



DEPARTMENT OF
ECOLOGY
State of Washington

MTCA Cleanup Rulemaking Chapter 173-340 WAC Preliminary Draft 2

Tracked Changes to Current Rule

September 8, 2022

Purpose of this document:

This document provides a **Preliminary Draft 2** of Ecology's proposed changes to selected Parts and Sections of Chapter 173-340 WAC, Model Toxics Control Act (MTCA) Cleanup Regulations. This document **tracks changes to the current rule**, but **does not footnote** the changes.

This document is provided for review and consideration by the Stakeholder and Tribal Advisory Group (STAG). The document should be read in conjunction with a **separate briefing document** that provides an overview of rule changes and a list of questions that Ecology would like STAG members to consider when reviewing the rule draft to facilitate discussions and written comments.

For more information about the cleanup rulemaking:

Visit Ecology's website at <http://www.ecy.wa.gov/programs/tcp/regs/wac173360/1602inv.html>.

For more information about the Stakeholder and Tribal Advisory Group:

Visit Ecology's website at https://www.ezview.wa.gov/site/alias_1988/37514/overview.aspx.

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Accommodation requests:

To request ADA accommodation including materials in a format for the visually impaired, call Ecology's Toxics Cleanup Program at 360-407-7170. Persons with impaired hearing may call Washington Relay Service at 711. Persons with speech disability may call TTY at 877-833-6341.

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Introduction

What is included in this document?

This document includes **Preliminary Draft 2** of proposed changes to the following Parts and Sections of Chapter 173-340 WAC, Model Toxics Control Act (MTCA) Cleanup Regulations:

Part or Section	Previously reviewed by STAG?
Part 1 – Overall cleanup process	NO
Part 2 – Definitions and usage	YES, except for some definitions
Part 3 – Site reports and cleanup	YES, except Sections 355, 357, 380, & 390
Part 6 – Public participation and tribal engagement	NO
Section 450 – Releases from regulated UST systems	YES
Section 510 – Administrative options for remedial actions	NO
Section 815 – Cultural resources protection (new)	NO
Section 830 – Sampling and analysis procedures	NO
Conforming changes in other sections	NO
Corrections in Part 7	NO

What do the tracked changes show?

This document tracks **changes to the current rule**, regardless of whether the Stakeholder and Tribal Advisory Group (STAG) previously reviewed an earlier draft of the section. The document tracks changes using ~~strikeouts~~ and underlines. The changes are not identified by footnotes.

How can I navigate the document?

You can navigate the document using the Table of Contents in the document or using the Navigation Pane in Microsoft Word. To use the Navigation Pane, select the “View” menu and then click on “Navigation Pane” under “Show.” Under Navigation, click on “Headings.”

How can I view the tracked changes?

If you’re unable to see the tracked changes, select the “Review” menu and then select “All Markup” in the first box to the right of the “Track Changes” button. To quickly toggle between tracked and untracked versions, just click on the bar on the side of the text.

Part 1 – Overall Cleanup Process

WAC 173-340-100 Purpose.

This chapter is promulgated under chapter 70A.305 RCW, the Model Toxics Control Act. It establishes administrative processes and standards to identify, investigate, and clean up ~~facilities~~sites where hazardous substances have come to be located. It defines the role of ~~the department~~Ecology and encourages public and tribal involvement in decision making at these ~~facilities~~sites.

The goal of this chapter is to implement chapter ~~70.105D~~70A.305 RCW, the Model Toxics Control Act. This chapter provides a workable process to accomplish effective and expeditious cleanups in a manner that protects human health and the environment, including vulnerable populations and overburdened communities. This chapter is primarily intended to address releases of hazardous substances caused by past activities although its provisions may be applied to potential and ongoing releases of hazardous substances from current activities.

Note: All materials incorporated by reference in this chapter are available for inspection at the Department of Ecology's Toxics Cleanup Program, 300 Desmond Drive, Lacey, Washington, 98503.

WAC 173-340-110 Applicability.

- (1) This chapter ~~shall apply~~applies to all ~~facilities~~sites where there has been a release or threatened release of a hazardous substance that may pose a threat to human health or the environment. Under this chapter, ~~the department~~Ecology may require or take those actions necessary to investigate and ~~remedy~~clean up these releases.
- (2) ~~Nothing herein shall be construed to diminish the department's~~Ecology retains all its authority to address a release or threatened release under other applicable laws or regulations. The cleanup process and procedures under this chapter and under other laws may be combined. ~~The department~~Ecology may initiate a remedial action under this chapter and may upon further analysis determine that another law is more appropriate, or vice versa.
- (3) If a hazardous substance remains at a ~~facility~~site after actions have been completed under other applicable laws or regulations, ~~the department~~Ecology may apply this chapter to protect human health or the environment.

WAC 173-340-120 **Overview of cleanup process.**

~~(1) Purpose.~~ This section provides an overview of the cleanup process that typically ~~will~~ occurs at a site ~~following the discovery of where~~ a release or threatened release of a hazardous substance ~~to the environment has been discovered with an emphasis on sites being cleaned up under order or consent decree.~~ See WAC 173-340-510 for an overview of the administrative options for investigating and cleaning up a site. If there are any inconsistencies between this section and any specifically referenced sections, the referenced section ~~shall~~ governs.

~~(2) Site discovery.~~ Site discovery includes:

~~(a)(1)~~ **Release reporting.** Within ninety days of discovering a hazardous substance release or threatened release that may pose a threat to human health or the environment, Aan owner or operator ~~who knows of or discovers a release of a hazardous substance due to past activities~~ must report the release to ~~the department~~ Ecology as described in WAC 173-340-300. Other persons are encouraged to report such releases. ~~Most current~~Some releases ~~of hazardous substances~~ are exempt from the release reporting requirements of this chapter, including those ~~must be~~ previously reported to ~~the department~~ Ecology under the state's hazardous waste, underground storage tank, or water quality laws. The term "hazardous substance" includes a broad range of substances as defined ~~by chapter 70.105 DRCW~~ in WAC 173-340-200.

~~(b)(2)~~ **Initial investigation.** Within ninety days of learning of a hazardous substance release, ~~the department~~ Ecology ~~will~~ conducts an initial investigation ~~of the site~~ under WAC 173-340-310 to confirm whether a release occurred that poses a threat and to determine whether further remedial action is necessary to confirm or address that threat. Ecology may extend an initial investigation when independent remedial actions are completed within ninety days of release discovery. ~~For sites that may need further remedial action, the department will send an early notice letter to the owner, operator, and other potentially liable persons known to the department, informing them of the department's decision.~~ Ecology notifies owners and operators in writing of its determination. For sites where remedial action is necessary, Ecology also notifies the public in the *Contaminated Site Register* and provides information about the site on Ecology's website under WAC 173-340-600.

~~(3) Site priorities.~~ Sites are prioritized for further remedial action by the following process:

~~(a)(3)~~ **Site hazard assessment and ranking.** ~~Based on the results of the initial investigation, a site hazard assessment will be performed if necessary, as described in WAC 173-340-320. The purpose of the site hazard assessment is to gather information to confirm whether a release has occurred and to enable the department to evaluate the relative potential hazard posed by the release. If the department decides that no further action is required, it will notify the public of that decision through the Site Register.~~ Based on the results of the initial investigation, Ecology assesses and ranks the threats to human health and the environment posed by the site under WAC 173-340-320. Ecology may update the site's hazard assessment and rankings during the cleanup process when new information becomes available or conditions change. Ecology uses the results to support decisions to add or remove sites from the contaminated sites list, prioritize remedial action and funding among and within sites, track cleanup progress, and communicate threats to the public.

- ~~(b)(4)~~ **Hazardous sites list**Listing. The department will maintain a list of sites known as the "hazardous sites list" where further remedial action is required. The department will add sites to this list after the completion of a site hazard assessment. Sites placed on the list will be ranked using the department's hazard ranking method. The department will remove a site from the hazardous sites list if the site meets the requirements for removal described in WAC 173-340-330. Ecology lists a site based on the results of the initial investigation and the site hazard assessment and ranking.
- (a) Contaminated sites list. If further remedial action is necessary, Ecology adds the site to the contaminated sites list under WAC 173-340-330. The list also identifies the site's remedial action status. Ecology updates the status during the cleanup process to reflect current conditions. The list is publicly available on Ecology's website.
- (b) No further action sites list. If no further remedial action is necessary, Ecology adds the site to the no further action sites list under WAC 173-340-335. The list identifies whether institutional controls or periodic reviews remain necessary at the site. The list is publicly available on Ecology's website.
- ~~(c) Biennial program report.~~ Every even-numbered year, the department will prepare a biennial program report for the legislature. The hazard ranking, along with other factors, will be used in this report to identify the projects and expenditures recommended for appropriation. See ~~WAC 173-340-340~~.
- ~~(4) Detailed site investigations and cleanup decisions.~~ The following steps will be taken to ensure that the proper method of cleanup is chosen for the site.
- (5) Interim actions. Under certain conditions it may be necessary or appropriate to conduct an early, interim action at a site before conducting a cleanup action.
- (a) WAC 173-340-430 describes when interim actions are typically appropriate at a site and the requirements for such actions.
- (b) WAC 173-340-450 describes specific interim actions that UST system owners and operators must perform immediately or shortly after confirming a release from a regulated UST system to reduce the threats posed by the release, prevent any further release, and characterize the nature and extent of the release. As specified in chapter 173-360A WAC, such releases must be cleaned up in accordance with this chapter.
- ~~(a)(6)~~ **Remedial investigation of site conditions.** ~~A remedial investigation will be performed at ranked sites under WAC 173-340-350. The purpose of the remedial investigation is to collect data and information necessary to define the extent of contamination and to characterize the site. After a detailed work plan is prepared, a remedial investigation is conducted at the site under WAC 173-340-350 to identify the sources of contamination; to characterize the nature, extent, and magnitude of contamination; and to assess the current or potential threats posed by the contamination to human health and the environment. The results of the remedial investigation are used to establish cleanup standards and to develop and evaluate cleanup action alternatives in a feasibility study.~~

- ~~(b)(7)~~ **Feasibility study of cleanup action alternatives.** ~~A feasibility study will be conducted at ranked sites under WAC 173-340-350. The purpose of the feasibility study is to develop and evaluate alternative cleanup actions. The department will evaluate the remedial investigation/feasibility study, establish cleanup levels and the point or points at which they must be complied with in accordance with the procedures provided for in WAC 173-340-700 through 173-340-760 and select a cleanup action that protects human health and the environment and is based on the remedy selection criteria and requirements in WAC 173-340-350 through 173-340-390. WAC 173-340-440 sets forth the circumstances in which institutional controls will be required to ensure continued protection of human health and the environment. Based on the results of the remedial investigation, cleanup action alternatives for addressing the threats posed by the site are developed and evaluated in a feasibility study under WAC 173-340-351. The alternatives are evaluated against the requirements and expectations for cleanup actions in WAC 173-340-360 and 173-340-370. The results of the feasibility study are used to select the cleanup action for a site. A feasibility study is not required to select an applicable model remedy developed by Ecology under WAC 173-340-390.~~
- ~~(c)(8)~~ **Cleanup action plan.** ~~The cleanup action will be set forth in a draft cleanup action plan that addresses cleanup requirements for hazardous substances at the site. After public comment on the draft plan, a final cleanup action plan will be issued by the department. Based on the results of the remedial investigation/feasibility study, a cleanup action is selected and a cleanup action plan is prepared under WAC 173-340-380. The cleanup action plan documents the selected cleanup action and specifies the cleanup standards and other requirements the cleanup action must meet. Cleanup standards are established under Part 7 of this chapter and include the concentrations the cleanup action must meet (cleanup levels), the location where those concentrations must be met (points of compliance), and other regulatory requirements that apply to the cleanup action or site.~~
- ~~(5)~~ **Site cleanup.** ~~Once the appropriate cleanup action has been selected for the site, the actual cleanup will be performed.~~
- ~~(a)~~ **Cleanup actions.** ~~WAC 173-340-400 describes the design and construction requirements for implementing the cleanup action plan.~~
- ~~(b)~~ **Compliance monitoring and review.** ~~The cleanup action must include compliance monitoring under WAC 173-340-410 and in some cases periodic review under WAC 173-340-420 to ensure the long-term effectiveness of the cleanup action.~~
- ~~(6)~~ **Interim actions.** ~~Under certain conditions it may be appropriate to take early actions at a site before completing the process described in subsections (2) through (5) of this section. WAC 173-340-430 describes when it is appropriate to take these early or interim actions and the requirements for such actions.~~
- ~~(9)~~ **Cleanup.** ~~After a cleanup action is selected, the cleanup is conducted under WAC 173-340-400 and 173-340-410. Cleanup includes design, construction, operation and maintenance, and monitoring of the cleanup action.~~

- (a) Design.** Before starting construction, plans are developed to detail the cleanup action. This include engineering designs, construction plans and specifications, operation and maintenance plans, and compliance monitoring plans. Before or during this design phase, any permits or approvals needed to construct the cleanup action are identified and resolved.
- (b) Construction.** Construction of the cleanup action is conducted in accordance with the plans and specifications prepared during the design phase. Upon completion of construction, as built reports are prepared to document all aspects of construction and compliance with plans and specifications. During and upon completion of construction, Ecology may inspect the site and provide construction oversight.
- (c) Operation and maintenance.** After construction is complete, some cleanup actions need to be operated and maintained for a period of time to achieve cleanup standards. For example, a treatment system may be constructed and used to clean up contaminated groundwater. Operation and maintenance of such cleanup actions is conducted in accordance with a plan developed during the design phase.
- (d) Monitoring.** During the construction and the operation and maintenance of the cleanup action, the following types of compliance monitoring are conducted. Compliance monitoring is conducted in accordance with a plan developed during the design phase.

