

"Exposure pathway" means the path a hazardous substance takes or could take from a source to an exposed organism. An exposure pathway describes the mechanism by which an individual or population is exposed or has the potential to be exposed to hazardous substances at or originating from a site. Each exposure pathway includes an actual or potential source or release from a source, an exposure point, and an exposure route. If the exposure point differs from the source of the hazardous substance, the exposure pathway also includes a transport/exposure medium.

"Facility" means any building, structure, installation, equipment, pipe or pipeline (including any pipe into a sewer or publicly owned treatment works), well, pit, pond, lagoon, impoundment, ditch, landfill, storage container, motor vehicle, rolling stock, vessel, or aircraft; or any site or area where a hazardous substance, other than a consumer product in consumer use, has been deposited, stored, disposed of, or placed, or otherwise come to be located.

"Federal cleanup law" means the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended by the Superfund Amendments and Reauthorization Act of 1986, 42 U. S. C. 9601 et seq., as presently promulgated or as subsequently amended or repromulgated.

"Fish diet fraction" means the percentage of the total fish or shellfish in an individual's diet that is obtained or has the potential to be obtained from the site.

"Food crop" means any domestic plant which is produced for the purpose of, or may be used in whole or in part for, consumption by people or livestock. This shall include nursery, root, or seedstock to be used for the production of food crops.

"Free product" means a hazardous substance that is present as a nonaqueous phase liquid (that is, liquid not dissolved in water).

"Ground water" means water in a saturated zone or stratum beneath the surface of land or below a surface water.

"Hazard index" means the sum of two or more hazard quotients for multiple hazardous substances and/or multiple exposure pathways.

"Hazardous sites list" means the list of hazardous waste sites maintained under WAC 173-340-330.

"Hazardous substance" means any dangerous or extremely hazardous waste as defined in RCW 70.105.010 (5) and (6), or any dangerous or extremely dangerous waste as designated by rule under chapter 70.105 RCW; any hazardous substance as defined in RCW 70.105.010(14) or any hazardous substance as defined by rule under chapter 70.105 RCW; any substance that, on the effective date of this section, is a hazardous substance under section 101(14) of the federal cleanup law, 42 U.S.C., Sec. 9601(14); petroleum or petroleum products; and any substance or category of substances, including solid waste decomposition products, determined by the director by rule to present a threat to human health or the environment if released into the environment.

The term hazardous substance does not include any of the following when contained in an underground storage tank from which there is not a release: Crude oil or any fraction thereof or petroleum, if the tank is in compliance with all applicable federal, state, and local law.

"Hazardous waste site" means any facility where there has been confirmation of a release or threatened release of a hazardous substance that requires remedial action.

"Hazard quotient" or “HQ" means the ratio of the dose of a single hazardous substance over a specified time period to a reference dose for that hazardous substance derived for a similar exposure period.

"Highest beneficial use" means the beneficial use of a resource generally requiring the highest quality in the resource. For example, for many hazardous substances, providing protection for the beneficial use of drinking water will generally also provide protection for a great variety of other existing and future beneficial uses of ground water.

"Independent remedial actions" means remedial actions conducted without department oversight or approval and not under an order or decree.

"Indicator hazardous substances" means the subset of hazardous substances present at a site selected under WAC 173-340-708 for monitoring and analysis during any phase of remedial action for the purpose of characterizing the site or establishing cleanup requirements for that site.

"Industrial properties" means properties that are or have been characterized by, or are to be committed to, traditional industrial uses such as processing or manufacturing of materials, marine terminal and transportation areas and facilities, fabrication, assembly, treatment, or distribution of manufactured products, or storage of bulk materials, that are either:

- Zoned for industrial use by a city or county conducting land use planning under chapter 36.70A RCW (Growth Management Act); or
- For counties not planning under chapter 36.70A RCW (Growth Management Act) and the cities within them, zoned

for industrial use and adjacent to properties currently used or designated for industrial purposes.

See WAC 173-340-745 for additional criteria to determine if a land use not specifically listed in this definition would meet the requirement of "traditional industrial use" and for evaluating if a land use zoning category meets the requirement of being "zoned for industrial use."

"Inhalation correction factor" means a multiplier that is used to adjust exposure estimates based on ingestion of drinking water to take into account exposure to hazardous substances which are volatilized and inhaled during use of the water.

"Initial investigation" means a remedial action that consists of an investigation under WAC 173-340-310 to determine that a release or threatened release may have occurred that warrants further action under this chapter.

"Institutional control" means a measure undertaken to limit or prohibit activities that may interfere with the integrity of a cleanup action or result in exposure to hazardous substances at the site.

"Integrated risk information system" or "IRIS" means a data base developed by the United States Environmental Protection Agency which provides a summary of information on hazard identification and dose-response assessment for specific hazardous substances.

"Interim action" means a remedial action conducted under WAC 173-340-430 that partially addresses the cleanup of a site.

"Interspecies scaling factor" means the conversion factor used to take into account differences between animals and humans.

"Legally applicable requirements" means those cleanup standards, standards of control, and other human health and environmental protection requirements, criteria, or limitations promulgated under state or federal law that specifically address a hazardous substance, cleanup action, location, or other circumstances at the site.

"Lowest observed adverse effect level" or "LOAEL" means the lowest concentration of a hazardous substance at which there is a statistically or biologically significant increase in the frequency or severity of an adverse effect between a population and a control group.

"Mail" means delivery through the United States Postal Service or an equivalent method of delivery or transmittal, including private mail carriers, or personal delivery.

"Maximum contaminant level" or "MCL" means the maximum concentration of a contaminant established by either the Washington state board of health or the United States Environmental Protection Agency under the Federal Safe Drinking Water Act (42 U.S.C. 300f et seq.) and published in chapter 248-54 WAC or 40 C.F.R. 141 as presently promulgated or subsequently amended or repromulgated.

"Maximum contaminant level goal" or "MCLG" means the maximum concentration of a contaminant established by either the Washington state board of health or the United States Environmental Protection Agency under the Federal Safe Drinking Water Act (42 U.S.C. 300f et seq.) and published in chapter 248-54 WAC or 40 C.F.R. 141 as presently promulgated or subsequently amended or repromulgated, for which no known or anticipated adverse effects on human health occur, including an adequate margin of safety.

"Method detection limit" or "MDL" means the minimum concentration of a compound that can be measured and reported with 99% confidence that the value is greater than zero.

"Millirem" or "mrem" means the measure of the dose of any radiation to body tissue in terms of its estimated biological effect relative to a dose received from an exposure to one roentgen (R) of x-rays. One millirem equals 0.001 rem.

"Mixed funding" means any funding provided to potentially liable persons from the state toxics control account under WAC 173-340-560.

"Model Toxics Control Act" or "act" means the act approved by the voters at the November 1988 general election, also known as Initiative 97 (chapter 70.105D RCW).

"Natural background" means the concentration of hazardous substance consistently present in the environment which has not been influenced by localized human activities. For example, several metals naturally occur in the bedrock arid soils of Washington state due solely to the geologic processes that formed these materials and the concentration of these metals would be considered natural background. Also, low concentrations of some particularly persistent organic compounds such as polychlorinated biphenyls (PCBs) can be found in surficial soils and sediment throughout much of the, state due to global use of these hazardous substances. These low concentrations would be considered natural background. Similarly, concentrations of various radionuclides which are present at low concentrations throughout the state due to global distribution of fallout from bomb testing and nuclear accidents would be considered natural background.

"Natural person" means any unincorporated individual or group of individuals. The term "individual" is synonymous with "natural person".

"No observed adverse effect level" or "NOAEL" means the exposure level at which there are no statistically or biologically significant increases in frequency or severity of adverse effects between the exposed population and its appropriate control; some effects may be produced at this level, but they are not considered to be adverse, nor precursors to specific adverse effects.

"Null hypothesis" means an assumption about hazardous substance concentrations at a site when evaluating compliance with cleanup levels established under this chapter. The null hypothesis is that the site is contaminated at concentrations which exceed cleanup levels. This shall not apply to cleanup levels based on background concentrations.

"Order" means an enforcement order issued under WAC 173-340-540 or an agreed order issued under WAC 173-340-530.

"Owner or operator" means any person with any ownership interest in the facility or who exercises any control over the facility; or in the case of an abandoned facility, any person who had owned, or operated, or exercised control over the facility any time before its abandonment. The term does not include:

An agency of the state or unit of local government which acquired ownership or control involuntarily through bankruptcy, tax delinquency, abandonment, or circumstances in which the government involuntarily acquires title. This exclusion does not apply to an agency of the state or unit of local government which has caused or contributed to the release or threatened release of a hazardous substance from the facility; or

A person who, without participating in the management of a facility, holds indicia of ownership primarily to protect the person's security interest in the facility.

"PAHs (carcinogenic)" means those PAHs substances identified as A (known human) or B (probable human) carcinogens by the United states Environmental Protection Agency. These include, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, chrysene, dibenzo (a,h) anthracene, and indeno(1, 2, 3-cd)pyrene.

"Permanent solution" means a cleanup action in which cleanup standards of WAC 173-340-700 through 173-340-760 can be met without farther action being required at the site being cleaned up or any other site involved with the cleanup action, other than the approved disposal of any residue from the treatment of hazardous substances.

"Person" means an individual, firm, corporation, association, partnership, consortium, joint venture, commercial entity, state government agency, unit of local government, federal government agency Indian tribe.

“Picocurie" or "pCi" means 10^{-12} curie.

“Point of compliance" means the point or points where cleanup levels established in accordance with WAC 173-340-720 through 173-340-760 shall be attained.

"Polychlorinated biphenyls" or "PCB mixtures" means those aromatic compounds containing two benzene nuclei with two or more substituted chlorine atoms. For the purposes of this chapter, PCB includes those congeners which are identified using the appropriate analytical methods as specified in WAC 173-340-830.

