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# Amendments to the MTCA Cleanup Regulation

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Prepared by

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# Discussion Topics

- Background information on the MTCA rule and the current process to amend the rule
- Draft rule language to address issues associated with dioxins, PAH and PCB mixtures
- Questions for the Science Advisory Board
- Next Steps

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# Background

February 1991

MTCA Cleanup Regulation adopted

February 2001

Major amendments to the MTCA rule adopted in February

- Use of EPA 1989 Toxicity Equivalency Factors (TEFs) for dioxin/furan mixtures
- Use of Cal EPA 1994 TEFs (Relative Potency Factors) for PAHs

November 2001

CLARC Guidance published

November 2005

Rayonier filed a lawsuit challenging application of CLARC guidance

March 2006

Petition for emergency rulemaking

April/May 2006

Ecology settles lawsuit and announces plan to amend MTCA rule to clarify policies and procedures

# MTCA Rule

- The MTCA rule establishes a process for setting Method B cleanup levels for carcinogens that reflects three key policy choices:
  - Cleanup levels for individual hazardous substances must be at least as stringent as levels in other applicable laws and rules;
  - Cleanup levels for individual hazardous substances are established at a level corresponding to an incremental cancer risk of one-in-one million ( $10^{-6}$ );
  - Total site risk (including consideration of multiple hazardous substances & multiple exposure pathways) shall not exceed one-in-one hundred thousand ( $10^{-5}$ ).
- The MTCA rule specifies that the TEF methodology may be used to characterize the health risks of dioxin/furan and PAH mixtures.
- The MTCA rule does not specify how to use the TEF methodology when establishing cleanup levels.
- The CLARC guidance defines procedures for establishing cleanup levels.

# Use of the TEF Methodology

- CLARC Guidance specifies that dioxin/furan mixtures should be considered an individual hazardous substance when establishing cleanup levels (cleanup level for mixture based on  $10^{-6}$ )
- Rayonier argued that the CLARC guidance is not consistent with the overall MTCA rule framework and Ecology is imposing the CLARC guidance as a rule. They argued that:
  - ❑ Mixture is considered a mixture of individual hazardous substances (Cleanup level for the mixture is based on  $10^{-5}$  cancer risk level).
  - ❑ Cleanup levels for individual congeners are based on  $10^{-6}$  cancer risk level.
- The two approaches use the same scientific methods and information to characterize dioxin/furan mixtures:
  - ❑ TEQs are used to characterize mixtures
  - ❑ EPA TEF values are used to calculate TEQs
  - ❑ Effects of different congeners are assumed to be additive

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# Draft Rule Revisions

- Policies and procedures applicable to dioxin/furan mixtures
- Policies and procedures applicable to polycyclic aromatic hydrocarbon (PAH) mixtures
- Policies and procedures applicable to polychlorinated biphenyls (PCBs) mixtures
- Approaches for evaluating cross media transfer when establishing cleanup levels

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# Dioxin/Furan Mixtures

- Clarify that mixtures of dioxins and furans will be considered a single hazardous substance establishing and evaluating compliance with cleanup levels and remediation levels.
- Update the rule to incorporate the most recent TEFs for dioxins/furans recommended by the World Health Organization. The updated TEF values are included in a new table (708-1).
- Summarize the procedures for using the TEF methodology when establishing and evaluating compliance with cleanup and remediation levels.

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# PAH Mixtures

- Clarify that PAH mixtures will be considered a single hazardous substance when establishing and evaluating compliance with cleanup levels and remediation levels.
- Update the rule to incorporate the most recent TEFs for PAHs developed by the California Environmental Protection Agency. The updated TEF values are included in a new table (708-1).
- Retain current rule language on which PAH compounds are included in PAH mixtures.
- Summarize the procedures for using the TEF methodology when developing and evaluating compliance with cleanup and remediation levels.

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# PCB Mixtures

- Clarify that PCB mixtures will continue to be considered a single hazardous substance when establishing and evaluating compliance with cleanup levels and remediation levels.
- Update the rule to provide the option to use the TEFs for dioxin-like PCBs recommended by the World Health Organization. The updated TEF values are included in a new table (708-1).

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# Cross-Media Transfer

- Congener-specific properties should be used when evaluating cross-media transfer (e.g. soil-to-ground water).
- PAH-specific properties should be used when evaluating cross-media transfer (e.g. soil-to-ground water)

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# Rulemaking Issues

- Dioxins/Furans - Common Mechanism of Action
- Dioxins/Furans - Use of 2005 WHO TEF Values
- Dioxin-Like PCBs - Use of 2005 WHO TEF Values
- PAHs - Use of Cal EPA 2005 PEF Values
- Dioxins/Furans - Default GI Absorption Fraction
- Dioxins/Furans - Default Dermal Absorption Fraction
- Application of TEFs/PEFs to Abiotic Media
- Cross-Media Transfer