 - (i)** Protection monitoring is conducted to confirm that human health and the environment are adequately protected.
 - (ii)** Performance monitoring is conducted to confirm that the cleanup action is achieving or has attained cleanup standards and any other applicable performance standards, such as remediation levels or permit requirements.
- (10) Cleanup completion.** Ecology determines whether cleanup of the site is complete based on the criteria in WAC 173-340-330(5)(b). Typically, a cleanup is complete if no further remedial action is necessary to achieve cleanup standards at the site. For non-permanent cleanup actions, such as those involving containment of contamination, post-cleanup controls and monitoring may be necessary as part of the cleanup action to maintain and periodically review compliance with cleanup standards.
- (11) Removal from contaminated sites list.** After determining the cleanup of the site is complete, Ecology removes the site from the contaminated sites list under WAC 173-340-330 and adds the site to the no further action sites list under WAC 173-340-335. The no further action sites list identifies whether institutional controls or periodic reviews remain necessary at the site.
- (12) Post-cleanup controls and monitoring.** For non-permanent cleanup actions, after the cleanup is completed and the site is delisted, one or more of the following post-cleanup remedial actions may be needed to control or monitor contamination remaining at the site.

 - (a) Engineered controls.** Engineered controls are containment or treatment systems that prevent or limit movement of, or exposure to, contamination. For example, materials may be placed over contaminated soils to limit contact with contamination. For a

cleanup action to remain protective, engineered controls must be operated and maintained in accordance with the plan required under WAC 173-340-400.

- (b) Institutional controls.** Institutional controls prohibit or limit activities or uses of real property that may interfere with the integrity of engineered controls or result in exposure to contamination remaining at the site. For example, a property may be restricted to industrial land use at sites where cleanup standards are based on such use. Institutional controls may also obligate a person to operate, maintain, or monitor engineered controls to ensure the integrity of the cleanup action. Typically, institutional controls are implemented by recording a restrictive covenant on the property. For a cleanup action to remain protective, institutional controls must be maintained and enforced. See WAC 173-340-440.
- (c) Confirmation monitoring.** Confirmation monitoring is a type of compliance monitoring used to confirm the long-term effectiveness of a cleanup action after the cleanup is completed. See WAC 173-340-410. For example, confirmation monitoring may be used to confirm that engineered controls are operating properly and effectively limiting the movement of contamination remaining at the site. For a cleanup action to remain protective, confirmation monitoring must be conducted in accordance with the plan required under WAC 173-340-400. Ecology relies on the monitoring data during periodic reviews of post-cleanup site conditions.
- (d) Financial assurances.** Financial assurances are assurances made to Ecology by a person that sufficient financial resources are available to provide for the long-term operation, maintenance, and monitoring of a cleanup action relying on engineered or institutional controls, and for any needed corrective measures. Ecology may require financial assurances under WAC 173-340-440(11).
- (e) Periodic reviews.** Ecology conducts periodic reviews of post-cleanup site conditions at least once every five years to determine whether they remain protective of human health and the environment. If Ecology determines that conditions are not protective and that substantial changes to the cleanup action are necessary, Ecology may relist the site on the contaminated sites list and revise the cleanup action plan. See WAC 173-340-420.

~~(7) — Leaking underground storage tanks. Underground storage tank (UST) owners and underground storage tank operators regulated under chapter 90.76 RCW are required to perform specific actions in addition to what other site owners and operators would do under this chapter. WAC 173-340-450 describes the requirements for leaking underground storage tanks.~~

~~(8) — Procedures for conducting remedial actions.~~

- ~~(a) — Remedial action agreements. The department has authority to take remedial actions or to order persons to conduct remedial actions under WAC 173-340-510 and 173-340-540. However, the department encourages agreements for investigations and cleanups in appropriate cases. These agreements can be agreed orders or consent decrees reached under the procedures of WAC 173-340-520 and 173-340-530.~~

~~(b) — **Independent remedial actions.** Persons may conduct investigations and cleanups without department approval under this chapter. The department will use the appropriate requirements in this chapter when evaluating the adequacy of any independent remedial action. Except as limited by WAC 173-340-515(2), nothing in this chapter prohibits persons from conducting such actions before the department is ready to act at the site; however, all interim and cleanup actions must be reported to the department under WAC 173-340-515. Furthermore, independent remedial actions are conducted at the potentially liable person's own risk and the department may take or require additional remedial actions at these sites at any time. (See WAC 173-340-515 and 173-340-545.)~~

(9)(13) Public notice and participation and tribal engagement.

(a) Site-specific information and alerts. For all sites on the contaminated sites list and the no further action sites list, Ecology will:

- (i)** Make key site information publicly available on Ecology's website under WAC 173-340-600(5), including the site's listing, remedial action status, hazard rankings, and remedial action plans and reports;
- (ii)** If requested, notify a person electronically under WAC 173-340-600(6) when the site information specified on Ecology's website is added or changed; and
- (iii)** Provide notice of proposed actions available for public comment in the Contaminated Site Register.

(b) Ecology-conducted and Ecology-supervised remedial actions. ~~At sites where the department is conducting the cleanup or overseeing the cleanup under an order or decree~~For Ecology-conducted and Ecology-supervised remedial actions, Ecology provides the public ~~will receive~~with notice and ~~an~~opportunity to comment and invites tribal engagement on most ~~of the~~steps in the cleanup process. ~~For such sites, At many sites, a~~Ecology prepares or requires site-specific public participation and tribal engagement plans ~~will be prepared to provide opportunities for more extensive public involvement in the cleanup process.~~ These and other requirements are described in WAC 173-340-600(8) through (19) and 173-340-620.

(c) Independent remedial actions. For independent remedial actions, Ecology provides the public with notice of any reports of such actions received by Ecology, the results of any Ecology review of such actions, the results of any periodic review of the site, and any institutional controls at the site. These and other requirements are described in WAC 173-340-600(20).

WAC 173-340-130 Administrative principles.

- ~~(1)~~ ~~Introduction.~~ ~~The department shall~~ Ecology will conduct or require remedial actions, or provide technical assistance for independent remedial actions, consistent with the provisions of this section.
- ~~(2)~~(1) ~~Sharing~~ ~~information-sharing.~~ Ecology's ~~It is the policy of the department is~~ to make information about releases or threatened releases available to owners, operators, or other persons with potential liability for a site in order to encourage them to conduct prompt remedial action. ~~It~~ Ecology's policy is also ~~the policy of the department~~ to make the same information available to interested members of the general public so they can follow the progress of site cleanup in the state.
- ~~(3)~~(2) ~~Information-exchange~~ Providing technical assistance. All persons are encouraged to contact ~~the department~~ Ecology and seek assistance on the general administrative and technical requirements of ~~this chapter~~ the state cleanup law. ~~Through its technical consultation program described in WAC 173-340-515, the department may also provide informal advice and assistance to persons conducting or proposing remedial actions at a specific site at any time. Unless the department is providing formal guidance for the implementation of an order or decree, any comments by the department or its agents are advisory and not commitments or approvals binding on the department. A person may not represent this advice as an approval of a remedial action. If the person requesting the advice is seeking binding commitments or approvals, then an order or consent decree shall be used.~~ Under Ecology's voluntary cleanup program, persons planning or conducting independent remedial action may also request technical assistance on how to investigate and clean up a site and written opinions on whether a planned or completed remedial action meets the substantive requirements of the state cleanup law. Such technical assistance is advisory only and is not binding on Ecology. Such technical assistance does not constitute, and may not be represented by a person as, an approval of a remedial action. See RCW 70A.305.170(1) and WAC 173-340-515(5). Ecology will only provide a binding commitment or approval under an order or decree.
- ~~(5)~~(3) ~~Scope of information~~ Collecting adequate information. ~~It is the department's intention~~ Ecology intends that adequate information be gathered at a site to enable decisions on appropriate actions. ~~It is also the department's intention~~ Ecology also intends that decisions be made and cleanups proceed expeditiously once adequate information is obtained. Studies can be performed and submittals made at varying levels of detail appropriate to the conditions at the site. Also, steps in the cleanup process may be combined to facilitate quicker cleanups, where appropriate. Flexibility in the scope of investigations and in combining steps may be particularly appropriate for routine cleanup actions. Once adequate information has been obtained, Ecology will make decisions ~~shall be made~~ within the framework provided ~~in this chapter~~ under the state cleanup law and in site-specific orders or decrees.
- ~~(6)~~(4) ~~Preparation of~~ Preparing documents. Except for the initial investigation and the site hazard assessment and ranking, any of the studies, reports, or plans used in the cleanup process can be prepared by either ~~the department~~ Ecology or the potentially liable person. ~~The department~~ Ecology retains all authority to review and verify the documents submitted and to make decisions based on the documents and other relevant information.

(4)(5) ~~Scope of Encouraging and facilitating public participation.~~ For Ecology-conducted and Ecology-supervised remedial actions, ~~The department~~Ecology seeks to encourage public participation and facilitate equitable participation in all steps of the cleanup process under WAC 173-340-600. ~~The department shall~~Ecology will encourage a level of participation appropriate to the conditions at a facility threats posed by a site and the level of the public's interest in the site. When assessing public participation needs at a site, Ecology will consider the interests of vulnerable populations, overburdened communities, and non-federally recognized tribes.

(6) Engaging and collaborating with Indian tribes.

- (a)** For Ecology-conducted and Ecology-supervised remedial actions, Ecology will seek to engage affected Indian tribes under WAC 173-340-620 by providing timely information, effective communication, continuous opportunities for collaboration and, when necessary, government-to-government consultation, as appropriate for each site.
- (b)** To facilitate collaboration, it is important that Indian tribes provide specific comments, including the identification of other applicable state and federal laws and any additional information or mitigating measures that are necessary or desirable to satisfy their concerns.

(7) ~~Interagency coordination~~Coordinating with agencies.

- (a)** ~~If the department is conducting remedial actions or requiring remedial actions under an order or decree, the department shall~~For Ecology-conducted and Ecology-supervised remedial actions, Ecology will ensure appropriate local, state, and federal agencies ~~and tribal governments~~ are kept informed and, as appropriate, involved in the development and implementation of remedial actions. ~~The department~~Ecology may require a potentially liable person to undertake this responsibility. If the potentially liable person demonstrates that they are unable to obtain adequate involvement ~~to allow the remedial action to proceed~~ by a particular government agency ~~or tribe~~to allow the remedial action to proceed, the department shallEcology will request the involvement of the agency ~~or tribe~~.
- (b)** The nature and degree of coordination and consultation ~~shall~~must be commensurate with the other agencies' ~~and tribes'~~ interests and needs at the site. Interested agencies ~~and tribes shall~~must also be included in the ~~mailing lists~~ for public notices under WAC 173-340-600. To facilitate coordination, it is important that agencies ~~and tribes~~ provide specific comments, including the identification of other applicable state and federal laws and any additional information ~~needed~~ or mitigating measures that are necessary or desirable to satisfy their concerns.
- (c)** In order to provide for expeditious cleanup actions, all federal, state, and local agencies, ~~and tribes~~ are encouraged to coordinate with Ecology when providing notices, holding meetings and hearings, and preparing documents. Whenever reasonable, ~~the department shall~~Ecology will coordinate and combine its activities with other agencies ~~and tribes~~ to minimize the duplication of notices, hearings and preparation of documents, unless otherwise prohibited.

- (8) **Integrating State Environmental Policy Act.** See chapter 197-11 WAC for the State Environmental Policy Act requirements pertaining to the implementation of ~~the Model Toxics Control Act~~the state cleanup law.
- (9) **Ecology decisions.** Ecology retains all authority to determine compliance with state cleanup law requirements, including:
- (a)** Whether a remedial action is necessary under state cleanup law;
 - (b)** Whether a remedial action meets the requirements in state cleanup law; and
 - (c)** Whether a remedial action plan or report meets the requirements in state cleanup law.
- ~~(9)~~**(10) Appeals****Appealing Ecology decisions.** Unless otherwise indicated, all ~~department~~Ecology decisions made under this chapter are remedial decisions and may be appealed only as provided for in RCW ~~70.105D.060~~70A.305.070.

~~WAC 173-340-140—Deadlines.~~

- ~~(1) Purpose.~~** It is the department's intent to move sites through the cleanup process as expeditiously as possible. However, the department is limited by the amount of personnel and funds it can expend in any given fiscal year. This section is intended to establish reasonable deadlines for remedying releases within these constraints. The department's process for ranking and setting site priorities is described in WAC 173-340-330 and 173-340-340, respectively.
- ~~(2) Initial investigation.~~** Within ninety days of learning of a release or threatened release of a hazardous substance, the department shall complete an initial investigation under WAC 173-340-310.
- ~~(3) Further investigation.~~** At least twice a year, the department shall determine which sites with completed initial investigations are a high priority for further investigation. At that time, the department shall schedule high priority sites for further investigations to begin within six months. This determination will be based on the best professional judgment of departmental staff. Sites may be scheduled for further investigation at any time if the department determines that the site warrants expedited action.
- ~~(4) Site assessment and ranking.~~** For high priority sites, the department shall complete the site hazard assessment and hazard ranking within one hundred eighty days of the scheduled start date. These sites shall be identified in the department's *Site Register*. Sites not designated as a high priority shall be scheduled for future investigations and listed in the biennial report to the legislature (WAC 173-340-340). The department shall conduct at least thirty-five site hazard assessments each fiscal year until the number of sites needing site hazard assessments are reduced below this number.
- ~~(5) Site investigation.~~** Within thirty days of ranking, the department shall designate which sites are a high priority for a remedial investigation/feasibility study and which sites are a lower priority where further action can be delayed. The department shall review these lower priority sites and provide an opportunity for public comment as part of the biennial report to the legislature (WAC 173-340-340).
- ~~(6) Remedial investigation/feasibility study.~~** For all sites designated as a high priority, the remedial investigation/feasibility study shall be completed under WAC 173-340-350 within eighteen months of signing the order or decree. The department may extend the deadline up to twelve months if the circumstances at the site merit a longer time frame. The department shall provide the public an opportunity to comment on any extension. The department shall initiate a remedial investigation/feasibility study on at least ten sites per fiscal year.
- ~~(7) Cleanup action.~~** The department shall select the cleanup action under WAC 173-340-360 and file a consent decree or issue an order for cleanup action for all designated high priority sites within six months of the completion of the remedial investigation/feasibility study. The department may extend the deadline for up to four months for consent decree and order discussions. The department shall provide the public with an opportunity to comment on any deadline extension.