"Polycyclic aromatic hydrocarbons" or "PAH" means those hydrocarbon molecules composed of two or more fused benzene rings. For purpose of this chapter, PAH includes those compounds which are identified and quantified using the appropriate analytical methods as specified in WAC 173-340-830. The specific compounds generally included are acenaphthene, acenaphthylene, fluorene, naphthalene, anthracene, fluoranthene, phenanthrene, benzo[a]anthracene, benzo [b] fluoranthene, benzo [k] fluoranthene, pyrene, chrysene, benzo[a]pyrene, dibenzo [a,h] anthracene, indeno [1,2,3-cd] pyrene, and benzo [ghi] perylene.

"Potentially liable person" means any person whom the department finds, based on credible evidence, to be liable under RCW 70.105D.040.

"Practicable" means (except when used in the phrase "permanent to the maximum extent practicable" which is defined in WAC 173-340-360(5)) capable of being designed, constructed and implemented in a reliable and effective manner including consideration of cost. When considering cost under this analysis, an alternative shall not be considered practicable if the incremental cost of the alternative is substantial and disproportionate to the incremental degree of protection provided by the alternative over other lower cost alternatives.

"Practical quantitation limit" or "PQL" means the lowest concentration that can be reliably measured within specified limits of precision, accuracy, representativeness, completeness, and comparability during routine laboratory operating conditions, using department approved methods.

"Public notice" means, at a minimum, adequate notice mailed to all persons who have made a timely request of the department and to

persons residing in the potentially affected vicinity of the proposed action; mailed to appropriate news media; published in the newspaper of largest circulation in the city or county of the proposed action; and opportunity for interested persons to comment.

"Public participation plan" means a plan prepared under WAC 173-340-600 to encourage coordinated and effective public involvement tailored to the public's needs at a particular site.

"Rad" means that quantity of ionizing radiation that results in the absorption of 100 ergs of energy per gram of irradiated material, regardless of the source of radiation

"Radionuclide" means a type of atom which spontaneously undergoes radioactive decay. Radionuclides are hazardous substances under the act.

"Recovery by-products" means any hazardous substance, water, sludge or other materials collected in the free product removal process in response to a release from an underground storage tank.

"Reasonable maximum exposure" means the highest exposure that can be reasonably expected to occur for a human or other living organisms at a site under current and potential future site use.

"Reference dose" or "RFD" means a benchmark dose, derived from the NOAEL or LOAEL for a hazardous substance by consistent application of uncertainty factors used to estimate acceptable daily intake doses and an additional modifying factor, which is based on professional judgment when considering all available data about a substance, expressed in units of milligrams per kilogram body weight per day. This includes chronic reference doses, subchronic reference doses, and developmental reference doses.

"Regional office" means one of the regional offices of the department of ecology.

"Release" means any intentional or unintentional entry of any hazardous substance into the environment, including but not limited to the abandonment or disposal of containers of hazardous substances.

"Relevant and appropriate requirements" means those cleanup standards, standards of control, and other human health and environmental requirements, criteria, or limitations established under state and federal law that, while not legally applicable to the hazardous substance, cleanup action, location, or other circumstance at a site, the department determines address problems or situations sufficiently similar to those encountered at the site that their use is well suited to the particular site. The criteria specified in WAC 173-340-710(3) shall be used to determine if a requirement is relevant and appropriate.

"Rem" means the unit of radiation dose equivalent that is the dosage in rads multiplied by a factor representing the different biological effects of various types of radiation.

"Remedy" or "remedial action" means any action or expenditure consistent with the purposes of chapter 70.105D RCW to identify, eliminate, or minimize any threat posed by hazardous substances to human health or the environment including any investigative and monitoring activities with respect to any release or threatened release of a hazardous substance and any health assessments or health effects studies conducted in order to determine the risk or potential risk to human health.

"Restoration time frame" means the period of time needed to achieve the required cleanup levels at the points of compliance established for the site.

"Risk" means the probability that a hazardous substance, when released into the environment, will cause an adverse effect in exposed humans or other living organisms.

"Routine cleanup action" means a remedial action that consists of a cleanup action meeting the requirements in WAC 173-340-130 (7).

"Safety and health plan" means a plan prepared under WAC 173-340-810.

"Sample mean" means the arithmetic mean or the average of a set of measurements. The arithmetic mean is defined as the sum of all measurements divided by the number of measurements.

"Sampling and analysis plan" means a plan prepared under WAC 173-340-820.

"Saturated zone" means the area below the water table in which all interstices are filled with water.

"Schools" means preschools elementary schools, middle schools, high schools and similar facilities, both public and private, used primarily for the instruction of minors.

"Science advisory board" means the advisory board established by the department under RCW 70.105D.030(4).

"Secondary maximum contaminant level" means the maximum concentration of a secondary contaminant in water established by the United States Environmental Protection Agency under the Federal Safe Drinking Water Act (42 U.S.C. 300f et seq.) and published in 40 C.F.R. 143 as presently promulgated or as subsequently amended or repromulgated.

"Sensitive environment" means an area of particular environmental value, where a release could pose a greater threat than in other areas including: Wetlands; critical habitat for endangered or threatened species; national or state wildlife refuge; critical habitat, breeding or feeding area for fish or shellfish; wild or scenic river; rookery; riparian area; big game winter range.

"Site" means the same as facility.

"Site characterization report" means a written report describing the site and nature of a release from an underground storage tank, as described in WAC 173-340-450 (4)(b).

"Site check" means the investigation conducted pursuant to rules adopted under chapter 90.76 RCW in order to confirm a release from an underground storage tank.

"Site hazard assessment" means a remedial action that consists of an investigation performed under WAC 173-340-320.

"Site register" means the public information document described in WAC 173-340-600.

"Soil" means a mixture of organic and inorganic solids, air, water, and biota which exists on the earth's surface above bedrock, including materials of anthropogenic sources such as slag, sludge, etc.

"State remedial investigation/feasibility study" means a remedial action that consists of activities performed under WAC 173-340-350 to collect, develop, and evaluate sufficient information regarding a site to enable the selection of a cleanup plan under WAC 173-340-360.

"Status report" means a written or verbal report on the status of the interim actions taken in response to a release from an underground storage tank, as described in WAC 173-340-450 (4)(b).

"Subchronic reference dose" means an estimate (with an uncertainty of an order of magnitude or more) of a daily exposure

level for the human population, including sensitive subgroups, that is likely to be without appreciable risk of adverse effects during a portion of a lifetime.

"Surface water" means lakes, rivers, ponds, streams, inland waters, salt waters, and all other surface waters and water courses within the state of Washington or under the jurisdiction of the state of Washington.

"Technically possible" means capable of being designed, constructed and implemented in a reliable and effective manner, regardless of cost.

"Total excess cancer risk" means the upper bound on the estimated excess cancer risk associated with exposure to multiple hazardous substances and multiple exposure pathways.

"Total petroleum hydrocarbons" or "TPH" means any fraction of crude oil that is contained in plant condensate, crankcase motor oil, gasoline, aviation fuels, kerosene, diesel motor fuel, benzol, fuel oil, and other products derived from the refining of crude oil. For the purposes of this chapter, TPH will generally mean those fractions of the above products that are quantified by EPA Methods 8015 or 418.1 as appropriate or other test methods approved by the department.

"Type I error" means the error made when it is concluded that an area of a site is below cleanup levels when it actually exceeds cleanup levels. This is the rejection of a true null hypothesis.

"Underground storage tank" or "UST" means an underground storage tank and connected underground piping as defined in the rules adopted under chapter 90.76 RCW.

"Underground storage tank operator" means any underground storage tank operator as defined in the rules adopted under chapter 90.76 RCW.

"Underground storage tank owner" means any underground storage tank owner as defined in the rules adopted under chapter. 90.76 RCW.

"Underground storage tank release" means a confirmed release from an underground storage tank pursuant to the rules adopted under chapter 90.76 RCW.

"Unrestricted site use conditions" means restrictions on the use of the site or natural resources affected by releases of hazardous substances from the site are not required to ensure continued protection of human health and the environment.

"Upper bound on the estimated excess cancer risk of one in one hundred thousand" means the upper 95th percent confidence limit on the estimated risk of one additional cancer above the background cancer rate per one hundred thousand individuals.

"Upper bound on the estimated excess cancer risk of one in one million" means the upper 95th percent confidence limit on the estimated risk of one additional cancer above the background cancer rate per one million individuals.

"Volatile organic compound" means those carbon-based compounds listed in EPA methods 601, 602, 603, 624, 8010, 8015, 8020, 8030, 8240, 502.1, 502.2, 503.1, 524.1, 524.2, and those with similar vapor pressures or boiling points.

"Wastewater facility" means all structures and equipment required to collect, transport, treat, reclaim, or dispose of domestic, industrial, or combined domestic/ industrial wastewaters.

"Wetlands" means lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. For the purposes

of this classification, wetlands must have one or more of the following attributes at least periodically, the land supports predominantly hydrophytes; the substrate is predominately undrained hydric soil; and the substrate is nonsoil and saturated with water or covered by shallow water at some time during the growing season each year.

"Zoned for (a specified) use" means the use is allowed as a permitted or conditional use under the local jurisdiction's land use zoning ordinances. A land use that is inconsistent with the current zoning but allowed to continue as a nonconforming use or through a comparable designation is not considered to be zoned for a that use.