# Dioxin/Furans - Common Mechanism of Action

- Ecology is planning to modify the MTCA rule to clarify that mixtures of dioxins and furans should be treated as a single hazardous substance when establishing cleanup levels and remediation levels.
- One of the foundations for this policy decision is the conclusion that the various dioxin and furan congeners act through a common biological mechanism of action.
- Is this conclusion regarding common mechanism of action consistent with current scientific information?
  - World Health Organization 2005 Expert Committee
  - National Academy of Sciences Review of Dioxin Reassessment Report
  - EPA Dioxin Reassessment Report

# Dioxins/Furans - 2005 WHO TEF Values

- Ecology is planning to use the Toxicity Equivalency Factors recommended by the World Health Organization (Van den Berg et al. 2006) when establishing and evaluating compliance with cleanup levels and remediation levels for dioxin and furan mixtures. Is this approach consistent with current scientific information?
  - World Health Organization 2005 Expert Committee
  - National Academy of Sciences Review of Dioxin Reassessment Report
  - Public Comments

# PCBs - Use of 2005 WHO TEF Values

- Ecology is planning to provide cleanup proponents with the option to use the Toxicity Equivalency Factors recommended by the World Health Organization (Van den Berg et al. 2006) when establishing and evaluating compliance with cleanup levels and remediation levels for polychlorinated biphenyls. Is this approach consistent with current scientific information?
  - World Health Organization 2005 Expert Committee
  - National Academy of Sciences Review of Dioxin Reassessment Report
  - Regulatory Considerations
  - Public Comments

# PAHs - Use of Cal EPA 2005 PEF Values

- Ecology is planning to use the Potency Equivalency Factors (PEFs) recommended by the California Environmental Protection Agency (Cal EPA, 2005) when establishing and evaluating compliance with cleanup levels and remediation levels for carcinogenic PAH mixtures. This would be an update of the Cal EPA factors previously addressed in a Board recommendation. Is this approach consistent with current scientific information?
  - ❑ Board Review of 2001 MTCA Rule Amendments
  - ❑ Practical Significance
  - ❑ Public Comments
  - ❑ Other Environmental Programs

# Dioxins/Furans - Default GI Absorption

- Ecology is considering establishing a default gastrointestinal absorption factor for dioxin/furan mixtures equal to 0.4. Is this default value consistent with current scientific information?
  - EPA Dioxin Reassessment
  - Scientific Studies
  - Public Comments
  - Regulatory Considerations (Predictability, Efficiency, MTCA New Science Review Criteria, etc.)

# Dioxins/Furans - Default Dermal Absorption

- Ecology is considering establishing a default dermal absorption factor dioxin/furan mixtures equal to 0.03. Is this value consistent with current scientific information?
  - EPA Guidance Materials
  - EPA Dioxin Reassessment
  - Public Comment
  - Regulatory Considerations (Predictability, Efficiency, MTCA New Science Review Criteria, etc.)

# Application of TEFs/PEFs to Abiotic Media

- Ecology is planning to continue to use the TEF and PEF values when establishing cleanup levels and remediation levels for abiotic media (e.g. soil). Is this approach consistent with current scientific information?
  - EPA Dioxin Reassessment
  - National Academy of Sciences Review of Dioxin Reassessment
  - Van den Berg et al. (2006)
  - Public Comments

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# Cross-Media Transfer

- Ecology is planning to require that cleanup proponents use congener-specific information when evaluating cross-media transfer (e.g. soil to ground water) of mixtures of dioxins, furans and/or polychlorinated biphenyls. Is this approach consistent with current scientific information?
  - EPA Dioxin Reassessment
  - National Academy of Sciences Review of Dioxin Reassessment
  - Van den Berg et al. (2006)
  - Public Comments

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# Preparation for Board Review

- Are the questions listed above written in way that can be objectively evaluated based on current scientific information and knowledge?
- Are there other scientific questions that you believe the Department should be considering when evaluating this issue?
- Do the discussion materials provide you with a sufficient amount of information to review the questions identified above? If not, what additional information would you find useful?

# Five Year Review of the MTCA Rule

- MTCA rule requires Ecology to review the cleanup standards at least once every 5 years
- Ecology plans to conduct a series of scoping meetings after the current rulemaking is completed
  - Hire Contractor to Organize/Facilitate Meetings
  - Stakeholder and/or Public Meetings
  - Summary of Issues/Areas of Concern
- Decision on further rule amendments will be made following the review and evaluation of scoping comments (Winter 2006/2007)

# Next Steps

- Prepare Proposed Rule Page (CR 102)
  - Proposed rule language
  - SEPA checklist
  - Small Business Economic Impact Statement
  - Cost/Benefit Analysis (CBA) and Least Burdensome Alternative (LBA) Analysis
- Formal Public Review with Hearings Late October or early November.
  - Science Advisory Board Review
- Prepare Final Rule Adoption Package (CR 103)
  - Final Rule Language
  - Concise Explanatory Statement (Responsiveness Summary)
  - Final SBEIS, SEPA Documentation, CBA and LBA Analysis

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## For Further Information

Department of Ecology  
Toxics Cleanup Program  
Rule web site:

[http://aww.ecydev/programs/tcp/regs/amendment\\_2006/amend.htm](http://aww.ecydev/programs/tcp/regs/amendment_2006/amend.htm)

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