~~(8) — **Site schedules.** The department shall publish site schedules for designated high priority sites in the *Site Register* according to WAC 173-340-600(6)~~

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Part 2 – Definitions and Usage

WAC 173-340-200 Definitions.

For the purpose of this chapter, the following definitions apply unless the context clearly requires otherwise:

“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~~ Ecology 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~~ 70A.305.040(4) and ~~shall~~ does 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)~~ 70A.305.190(4)(a)(v) and (vi).

“Aliphatic hydrocarbons” or “aliphatics” means organic compounds that are characterized by a straight, branched, or cyclic (nonbenzene ring) arrangement of carbon atoms and that do not contain halogens (such as chlorine). See also “aromatic hydrocarbons.”

“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” (BACT) for releases of hazardous substances into the air resulting from cleanup actions.

“Applicable state and federal laws” means all legally applicable requirements specified in WAC 173-340-710(3) and those requirements that ~~the department~~ Ecology determines, based on the criteria in WAC 173-340-710(~~3~~)(4), are relevant and appropriate requirements.

“Area background” means the concentrations of a hazardous substances ~~that are~~ consistently present in the environment in the vicinity of a site ~~which are~~ as the result of human activities unrelated to releases from that site. See also “natural background.”

“Aromatic hydrocarbons” or “aromatics” means organic compounds that are characterized by one or more benzene rings, with or without aliphatic hydrocarbon substitutions of hydrogen atoms on the rings, and that do not contain halogens (such as chlorine). See also “aliphatic hydrocarbons.”

“Averaging time” means the time over which the exposure is averaged. For noncarcinogens, the averaging time typically equals the exposure duration. For carcinogens, the averaging time equals the life expectancy of a person.

“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 applies to substances on the United States

Environmental Protection Agency lists of A (known human) and B (probable human) carcinogens, and any substance that 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.

“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 173-340-350 through 173-340-390.

“Cleanup action alternative” means one or more treatment technology, containment action, removal action, engineered control, institutional control or other type of remedial action (**“cleanup action components”**) that, individually or, in combination, achieves a cleanup action at a site.

“Cleanup action plan” means the document prepared ~~by the department~~ under WAC 173-340-380 that ~~selects documents~~ the selected cleanup action and specifies the cleanup standards and other requirements ~~for~~ the cleanup action must meet.

“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 standards” means the standards adopted under RCW ~~70.105D.030(2)(d)~~ 70A.305.030(2)(e). Establishing cleanup standards requires specification of the following:

(a) Hazardous substance concentrations that protect human health and the environment (“cleanup levels”);

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

(c) 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.

“Cohen's method” means the maximum likelihood estimate of the mean and standard deviation accounting for data below the method detection limit or practical quantitation limit using the method described in the following publications:

(a) Cohen, A.C., 1959. "Simplified estimators for the normal distribution when samples are singly censored or truncated." *Technometrics*. Volume 1, pages 217-237.

(b) Cohen, A.C., 1961. "Tables for maximum likelihood estimates: Singly truncated and singly censored samples." *Technometrics*. Volume 3, pages 535-541.

“Compliance monitoring” means a remedial action that consists of the monitoring as described in WAC 173-340-410, including protection monitoring, performance monitoring, and confirmation monitoring.

“Conceptual site model” means a conceptual understanding of a site that identifies known or suspected:

(a) potential or suspected sources of hazardous substances sources and release mechanisms;

(b) Hazardous substance types and concentrations ~~of hazardous substances;~~

(c) Hazardous substance transport, including preferential pathways;

(d) potentially contaminated environmental media, including the general extent and distribution of contamination within the media; ~~and~~

(e) actual current and potential human and ecological receptors and exposure pathways and receptors (complete and incomplete); and

(f) Physical and habitat features, including current and potential future land and water uses.

This model is typically ~~initially~~ developed during the scoping of ~~the~~ remedial investigation and further refined as additional information is collected ~~on~~ about the site during the remedial investigation. ~~The model~~ is a tool used to assist in making decisions at a site.

“Conducting land use planning under chapter 36.70A RCW,” as used in the definition of "industrial properties," means having adopted a comprehensive plan and development regulations for the site under chapter 36.70A RCW (Growth Management Act).

“Confirmation monitoring” means a type of compliance monitoring described in WAC 173-340-410.

“Containment” means a container, vessel, barrier, or structure, whether natural or constructed, that 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.

“Contaminated site” means a site for which Ecology or PLIA has determined further remedial action is necessary under the state cleanup law to:

- (a)** Confirm whether there is a threat to human health or the environment posed by a release or threatened release; or
- (b)** Address the threat posed by a release or threatened release, based on the criteria in WAC 173-340-330(5)(b).

A contaminated site is referred to as hazardous waste site in chapter 70A.305 RCW.

“Contaminated sites list” means a list of contaminated sites maintained by Ecology under WAC 173-340-330. For each listed site, the list also identifies the site’s current remedial action status. This list is referred to as the hazardous sites list in chapter 70A.305 RCW.

“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 a consent decree issued under WAC [173-340-520](#). "Consent decree" is synonymous with decree.

“Degradation by-products” or “decomposition by-products” means the secondary product of biological or chemical processes that break down chemicals into other chemicals. The decomposition by-products may be more or less toxic than the parent compound.

~~**“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 and/or dermal contact.

“Director” means the director of the department of ecology or the director's designee.

“Disposal” means the discharging, discarding, or abandoning of hazardous substances or the treatment, decontamination, or recycling of such substances once they have been discarded or abandoned. This includes the discharge, discard, or abandonment of any hazardous substances into or on any land, air, or water.

“Drinking water fraction” means the fraction of drinking water that is obtained or has the potential to be obtained from the site.

“Ecology” or “department” means the department of ecology.

“Ecology-conducted remedial action” means a remedial action conducted by Ecology.

“Ecology-supervised remedial action” means a remedial action conducted by a potentially liable person or prospective purchaser and supervised by Ecology under an order or decree.

“Engineered controls” means a containment ~~and/or~~ treatment systems that ~~are~~is designed and constructed to prevent or limit the movement of, or the exposure to, a hazardous substances. An engineered control is a type of remedial action. Examples of engineered controls include:

- (a)** ~~a~~A layer of clean soil, asphalt or concrete paving, or other materials placed over contaminated soils to limit contact with contamination;
- (b)** ~~a~~A groundwater flow barrier such as a bentonite slurry trench;
- (c)** A groundwater gradient control systems ~~s~~ such as a French drains ~~s~~ or a pump and treat system ~~s~~; and
- (d)** A vapor control systems ~~s~~.

“Environment” means any plant, animal, natural resource, surface water (including underlying sediments), groundwater, 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.

“Equivalent carbon number” or “EC” means a value assigned to a fraction of a petroleum mixture, empirically derived from the boiling point of the fraction normalized to the boiling point of n-alkanes or the retention time of n-alkanes in a boiling point gas chromatography column.

“Exposure” means subjection of an organism to the action, influence, or effect of a hazardous substance (chemical agent) or physical agent.

“Exposure duration” means the period of exposure to a hazardous substance.

“Exposure frequency” means the portion of the exposure duration that an individual is exposed to a hazardous substance, expressed as a fraction. For example, if a person is exposed ~~260~~250 days (five days per week for ~~52~~50 work weeks) over a year (365 days), the exposure frequency would be equal to: $(5 \times 50)/365 = 0.7$.

“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 (a) 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 (b) 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.

“Feasibility study” means a remedial action conducted under WAC 173-340-351 that consists of developing and evaluating cleanup action alternatives to enable selection of a cleanup action.

“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.).

“Financial assurance” means a remedial action that consists of an assurance provided to Ecology under WAC 173-340-440(11) that sufficient financial resources are available to provide for the long-term effectiveness of engineered or institutional controls.

“Fish diet fraction” means the percentage of the total fish and/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 that is produced for the purpose of, or may be used in whole or in part for, consumption by people or livestock. This ~~shall~~ includes nursery, root, or seedstock to be used for the production of food crops.

“Free product” means a nonaqueous phase liquid that is present in the soil, bedrock, groundwater or surface water as a ~~distinct~~ distinct separate layer. Under the right conditions, if sufficient free product is present, free product is capable of migrating independent of the direction of flow of the groundwater or surface water.

“Gastrointestinal absorption fraction” means the fraction of a substance transported across the gastrointestinal lining and taken up systemically into the body.

“Groundwater” 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:

(a) aAny dangerous or extremely hazardous waste as defined in RCW ~~70.105.010~~ 70A.300.010 ~~(5)(1)~~ and ~~(6)(7)~~, or any dangerous or extremely dangerous waste as designated by rule under chapter ~~70.105~~ 70A.300 RCW;

(b) aAny hazardous substance as defined in RCW ~~70.105.010~~ 70A.300.010 ~~(14)(10)~~ or any hazardous substance as defined by rule under chapter ~~70.105~~ 70A.300 RCW;

(c) ~~a~~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\(14\)](#);

(d) ~~p~~Petroleum or petroleum products; and

(e) ~~a~~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.

“Health and safety plan” means a plan prepared under WAC 173-340-810.

“Health effects assessment summary tables” or “HEAST” means a database developed by the United States Environmental Protection Agency that provides a summary of information on the toxicity of hazardous substances.

“Henry's law constant” means the ratio of a hazardous substance's concentration in the air to its concentration in water. Henry's law constant can vary significantly with temperature for some hazardous substances. The dimensionless form of this constant is used in the default equations in this chapter.

“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 groundwater.

“Inadvertent discovery plan” means a plan prepared under WAC 173-340-815 that describes procedures for responding to a discovery of archaeological materials or human remains in accordance with applicable state and federal laws.

“Independent remedial actions” means ~~a~~ remedial actions conducted without ~~department~~Ecology oversight or approval and not under an order, ~~agreed order~~, or ~~consent~~ decree.

“Indian tribe” means the term as defined in RCW 43.376.010(1).

“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:

(a) Zoned for industrial use by a city or county conducting land use planning under chapter [36.70A](#) RCW (Growth Management Act); or

(b) 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 absorption fraction” means the percent of a hazardous substance (expressed as a fraction) that is absorbed through the respiratory system.

“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 that are volatilized and inhaled during use of the water.

“Initial investigation” means a remedial action that consists of an investigation conducted under WAC 173-340-310.

“Institutional controls” means measures undertaken to limit or prohibit activities that may interfere with the integrity of an interim action or a cleanup action or result in exposure to hazardous substances at the site. An institutional control is a type of remedial action. For examples of institutional controls, see WAC 173-340-440(1).

“Integrated risk information system” or “IRIS” means a database developed by the United States Environmental Protection Agency that 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.

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

“Land's method” means the method for calculating an upper confidence limit for the mean of a lognormal distribution, described in the following publications:

(a) Land, C.E., 1971. "Confidence intervals for linear functions of the normal mean and variance." *Annals of Mathematics and Statistics*. Volume 42, pages 1187-1205.

(b) Land, C.E., 1975. "Tables of confidence limits for linear functions of the normal mean and variance." In: *Selected Tables in Mathematical Statistics*, Volume III, pages 385-419. American Mathematical Society, Providence, Rhode Island.

“Legally applicable requirements” means those cleanup standards, standards of control, and other human health and environmental protection requirements, criteria, or limitations adopted 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 an exposed 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~~ 246-290 WAC or 40 C.F.R. Part 141.

“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~~ 246-290 WAC or 40 C.F.R. Part 141 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 ninety-nine percent (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 a potentially liable persons~~s~~ from the ~~state~~model toxics control capital account under WAC 173-340-560.

“Model remedy” means a set of technologies, procedures, and monitoring protocols identified by Ecology for use in routine types of cleanup projects at facilities that have common features and lower risk to human health and the environment.

“Model Toxics Control Act” or **“act”** means chapter ~~70-105D~~ 70A.305 RCW, first passed by the voters in the November 1988 general election as Initiative 97 and as since amended by the legislature.

“National priorities list” or **“NPL”** means the list of sites designated as a national priority by the United States Environmental Protection Agency under Section 105(a)(8)(B) of the federal cleanup law, 42 U.S.C. 9605(a)(8)(B).

“Natural attenuation” means a variety of physical, chemical or biological processes that, under favorable conditions, act without human intervention to reduce the mass, toxicity, mobility, volume, or concentration of hazardous substances in the environment. These in situ processes include: Natural biodegradation; dispersion; dilution; sorption; volatilization; and~~7~~ chemical or

biological stabilization, transformation, or destruction of hazardous substances. See WAC 173-340-370(7) for a description of the expected role of natural attenuation in site cleanup. A cleanup action that includes natural attenuation and conforms to the expectation in WAC 173-340-370(7) can be considered an active remedial measure.

“Natural background” means the concentration of a hazardous substance consistently present in the environment that has not been influenced by localized human activities. For example, several metals and radionuclides naturally occur in the bedrock, sediments, and soils of Washington state due solely to the geologic processes that formed these materials. ~~and the~~ The concentration of these hazardous substances 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 distribution of these hazardous substances. These low concentrations would be considered natural background. Similarly, concentrations of various radionuclides that 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. Compare “area background.”