AMENDATORY SECTION (Amending WSR 91-04-019, filed 1/28/91, effective 2/28/91)

WAC 173-340-440 Institutional controls. (1) Purpose. Institutional controls are measures undertaken to limit or prohibit activities that may interfere with the integrity of an interim action or cleanup action or result in exposure to hazardous substances at a site. Such measures shall be required to assure both the continued protection of human health and the environment and the integrity of an interim action or cleanup action in the following circumstances:

(a) Where a cleanup action results in residual concentrations of hazardous substances which exceed method A or method B cleanup levels, as applicable, established under WAC 173-340-700 through 173-340-760; or

(b) If conditional points of compliance have been established; or

(c)When the department determines such controls are required to assure the continued protection of human health and the environment or the integrity of the cleanup action.

(2) Institutional controls shall not be used as a substitute for cleanup actions that would otherwise be technically possible.

(3) Institutional controls include:

(a) Physical measures, such as fences and signs, to limit activities that may interfere with the cleanup action or result in exposure to hazardous substances at the site; and

(b) Legal and administrative mechanisms ((~~used~~)) to limit site use or activities and/or to ensure that ((~~such~~)) any physical measures are maintained over time. Examples of limits on site use activities include restricting the use of a property for industrial or commercial purposes or other specified land uses, or placing restrictions on activities such as disturbing a cap or using the ground water. Examples of maintenance activities include, inspection and repair of monitoring wells, treatment systems, caps or ground water barrier systems.

(4) Format.

(a) For properties owned by ((~~the~~)) a person who has been named as a potentially liable person or who has not been named a potentially liable person by the department but meets the criteria in RCW 70.1O5D.040 for being named a potentially liable ((~~parties~~))

person, appropriate institutional controls shall be described in a restrictive covenant on the property. The covenant shall be executed by the property owner and recorded with the register of deeds for the county in which the site is located. This restrictive covenant shall run with the land, and be binding on the owner's successors and assigns.

(b) For ((~~other~~)) properties containing hazardous substances where the owner does not meet the criteria in RCW 70.105D.040 for being a potentially liable person, the department may approve cleanup actions which include restrictive covenants or other legal and/or administrative mechanisms. The use of legal or administrative mechanisms which do not include restrictive covenants is intended to apply to situations where the release has affected properties near the source of the release not owned by a person potentially liable under the act. Examples of such mechanisms include zoning overlays, placing notices in local zoning or building department records or state lands records, public notices and educational mailings.

(5) Where required, the restrictive covenant shall:

(a) Prohibit activities on the site that may interfere with a cleanup action, operation and maintenance, monitoring, or other measures necessary to assure the integrity of the cleanup action and continued protection of human health and the environment;

(b) Prohibit activities that may result in the release of a hazardous substance which was contained as a part of the cleanup action;

(c) Require notice to the department of the owner's intent to convey any interest in the site. No conveyance of title, easement, lease, or other interest in the property shall be consummated by the property owner without adequate and complete provision for the continued operation, maintenance and monitoring of the cleanup action, and for continued compliance with this subsection;

(d) Require the land owner to restrict leases to uses and activities consistent with the restrictive covenant and notify all lessees of the restrictions on the use of the property. This requirement applies only to restrictive covenants imposed after February 1, 1996;

(e) Require notice and approval by the department of any proposal to use the site in a manner which is inconsistent with the restrictive covenant. If the department, after public notice and comment approves the proposed change, the restrictive covenant shall be amended to reflect the change((~~.~~)) ;

((~~(e)~~)) (f) Grant the department and its designated representatives the right to enter the property at reasonable times for the purpose of evaluating compliance with the cleanup action plan and other required plans, including the right to take samples, inspect any remedial actions taken at the site, and to inspect records.

(6) Local government notification. Prior to a restrictive covenant being established under this chapter, the department shall notify and seek comment from a city or county department with land use planning authority for real property subject to the restrictive covenant. Once a restrictive covenant has been executed, this same department shall be notified and sent a copy of the restrictive covenant. For independent cleanups using restrictive covenants, the person conducting the cleanup shall be responsible for these notifications.

(7) Financial assurances The department may require the potentially liable person to provide financial assurances, through a trust fund or equivalent financial mechanism approved by the department, sufficient to cover all costs of operation and maintenance including compliance monitoring and undertaking appropriate corrective measures. It is the department's expectation that such assurances will be required wherever the cleanup action includes containment and in other appropriate circumstances.

((~~(7)~~)) (8) Removal of restrictions. If the residual hazardous substances remaining at the site are subsequently reduced in concentration such that the method A or method B cleanup levels, as applicable, established under WAC 173-340-700 through 173-340-760 are met without a conditional point of compliance, then the owner may request that the restrictive covenant or other restrictions be eliminated. The restrictive covenant or other restrictions shall be removed, if the department, after public notice and opportunity for comment, concurs.

AMENDATORY SECTION (Amending WSR 90-08-086, filed 4/3/90, effective 5/4/90)

WAC 173-340-530 Agreed orders.(1) Agreed orders may be used for all remedial actions ((~~except for nonroutine cleanup actions and interim actions that constitute a substantial majority of a cleanup action likely to be selected~~)). Since an agreed order is not a settlement, an agreed order shall not provide for mixed funding, a covenant not to sue, or protection from claims for contribution. An agreed order means that the potentially liable person agrees to perform remedial actions at the site in accordance with the provisions of the agreed order and that the department will not take additional enforcement action against the potentially liable person to require those remedial actions specified in the agreed order so long as the potentially liable person complies with the provisions of the order. The department may require additional remedial actions should it deem such actions necessary.

(2) Request.

(a) To request an agreed order, a person shall submit a letter to the department based on available information, describing:

(i) The proposed remedial action including a schedule for the work;

(ii) The facility, including location and boundaries;

(iii) The environmental problems to be addressed, including the releases at the facility and the potential impact of those releases to human health and the environment;

(iv) A summary of the relevant historical use or conditions at the facility;

(v) Names of other persons whom the person has reason to believe may be potentially liable persons at the facility; and

(vi) A proposed public participation plan. This proposed plan shall be commensurate with the nature of the proposal and site and shall include at a minimum the elements listed in WAC 173-340-600 (8).

(b) The letter may include a waiver of the procedural requirements of WAC 173-340-500, and acceptance, for purposes of the agreed order, of potentially liable person status.

(c) Recognizing that the basic steps of the cleanup process may be combined and may vary by site, the information in the request shall be at the level of detail appropriate to the step in the process for which the order is requested. For example, a request for an agreed order for a state remedial investigation/ feasibility study should generally include the level of information needed for a site hazard assessment, so that the department and the public can evaluate the proposed scope of work and relative priority of the site.

(d) The department may waive part of the letter requirements of (a) of this subsection if the requirements have already been met.

(3) Response. The department shall respond to the request within sixty days, unless the department needs additional time to determine potentially liable person status under WAC 173-340-500. The department may:

(a) Request additional information;

(b) Proceed with discussions, if the department believes it is in the public interest to do so; or

(c) Provide written reasons for denying the request.

(4) Discussions on the agreed order shall not exceed sixty days unless the department decides continued discussions are in the public interest.

Unless an emergency exists, the department will stay any enforcement action under chapter 70.105D RCW; however, the duration of such stay shall not exceed sixty days from the date discussions begin. Furthermore, the department can withdraw from discussions if it determines that:

(a) Reasonable progress is not being made toward an agreed order acceptable to the department; or

(b) The agreed order is inappropriate based on new information or changed circumstances.

The department may commence with enforcement action after notifying the potentially liable person in writing of its intent to withdraw from discussions.

(5) Focus of discussions. The focus of discussions for the agreed order shall ordinarily be the technical scope of work and work schedule. This subsection is not intended to preclude discussion on any item. It is intended to convey the expectation that the scope of work and work schedule will be the primary topics of discussion in formulating agreed orders.

(6) When issuing an agreed order, the department shall provide appropriate public participation opportunities under WAC 173-340-600. If the agreed order is for a routine cleanup action and any person requests judicial review, then the applicable consent decree procedures under WAC 173-340-520 will be initiated.

(7) Revisions. If the department and the potentially liable person signing the order agree to substantial changes in the order, the department shall provide appropriate additional public notice and opportunity to comment.

AMENDATORY SECTION (Amending WSR 91-04-019, filed 1/28/91, effective 2/28/91)

WAC 173-340-700 Overview of cleanup standards. (1) Purpose. This section provides an overview of the methods for establishing cleanup standards that apply to a release or threatened release of a hazardous substance at a site. If there are any inconsistencies between this section and any specifically referenced section, the referenced section shall govern.

(2) Cleanup standards versus selection of cleanup actions.

(a) Cleanup standards are identified for the particular hazardous substances at a site and the specific areas or pathways, such as land- or water, where humans and the environment can become exposed to these substances. This part provides uniform methods state-wide for identifying cleanup standards and requires that all cleanups under the act meet these standards. The actual degree of cleanup may vary from site to site and will be determined by the cleanup action alternative selected under WAC 173-340-360. Establishing cleanup standards for individual sites requires the specification of the following:

(i) Hazardous substance concentrations that protect human health and the environment ("cleanup levels");

(ii) The location on the site where those cleanup levels must be attained ("points of compliance"); and

(iii) Additional regulatory requirements that apply to a cleanup action because of the type of action and/or the location of the site. These requirements are specified in applicable state and federal laws and are generally established in conjunction with the selection of a specific cleanup action.

(b) For most sites, there are several cleanup technologies or combinations of cleanup technologies ("cleanup action alternatives") that may be used to comply with cleanup standards at individual sites. Other parts of this rule govern the process for planning and deciding on the cleanup action to be taken at a site. For example, WAC 173-340-350 (State remedial investigation and feasibility study) (RI/FS) specifies the studies that are prepared to define the nature and extent of contamination ("RI") and to identify and evaluate cleanup action alternatives ("FS"). WAC 173-340-360 (Selection of cleanup actions) specifies the criteria for selecting the preferred alternative. WAC 173-340-410 specifies the monitoring required to assure that the remedy is effective.

