

# Use of Model Remedies to Address Petroleum Contamination

May 30, 2019

Toxics Cleanup Program

Washington Department of Ecology

# Presentation Overview

1. How Model Remedies fit into the cleanup process
2. Development of Model Remedies
3. Eligibility Criteria
4. Selection and Implementation
5. Applicability of Model Remedies to Sites Managed by PLIA

# Steps in the Site Cleanup Process

- ▶ Site Discovery
- ▶ Initial Investigation (II)
- ▶ Site Hazard Assessment (SHA)
- ▶ Interim Actions (if necessary)
- ▶ Remedial Investigation/Feasibility Study (RI/FS)
- ▶ Selection of the Cleanup Action
- ▶ Site Cleanup
- ▶ Documentation of Results

# Major Requirements for Cleanup Actions

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1. Protect human health and the environment
2. Meet cleanup standards
3. Comply with applicable state and federal laws
4. Use permanent solutions to the maximum extent practicable



## **Model Toxics Control Act Regulation and Statute**

**MTCA Cleanup Regulation**  
Chapter 173-340 WAC

**Model Toxics Control Act**  
Chapter 70.105D RCW

**Uniform Environmental Covenants Act**  
Chapter 64.70 RCW

Compiled by  
Washington State Department of Ecology  
Toxics Cleanup Program

Publication No. 94-06

Revised 2013

# How is “Permanent to the Maximum Extent Practicable” Determined?

1. A disproportionate cost analysis (DCA) is used to make this determine.
2. The most practicable permanent solution in the FS is compared against other viable remedies using established criteria.
3. If the cost of the alternative remedy exceeds the added benefits provided, that remedy is not required to be selected.
4. In practice, this can be subjective as benefits can be difficult to quantify.



# Model Remedies

## What is a model remedy?

- ▶ “Pre-approved” standardized cleanup actions. They can be used at routine cleanup sites with common features and low risk

## What are the benefits?

Sites using model remedies do **not** need to:

- ▶ Complete a Feasibility Study/Disproportionate Cost Analysis
- ▶ Pay for review of the first 2 Voluntary Cleanup Program NFA requests



# Model Remedy Development

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- ▶ The initial focus has been on petroleum.
- ▶ Nearly 250 petroleum sites with an NFA determination were reviewed to identify:
  1. What remedies were used, and
  2. The selected cleanup standards.
- ▶ These past decisions helped determine site eligibility criteria and formed the basis for selecting the various cleanup options.



# Model Remedy Eligibility Criteria

- ▶ The site is not impacting surface water, sediments or any water supply.
  
- ▶ No contamination besides petroleum except:
  1. Constituents meeting the definition of natural background,
  2. Metals contamination that meets the applicable cleanup standards following cleanup, or
  3. Non-petroleum contaminants that have not co-mingled with the petroleum impacts
  
- ▶ The site can be excluded from an ecological evaluation or can complete the evaluation using the simplified process.



# Model Remedy Eligibility Criteria (cont.)

- ▶ The primary remedy must consist of source removal to the maximum extent practicable (free product plus contaminated soil).
  
- ▶ For sites with groundwater impacts, source control can be combined with any of the following:
  1. Air Sparging,
  2. Soil vapor extraction
  3. Groundwater removal and treatment,
  4. Chemical/biological treatment, or
  5. Natural attenuation.
  
- ▶ None of the model remedies allow for off-property contamination above Method A following implementation of the selected remedy.

# Implications for Potentially Liable Parties (PLP's) Using Model Remedies

- ▶ The responsibility for selecting an appropriate remedy rests with the PLP's and their consultants.
- ▶ Justification that the selected remedy meets the definition of “permanent to the maximum extent practicable” is not required.

# Ecology Responsibilities

- ▶ Were the eligibility requirements met?
- ▶ Has an adequate site investigation been completed?
- ▶ Does post-cleanup monitoring document the cleanup standards have been met?