“Natural biodegradation” means ~~in-situ~~ in situ biological processes such as aerobic respiration, anaerobic respiration, and cometabolism, that occur without human intervention and that break down hazardous substances into other compounds or elements. The process is typically a multiple step process and may or may not result in organic compounds being completely broken down or mineralized to carbon dioxide and water.

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

“Nonaqueous phase liquid” or **“NAPL”** means a hazardous substance that is present in the soil, bedrock, groundwater, or surface water as a liquid not dissolved in water. The term includes both light nonaqueous phase liquid (LNAPL) and dense nonaqueous phase liquid (DNAPL).

“No further action sites list” means a list of sites for which Ecology or PLIA has determined no further remedial action is necessary under state cleanup law to meet the criteria in WAC 173-340-330(5)(b). For each listed site, the list also identifies whether institutional controls or periodic reviews remain necessary at the site. Ecology maintains the list under WAC 173-340-335.

“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.~~

“Nonpotable” means not a current or potential source of drinking water. See WAC 173-340-720 and 173-340-730 for criteria for determining if groundwater or surface water is a current or potential source of drinking water.

“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 that exceed cleanup levels. This ~~shall~~does not apply to cleanup levels based on background concentrations where other appropriate statistical methods supported by a power analysis would be more appropriate to use.

“Oral RFD conversion factor” means the conversion factor used to adjust an oral reference dose (which is typically based on an administered dose) to a dermal reference dose (which is based on an absorbed dose).

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

“Overburdened community” means the term as defined in RCW 70A.02.010(11).

“Owner or operator” means any person that meets the definition of this term in RCW ~~70.105D.020(12)~~70A.305.020(22).

“PAHs (carcinogenic)” or “cPAHs” means those polycyclic aromatic hydrocarbons substances, PAHs, 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.

“Performance monitoring” means a type of compliance monitoring described in WAC 173-340-410.

“Periodic review” means a remedial action that consists of a review conducted by Ecology under WAC 173-340-420.

“Permanent solution” or “permanent cleanup action” means a cleanup action in which cleanup standards of ~~WAC 173-340-700 through 173-340-760~~ Part 7 of this chapter can be met without further 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, or Indian tribe.

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

“PLIA” means the pollution liability insurance agency.

“Point of compliance” means the point or points where cleanup levels established in accordance with WAC 173-340-720 through 173-340-760 ~~shall~~must be attained. This term includes both standard and conditional points of compliance. A conditional point of compliance for particular environmental media is only available as provided in WAC 173-340-720 through 173-340-760.

“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~~by Ecology under WAC 173-340-830.

“Polycyclic aromatic hydrocarbons” or “PAH” means those hydrocarbon molecules composed of two or more fused benzene rings. For the purpose of this chapter, PAH includes those compounds which are identified and quantified using the appropriate analytical methods ~~as specified in~~ by Ecology under 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 who ~~the department~~ Ecology finds, based on credible evidence, to be liable under RCW ~~70.105D.040~~ 70A.305.040.

“Practicable” means capable of being designed, constructed, and implemented in a reliable and effective manner including consideration of cost. ~~When considering cost under this analysis, a~~ An alternative ~~shall~~ is not ~~be considered~~ practicable if ~~the~~ its incremental costs ~~of the alternative~~ are disproportionate to ~~the~~ its incremental degree of benefits, ~~provided by the alternative over compared to other another lower cost alternatives.~~ Whether a cleanup action uses permanent solutions to the maximum extent practicable is determined using the procedures in WAC 173-340-360(6).

“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~~ Ecology approved methods.

“Probabilistic risk assessment” means a mathematical technique for assessing the variability and uncertainty in risk calculations. This is done by using distributions for model input parameters, rather than point values, where sufficient data exists to justify the distribution. These distributions are then used to compute various simulations using tools such as Monte Carlo analysis to examine the probability that a given outcome will result (such as a level of risk being exceeded). When using probabilistic techniques under this chapter for human health risk assessment, distributions ~~shall~~ may not be used to represent dose response relationships (reference dose, reference concentration, cancer potency factor).

“Prospective purchaser” means a person who is not currently liable for remedial action at a site and who proposes to purchase, redevelop, or reuse the site.

“Protection monitoring” means a type of compliance monitoring described in WAC 173-340-410.

“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~~ the notice and opportunity to comment required under WAC 173-340-600(2).

“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 that spontaneously undergoes radioactive decay. Radionuclides are hazardous substances under the act.

“Reasonable maximum exposure” means the highest exposure that can be reasonably expected to occur for a human or other living organisms, including a vulnerable population or an overburdened community, 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.

“Regulated substance” means the term as defined in chapter 173-360A WAC. All regulated substances are hazardous substances, as defined in this chapter.

“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~~Ecology 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)(4)~~ 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.

“Remedial investigation” means a remedial action conducted under WAC 173-340-350 that consists of collecting and evaluating sufficient information about a site, including the distribution of hazardous substances and the threat they pose to human health and the environment, to enable:

(a) Cleanup standards to be established under Part 7 of this chapter; and

(b) Cleanup action alternatives to be developed and evaluated in a feasibility study under WAC 173-340-351.

“Remedial investigation/feasibility study” means a remedial action that consists of ~~activities conducted under WAC 173-340-350 to collect, develop, and evaluate sufficient information regarding a site to select a cleanup action under WAC 173-340-360 through 173-340-390~~both a remedial investigation and a feasibility study.

“Remediation level (REL)” means a concentration (or other method of identification) of a hazardous substance in soil, water, air, or sediment ~~above which~~ used to identify where a particular cleanup action component ~~will be~~ is required as part of a cleanup action at a site. Other methods of identification include physical appearance or location. A cleanup action selected in accordance with WAC 173-340-350 through 173-340-390 that includes remediation levels constitutes a cleanup action which is protective of human health and the environment. See WAC 173-340-355 for a description of the purpose of remediation levels and the requirements and procedures for developing a cleanup action alternative that includes remediation levels.

“Remedy” or “remedial action” means any action or expenditure consistent with the purposes of chapter ~~70.105D~~ 70A.305 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 meeting all of the following criteria:

- Cleanup standards for each hazardous substance addressed by the cleanup are obvious and undisputed, and allow for an adequate margin of safety for protection of human health and the environment;
- It involves an obvious and limited choice among cleanup action alternatives and uses an alternative that is reliable, has proven capable of accomplishing cleanup standards, and with which ~~the department~~ Ecology has experience;
- The cleanup action does not require preparation of an environmental impact statement; and
- The site qualifies under WAC 173-340-7491 for an exclusion from conducting a simplified or site-specific terrestrial ecological evaluation, or if the site qualifies for a simplified ecological evaluation, the evaluation is ended under WAC 173-340-7492(2) or the values in Table 749-2 are used.

Routine cleanup actions consist of, or are comparable to, one or more of the following remedial actions:

- Cleanup of above-ground structures;
- Cleanup of below-ground structures;
- Cleanup of contaminated soils where the action would restore the site to cleanup levels; or

- Cleanup of solid wastes, including containers.

~~“Safety and health plan” means a plan prepared under WAC 173-340-810.~~

“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.~~

“Sediment” means the term as defined in WAC 173-204-505.

“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 hazard assessment and ranking” means a remedial action that consists of an ~~investigation performed~~assessment and ranking conducted under WAC 173-340-320.

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

“Soil biota” means invertebrate multicellular animals that live in the soil or in close contact with the soil.

“State cleanup law” means the Model Toxics Control Act, chapter 70A.305 RCW, and the cleanup regulations adopted under that Act, chapters 173-340 and 173-204 WAC.

“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.

“Terrestrial ecological receptors” means plants and animals that live primarily or entirely on land.

“Threatened or endangered species” means species listed as threatened or endangered under the federal Endangered Species Act 16 U.S.C. Section 1533, or classified as threatened or endangered by the state fish and wildlife commission under ~~WAC 232-12-011(1) and 232-12-014~~ WAC 220-200-100 or 220-610-010.

“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 means those fractions of the above products that are the total of all hydrocarbons quantified by analytical methods NWTPH-Gx; NWTPH-Dx; volatile petroleum hydrocarbons (VPH) for volatile aliphatic and volatile aromatic petroleum fractions; and extractable petroleum hydrocarbons (EPH) for nonvolatile aliphatic and nonvolatile aromatic petroleum fractions, as appropriate, or other test methods approved by ~~the department~~ Ecology.

“Tribal lands” means the term as defined in RCW 70A.02.010(13).

“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~~ the term as defined in chapter 173-360A WAC.

“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 ninety-fifth 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 ninety-fifth percent confidence limit on the estimated risk of one additional cancer above the background cancer rate per one million individuals.

“UST system” means the term as defined in chapter 173-360A WAC.

“UST system operator” means the same as “operator” in chapter 173-360A WAC.

“UST system owner” means the same as “owner” in chapter 173-360A WAC.

“Volatile organic compound” means those carbon-based compounds listed in ~~EPA~~ United States Environmental Protection Agency methods 502.2, 524.2, 551, 601, 602, 603, 624, 1624C, 1666, 1671, 8011, 8015B, 8021B, 8031, 8032A, 8033, 8260B, and those with similar vapor pressures or boiling points. ~~See WAC 173-340-830(3) for references describing these methods.~~ For

petroleum, volatile means aliphatic and aromatic constituents up to and including EC12, plus naphthalene, 1-methylnaphthalene and 2-methylnaphthalene.

“Vulnerable population” means the term as defined in RCW 70A.02.010(14).

“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~~ the term as defined in WAC 173-201A-020.

“Wildlife” means any nonhuman vertebrate animal other than fish.

“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 that use.

WAC 173-340-210 Usage.

For the purposes of this chapter, the following ~~shall~~ apply:

- (1) Unless the context clearly requires otherwise, the use of the singular ~~shall~~ includes the plural and conversely.
- (2) The terms “**applicable,**” “**appropriate,**” “**relevant,**” “**unless otherwise directed by the ~~department~~Ecology**” and similar terms implying discretion mean as determined by ~~the department~~Ecology, with the burden of proof on other persons to demonstrate that the requirements are or are not necessary.
- (3) “**Approved**” means for ~~department-conducted or ordered remedial actions, or for potentially liable person-conducted cleanups agreed to by the department in an agreed order or decree governing remedial actions at the site~~ Ecology-conducted or Ecology-supervised remedial actions.
- (4) “**Conduct**” means to perform or undertake whether directly or through an agent or contractor, unless this chapter expressly provides otherwise.
- (5) “**Include**” means included but not limited to.
- (6) “**May**” or “**should**” means the provision is optional and permissive, and does not impose a requirement.
- (7) “**Shall,**” “**must,**” or “**will**” means the provision is mandatory.
- (8) “**Threat**” means threat or potential threat.
- (9) “**Under**” means pursuant to, subject to, required by, established by, in accordance with, and similar expressions of legislative or administrative authorization or direction.

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Part 3 – Site Reports and Cleanup Decisions

WAC 173-340-300 Site discovery and reporting.

- (1) **Purpose.** ~~As part of a program to identify hazardous waste sites, t~~This section sets forth the requirements for reporting a release or threatened release of a hazardous substance to the environment that may pose a threat to human health or the environment due to past activities, whether discovered before or after the effective date of this regulation. It also sets forth the requirements for reporting independent remedial actions. The department may take any other actions it deems appropriate to identify potential hazardous waste sites consistent with chapter 70.105D RCW.
- (2) **Release report**~~Applicability and timing.~~ Except as provided under (a) of this subsection, within ninety days of discovering a release or threatened release of a hazardous substance to the environment that may pose a threat to human health or the environment, an owner or operator must report the release to Ecology. All other persons are encouraged to report such a release to Ecology.
- ~~(a) Any owner or operator who has information that a hazardous substance has been released to the environment at the owner or operator's facility and may be a threat to human health or the environment shall report such information to the department within ninety days of discovery. Releases from underground storage tanks shall be reported by the owner or operator of the underground storage tank within twenty-four hours of release confirmation, in accordance with WAC 173-340-450. To the extent known, the report shall include:~~
- ~~(i) The identification and location of the hazardous substance;~~
- ~~(ii) Circumstances of the release and the discovery; and~~
- ~~(iii) Any remedial actions planned, completed, or underway. All other persons are encouraged to report such information to the department.~~
- (a) Exemptions. An owner or operator does not need to report the following releases under this section:
- (i) A release previously reported to Ecology in fulfillment of a reporting requirement in this chapter or in another law or regulation, including a release previously reported to Ecology under chapter 173-360A WAC;
- (ii) A release from a heating oil tank previously reported to PLIA under WAC 374-45-030;
- (iii) A release previously reported to the United States Environmental Protection Agency under CERCLA, Section 103(c) (42 U.S.C. Sec. 9603(c));
- (iv) A release previously reported to the state division of emergency management under RCW 90.56.280;
- (v) Application of pesticides and fertilizers for their intended purposes and according to label instructions;

(vi) Lawful and nonnegligent use of hazardous substances by a natural person for personal or domestic purposes;

(vii) A release in accordance with a permit that authorizes the release;

(viii) Except for a release specified under (b)(iii) of this subsection, a release to the air;

(ix) A release discovered in a public water system regulated by the department of health; or

(x) A release to a permitted wastewater facility.

An exemption from the reporting requirements in this section does not imply a release from liability under this chapter.