(c) The department recognizes that cleanup actions selected under WAC 173-340-360 may involve containment of hazardous substances. In these cases, the cleanup action may be determined to comply with cleanup standards, provided the compliance monitoring program is designed to ensure the long-term integrity of the containment system, and the other requirements for containment technologies in WAC 173-340-360(8) are met.

(3) Three basic methods for establishing cleanup levels. These rules provide three approaches for establishing cleanup levels:

(a) Method A: Tables. On some sites, the cleanup action may be routine (WAC 173-340-130) or may involve relatively few hazardous substances. Under Method A, cleanup levels for hazardous substances are established at concentrations at least as stringent as concentrations specified in applicable state and federal laws and Tables 1, 2, or 3 of this chapter. Method A cleanup levels for

hazardous substances not addressed under applicable state and federal laws or Tables 1, 2, or 3 are established at concentrations which do not exceed the natural background concentration or the practical quantitation limit for the substance in question.

(b) Method B: Standard method. Method B is the standard method for determining cleanup levels for ground water, surface water, soil, and air. Cleanup levels for individual hazardous substances are established using applicable state and federal laws or the risk equations specified in WAC 173-340-720 through 173-340-750. For individual carcinogens, cleanup levels are based upon the upper bound of the estimated excess cancer risk of one in one million (1×10^{-6}). For individual noncarcinogenic substances, cleanup levels are set at concentrations which are anticipated to result in no acute or chronic toxic effects on human health and the environment. Where a hazardous waste site involves multiple hazardous substances and/or multiple pathways of exposure, method B cleanup levels for individual substances must be modified in accordance with the procedures in WAC 173-340-708. Under this method, the total excess lifetime cancer risk for a site shall not exceed one in one hundred thousand (1×10^{-5}) and the hazard index for substances with similar noncarcinogenic toxic effects shall not exceed one (1).

(c) Method C: Conditional method. Compliance with cleanup levels developed under the method A or B may be impossible to achieve or may cause greater environmental harm. In those situations, method C cleanup levels for individual hazardous substances may be established on the basis of applicable state and federal laws and a site-specific risk assessment. Method C industrial soil cleanup levels may also be established at industrial ((~~sites~~)) properties which meet the criteria in WAC 173-340-745. For individual carcinogens, method C cleanup levels are based upon the upper bound of the estimated lifetime cancer risk of one in one hundred thousand (1×10^{-5}). For individual noncarcinogenic substances, method C cleanup levels are set at concentrations which are anticipated to result in no acute or chronic toxic effects on human health and no significant adverse effects on the protection and propagation of aquatic and terrestrial organisms. Where a hazardous waste site involves multiple hazardous substances and/or multiple pathways of exposure, method C cleanup levels for individual substances must be modified in accordance with the procedures in WAC 173-340-708. Under this method, the total excess lifetime cancer risk for a site shall not exceed one in one hundred thousand (1×10^{-5}) and the hazard index for substances with similar noncarcinogenic toxic effects shall not exceed one (1).

(4) Additional requirements for setting cleanup levels. Several requirements apply to cleanups under any of the three basic methods. Some of these requirements, such as the identification of applicable state and federal laws, describe analyses used along with methods A, B or C in order to set cleanup levels for particular substances at a site. Others describe the technical procedures to be used.

(a) Applicable state and federal laws. RCW 70.105D.030 (2) (d) requires the cleanup standards in these rules to be "at least as stringent as all applicable state and federal laws." In addition to establishing minimum requirements for cleanup standards, applicable state and federal laws may also impose certain technical

and procedural requirements for performing cleanup actions. These requirements are described in WAC 173-340-710 and are similar to the "ARAR" (applicable, relevant and appropriate requirements) approach of the federal superfund law.

(b) Cross-media contamination. In some situations, migration of hazardous substances from one medium may cause contamination in a second media. For example, the release of hazardous substances in soil may cause ground water contamination. Under methods A, B, and C, cleanup levels must be established at concentrations which prevent violations of cleanup levels for other media following implementation of the cleanup action.

(c) Risk assessment procedures. The analyses performed under methods B and C use several factors for defining cleanup levels for carcinogens and noncarcinogens. The individual factors and procedures for modifying these factors based on new scientific information are specified in WAC 173-340-708 and 173-340-720 through 173-340-750. WAC 173-340-708 also provides rules for use of indicator hazardous substances.

(d) Natural background. Cleanup levels shall not exceed concentrations established under methods A, B, or C except where the natural background concentration is greater than the cleanup level established under those methods. In such situations, the cleanup level shall be established at a concentration equal to the natural background concentration.

(5) Threshold criteria for all cleanup actions. WAC 173-340-360 specifies that all cleanup actions conducted under this chapter shall protect human health and the environment, comply with cleanup standards and applicable state and federal laws, and provide for compliance monitoring. These are the threshold criteria and all cleanup actions must meet these criteria regardless of other factors such as cost or technical limitations.

(6) Measuring compliance. Setting cleanup standards also involves being able to demonstrate that they have been met. This involves specifying where on the site the cleanup levels must be met ("points of compliance"), how long it takes for a site to meet cleanup levels ("restoration time frame"), and conducting sufficient monitoring to demonstrate that the cleanup standards have been met and will continue to be met in the future. The provisions for establishing points of compliance are in WAC 173-340-720 through 173-340-750. The provisions for establishing restoration time frames are in WAC 173-340-360. The compliance monitoring plan prepared under WAC 173-340-410 specifies precisely how these are measured for each site. Where cleanup levels are below the practical quantitation limit, compliance with cleanup standards will be based upon the practical quantitation limit.

(7) Administrative principles for cleanup standards.

(a) Remedial actions under this chapter shall be conducted in a manner that is consistent with this section. This section shall be used in combination with WAC 173-340-130, the more specific sections in Part VII of this chapter and WAC 173-340-360.

(b) Establishing cleanup standards and selecting an appropriate cleanup action involves many technical and public policy decisions. This chapter is intended to constrain the range of decisions needed to be made on individual sites to promote expeditious cleanups.

(b) The act contains policies which state, in part, each person has a fundamental and inalienable right to a healthful

environment and it is essential that sites be cleaned up well. Consistent with these policies, cleanup standards under this chapter shall be established which provide conservative estimates of human health and environmental risks which protect susceptible individuals as well as the general population.

(d) Cleanup standards under this chapter shall be established which protect human health and the environment for current and potential future site and resource uses.

(e) Cleanup actions that achieve cleanup levels under methods A, B or C (as applicable) and comply with applicable state and federal laws shall be presumed to be protective of human health and the environment.

(f) Except as provided for in applicable state and federal laws, cost shall not be a factor in determining what cleanup level is protective of human health and the environment. In addition, where specifically provided for in this chapter, cost may be appropriate for certain other determinations related to cleanup standards such as point of compliance. Cost shall, however, be considered when selecting an appropriate cleanup action.

(g) At most sites, there is more than one hazardous substance and more than one pathway for hazardous substances to get into the environment. For many sites there is more than one technology that could address each of these. When evaluating cleanup action alternatives it is appropriate to consider a representative range of technologies that could address each of these as well as different combinations of these technologies to accomplish the overall site cleanup.

(h) The cleanup of a particular media of a site will often affect other media at the site. These cross-media impacts shall be considered when establishing cleanup standards and selecting a cleanup action. Cleanup actions conducted under this chapter shall use appropriate engineering controls or other measures to minimize these cross-media impacts.

(i) In general, cleanup levels must be met throughout a site before the site will be considered to be clean. A remedy that leaves hazardous substances on a site in excess of cleanup levels may qualify as a cleanup action as long as the remedy is protective of human health and the environment, meets cleanup levels at specified points of compliance, complies with applicable state and federal laws, provides for adequate monitoring, and incorporates appropriate institutional controls. However, these rules are intended to promote thorough cleanups rather than long-term partial cleanups or containment measures.

AMENDATORY SECTION (Amending WSR 91-04-019, filed 1/28/91, effective 2/28/91)

WAC 173-340-706 Use of method C. (1) Method C cleanup levels represent concentrations which are protective of human health and the environment for specified site uses. A site (or portion of a site) that qualifies for a method C cleanup level for one medium does not necessarily qualify for a method C cleanup level in other

media. Each medium must be evaluated separately using the criteria applicable to that medium.

(a) Method C cleanup levels may be established where the person ((~~undertaking~~)) conducting the cleanup action can demonstrate that such levels comply with applicable state and federal laws, that all practicable methods of treatment are utilized, that institutional controls are implemented in accordance with WAC 173-340-440, and that one or more of the following conditions exist:

((~~(a)~~)) (i) Where method A or B cleanup levels are below area background concentrations, method C cleanup levels may be established at concentrations that are equal to area background concentrations, but in no case greater than concentrations specified in subsection (2) of this section; or

((~~(b)~~)) (ii) Where attainment of method A or B cleanup levels has the potential for creating a significantly greater overall threat to human health or the environment than attainment of method C cleanup levels established under this chapter, method C cleanup levels may be established at concentrations which minimize those overall threats, but in no case greater than concentrations specified in subsection (2) of this section. Factors that shall be considered in making this determination include:

((~~(i)~~)) (A) Results of a site-specific risk assessment;

((~~(ii)~~)) (B) Duration of threats;

((~~(iii)~~)) (C) Reversibility of threats;

((~~(iv)~~)) (D)Magnitude of threats; and

((~~(v)~~)) (E) Nature of affected population.

((~~(c)~~)) (iii) Where method A or B cleanup levels are below technically possible concentrations, method C cleanup levels may be established at the technically possible concentrations, but in no case greater than levels specified in subsection (2) of this section((~~;or~~

~~(d) The site is defined as an industrial site and meets the criteria for establishing soil cleanup levels under WAC 173-340-745~~)).