# What Model Remedies Don't Change

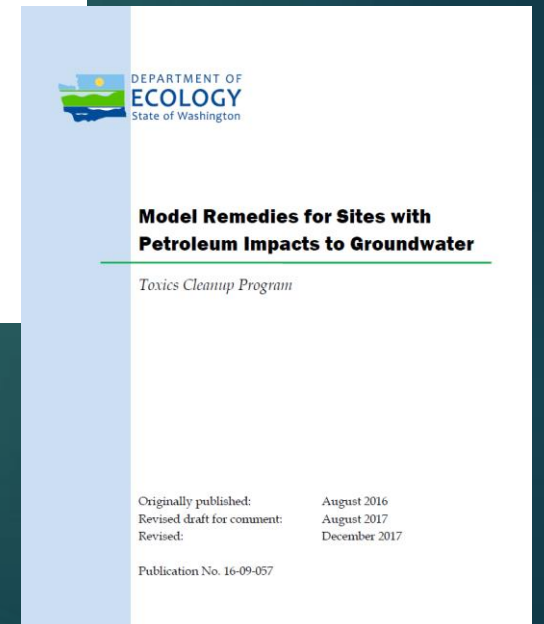
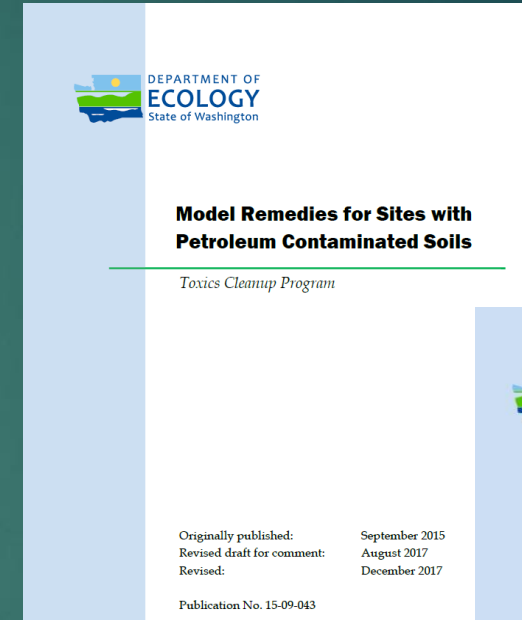
- ▶ The level of site investigation necessary.
- ▶ The way cleanup levels are determined
- ▶ How the point of compliance is established, and
- ▶ When an environmental covenant is necessary.



# Model Remedy Guidance

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- ▶ A total of 19 petroleum model remedies have been established.
- ▶ 7 for sites with petroleum contaminated soils and
- ▶ 12 for sites with petroleum contaminated groundwater.



# Selection of a Model Remedy

- ▶ PLP's can select any of the 19 model remedy options provided the site meets the specified criteria.
  
- ▶ Several of the most critical include:
  1. Source control has been implemented to the greatest degree practicable,
  2. No off-property impacts remain after cleanup and
  3. For groundwater sites the plume is stable or receding.
  
- ▶ Most model remedy options rely on institutional controls.

# What are Institutional Controls?

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- ▶ Measures taken to limit or prohibit activities at properties that might interfere with the remedy or result in exposure to or migration of contamination.
- ▶ While physical measures such as fences can provide short-term protections, environmental covenants are the most commonly used approach.



# Periodic Reviews

- ▶ Sites where an environmental covenant was used to obtain an NFA determination require periodic reviews.
- ▶ Periodic reviews are completed every 5 years after an environmental covenant is recorded to ensure the remedy remains protective.
- ▶ Ecology must take the appropriate actions if violations are found.



# Applicability of Model Remedies to Sites in PLIA's Petroleum Technical Assistance Program (PTAP)

- ▶ Sites meeting the eligibility criteria and the other applicable provisions of the selected option can use a model remedy to obtain an NFA determination from PLIA.
- ▶ The one major difference is that the fee waiver provision does not apply. All sites seeking technical assistance under PTAP must pay the one time application service fee of \$7500.

# Summary

- ▶ Model remedies are intended to streamline the remedy selection process by eliminating the need for a Feasibility Study and a Disproportionate Cost Analysis.
- ▶ Institutional controls are an important tool to help ensure the protectiveness of containment remedies.
- ▶ Periodic reviews are used to verify sites remain protective over the long-term.

Questions?