(b) Examples. ~~Persons~~ An owner or operator should use best professional judgment in deciding whether a release or threatened release of a hazardous substance to the environment may be pose a threat ~~or potential threat~~ to human health or the environment. The following, which is not an exhaustive list, are examples of situations that an owner or operator should generally ~~should be reported~~ under this section:

(i) Contamination in a water supply well~~;~~

(ii) Contaminated seeps, sediment or surface water~~;~~

(iii) Vapors in a building, utility vault or other structure that appear to be entering the structure from nearby contaminated soil or ground water~~;~~

(iv) ~~Free product~~ Non-aqueous phase liquid, such as a petroleum product or ~~other organic liquids~~ chlorinated solvent, on the surface of the ground or in the groundwater (free product)~~;~~

(v) Any contaminated soil or unpermitted disposal of waste materials that would be classified as a hazardous waste under federal or state law~~;~~

(vi) Any abandoned containers such as drums or tanks, above ground or buried, still containing more than trace residuals of hazardous substances~~;~~

(vii) Sites where unpermitted industrial waste disposal has occurred~~;~~

(viii) Sites where hazardous substances have leaked or been dumped on the ground~~;~~
and

(ix) Leaking underground petroleum storage tanks not already reported under ~~WAC 173-340-450~~ chapter 173-360A WAC.

~~**(3) Exemptions.** The following releases are exempt from these notification requirements:~~

~~**(a)** Application of pesticides and fertilizers for their intended purposes and according to label instructions;~~

- ~~(b) — Lawful and nonnegligent use of hazardous substances by a natural person for personal or domestic purposes;~~
- ~~(c) — A release in accordance with a permit that authorizes the release;~~
- ~~(d) — A release previously reported to the department in fulfillment of a reporting requirement in this chapter or in another law or regulation;~~
- ~~(e) — A release previously reported to the United States Environmental Protection Agency under CERCLA, Section 103(c) (42 U.S.C. Sec. 9603(c));~~
- ~~(f) — Except for releases under subsection (2)(b)(iii) of this section, a release to the air;~~
- ~~(g) — Releases discovered in public water systems regulated by the department of health; or~~
- ~~(h) — A release to a permitted wastewater facility.~~

~~An exemption from the notification requirements in this section does not imply a release from liability under this chapter.~~

(3) Content of release report. An owner or operator must include the following information in a release report, to the extent known:

- (a) The identity and location of the hazardous substance;
- (b) The circumstances of the hazardous substance release and its discovery; and
- (c) Any planned, ongoing, or completed independent remedial actions to investigate or clean up the release.
 - (i) See WAC 173-340-515(4) and 173-340-450 for additional reporting requirements for independent remedial actions.
 - (ii) See WAC 173-340-310(5) for Ecology's authority to defer completing an initial investigation of a release to review independent remedial actions completed within ninety days of release discovery.

~~(4) — **Report of independent remedial actions.** See WAC 173-340-515 for additional reporting requirements for independent remedial actions. See WAC 173-340-450 for reporting requirements for independent remedial actions for releases from underground storage tanks.~~

~~(5) — **Department response.** Within ninety days of receiving information under this section, the department shall conduct an initial investigation in accordance with WAC 173-340-310. For sites on the hazardous sites list, the department shall, as resources permit, review reports that document independent cleanup actions. The review shall include an evaluation of whether the site qualifies for removal from the hazardous sites list or whether further remedial action is required.~~

~~(6)~~**(4) Other obligations release reporting requirements.** Nothing in this section shall eliminates any obligations to comply with reporting requirements that may exist in a permit or under other laws or permits, including but not limited to the following:

- (a) Releases from regulated UST systems.** Under chapter 173-360A WAC, UST system owners and operators and regulated service providers must report a confirmed release of a regulated substance from an UST system to Ecology within twenty-four hours. As specified in subsection (2)(a)(i) of this section, a release previously reported to Ecology under chapter 173-360A WAC is exempt from the release reporting requirements in this section. However, the release must still be investigated and cleaned up in accordance with this chapter. WAC 173-340-450 specifies interim actions that UST system owners and operators must perform immediately or shortly after confirming a release to reduce the threats posed by the release, prevent any further release, and characterize the nature and extent of the release;
- (b) Releases from heating oil tanks.** Under chapter 374-45 WAC, owners and operators of a heating oil tank and owners of the property where the tank is located must report a suspected or confirmed release from the tank to PLIA within ninety days. As specified in subsection (2)(a)(ii) of this section, a release previously reported to Ecology under chapter 374-45 WAC is exempt from the release reporting requirements in this section. However, the release must still be investigated and cleaned up in accordance with this chapter.
- (5) Reservation of rights.** Nothing in this section precludes Ecology from taking any actions it deems appropriate to identify contaminated sites consistent with chapter 70A.305 RCW.

WAC 173-340-310 Initial investigation.

- (1) **Purpose.** ~~An initial investigation is an inspection of a suspected site by the department and documentation of conditions observed during that site inspection.~~ The purpose of the initial investigation is to determine ~~whether a release or threatened release of a hazardous substance may have occurred that warrants further action under this chapter.~~
- (a) Whether there has been a release or threatened release of a hazardous substance to the environment;
 - (b) Whether the release or threatened release may pose a threat to human health or the environment;
 - (c) Whether the population threatened may be a vulnerable population or an overburdened community;
 - (d) Whether further remedial action is necessary under state cleanup law to confirm whether there has been a release or threatened release that poses a threat to human health or the environment;
 - (e) Whether further remedial action is necessary under state cleanup law to address the threat to human health and the environment posed by the release or threatened release. This determination is based on the criteria in WAC 173-340-330(5)(b);
 - (f) Whether an emergency remedial action or an interim action is necessary under state cleanup law to address the threat, and whether persons in the potentially affected vicinity need to be notified of such action;
 - (g) Whether action under another state or federal law is appropriate; and
 - (h) The current owners and operators of the site.
- ~~(2) **Applicability and timing.** Whenever the department receives information and has a reasonable basis to believe that there may be a release or a threatened release of a hazardous substance that may pose a threat to human health or the environment, the department shall conduct an initial investigation within ninety days.~~
- ~~(3)~~(2) **Exemptions****Applicability.** ~~The department shall not be required to conduct an initial investigation when~~Ecology will complete an initial investigation unless:
- (a) The release is exempt from reporting under WAC 173-340-300(2)(a);
 - ~~(a)~~(b) The circumstances associated with the release or threatened release are known to the departmentEcology ~~and have previously been or currently are being evaluated by the department~~Ecology or other~~another~~ government agency; or
 - ~~(b) The release is permitted; or~~
 - ~~(c) The release is exempt from reporting under WAC 173-340-300(3).~~

- (c) Ecology does not have a reasonable basis to believe that there has been a release or threatened release of a hazardous substance that may pose a threat to human health or the environment.
- (3) **Performance.** To make the determinations specified in subsection (1) of this section, Ecology will review readily available information and may collect, or advise other persons to collect, additional information.
- (4) **Department deferral to Reliance on others.** ~~The department~~Ecology may rely on another government agency or a contractor to ~~the department~~Ecology to conduct an initial investigation on its behalf, provided:
 - (a) ~~the department determines such an~~The agency or contractor is not suspected ~~to have~~of having contributed to the release or threatened release ~~of a hazardous substance~~; and
 - (b) ~~that~~The agency or contractor has no conflict of interest ~~exists~~.
- (5) **Timing.**
 - (a) Except as provided under (b) of this subsection, Ecology will complete an initial investigation within ninety days of discovering a release or threatened release or receiving a release report under WAC 173-340-300.
 - (b) If an independent remedial investigation, interim action, or cleanup action is completed within ninety days of the discovery of a release or threatened release, Ecology will complete an initial investigation by the earlier of the following:
 - (i) Ninety days after receiving the independent remedial action report required under WAC 173-340-515(4);
 - (ii) One-hundred and eighty days after discovering a release or threatened release or receiving a release report.
- ~~(5) **Department decision.** Based on the information obtained about the site, the department shall within thirty days of completion of the initial investigation make one or more of the following decisions:
 - ~~(a) A site hazard assessment is required;~~
 - ~~(b) Emergency remedial action is required;~~
 - ~~(c) Interim action is required; or~~
 - ~~(d) The site requires no further action under this chapter at this time because either:
 - ~~(i) There has been no release or threatened release of a hazardous substance; or~~
 - ~~(ii) A release or threatened release of a hazardous substance has occurred, but in the department's judgment, does not pose a threat to human health or the environment; or~~
 - ~~(iii) Action under another authority is appropriate.~~~~~~

~~A decision for a particular follow-up action does not preclude the department from requiring some other action in the future based on reevaluation of the site or additional information.~~

~~(6) — Notification.~~

~~(a) — Sites requiring an emergency remedial action or interim action. If the department determines that an emergency remedial action or interim action is required, then notification of the threat to the potentially affected vicinity may be required by the department. The method and nature of the notification shall be determined on a case-by-case basis using the methods specified in WAC 173-340-600. Such notification shall be the responsibility of the site owner or operator if required in writing by the department.~~

~~(b) — Sites requiring further remedial action. For sites requiring further remedial action under chapter 70.105D RCW, the department shall notify the owner, operator, and any potentially liable person known to the department of its decision. This notification shall be a letter ("Early Notice Letter") mailed to the person which includes:~~

~~(i) — The basis for the department's decision;~~

~~(ii) — Information on the cleanup process provided for in this chapter;~~

~~(iii) — A statement that it is the department's policy to work cooperatively with persons to accomplish prompt and effective cleanups;~~

~~(iv) — A person or office of the department to contact regarding the contents of the letter; and~~

~~(v) — A statement that the letter is not a determination of liability and that cooperating with the department in planning or conducting a remedial action is not an admission of guilt or liability.~~

~~(c) — Sites not requiring further remedial action. For sites requiring no further remedial action under chapter 70.105D RCW, if requested by the owner or operator, the department shall notify the owner or operator of the department's conclusion. This notification shall be in writing and may be combined with the determination of status letter in WAC 173-340-500.~~

(6) Determinations and next steps. Within thirty days of completing the initial investigation, Ecology will make one of the following determinations and take the applicable steps:

(a) No release or threatened release occurred. In this case, Ecology will notify the owner and operator in writing of its determination;

(b) A release or threatened release occurred, but does not pose a threat to human health or the environment that requires remedial action under state cleanup law. This determination must be based on factors other than performance of remedial action. In this case, Ecology will notify the owner and operator in writing of its determination;

- (c) A release or threatened release occurred that posed a threat to human health or the environment, but no further remedial action is necessary under state cleanup law to address that threat based on the criteria in WAC 173-340-330(5)(b). In this case, Ecology will take the following steps:

 - (i) Perform a site hazard assessment and ranking in accordance with WAC 173-340-320;
 - (ii) List the site on Ecology's no further action sites list in accordance with WAC 173-340-335(2);
 - (iii) Make any initial investigation report publicly available on Ecology's website;
 - (iv) Notify the owner and operator in writing of Ecology's determination; and
 - (v) Notify the public of Ecology's determination in the *Contaminated Site Register* under WAC 173-340-600(7). The notice must include instructions on how to sign up for electronic alerts about the site under WAC 173-340-600(6);
- (d) A release or threatened release may have occurred that poses a threat to human health or the environment, and further remedial action is necessary under state cleanup law to confirm the threat. In this case, Ecology will take the steps specified under (e) of this subsection;
- (e) A release or threatened release occurred that poses a threat to human health or the environment, and further remedial action is necessary under state cleanup law to address threat based on the criteria in WAC 173-340-330(5)(b). In this case, Ecology will take the following steps:

 - (i) Perform a site hazard assessment and ranking in accordance with WAC 173-340-320;
 - (ii) List the site on the contaminated sites list in accordance with WAC 173-340-330(2);
 - (iii) Make any initial investigation report publicly available on Ecology's website;
 - (iv) Notify the owner and operator, and any person who Ecology has preliminarily determined to be liable under WAC 173-340-500(1), in writing of Ecology's determination. The notice may be combined with the potentially liable person status letter in WAC 173-340-500. The notice must include:

 - (A) The basis for Ecology's determination;
 - (B) The site's hazard rankings;
 - (C) Information on the cleanup process provided for in this chapter;
 - (D) A statement that it is Ecology's policy to work cooperatively with persons to accomplish prompt and effective cleanups;

- (E) A statement that the notice is not a determination of liability and that cooperating with Ecology in planning or conducting a remedial action is not an admission of guilt or liability;
 - (F) An Ecology website where information about the site is publicly available, and instructions on how to sign up for electronic alerts about the site under WAC 173-340-600(6); and
 - (G) An Ecology staff or office to contact about the contents of the notice;
 - (v) Notify the public of Ecology’s determination in the *Contaminated Site Register* under WAC 173-340-600(7). The notice must include instructions on how to sign up for electronic alerts about the site under WAC 173-340-600(6);
 - (vi) Notify persons within the potentially affected vicinity of the threat, if Ecology determines that an emergency remedial action or an interim action is necessary under state cleanup law and that such notice is needed.
 - (A) Ecology may require the owner or operator to provide the notice on Ecology’s behalf. If required in writing by Ecology, the owner or operator must provide the notice.
 - (B) Ecology will determine the method and nature of the notice on a case-by-case basis using the methods specified in WAC 173-340-600.
- (f) A release or threatened release occurred that poses a threat to human health or the environment, but action under another state or federal law is appropriate. The steps Ecology will take depend on the other authority identified by Ecology.
 - (i) For all sites where Ecology determines action is appropriate under another state or federal law, Ecology will:
 - (A) Refer the site to the applicable government agency or program; and
 - (B) Notify the owner and operator in writing of its determination.
 - (ii) For sites where Ecology determines action is appropriate under the federal cleanup law, the federal solid waste disposal act (42 U.S.C. 6901 et seq.), the state hazardous waste management act (chapter 70A.300 RCW), the state solid waste management act (chapter 70A.205 RCW), or the state pollution liability protection act (chapter 70A.330 RCW), Ecology will also:
 - (A) Perform a site hazard assessment and ranking in accordance with WAC 173-340-320;
 - (B) List the site on Ecology’s contaminated sites list in accordance with WAC 173-340-330(2);
 - (C) Make any initial investigation report publicly available on Ecology’s website; and

(D) Notify the public of Ecology’s determination in the *Contaminated Site Register* under WAC 173-340-600(7). The notice must include instructions on how to sign up for electronic alerts about the site under WAC 173-340-600(6).