(b) For soil cleanup levels only, Method C cleanup levels may also be established where the person conducting the cleanup action can demonstrate that the area under consideration is an industrial property and meets the criteria for establishing industrial soil cleanup levels under WAC 173-340-745.

(2) Method C cleanup levels shall be established in accordance with the procedures in WAC I73-340-720 through 173-340-760. Method C cleanup levels shall be at least as stringent as all of the following:

(a) Concentrations established under applicable state and federal laws;

(b) Concentrations which are estimated to result in no significant adverse effects on the protection and propagation of aquatic and terrestrial life;

(c) For hazardous substances for which sufficiently protective, health-based criteria or standards have not been established under applicable state and federal laws, those concentrations which are protective of human health and the environment as determined by the following methods:

(i) Concentrations which are estimated to result in no significant adverse acute or chronic toxic effects on human health

as estimated using a hazard quotient of one (1) and the procedures defined in WAC 173-340-720 through 173-340-760;

(ii) For known or suspected carcinogens, concentrations for which the upper bound on the estimated excess cancer risk is less than or equal to one in one hundred thousand as determined using the procedures defined in WAC 173-340-720 through 173-340-760; and

(iii) Concentrations which eliminate or minimize the potential for food chain contamination.

(3) The department may establish method C cleanup levels that are more stringent than those required by subsection (2) of this section when based upon a site-specific evaluation, the department determines that such levels are necessary to protect human health and the environment.

(4) Concentrations of individual hazardous substances established under subsections (2) and (3) of this section, including those based on applicable state and federal laws, shall be adjusted downward to take into account exposure to multiple hazardous substances and/or exposure resulting from more than one pathway of exposure. These adjustments shall be made in accordance with WAC 173-340-708. In making these adjustments, the hazard index shall not exceed one (1) and the total excess cancer risk shall not exceed one in one hundred thousand. These overall limits on the hazard index and total excess cancer risk shall also apply to sites where there is exposure to a single hazardous substance by one exposure pathway, including cleanup levels based on applicable state and federal laws.

(5) If there are any inconsistencies between this subsection and any specifically referenced sections, the referenced section shall govern.

AMENDATORY SECTION (Amending WSR 91-04-019, filed 1/28/91, effective 2/28/91)

WAC 173-340-740 Sail cleanup standards (1) General considerations.

(a) Presumed exposure scenario soil cleanup levels shall be based on estimates of the reasonable maximum exposure expected to occur under both current and future site use conditions. The department has determined that residential ((~~site~~)) land use is generally the site use requiring the most protective cleanup levels and that exposure to hazardous substances under residential ((~~site~~)) land use conditions represents the reasonable maximum exposure scenario. Soil cleanup levels for this presumed exposure scenario shall be established in accordance with method A or method B cleanup levels described in subsections (2) and (3) of this section. In the event of a release of a hazardous substance, treatment, removal, and/or containment measures shall be implemented for those soils with hazardous substance concentrations which exceed soil cleanup levels based on this use unless the following can be demonstrated:

(i) The ((~~site~~)) property does not serve as a current residential area;

(ii) The ((~~site~~)) property does not have the potential to serve as a future residential area based on the consideration of ((~~site~~)) zoning, statutory and regulatory restrictions, comprehensive plans, historical ((~~site~~)) use, adjacent land uses, and other relevant factors; and

(iii) Appropriate ~~((site))~~ use restrictions are implemented at the ((~~site~~)) property; or

(iv) More stringent concentrations are necessary to protect human health and the environment.

(b) Industrial property soil cleanup levels. Soil cleanup levels for qualifying industrial ((~~sites~~)) properties may be established in accordance with the requirements in WAC 173-340-745.

(c) Commercial property soil cleanup levels. For industrial ~~((sites))~~ land uses not qualifying under WAC 173-340-745 and commercial ((~~sites~~)) land uses, the presumption is that soil cleanup levels ((~~will~~)) shall be established in accordance with residential areas unless it can be clearly demonstrated that this is inappropriate.

(i) For a ((~~site~~)) property to qualify under this subsection, it must be clearly demonstrated that:

(A) The ((~~site~~)) property is currently zoned for or otherwise officially designated for industrial/commercial use;

(B) The ((~~site~~)) property is currently used for industrial/commercial purposes or has a history of use for industrial/commercial purposes;

(C) Properties adjacent to and in the general vicinity of the ((~~site~~)) property are used or are designated for use for industrial/commercial purposes; and

(D) The ((~~site is~~)) property and properties adjacent to and in the general vicinity are expected to be used for industrial/commercial purposes for the foreseeable future due to site zoning, statutory or regulatory restrictions, comprehensive plans, adjacent land use, and other relevant factors.

(ii) For industrial/commercial ((~~sites~~)) land uses qualifying under this subsection, soil cleanup levels shall be established as close as practicable to the method B soil cleanup levels established under subsection (3) of this section and shall be at least as stringent as the method C soil cleanup levels established under subsection (4) of this section. The overall limits on hazard index and total excess cancer risk specified in subsections (3) through (5) of this section shall apply to these sites.

(iii)Institutional controls under WAC 173-340-440 shall be required for industrial/commercial ((~~sites~~)) land uses qualifying under this subsection where soil cleanup levels are less stringent than method B soil cleanup levels established under subsection (3) of this section.

(iv) Soil cleanup levels for areas beyond the commercial/industrial property boundary that do not qualify for commercial soil cleanup levels under this subsection (including implementation of institutional controls and a covenant restricting use of the property to commercial or industrial use, as applicable) shall use method A or method B cleanup levels as described in subsections (2) or (3) of this section.

(v) The department expects that only industrial/commercial ((~~sites~~)) properties located in the interior portion of a large industrial/commercial area will qualify for other than method A or method B cleanup levels under this subsection.

(d) Other nonresidential properties soil cleanup levels.

(i) Soil cleanup levels for childcare facilities and schools shall be established in accordance with method A or method B cleanup levels as described in subsections (2) and (3) of this section.

(ii) For other nonresidential ((~~site~~)) land uses such as recreational or agricultural uses, soil cleanup levels shall be established on a case-by-case basis.

(A) The overall limits on the hazard index and cancer risk specified in subsections (3) through (5) of this section shall apply to these types of sites.

(B) Soil cleanup levels for these types of sites shall be at least as stringent as method C cleanup levels established under subsection (4) of this section.

(C) Where other than a method A (residential) or method B soil cleanup level is proposed at these properties, the cleanup action shall include appropriate institutional controls implemented in accordance with WAC 173-340-440 to limit potential exposure to residual contamination. This shall include, at a minimum, placement of a covenant on the property restricting use of the property to the land use(s) the cleanup level is based on.

(e) Relationship between soil cleanup levels and other cleanup standards. Soil cleanup levels shall be established at concentrations which do not directly or indirectly cause violations of ground water, surface water, sediment, or air cleanup standards established under this chapter or applicable state and federal laws. A property that qualifies for other than a method A or method B soil cleanup level under this subsection does not necessarily qualify for other than a method A or method B cleanup level in other media. Each medium must be evaluated separately using the criteria applicable to that medium.

(2) Method A cleanup levels.

(a) Method A cleanup levels shall be at least as stringent as all of the following:

(i) Concentrations in the following table; and

Table 2
Method A Cleanup Levels - Soil

Hazardous Substance	CAS Number	Cleanup Level
Arsenic	7440-38-2	20.0 mg/kg[b]
Benzene	71-43-2	0.5 mg/kg[c]
Cadmium	7440-43-9	2.0 mg/kg[d]
Chromium	7440-47-3	100.0 mg/kg[e]
DDT	50-29-3	1.0 mg/kgf
Ethylbenzene	100-41-4	20.0 mg/kg[g]
Ethylene dibromide	106-93-4	0.001 mg/kg[h]
Lead	7439-92-1	250.0 mg/kgi
Lindane	58-89-9	1.0 mg/kg[j]
Methylene chloride	75-09-2	0.5 mg/kg[k]
Mercury (inorganic)	7439-97-6	1.0 mg/kg[l]
PAHs (carcinogenic)		1.0 mg/kg[m]
PCB Mixtures		1.0 mg/kg[n]
Tetrachloroethylene	127-18-4	0.5 mg/kg[o]
Toluene	108-88-3	40.0 mg/kg[p]
TPH (gasoline)		100.0 mg/kg[q]
TPH (diesel)		200.0 mg/kg[r]
TPH (other)		200.0 mg/kg[s]
1,1,1 Trichloroethane	71-55-6	20.0 mg/kg[t]

Trichloroethylene	79-01-5	0.5 mg/kg[u]
Xylenes	1330-20-7	20.0 mg/kg[v]

a Caution on misusing method A tables. Method A tables have been developed for specific purposes. They are intended to provide conservative cleanup levels for sites undergoing routine cleanup actions or those sites with relatively few hazardous substances. The tables may not be appropriate for defining cleanup levels at other sites. For these reasons, the values in these tables should not automatically be used to define cleanup levels that must be met for financial, real estate, insurance coverage or placement, or similar transactions or purposes. Exceedances of the values in these tables do not necessarily trigger requirements for cleanup action under this chapter.

b Arsenic. Cleanup level based on background concentrations in the state of Washington.
c Benzene. Cleanup level based on protection of ground water.
d Cadmium. Cleanup level based on plant protection.
e Chromium. Cleanup level based on health risks associated with inhalation of resuspended dust.
f DDT. Cleanup level based on concentrations derived using the procedures in subsection (3)(a)(iii)(B) of this section.
g Ethylbenzene. Cleanup level based on protection of ground water.
h Ethylene dibromide. Cleanup level based on protection of ground water.
1 Lead. Cleanup level based on preventing unacceptable blood lead levels.
j Lindane. Cleanup level based on concentration derived using the procedures in subsection (3)(a)(iii)(B) of this section.
k Methylene chloride. Cleanup level based on protection of ground water.
l Mercury. Cleanup level based on protection of ground water.
m PAHs (carcinogenic). Cleanup level based on concentration derived using the procedures in subsection (3)(a)(iii)(B) of this section.
n PCB Mixtures. Cleanup level based on concentration derived using the procedures in subsection (3)(a)(iii)(B) of this section.
o Tetrachloroethylene. Cleanup level based on protection of ground water.
P Toluene. Cleanup level based on protection of ground water.
q Total Petroleum Hydrocarbons (gasoline). Cleanup level based on protection of ground water
r Total Petroleum Hydrocarbons (diesel). Cleanup level based on protection of ground water.
s Total Petroleum Hydrocarbons (other). Cleanup level based on protection of ground water.
t 1,1,1 Trichloroethane. Cleanup level based on protection of ground water.
u Trichloroethylene. Cleanup level based on protection of ground water.
v Xylenes. Cleanup level based on protection of ground water.