- (7) **Reservation of rights.** Nothing in this section ~~shall precludes~~ ~~the department~~ Ecology from taking or requiring appropriate remedial action at any time.

WAC 173-340-320 Site hazard assessment and ranking.

- ~~(1) — **Purpose.** The purpose of the site hazard assessment is to provide sufficient sampling data and other information for the department to:~~
- ~~(a) — Confirm or rule out that a release or threatened release of a hazardous substance has occurred;~~
 - ~~(b) — Identify the hazardous substance and provide some information regarding the extent and concentration of the substance;~~
 - ~~(c) — Identify site characteristics that could result in the hazardous substance entering and moving through the environment;~~
 - ~~(d) — Evaluate the potential for the threat to human health and the environment; and~~
 - ~~(e) — Determine the hazard ranking of the site under WAC 173-340-330, if appropriate.~~
- ~~(2) — **Timing.** Generally, a site hazard assessment shall be completed before proceeding to any subsequent phase of remedial action, other than an emergency or interim action.~~
- ~~(3) — **Administrative options.** The site hazard assessment may be conducted under any of the procedures described in WAC 173-340-510. The department may rely on another government agency or a contractor to the department to conduct a site hazard assessment on its behalf, provided the department determines such an agency or contractor is not suspected to have contributed to the release or threatened release of a hazardous substance and that no conflict of interest exists.~~
- ~~(4) — **Scope and content.** A site hazard assessment is an early study to provide preliminary data regarding the relative potential hazard of the site. A site hazard assessment is not intended to be a detailed site characterization; however, it shall include sufficient sampling, site observations, maps, and other information needed to meet the purposes specified in subsection (1) of this section. To fulfill this requirement, a site hazard assessment shall include, as appropriate, the following information:~~
- ~~(a) — Identification of hazardous substances, including what was released and is threatened to be released and/or, if known, what products of decomposition, recombination, or chemical reaction are currently present on site, and an estimate of their quantities and concentrations;~~
 - ~~(b) — Evidence confirming a release or threatened release of hazardous substances to the environment;~~
 - ~~(c) — Description of facilities containing releases, if any, and their condition;~~
 - ~~(d) — Identification of the location of all areas where a hazardous substance is known or suspected to be, indicated on a site map;~~
 - ~~(e) — Consideration of surface water run-on and runoff and the hazardous substances leaching potential;~~

- ~~(f) Preliminary characterization of the subsurface and groundwater actually or potentially affected by the release, including vertical depth to groundwater and distance to nearby wells, bodies of surface water, and drinking water intakes;~~
- ~~(g) Preliminary evaluation of receptors, including: Human population, food crops, recreation areas, parks, sensitive environments, irrigated areas, and aquatic resources currently or potentially affected by groundwater, air, or surface water containing the release of hazardous substances at the site, including distances to these receptors; and~~
- ~~(h) Any other physical factors which may be significant in estimating the potential or current exposure to sensitive biota.~~
- ~~(5) **Guidance.** The department shall make available guidance for how to conduct a site hazard assessment to meet the requirements of this section. Persons are encouraged to contact the department to obtain a copy of the latest guidance.~~
- ~~(6) **Department decision.** Based on the results of the site hazard assessment and other available information about the site, the department shall either determine the site warrants no further action using the criteria in WAC 173-340-310(5)(d) or proceed with ranking and placing the site on the hazardous sites list under WAC 173-340-330.~~
- ~~(7) **Notification.** The department shall make available the results of the site hazard assessment to the site's owner and operator and any person who has received a potentially liable person status letter under WAC 173-340-500 regarding the site. If the department finds after a site hazard assessment that the site requires no further action, it shall publish this decision in the *Site Register*.~~
- (1) **Purpose.** The site hazard assessment and ranking process provides a method for Ecology to assess and rank threats to human health and the environment posed by a site based on information readily available at the time of assessment. The site hazard assessment and ranking process satisfies the requirements of RCW 70A.305.030(2)(b), and is not a substitute for a remedial investigation. Ecology uses site hazard assessments and rankings to:
 - (a) Support decisions to add or remove sites from the contaminated sites list under WAC 173-340-330 or the no further action sites list under WAC 173-340-335;
 - (b) Prioritize remedial actions and allocate agency resources among and within sites under WAC 173-340-340;
 - (c) Reflect changes in threats posed by a site based on new information or changes in site conditions; and
 - (d) Inform the legislature and the public about the threats posed by contaminated sites.
- (2) **Development.** Ecology will establish and maintain a site hazard assessment and ranking process.
 - (a) **Standards.** A site hazard assessment and ranking process must enable Ecology to use readily available information to:

- (i) Assess and rank the potential exposure of human and environmental receptors to confirmed or suspected releases of hazardous substances through each environmental medium;
 - (ii) Assess and rank the severity of such exposures to human health and the environment;
 - (iii) Identify whether the population exposed may be a vulnerable population or an overburdened community; and
 - (iv) Report the assessor's level of confidence in the information used for the assessment.
 - (b) **Public participation.** When establishing a site hazard assessment and ranking process or any substantive change to the process, Ecology will provide the public with notice and an opportunity to comment. The public comment period must be at least thirty days.
- (3) **Implementation.**
 - (a) **Applicability and timing.**
 - (i) Ecology will perform a site hazard assessment and ranking before adding or removing a site from the contaminated sites list under WAC 173-340-330 or the no further action sites list under WAC 173-340-335.
 - (ii) For sites on the contaminated sites list on the effective date of this section, Ecology will conduct a site hazard assessment and ranking as resources permit. As part of the strategic plan required under WAC 173-340-340, Ecology will develop goals and strategies for completing a site hazard assessment and ranking of such sites.
 - (iii) Ecology may also conduct a site hazard assessment and ranking when new information becomes available or when site conditions change.
 - (b) **Performance.** Ecology will review readily available information when conducting a site hazard assessment and ranking.
 - (c) **Reliance on others.** Ecology may rely on another government agency or a contractor to Ecology to perform a site hazard assessment and ranking on its behalf, provided:
 - (i) The agency or contractor is not suspected of having contributed to the release or threatened release; and
 - (ii) The agency or contractor has no conflict of interest.
 - (d) **Notification.**
 - (i) Ecology will make the site's current hazard rankings publicly available on Ecology's website under WAC 173-340-600(5).

- (ii) If requested, Ecology will notify a person electronically under WAC 173-340-600(6) upon completing a site hazard assessment and ranking.

WAC 173-340-330 ~~Hazard ranking and the hazardous~~Contaminated sites list.

- (1) **Purpose.** ~~The department shall maintain a list of sites where remedial action has been determined by the department to be necessary. This list, called the hazardous sites list, shall fulfill the department's responsibilities under RCW 70.105D.030(2)(b) and (3). From this list, the department shall select those sites where action is anticipated and include those in the biennial program report under WAC 173-340-340.~~The purpose of the contaminated sites list is to identify:
- (a) All sites for which Ecology or PLIA has determined further remedial action is necessary under state cleanup law to:
 - (i) Confirm whether there is a threat to human health or the environment posed by a release or threatened release; or
 - (ii) Address the threat posed by a release or threatened release, based on the criteria in subsection (5)(b) of this section; and
 - (b) For each listed site, the site's current remedial action status.
- ~~(2) **Hazard ranking.**~~
- ~~(a) The department shall give a hazard ranking to sites placed on the list. The purpose of hazard ranking is to estimate, based on the information compiled during the site hazard assessment, the relative potential risk posed by the site to human health and the environment. This assessment considers air, groundwater, and surface water migration pathways, human and nonhuman exposure targets, properties of the substances present, and the interaction of these variables.~~
 - ~~(b) The department shall evaluate each site on a consistent basis using the procedure described in the "Washington Ranking Method Scoring Manual," publication number 90-14, dated April 1992. The sediment component of a site shall be scored using the procedures described in "Sediment Ranking System," publication number 97-106, dated January 1990, and "Status Report: Technical Basis for SEDRANK Modifications," publication number 97-107, dated June 1991. The ranking procedure and major amendments to the manual shall be reviewed by the science advisory board established under chapter 70.105D RCW. Information obtained in the site hazard assessment, plus any additional data specified in these publications, shall be included in the hazard ranking evaluation.~~
- ~~(3) **Site Register.** The department shall periodically provide notification of the results of hazard ranking in the Site Register. The department shall make available hazard ranking results for each site to the site owner and operator and any potentially liable person known to the department before publication in the Site Register.~~
- ~~(4) **Reranking.** The department may at its discretion re-rank a site if, before the initiation of state action at the site, the department receives additional information within the scope of the evaluation criteria which indicates that a significant change in rank may result.~~

~~(5) **Listing.** Sites shall be ranked and placed on the hazardous sites list if, after the completion of a site hazard assessment, the department determines that further action is required at the site. The list shall be updated at least once per year. Placement of a site on the hazardous sites list does not, by itself, imply that persons associated with the site are liable under chapter 70.105D RCW.~~

(2) **Adding a site to the list.** After an initial investigation under WAC 173-340-310 or 374-45-040, Ecology will add a site to the contaminated sites list if Ecology or PLIA determines further remedial action is necessary under state cleanup law to:

- (a) Confirm whether there is a threat to human health or the environment posed by a release or threatened release; or
- (b) Address the threat posed by a release or threatened release, based on the criteria in subsection (5)(b) of this section.

~~(6)~~(3) **Site status**Tracking the remedial action status of a site. The hazardous sites list shall reflect the current status of remedial action at each site. For each site on the contaminated sites list, Ecology will track and include on the list the site's remedial action status. The departmentEcology may change a site'sthe remedial action status of a site to reflect current conditions. The status for each site shall be identified as one of the following:

- ~~(a) Sites awaiting further remedial action;~~
- ~~(b) Sites with remedial action in progress;~~
- ~~(c) Sites where a cleanup action has been conducted but confirmational monitoring is underway;~~
- ~~(d) Sites with independent remedial actions; or~~
- ~~(e) Other categories established by the department.~~

(4) **Splitting or combining sites on the list.** Ecology may split or combine sites on the contaminated sites list consistent with its authority under chapter 70A.305 RCW.

~~(7)~~(5) **Removing sites**Criteria for removing a site from the list. Ecology will remove a site from the contaminated sites list if, and only if, Ecology or PLIA determines that:

- ~~(a) The department may remove a site from the list only after it has determined that:~~The listing of the site is erroneous; or
- (b) The site meets the following criteria:
 - (i) For sites where the selected cleanup action is permanent:
 - (A) All cleanup standards have been achieved; and
 - (B) All necessary remedial actions under state cleanup law have been completed;

- ~~(i)~~(ii) For sites where the selected cleanup action is not permanent and does not include containment;~~;~~
 - (A) All cleanup standards have been achieved; and
 - (B) ~~a~~All necessary remedial actions under state cleanup law, except confirmation~~al~~ monitoring and periodic reviews, have been completed and compliance with the cleanup standards has been achieved at the site; or
- ~~(ii) — The listing was erroneous; or~~
- (iii) For sites where the selected cleanup action is not permanent and includes containment~~, if all of the following conditions have been met:~~
 - (A) All cleanup standards have been achieved;
 - (B) All necessary construction has been completed;
 - ~~(A)~~(C) All ~~construction and operation of remedial actions~~necessary operation and maintenance activities have been adequately completed and, except for the following:
 - ~~(I) Only p~~Passive maintenance activities, such as monitoring, inspections, ~~and or~~ periodic repairs ~~remain~~; or
 - ~~(II) For municipal~~ solid waste landfills ~~only permitted under chapter 173-304, 173-350, or 173-351 WAC, a closure plan meeting the substantive requirements in chapter 173-351 WAC has been approved by the department as part of a remedial action under this chapter and the only remaining active maintenance activities are methane gas control, the operation of leachate collection and treatment systems, and/or surface water diversion~~any operation or maintenance activities of systems for explosive gas control, leachate collection, or surface water run-on or runoff management;
 - (D) All necessary performance monitoring has been completed;
 - ~~(B)~~(E) Sufficient confirmation~~al~~ monitoring has been donecompleted to demonstrate that the ~~remedy~~cleanup action has effectively containeds the hazardous substances of concern at the site;
 - ~~(C) — All required performance monitoring has been completed;~~
 - ~~(D)~~(F) Any required institutional controls are in place and have been demonstrated to be effective in protecting public health and the environment from exposure to hazardous substances and protecting the integrity of the cleanup action;

- (G) Any required financial assurances are in place; and
- ~~(E)(H)~~ Written documentation is present in ~~the department~~Ecology files that describes what hazardous substances ~~have been left~~remain on site, where they are located, and the long-term monitoring and maintenance obligations at the site;
- ~~(F) When required under WAC 173-340-440, financial assurances are in place; and~~
- ~~(G) For sites with releases to groundwater, it has been demonstrated the site meets groundwater cleanup levels at the designated point of compliance.~~
- ~~(b) A site owner, operator, or potentially liable person may request that a site be removed from the list by submitting a petition to the department. The petition shall include thorough documentation of all investigations performed, all cleanup actions taken, and adequate compliance monitoring to demonstrate to the department's satisfaction that one of the conditions in (a) of this subsection has been met. The department may require payment of costs incurred, including an advance deposit, for review and verification of the work performed. The department shall review such petitions; however, the timing of the review shall be at its discretion and as resources may allow.~~
- (6) Petitions for removing a site from the list.** A site owner, operator, or potentially liable person may petition Ecology to remove a site from the contaminated sites list.

 - (a) Content.** A petition must be in writing and include the following:

 - (i) For claims the listing of the site is erroneous under subsection (4)(a) of this section, sufficient documentation of investigations to demonstrate to Ecology's satisfaction that the listing is erroneous;
 - (ii) For claims based on an independent remedial action, a written opinion from Ecology under WAC 173-340-515(5), or PLIA under chapter 374-80 WAC, that no further remedial action is necessary at the site to meet the criteria in subsection (5)(b) of this section; or
 - (iii) For claims based on an Ecology-supervised or Ecology-conducted remedial action, sufficient documentation of remedial actions, including investigations, cleanup actions, and compliance monitoring, to demonstrate to Ecology's satisfaction that no further remedial action is necessary at the site to meet the criteria in subsection (5)(b) of this section.
 - (b) Response.** Ecology will review the petition. However, the timing of Ecology's review is at its discretion and as resources permit. Unless Ecology determines the listing is erroneous, Ecology may collect from the petitioner all costs incurred by Ecology in reviewing the petition and, as applicable, providing for public participation under

subsection (6) of this subsection. Ecology may require a deposit in advance of reviewing the petition.

(7) Public participation when removing a site from the list. For Ecology-conducted and Ecology-supervised remedial actions, Ecology will provide public notice in accordance with WAC 173-340-600(17) before removing a site from the contaminated sites list.

~~**(8) Record of sites.** The department shall maintain a record of sites that have been removed from the list under subsection (7) of this section. The record shall identify which sites have institutional controls under WAC 173-340-440 and which sites are subject to periodic review under WAC 173-340-420. This record will be made available to the public upon request.~~

(9)(8) Re-listing of sites. ~~The department~~Ecology may re-list a site on the contaminated sites list that ~~has~~it previously ~~been~~ removed from the list if ~~it~~Ecology or PLIA determines ~~that the site requires~~ further remedial action is necessary at the site to meet the criteria in subsection (5)(b) of this section.

~~**(10)(9) NoticeNotification.** The department shall provide public notice and an opportunity to comment when the department proposes to remove a site from the list. Additions to the list, changes in site status, and removal from the list shall be published in the *Site Register*.~~

(a) Ecology will make the contaminated sites list and the current list of remedial action status categories publicly available on Ecology's website.

(b) Ecology will make a site's current remedial action status publicly available on Ecology's website under WAC 173-340-600(5).

(c) If requested, Ecology will notify a person electronically under WAC 173-340-600(6) upon:

(i) Any change in a site's remedial action status;

(ii) Splitting or combining a site on the contaminated sites list; or

(iii) Removing or re-listing a site on the contaminated sites list.

(10) Liability. Placement of a site on the contaminated sites list does not, by itself, imply that persons associated with the site are liable under chapter 70A.305 RCW.

WAC 173-340-335 No further action sites list.

- (1) Purpose.** The purpose of the no further action sites list is to identify:
 - (a)** All sites where Ecology or PLIA has determined no further remedial action is necessary under state cleanup law to meet the criteria in WAC 173-340-330(5)(b); and
 - (b)** For each listed site, whether institutional controls or periodic reviews remain necessary at the site.
- (2) Adding a site to the list.** Ecology will add a site to the no further action sites list if, and only if:
 - (a)** After completing an initial investigation, Ecology or PLIA determines that no further remedial action is necessary under state cleanup law to meet the criteria in WAC 173-340-330(5)(b); or
 - (b)** Ecology removes the site from the contaminated sites list based on the criteria in WAC 173-340-330(5)(b).
- (3) Tracking institutional controls and periodic reviews.** For each site on the no further action sites list, Ecology will identify on the list whether the site requires:
 - (a)** Institutional controls under WAC 173-340-440; or
 - (b)** Periodic reviews under WAC 173-340-420.
- (4) Removing a site from the list.** If Ecology re-lists a site on the contaminated sites list under WAC 173-340-330(8), Ecology will remove the site from the no further action sites list.
- (5) Notification.**
 - (a)** Ecology will make the no further action sites list publicly available on Ecology's website.
 - (b)** If requested, Ecology will notify a person electronically under WAC 173-340-600(6) upon adding or removing a site on the no further action sites list.

WAC 173-340-340 ~~Biennial program report~~Program planning and assessment.

- ~~(1) **Timing.** Before November 1 of each even-numbered year, the department shall prepare a biennial program report for the legislature containing its plan for conducting remedial actions for the following two fiscal years. This report shall identify the projects and expenditures recommended for appropriation from both the state and local toxics control accounts. In determining which sites the department shall consider for planned action, emphasis shall be given to sites posing the highest risk to human health and the environment, as indicated by a site's hazard ranking. The department may also consider other factors in setting site priorities. After legislative action and any revisions, this report shall become the department's biennial program plan.~~
- ~~(2) **Public notice.** The department shall provide public notice and a hearing on the proposed plan. For purposes of this subsection only, public notice shall consist of mailings to all persons who have made a timely request and to the appropriate news media, and publication in the state register. Notice shall also be provided in the *Site Register*. The public comment period on the proposed plan shall run for at least thirty days from the date of the publication in the *Site Register*.~~
- (1) **Strategic plan.** Ecology will develop and periodically update a comprehensive and integrated strategic plan for cleaning up contaminated sites. The strategic plan must prioritize vulnerable populations and overburdened communities impacted by contaminated sites and consider the resource allocation factors in subsection (2) of this section. The strategic plan must include:
- (a) Goals and strategies for all core program functions and major initiatives;
- (b) Metrics to track and measure progress in accomplishing the goals and implementing the strategies; and
- (c) Staffing and capital funds needed to accomplish the goals and implement the strategies.
- (2) **Resource allocation.** In fulfilling the objectives of this chapter, Ecology will allocate staffing and capital funds based on the following factors:
- (a) The threats posed by a contaminated site to human health and the environment;
- (b) Whether the population threatened by a contaminated site is a vulnerable population or an overburdened community;
- (c) The land reuse potential and planning for a contaminated site; and
- (d) Other factors specified by the legislature or Ecology.
- (3) **Performance assessment.** Ecology will periodically assess its progress in accomplishing its goals and implementing its strategies for cleaning up contaminated sites, including its progress in cleaning up sites impacting vulnerable populations and overburdened communities, using the metrics established under subsection (1)(b) of this section.
- (4) **Notification.**

- (a) Ecology will make the strategic plans and performance assessments required under subsections (1) and (3) publicly available on Ecology’s website.
- (b) Ecology will provide notice in the *Contaminated Site Register* of the following:
 - (i) Any update to the strategic plans or performance assessments required under subsections (1) and (3) of this section; and
 - (ii) Any additional resource allocation factors specified by Ecology under subsection (2)(d) of this section.

WAC 173-340-350 Remedial investigation~~and feasibility study~~.

- (1) **Purpose.** ~~The purpose of a remedial investigation/feasibility study is to collect, develop, and evaluate sufficient information regarding a site to select a cleanup action under WAC 173-340-360 through 173-340-390.~~ The purpose of a remedial investigation is to adequately characterize a contaminated site, including the distribution of hazardous substances and the threat they pose to human health and the environment, to enable:
- (a) Cleanup standards to be established under Part 7 of this chapter; and
 - (b) Cleanup action alternatives to be developed and evaluated in a feasibility study under WAC 173-340-351.
- (2) **Applicability.**
- (a) **Whether required.** A remedial investigation of a contaminated site must be conducted regardless of which administrative option in WAC 173-340-510 is used to conduct remedial action at the site.
 - (b) **Requirements.** A remedial investigation must comply with the requirements in this section and, as applicable, the following:
 - (i) For sites where there is a release or threatened release to sediment, the requirements in WAC 173-204-550.
 - (ii) For sites on the federal National Priorities List, the applicable requirements under the federal cleanup law.
- ~~(2)(3) **Timing and phasing.** Unless otherwise directed by the department, a remedial investigation/feasibility study shall be completed before selecting a cleanup action under WAC 173-340-360 through 173-340-390, except for an emergency or interim action.~~
- (a) Except as otherwise directed by Ecology, a remedial investigation/feasibility study must be completed before cleanup standards are established and a cleanup action is selected. An emergency remedial action or an interim action may be conducted before a remedial investigation/feasibility study is completed.
 - (b) A remedial investigation/feasibility study may be conducted, or required by Ecology to be conducted, for the entire site or for separate parts of a site, such as a sediment cleanup unit as defined in WAC 173-204-505.
 - (c) A remedial investigation/feasibility study may be conducted, or required by Ecology to be conducted, as a single step or as separate steps in the cleanup process.
 - (d) A remedial investigation may be conducted, or required by Ecology to be conducted, in phases. For example, additional remedial investigation may be necessary to fill data gaps identified in earlier investigations or to determine the applicability of a model remedy at a site.

~~(3)~~**(4) Administrative options and requirements.** A remedial investigation/~~feasibility study~~ may be conducted under any of the ~~procedures~~administrative options for remedial action described in WAC 173-340-510 ~~and 173-340-515~~. Reporting and public participation requirements depend on the administrative option used to conduct remedial action.

(a) Ecology-conducted or Ecology-supervised remedial actions. For an Ecology-conducted or Ecology-supervised remedial investigation, Ecology will provide or require:

- (i)** A remedial investigation work plan that complies with the requirements in subsection (5)(b) of this section and WAC 173-340-840. For Ecology-supervised remedial actions, Ecology may require submittal of a work plan for its review and approval;
- (ii)** A remedial investigation report that complies with the requirements in subsection (5)(g) of this section and WAC 173-340-840. For Ecology-supervised remedial actions, Ecology may require submittal of a report for its review and approval; and
- (iii)** Public notice of a remedial investigation report in accordance with WAC 173-340-600(13).

(b) Independent remedial actions.

- (i)** An independent remedial investigation must be reported to Ecology in accordance with WAC 173-340-515.
- (ii)** Ecology must notify the public of an independent remedial investigation report in accordance with WAC 173-340-600(20).

~~(4) Submittal requirements.~~ ~~For a remedial action conducted by the department or under a decree or order, a report shall be prepared at the completion of the remedial investigation/feasibility study. Additionally, the department may require reports to be submitted for discrete elements of the remedial investigation/feasibility study. Reports prepared under this section and under an order or decree shall be submitted to the department for review and approval. See also subsection (7)(c)(iv) of this section for information on the sampling and analysis plan and the safety and health plan. See WAC 173-340-515(4) for submittal requirements for independent remedial actions.~~

~~(5) Public participation.~~ ~~Public participation will be accomplished in a manner consistent with WAC 173-340-600.~~

~~(6) Scope.~~ ~~The scope of a remedial investigation/feasibility study varies from site to site, depending on the informational and analytical needs of the specific facility. This requires that the process remain flexible and be streamlined when possible to avoid the collection and evaluation of unnecessary information so that the cleanup can proceed in a timely manner. Where information required in subsections (7)(c) and (8)(c) of this section is available in other documents for the site, that information may be incorporated by reference to avoid unnecessary duplication. However, in all cases sufficient information must be collected,~~

~~developed, and evaluated to enable the selection of a cleanup action under WAC 173-340-360 through 173-340-390. In addition, for facilities on the federal national priorities list, a remedial investigation/feasibility study shall comply with federal requirements.~~

~~(7) — Procedures for conducting a remedial investigation.~~

~~(a) — Purpose.~~ The purpose of the remedial investigation is to collect data necessary to adequately characterize the site for the purpose of developing and evaluating cleanup action alternatives. Site characterization may be conducted in one or more phases to focus sampling efforts and increase the efficiency of the remedial investigation. Site characterization activities may be integrated with the development and evaluation of alternatives in the feasibility study, as appropriate.

~~(b) — Scoping activities.~~ To focus the collection of data and to assist the department in making the preliminary evaluation required under the State Environmental Policy Act (see WAC ~~197-11-256~~), the following scoping activities may be taken before conducting a remedial investigation:

~~(i) — Assemble and evaluate existing data on the site, including the results of any interim or emergency actions, initial investigations, site hazard assessments, and other site inspections;~~

~~(ii) — Develop a preliminary conceptual site model as defined in WAC 173-340-200;~~

~~(iii) — Begin to identify likely cleanup levels for the site;~~

~~(iv) — Begin to identify likely cleanup action components that may address the releases at the site;~~

~~(v) — Consider the type, quality and quantity of data necessary to support selection of a cleanup action; and~~

~~(vi) — Begin to identify likely applicable state and federal laws under WAC 173-340-710.~~

~~(c) — Content.~~ A remedial investigation shall include the following information as appropriate:

~~(i) — General facility information.~~ General information, including: Project title; name, address, and phone number of project coordinator; legal description of the facility location; dimensions of the facility; present owner and operator; chronological listing of past owners and operators and operational history; and other pertinent information.

~~(ii) — Site conditions map.~~ An existing site conditions map that illustrates relevant current site features such as property boundaries, proposed facility boundaries, surface topography, surface and subsurface structures, utility lines, well locations, and other pertinent information.