(ii) Concentrations established under applicable state and federal laws;

(b) For sites with additional hazardous substances which are deemed indicator hazardous substances under WAC 173-340-708(2) for which there is no value in Table 2 or applicable state and federal laws, cleanup levels for these additional hazardous substances _shall be established at the natural background concentration or the practical quantification limit, subject to the limitations in this chapter.

(c) The department may establish method A cleanup levels that are more stringent than those required by subsection (2) (a) of this section, when based on a site-specific evaluation, the department determines that such levels are necessary to protect human health or environment.

(3) Method B cleanup levels.

(a) Method B cleanup levels for soils shall be at least as stringent as all of the following:

(i) Concentrations established under applicable state and federal laws;

(ii) Concentrations which will not cause contamination of ground water at levels which exceed method B ground water cleanup levels established under WAC 173-340-720 as determined using the following criteria:

(A) For individual hazardous substances or mixtures, concentrations that are equal to or less than one hundred times the ground water cleanup level established in accordance with WAC 173-

340-720 unless it can be demonstrated that a higher soil concentration is protective of ground water at the site;

(B) For total petroleum hydrocarbons, the person undertaking the cleanup may elect to make this demonstration on the basis of data on individual hazardous substances that comprise the total petroleum hydrocarbons.

(iii) For those hazardous substances for which health-based criteria or standards have not been established under applicable state and federal laws, those concentrations which protect human health and the environment as determined by the following methods:

(A) Concentrations which are estimated to result in no acute or chronic toxic effects on human health via direct contact with contaminated soil and are determined using the following equation and standard exposure assumptions:

$$\text{Soil Cleanup Level (mg/kg)} = \frac{\text{RFD} \times \text{ABW} \times \text{UCF2} \times \text{HQ}}{\text{SIR} \times \text{ABI} \times \text{FOC}}$$

Where:

RFD	=	Reference Dose as defined in WAC 173-340-708(7) (mg/kg-day)
ABW	=	Average body weight over the period of exposure (16 kg)
UCF2	=	Units conversion factor (1,000,000 mg/kg)
SIR	=	Soil ingestion rate (200 mg/day)
ABI	=	Gastrointestinal absorption rate (1.0)
FOC	=	Frequency of contact (1.0)
HQ	=	Hazard quotient (1);

(B) Concentrations for which the upper bound on the estimated excess cancer risk is less than or equal to 1 in 1,000,000 via direct contact with contaminated soil and are determined using the following equation and standard exposure assumptions:

$$\text{Soil Cleanup Level (mg/kg)} = \frac{\text{RISK} \times \text{ABW} \times \text{LIFE} \times \text{UCF1}}{\text{CPF} \times \text{SIR} \times \text{ABl} \times \text{DUR} \times \text{FOC}}$$

Where:

RISK	=	Acceptable cancer risk level (I in 1,000,000)
ABW	=	Average body weight over the period of exposure (16 kg)
LIFE	=	Lifetime (75 years)
UCF1	=	Unit conversion factor (1,000,000 mg/kg)
CPF	=	Carcinogenic Potency Factor as defined in WAC 173-340-708(8) (kg-day/mg)
SIR	=	Soil ingestion rate (200 mg/day)
ABI	=	Gastrointestinal absorption rate (1.0)
DUR	=	Duration of exposure (6 years)
FOC	=	Frequency of contact (1.0);

(iv) To assure that unacceptable risks do not result from inhalation of hazardous substances in or released from contaminated soils, soil concentrations which ensure that releases of hazardous substances shall not result in ambient air concentrations which exceed method B cleanup levels established under WAC 173-340-750.

(b) The department may establish method B cleanup levels that are more stringent than those required under (a) of this subsection, when, based on a site-specific evaluation, the department determines that such levels are necessary to protect human health or environment, including the following:

(i) Concentrations which eliminate or substantially reduce the potential for food chain contamination;

(ii) Concentrations which eliminate or substantially reduce the potential for damage to soils or biota in the soils which could impair the use of soils for agricultural or silvicultural purposes;

(iii) Concentrations which eliminate or substantially reduce the potential for adverse effects on vegetation or wildlife;

(iv) Concentrations more stringent than those in (b) of this subsection where the department determines that such levels are necessary to protect the ground water at a particular site;

(v) Concentrations necessary to protect nearby surface waters from hazardous substances in runoff from the site; and

(vi) Concentrations which eliminate or minimize the potential for the accumulation of vapors in buildings or other structures to concentrations which pose a threat to human health or the environment.

(4) Method C cleanup levels.

(a) Method C soil cleanup levels may be ((~~approved by the department~~)) utilized if the person ((~~undertaking~~)) conducting the cleanup action can demonstrate that such levels are consistent with applicable state and federal laws, that all practicable methods of treatment have been utilized, that institutional controls are implemented in accordance with WAC 173-340-440, and that one or more of the conditions in WAC 173-340-706 (1)(a) exist.

(b) Method C cleanup levels for soils shall be at least as stringent as all of the following:

(i) Concentrations established under applicable state and federal laws;

(ii) Concentrations which will not cause contamination of ground water at levels which exceed ground water cleanup levels established under WAC 173-340-720 as determined using the following procedures:

(A) For individual hazardous substances or mixtures, concentrations that are equal to or less than one hundred times the ground water cleanup level established in accordance with WAC 173-340-720 unless it can be demonstrated that a higher soil concentration is protective of ground water at the site;

(B) For total petroleum hydrocarbons, the person undertaking the cleanup may elect to make this demonstration on the basis of data on individual hazardous substances that comprise, the total petroleum hydrocarbons;

(iii) For those hazardous substances for which health-based criteria or standards have not been established under applicable state and federal laws, those concentrations which protect human health and the environment as determined by the following methods:

(A) Concentrations which are anticipated to result in no significant acute or chronic toxic effects on human health and estimated in accordance with WAC 173-340-740 (3)(a)(iii)(A) except that the frequency of contact shall be 0.5, the soil ingestion rate shall be 100 milligrams per day, and the average body weight shall be 16 kilograms;

(B) For known or suspected carcinogens, concentrations for which the upper bound on the estimated excess cancer risk is less than or equal to 1 in 100,000 and are estimated in accordance with WAC 173-340-740 (3) (a) (iii) (B) except that the frequency of contact shall be 0.5 and the soil ingestion rate shall be 100 milligrams per day; and

(iv) To assure that unacceptable risks do not result from inhalation of hazardous substances in or released from contaminated

soils, soil concentrations which ensure that releases of hazardous substances shall not result in ambient air concentrations which exceed method C cleanup levels established under WAC 173-340-750.

((~~(b)~~)) (C) The department may establish method C cleanup levels that are more stringent than those required by (a) through (c) of this subsection when, based on a site-specific evaluation, the department determines that such levels are necessary to protect human health and the environment, including consideration of those factors listed in subsection (3) ((~~(c)~~)) (b) of this section.

(5) Multiple hazardous substances/multiple pathways of exposure.

(a) Soil cleanup levels for individual hazardous substances developed in accordance with subsections (3) and (4) of this section, including cleanup levels based on applicable state and federal laws, shall be adjusted downward to take into account exposure to multiple hazardous substances and/or exposure resulting from more than one pathway of exposure. These adjustments shall be made in accordance with the procedures specified in WAC 173-340-708 (5) and (6).

In making these adjustments, the hazard index shall not exceed one and the total excess cancer risk shall not exceed one in one hundred thousand.

(b) These overall limits on the hazard index and total excess cancer risk shall also apply to sites where there is exposure to a single hazardous substance by one exposure pathway, including cleanup levels based on applicable state and federal laws.

(6) Point of compliance.

(a) The point of compliance is the point or points where the soil cleanup levels established under subsections (2), (3), (4), and (5) of this section shall be attained.

(b) For soil cleanup levels based on the protection of ground water, the point of compliance shall be established in the soils throughout the site.

(c) For soil cleanup levels based on human exposure via direct contact, the point of compliance shall be established in the soils throughout the site from the ground surface to fifteen feet below the ground surface. This represents a reasonable estimate of the depth of soil that could be excavated and distributed at the soil surface as a result of site development activities.

(d) The department recognizes that, for those cleanup actions selected under WAC 173-340-360 that involve containment of hazardous substances, the soil cleanup levels will typically not be met at the points of compliance specified in (b) and (c) of this subsection. In these cases, the cleanup action may be determined to comply with cleanup standards, provided the compliance monitoring program is designed to ensure the long-term integrity of the containment system, and the other requirements for containment technologies in WAC 173-340-360(8) are met.

(7) Compliance monitoring.

(a) Compliance with soil cleanup levels shall be based on total analyses of the soil fraction less than two millimeters in size. When it is reasonable to expect that larger soil particles could be reduced to two millimeters or less during current or future site use and this reduction could cause an increase in the concentrations of hazardous substances in the soil, soil cleanup levels shall also apply to these larger soil particles. Compliance with soil cleanup levels shall be based on dry weight

concentrations. The department may approve the use of alternate procedures for stabilized soils.

(b) Sampling and analytical procedures shall be defined in a compliance monitoring plan prepared under WAC 173-340-410. The sample design shall provide data which are representative of the area where exposure to hazardous substances may occur.

(c) The data analysis and evaluation procedures used to evaluate compliance with soil cleanup levels shall be defined in a compliance monitoring plan prepared under WAC 173-340-410. These procedures shall meet the following general requirements:

(i) Methods of data analysis shall be consistent with the sampling design. Separate methods may be specified for surface soils and deeper soils;

(ii) When cleanup levels are based on requirements specified in applicable state and federal laws, the procedures for evaluating compliance that are specified in those requirements shall be utilized to evaluate compliance with cleanup levels unless those procedures conflict with the intent of this section;

(iii) Where procedures for evaluating compliance are not specified in an applicable state and federal law, statistical methods shall be appropriate for the distribution of sampling data for each hazardous substance. If the distribution of sampling data for a hazardous substance is inappropriate for statistical methods based on a normal distribution, then the data may be transformed. If the distributions for hazardous substances differ, more than one statistical method may be required; and

(iv) The data analysis plan shall specify which parameters are to be used to determine compliance with soil cleanup levels.

(A) For cleanup levels based on short-term or acute toxic effects on human health or the environment, an upper percentile soil concentration shall be used to evaluate compliance with cleanup levels.

(B) For cleanup levels based on chronic or carcinogenic threats, the mean soil concentration shall be used to evaluate compliance with cleanup levels unless there are large variations in hazardous substance concentrations relative to the mean hazardous substance concentration or a large percentage of concentrations are below the detection limit.

(d) Appropriate statistical methods include the following:

(i) A procedure in which a confidence interval for each hazardous substance is established from site sampling data and the soil cleanup level is compared to the upper confidence interval;

(ii) A parametric test for percentiles based on tolerance intervals to test the proportion of soil samples having concentrations less than the soil cleanup level; or

(iii) Other statistical methods approved by the department.

(e) If a confidence interval approach is used to evaluate compliance with a soil cleanup level, the decision rule is a one-tailed test of the null hypothesis that the true soil concentration of a hazardous substance exceeds the soil cleanup level. Compliance with soil cleanup levels shall be determined using the following criteria:

(i) The upper confidence interval on the true soil concentration is less than the soil cleanup level. Statistical tests shall be performed at a Type I error level of 0.05;

(ii) No single sample concentration shall be greater than two times the soil cleanup level; and

(iii) Less than ten percent of the sample concentrations shall exceed the soil cleanup level.

(f) If a method to test the proportion of soil samples is used to evaluate compliance with a soil cleanup level, compliance shall be determined using the following criteria:

(i) No single sample concentrations shall be greater than two times the soil cleanup level; and

(ii) Less than ten percent of the sample concentrations shall exceed the soil cleanup level; and

(iii) The true proportion of samples that do not exceed the soil cleanup level shall not be less than ninety percent. Statistical tests shall be performed with a Type I error level of 0.05.

(g) For purposes of demonstrating compliance with soil cleanup levels, measurements below the method detection limit shall be assigned a value equal to one-half the method detection limit. Detectable levels below the practical quantitation limit shall be assigned a value equal to the method detection limit. The department may approve alternate statistical procedures for handling nondetected values or values below the practical quantitation limit. Alternate statistical procedures may include probit analysis and regression analysis.

AMENDATORY SECTION (Amending WSR 91-04-019, filed 1/28/91, effective 2/28/91)

WAC 173-340-745 Soil cleanup standards for industrial ((~~sites~~)) properties. (1) General considerations.

(a) Use of this section. This section shall be used to establish soil cleanup levels where the department has determined that industrial ~~((site))~~ land use represents the reasonable maximum exposure.

(b) Criteria. Cleanup levels shall not be based on industrial ((~~site~~)) land use unless the following criteria can be demonstrated:

(i) ((~~The site is zoned or has been otherwise officially designated for industrial use;~~

~~(ii) The site is currently used for industrial purposes or has a history of use for industrial purposes;~~

~~(iii) Adjacent properties are currently used or designated for use for industrial purposes;~~

~~(iv) The site is expected to be used for industrial purposes for the foreseeable future due to site zoning, statutory or regulatory restrictions, comprehensive plans, adjacent land use, and other relevant factors; and~~

~~(v) The cleanup action provides for institutional controls implemented in accordance with WAC 173-340-440.~~

~~(c) The department expected that only sites located within a limited number of large industrial areas will qualify for industrial soil cleanup levels under this section.~~)) The area of the site where industrial property soil cleanup levels are proposed meets the definition of an industrial property under WAC 173-340-200;

Industrial soil cleanup levels are based on an adult worker exposure scenario. It is essential to evaluate land uses and zoning for compliance with this definition in the context of this exposure scenario. Local governments use a variety of zoning categories for industrial land uses so a property does not necessarily have to be in a zone called "industrial" to meet the definition of "industrial property." Also, there are land uses allowed in industrial zones that are actually commercial or residential, rather than industrial, land uses. Thus, an evaluation to determine compliance with this definition should include a review of the actual text in the comprehensive plan and zoning ordinance pertaining to the site and a visit to the site to observe land uses in the zone. When evaluating land uses to determine if a property use not specifically listed in the definition is a "traditional industrial use," or to determine if the property is "zoned for industrial use," the following characteristics shall be considered:

- People do not normally live on industrial property. The primary potential exposure is to adult employees of businesses located on the industrial property;
- Access to industrial property by the general public is generally not allowed. If access is allowed, it is highly limited and controlled due to safety or security considerations;
- Food is not normally grown/raised on industrial property. (However, food processing operations are commonly considered industrial facilities);
- Operations at industrial properties are often (but not always) characterized by use and storage of chemicals, noise, odors and truck traffic;
- The surface of the land at industrial properties is often (but not always) mostly covered by buildings or other structures, paved parking lots, paved access roads and material storage areas--minimizing potential exposure to the soil;
- Industrial properties may have support facilities consisting of offices, restaurants, and other facilities that are commercial in nature but are primarily devoted to administrative functions necessary for the industrial use and/or are primarily intended to serve the industrial facility employees and not the general public;

(ii) The cleanup action provides for appropriate institutional controls implemented in accordance with WAC 173-340-440 to limit potential exposure to residual hazardous substances. This shall include, at a minimum, placement of a covenant on the property restricting use of the area of the site where industrial soil cleanup levels are proposed to industrial property uses; and

(iii) Hazardous substances remaining at the property after remedial action would not pose a threat to human health or the environment at the site or in adjacent nonindustrial areas. In evaluating compliance with this criterion, at a minimum the following factors shall be considered:

- The potential for access to the industrial property by the general public, especially children. The proximity of the industrial property to residential areas, schools or childcare facilities shall be considered when evaluating access. In addition, the presence of natural features, manmade structures, arterial streets or intervening land uses that would limit or encourage access to the industrial property shall be considered. Fencing shall not be considered sufficient to limit access to an industrial property since this is insufficient to assure long term protection;

- The degree of reduction of potential exposure to residual hazardous substances by the selected remedy. Where the residual hazardous substances are to be capped to reduce exposure, consideration shall be given to the thickness of the cap and the likelihood of future site maintenance activities, utility and drainage work, or building construction reexposing residual hazardous substances.

- The potential for transport of residual hazardous substances to off-property areas, especially residential areas, schools and childcare facilities;

- The potential for adverse effects on vegetation or wildlife caused by residual hazardous substances; and

- The likelihood that these factors would not change for the foreseeable future.

(c) Ecology expectations. In applying the criteria in WAC 173-340-745 (1) (b), the department expects the following results:

(i) The department expects that properties zoned for heavy industrial or high intensity industrial use and located within a city or county having completed a comprehensive plan and adopted implementing zoning regulations under the Growth Management Act (chapter 36.70A RCW) will meet the definition of industrial property. For cities and counties not planning under the Growth Management Act, the department expects that spot zoned industrial properties will not meet the definition of industrial property but that properties that are part of a larder area zoned for heavy industrial or high intensity industrial use will meet the definition of an industrial property;

(ii) For both GMA and non-GMA cities and counties, the department expects that light industrial and commercial zones and uses should meet the definition of industrial property where the land uses are comparable to those cited in the definition of industrial property or the land uses are an integral part of a qualifying industrial use (such as, ancillary or support facilities). This will require a site-by-site evaluation of the zoning text and land uses;

(iii) The department expects that for portions of industrial properties in close proximity to (generally, within a few hundred feet) residential areas, schools or childcare facilities, residential soil cleanup levels will be used unless:

(A) Access to the industrial property is very unlikely or, the hazardous substances that are not treated or removed are contained under a cap of clean soil (or other materials) of substantial thickness so that it is very unlikely the hazardous substances would be disturbed by future site maintenance and construction

activities (depths of even shallow footings, utilities and drainage structures in industrial areas are typically three to six feet); and

(B) The hazardous substances are relatively immobile (or have other characteristics) or have been otherwise contained so that subsurface lateral migration or surficial transport via dust or runoff to these nearby areas or facilities is highly unlikely; and

(iv) Note that a change in the reasonable maximum exposure to industrial site use primarily affects the direct contact exposure pathway. Thus, for example, for sites where the soil cleanup level is based primarily on the potential for the hazardous substance to leach and cause ground water contamination, it is the department's expectation that an industrial land use will not affect the soil cleanup level. Similarly, where the soil cleanup level is based primarily on surface water protection, ecological or other pathways other than direct human contact, land use is not expected to affect the soil cleanup level.

(d) Calculating industrial property soil cleanup levels. Soil cleanup levels established under this section shall be ((~~as close as practicable to cleanup levels established in accordance with WAC 173-340-740, but in no case higher than the concentrations established under~~)) determined as described in subsections (2) through (5) of this section.

(e) Soil cleanup levels for nearby properties. Soil cleanup levels for areas beyond the industrial property boundary that do not qualify for industrial soil cleanup levels under this section (including implementation of institutional controls and a covenant restricting use of the property to industrial property uses) shall be established in accordance with WAC 173-340-740.

(f) Relationship between soil cleanup levels and other cleanup standards. Soil cleanup levels shall be established at concentrations which do not directly or indirectly cause violations of ground water, surface water, sediment or air cleanup standards established under this chapter or under applicable state and federal laws. A property that qualifies for an industrial soil cleanup level under this section does not necessarily qualify for other than a Method A or method B cleanup level in other media. Each medium must be evaluated separately utilizing the criteria applicable to that medium.

(g) Other options. See WAC 173-340-740 (1)(c) for establishing cleanup levels ((~~at industrial sites~~)) for industrial land uses not qualifying under this section and ((~~at commercial sites~~)) for commercial land uses.

(2) Method A cleanup levels.

(a) Method A cleanup levels shall be at least as stringent as all of the following:

(i) Concentrations in the following table:

Table 3
Method A Cleanup Levels – Industrial Soil

Hazardous Substance	CAS Number	Cleanup Level
Arsenic	7440-38-2	200.0 mg/kg[b]
Benzene	71-43-2	0.5 mg./kg[c]
Cadmium	7440-43-9	10.0 mg/kg[d]
Chromium (Total)	7440-47-3	500.0 mg/kg[e]
DDT	50-29-3	5.0 mg/kg[f]
Ethylbenzene	100-41-4	20.0 mg/kg[g]

Ethylene dibromide	106-93-4	0.001 mg/kg[h]
Lead	7439-92-1	1000.0 mg/kg[i]
Lindane	58-89-9	20.0 mg/kg[j]
Methylene chloride	75-09-2	0.5 mg/kg[k]
Mercury (inorganic)	7439-97-6	1.0 mg/kg[l]
PAHs (carcinogenic)		20.0 mg/kg[m]
PCB Mixtures		10.0 mg/kg[n]
Tetrachloroethylene	127-18-4	0.5 mg/kg[o]
Toluene	108-88-3	40.0 mg/kg[p]
TPH (gasoline)		100.0 mg/kg[q]
TPH (diesel)		200.0 mg/kg[r]
TPH (other)		200.0 mg/kg[s]
1,1,1 Trichloroethane	71-55-6	20.0 mg/kg[t]
Trichlorethylene	79-01-5	0.5 mg/kg[u]
Xylenes	1330-20-7	20.0 mg/kg[v]

a Caution on misusing method A tables. Method A tables have been developed for specific purposes. They are intended to provide conservative cleanup levels for sites undergoing routine cleanup actions or those sites with relatively few hazardous substances. The tables may not be appropriate for defining cleanup levels at other sites. For these reasons, the values in these tables should not automatically be used to define cleanup levels that must be met for financial, real estate, insurance coverage or placement, or similar transactions or purposes. Exceedances of the values in these tables do not necessarily trigger requirements for cleanup. action under this chapter.

b Arsenic. Cleanup level based on concentration derived using the procedures in subsection (4)(a)(iii)(B) of this section.

c Benzene. Cleanup level based on protection of ground water.

d Cadmium. Cleanup level based on protection of ground water.

e Chromium. Cleanup level based on inhalation exposure.

f DDT. Cleanup level based on protection of ground water.

g Ethylbenzene. Cleanup level based on protection of ground water.

h Ethylene dibromide. Cleanup level based on protection of ground water.

1 Lead. Cleanup level based on direct contact.

j Lindane. Cleanup level based on concentration derived using the procedures in subsection (4)(a)(iii)(B) of this section.

k Methylene chloride. Cleanup level based on protection of ground water.

l Mercury. Cleanup level based on protection of ground water.

m PAHs (carcinogenic). Cleanup level based on concentration derived using the procedures in subsection (4)(a)(iii)(B) of this section.

n PCB Mixtures. Cleanup level based on concentration derived using the procedures in subsection (4)(a)(iii)(B) of this section.

o Tetrachloroethylene. Cleanup level based on protection of ground water.

p Toluene. Cleanup level based on protection of ground water.

q Total Petroleum Hydrocarbons (gasoline). Cleanup level based on protection of ground water

r Total Petroleum Hydrocarbons (diesel). Cleanup level based on protection of ground water.

s Total Petroleum Hydrocarbons (other). Cleanup level based on protection of ground water.

t 1,1,1 Trichloroethane. Cleanup level based on protection of ground water.

u Trichloroethylene. Cleanup level based on protection of ground water.

v Xylenes. Cleanup level based on protection of ground water; and

(ii) Concentrations established under applicable state and federal laws;

(b) For sites with additional hazardous substances which are deemed indicator hazardous substances under WAC 173-340-708 (2) for which there is no value in Table 3 or applicable state and federal laws, cleanup levels for these additional hazardous substances shall be established at the natural background concentration or the practical quantification limit, subject to the limitations in this chapter.

(c)The department may establish method A cleanup levels that are more stringent than those required by (a) of this subsection when, based on site-specific evaluations, the department determines that such levels are necessary to protect human health or environment, including consideration of the factors in WAC 173-340-740 (3) (b).

(3) Method B cleanup levels. This section does not provide procedures for establishing method B cleanup levels. Method C is the standard method for establishing soil cleanup levels at industrial sites and its use is conditioned upon the continued use of the site for industrial purposes.

(4) Method C cleanup levels.

(a) Method C cleanup levels for industrial soils shall be at least as stringent as all of the following:

(i) Concentrations established under applicable state and federal laws;

(ii) Concentrations which will not cause contamination of ground water to concentrations which exceed ground water cleanup levels established under WAC 173-340-720 as determined using the following procedures:

(A) For individual hazardous substances or mixtures, concentrations that are equal to or less than one hundred times the ground water cleanup level established in accordance with WAC 173-340-720 unless it can be demonstrated that higher soil concentrations are protective of ground water at the site;

(B) For total petroleum hydrocarbons, the person undertaking the cleanup action may elect to make this demonstration on the basis of data on individual hazardous substances that comprise the total petroleum hydrocarbons;

(iii) For those hazardous substances for which sufficiently protective health-based criteria or standards have not been established under applicable state and federal laws, those concentrations which protect human health and the environment as determined by the following methods:

(A) Concentrations which are anticipated to result in no acute or chronic toxic effects on human health via direct contact with contaminated soil and are determined using the following equation and standard exposure assumptions:

$$\text{Soil Cleanup Level (mg/kg)} = \frac{\text{RFD} \times \text{ABW} \times \text{UCF2} \times \text{HQ}}{\text{SIR} \times \text{AB1} \times \text{FOC}}$$

Where:

RFD	=	Reference Dose as defined in WAC 173-340-708(7) (mg/kg-day)
ABW	=	Average body weight over the period of exposure (70 kg)
UCF2	=	Unit conversion factor (1,000,000 mg/kg)
SIR	=	Soil ingestion rate (50 mg/day)
ABI	=	Gastrointestinal absorption rate (1.0)
FOC	=	Frequency of contact (0.4)
HQ	=	Hazard quotient (1);

(B) Concentrations for which the upper bound on the estimated excess cancer risk is less than or equal to 1 in 100,000 via direct contact with contaminated soil and are determined using the following equation and standard exposure assumptions:

$$\text{Soil Cleanup Level (mg/kg)} = \frac{\text{RISK} \times \text{ABW} \times \text{LIFE} \times \text{UCF1}}{\text{CPF} \times \text{SIR} \times \text{AB1} \times \text{DUR} \times \text{FOC}}$$

Where:

RISK	=	Acceptable cancer risk level (1 in 100,000)
ABW	=	Average body weight over the period of exposure (70 kg)
LIFE	=	Lifetime (75 years)
UCF1	=	Unit conversion factor (1,000,000 mg/kg)
CPF	=	Carcinogenic Potency Factor as defined in WAC 173-340-708(8) (kg-day/mg)
SIR	=	Soil ingestion rate (50 mg/day)

ABI = Gastrointestinal absorption rate (1.0)
DUR = Duration of exposure (20 years)
FOC = Frequency of contact (0.4);

(b) The department may establish method C cleanup levels that are more stringent than those required by (a) of this subsection when, based on a site-specific evaluation, the department determines that such levels are necessary to protect human health and the environment.

(5) Multiple hazardous substances/multiple pathways of exposure.

(a) Soil cleanup levels for individual hazardous substances developed in accordance with subsection (4) of this section, including cleanup levels based on state and federal laws, shall be adjusted downward to take into account exposure to multiple hazardous substances and/or exposure resulting from more than one pathway of exposure. These adjustments shall be made in accordance with the procedures specified in WAC 173-340-708 (5) and (6). In making these adjustments, the hazard index shall not exceed one and the total excess cancer risk shall not exceed one in one hundred thousand.

(b) These overall limits on the hazard index and total excess cancer risk shall also apply to sites where there is exposure to a single hazardous substance by one exposure pathway, including cleanup levels based on applicable state and federal laws.

(6) Point of compliance. The point of compliance shall be established in accordance with WAC 173-340-740(6).

(7) Compliance monitoring. Compliance monitoring shall be performed in accordance with WAC 173-340-410 and 173-340-740(7).