~~(iii) — **Field investigations.** Sufficient investigations to characterize the distribution of hazardous substances present at the site, and threat to human health and the environment. Where applicable to the site, these investigations shall address the following:~~

~~(A) — **Surface water and sediments.** Investigations of surface water and sediments to characterize significant hydrologic features such as: Surface drainage patterns and quantities, areas of erosion and sediment deposition, surface waters, floodplains, and actual or potential hazardous substance migration routes towards and within these features. Sufficient surface water and sediment sampling shall be performed to adequately characterize the areal and vertical distribution and concentrations of hazardous substances. Properties of surface and subsurface sediments that are likely to influence the type and rate of hazardous substance migration, or are likely to affect the ability to implement alternative cleanup actions shall be characterized.~~

~~(B) — **Soils.** Investigations to adequately characterize the areal and vertical distribution and concentrations of hazardous substances in the soil due to the release. Properties of surface and subsurface soils that are likely to influence the type and rate of hazardous substance migration, or which are likely to affect the ability to implement alternative cleanup actions shall be characterized.~~

~~(C) — **Geology and groundwater system characteristics.** Investigations of site geology and hydrogeology to adequately characterize the areal and vertical distribution and concentrations of hazardous substances in the groundwater and those features which affect the fate and transport of these hazardous substances. This shall include, as appropriate, the description, physical properties and distribution of bedrock and unconsolidated materials; groundwater flow rate and gradient for affected and potentially affected groundwaters; groundwater divides; areas of groundwater recharge and discharge; location of public and private production wells; and groundwater quality data.~~

~~(D) — **Air.** An evaluation of air quality impacts, including sampling, where appropriate, and information regarding local and regional climatological characteristics which are likely to affect the hazardous substance migration such as seasonal patterns of rainfall, the magnitude and frequency of significant storm events, temperature extremes, prevailing wind direction, variations in barometric pressure, and wind velocity.~~

- ~~(E) — Land use.~~ Information regarding present and proposed land and resource uses and zoning for the site and potentially affected areas and information characterizing human and ecological populations that are reasonably likely to be exposed or potentially exposed to the release based on such use.
- ~~(F) — Natural resources and ecological receptors.~~
- ~~(I) —~~ Information to determine the impact or potential impact of the hazardous substance from the facility on natural resources and ecological receptors, including any information needed to conduct a terrestrial ecological evaluation, under WAC 173-340-7492 or 173-340-7493, or to establish an exclusion under WAC 173-340-7491.
- ~~(II) —~~ Where appropriate, a terrestrial ecological evaluation may be conducted so as to avoid duplicative studies of soil contamination that will be remediated to address other concerns, such as protection of human health. This may be accomplished by evaluating residual threats to the environment after cleanup action alternatives for human health protection have been developed. If this approach is used, the remedial investigation may be phased. Examples of sites where this approach may not be appropriate include: A site contaminated with a hazardous substance that is primarily an ecological concern and will not obviously be addressed by the cleanup action for the protection of human health, such as zinc; or a site where the development of a human health based remedy is expected to be a lengthy process, and postponing the terrestrial ecological evaluation would cause further harm to the environment.
- ~~(III) —~~ If it is determined that a simplified or site-specific terrestrial ecological evaluation is not required under WAC 173-340-7491, the basis for this determination shall be included in the remedial investigation report.
- ~~(G) — Hazardous substance sources.~~ A description of and sufficient sampling to define the location, quantity, areal and vertical extent, concentration within and sources of releases. Where relevant, information on the physical and chemical characteristics, and the biological effects of hazardous substances shall be provided.
- ~~(H) — Regulatory classifications.~~ Regulatory designations classifying affected air, surface water and groundwater, if any.

~~(iv) — **Workplans.** A safety and health plan and a sampling and analysis plan shall be prepared as part of the remedial investigation/feasibility study. These plans shall conform to the requirements specified in WAC 173-340-810 and 173-340-820.~~

~~(v) — **Other information.** Other information may be required by the department.~~

~~(8) — **Procedures for conducting a feasibility study.**~~

~~(a) — **Purpose.** The purpose of the feasibility study is to develop and evaluate cleanup action alternatives to enable a cleanup action to be selected for the site. If concentrations of hazardous substances do not exceed the cleanup level at a standard point of compliance, no further action is necessary.~~

~~(b) — **Screening of alternatives.** An initial screening of alternatives to reduce the number of alternatives for the final detailed evaluation may be appropriate. The person conducting the feasibility study may initially propose cleanup action alternatives or components to be screened from detailed evaluation. The department shall make the final determination of which alternatives must be evaluated in the feasibility study. The following cleanup action alternatives or components may be eliminated from the feasibility study:~~

~~(i) — Alternatives that, based on a preliminary analysis, the department determines so clearly do not meet the minimum requirements specified in WAC 173-340-360 that a more detailed analysis is unnecessary. This includes those alternatives for which costs are clearly disproportionate under WAC 173-340-360(3)(e); and~~

~~(ii) — Alternatives or components that are not technically possible at the site.~~

~~(c) — **Content.** A feasibility study shall include the following information as appropriate.~~

~~(i) — **General requirements.**~~

~~(A) — The feasibility study shall include cleanup action alternatives that protect human health and the environment (including, as appropriate, aquatic and terrestrial ecological receptors) by eliminating, reducing, or otherwise controlling risks posed through each exposure pathway and migration route.~~

~~(B) — A reasonable number and type of alternatives shall be evaluated, taking into account the characteristics and complexity of the facility, including current site conditions and physical constraints.~~

~~(C) — Each alternative may consist of one or more cleanup action components, including, but not limited to, components that reuse or recycle the hazardous substances, destroy or detoxify the hazardous substances, immobilize or solidify the hazardous substances, provide for on-site or offsite disposal of the hazardous substances in an engineered, lined and monitored facility, on-site isolation or containment of the~~

~~hazardous substances with attendant engineering controls, and institutional controls and monitoring.~~

~~(D) — Alternatives may, as appropriate, include remediation levels to define when particular cleanup action components will be used. Alternatives may also include different remediation levels for the same component. For example, alternatives that excavate and treat soils at varying concentrations may be appropriate to evaluate. See WAC 173-340-355 for detailed information on establishing potential remediation levels to be evaluated in the feasibility study.~~

~~(E) — If necessary, evaluate the residual threats that would accompany each alternative and determine if remedies that are protective of human health will also be protective of ecological receptors. See subsection (7)(c)(iii)(F) of this section.~~

~~(F) — The feasibility study shall include alternatives with the standard point of compliance for each environmental media containing hazardous substances, unless those alternatives have been eliminated under (b) of this subsection, and may include, as appropriate, alternatives with conditional points of compliance.~~

~~(G) — Each alternative shall be evaluated on the basis of the requirements and the criteria specified in WAC 173-340-360.~~

~~(H) — A preferred cleanup action may be identified in the feasibility study, where appropriate.~~

~~(I) — Other information may be required by the department.~~

~~(ii) — **Permanent alternatives.**~~

~~(A) — Except as provided in (c)(ii)(B) of this subsection, the feasibility study shall include at least one permanent cleanup action alternative, as defined in WAC 173-340-200, to serve as a baseline against which other alternatives shall be evaluated for the purpose of determining whether the cleanup action selected is permanent to the maximum extent practicable. The most practicable permanent cleanup action alternative shall be included.~~

~~(B) — The feasibility study does not need to include a permanent cleanup action alternative under any of the following circumstances:~~

~~(I) — Where a model remedy is the selected cleanup action;~~

~~(II) — Where a permanent cleanup action alternative is not technically possible; or~~

~~(III) — Where the cost of the most practicable permanent cleanup action alternative is so clearly disproportionate that a more~~

~~detailed analysis is not necessary, as determined through the screening process in (b)(i) of this subsection.~~

~~(9) — Additional requirements.~~

- ~~(a) — Cleanup levels.~~ Unless otherwise specified under this chapter, cleanup levels shall be established for hazardous substances in each medium and for each pathway where a release has occurred, using WAC 173-340-700 through 173-340-760. These are typically initially established during the scoping of the remedial investigation and may be further refined during the remedial investigation and/or feasibility study.
- ~~(b) — Compliance with other laws.~~ The department may require that a remedial investigation/feasibility study include additional information or analyses to comply with the State Environmental Policy Act or other applicable laws. This includes information necessary to make a threshold determination (see WAC 197-11-335(1)), or information necessary to integrate the remedial investigation/feasibility study with an environmental impact statement (see WAC 197-11-262).
- ~~(c) — Treatability studies.~~ The department may require treatability studies as necessary to provide sufficient information to develop and evaluate cleanup action alternatives for a site.
- ~~(d) — Other information.~~ Other information may be required by the department.

(5) Steps. Except as otherwise directed by Ecology, a remedial investigation must be conducted in accordance with the following steps.

- (a) Step 1: Identify scope. Identify the scope of the remedial investigation. The scope depends on many factors, including the nature and extent of contamination, the exposure pathways of concern, the human and ecological receptors potentially impacted by the contamination, the characteristics of the site, the type of cleanup action alternatives likely to be evaluated, and information previously obtained about the site. To determine the scope, do the following:
 - (i) Identify what information is needed about the site to comply with the requirements in (c) of this subsection and chapter 197-11 WAC, the State Environmental Policy Act rules (see WAC 197-11-250);
 - (ii) Assemble and evaluate relevant information collected during any prior remedial actions at the site, such as an initial investigation or an interim action. Previously collected information may be relied upon in the investigation to avoid duplication; and
 - (iii) Identify what additional information needs to be collected during the investigation.
- (b) Step 2: Develop work plan. Develop a remedial investigation work plan to collect and evaluate the information identified in Step 1. If required by Ecology under subsection (4)(a)(i) of this section, submit the work plan for Ecology's review and approval.

- (i) **Content.** Except as otherwise directed by Ecology, include the following in the work plan:

 - (A) The scope of the investigation identified in Step 1, including a summary of available information about the site and data gaps needing to be addressed by the investigation;
 - (B) A preliminary conceptual site model, as defined in WAC 173-340-200;
 - (C) A target concentration for each hazardous substance in each contaminated environmental medium identified in the preliminary conceptual site model under (b)(i)(B) of this subsection;
 - (D) A sampling and analysis plan meeting the requirements in WAC 173-340-820, including the analytical methods that enable detection of the target concentrations identified in (b)(i)(C) of this subsection;
 - (E) A health and safety plan meeting the requirements in WAC 173-340-810;
 - (F) An inadvertent discovery plan meetings the requirements in WAC 173-340-815;
 - (G) Cleanup action alternatives likely to be considered in the feasibility study, based on available information;
 - (H) Any studies needed to develop or evaluate cleanup action alternatives in the feasibility study, such as treatability or pilot studies;
 - (I) A proposed schedule for completing the remedial investigation/feasibility study and, if required, submittal of a report for Ecology review and approval; and
 - (J) Any other information required by Ecology.
- (ii) **Flexibility.** The work plan should remain flexible and be streamlined when possible to avoid collection and evaluation of unnecessary information. While it may be appropriate to phase investigations at some sites, Ecology encourages expedited investigations. For example, using field screening methods to guide investigations and fast turnaround laboratory analyses to provide real-time feedback may be appropriate at some sites. However, in all cases, sufficient information must be collected and evaluated to meet the purposes in subsection (1) of this section.
- (c) **Step 3: Conduct investigation.** Conduct the remedial investigation in accordance with the work plan developed in Step 2.
- (d) **Step 4: Complete conceptual site model.** Based on the results of the remedial investigation conducted in Step 3 and any previously obtained information about the

site, complete the development of a conceptual site model, as defined in WAC 173-340-200.

- (e) Step 5: Develop proposed cleanup levels.** Based on the conceptual site model completed in Step 4, develop a proposed cleanup level for each hazardous substance within each affected environmental medium at the site in accordance with Part 7 of this chapter.
- (f) Step 6: Determine whether feasibility study is necessary.** Based on the results of the remedial investigation conducted in Step 3 and any previously obtained information about the site, determine whether a feasibility study is necessary under WAC 173-340-351(2)(a), including:

 - (i)** Whether prior remedial actions conducted at the site constitute a permanent cleanup action; and
 - (ii)** Whether a model remedy may be used as a cleanup action or a cleanup action component at the site.
- (g) Step 7: Report results.** Report the results of the remedial investigation in accordance with subsection (4) of this section. Include the following information in the report:

 - (i)** General information about the site, including:

 - (A)** Project title;
 - (B)** Name, address, and phone number of project coordinator;
 - (C)** Legal description and dimensions of the site;
 - (D)** Current owners and operators; and
 - (E)** Chronological listing of past owners and operators and operational history;
 - (ii)** Maps, figures, or diagrams illustrating relevant existing and historic site features, including:

 - (A)** Sources of releases;
 - (B)** Property boundaries;
 - (C)** Proposed site boundaries, as defined by where hazardous substances exceed the proposed cleanup levels identified in (d)(iv) of this subsection;
 - (D)** Surface topography;
 - (E)** Surface and subsurface structures;
 - (F)** Surface water, wetlands, and undeveloped areas; and
 - (G)** Utility lines and well locations;

- (iii) The conceptual site model completed in Step 4;
 - (iv) The proposed cleanup levels developed in Step 5, including:
 - (A) The basis for the proposed cleanup levels; and
 - (B) Any regulatory classifications for, or laws applicable to, each environmental medium (see WAC 173-340-710);
 - (v) A comparison of the proposed cleanup levels developed in Step 5 to the hazardous substance concentrations in each environmental medium;
 - (vi) If a feasibility study is determined in Step 6 not to be necessary under subsection (7)(b) of this section, sufficient documentation to demonstrate the basis of the determination;
 - (vii) The information collected in Step 3, and any information obtained from prior remedial actions relied on during the investigation. Previously obtained information may be summarized and referenced to avoid unnecessary duplication;
 - (viii) Documentation of the proper management and disposal of any waste materials generated as a result of the remedial investigations in accordance with applicable state and federal laws; and
 - (viii) Any other information required by Ecology.
 - (6) **Investigations.** A remedial investigation must collect and evaluate sufficient information about a site and the surrounding area to meet the purposes in subsection (1) of this section, including the following as applicable to the site.
 - (a) **Hazardous substance sources.** Confirmed and suspected releases must be investigated to define the location, quantity, areal and vertical extent, concentration within, and sources of hazardous substances. Where relevant, information on the physical and chemical characteristics and the biological effects of hazardous substances must be collected.
 - (b) **Soils.** Soils must be investigated to adequately characterize:
 - (i) The areal and vertical distribution and concentrations of hazardous substances in soils; and
 - (ii) The properties of surface and subsurface soils that are likely to influence the type and rate of hazardous substance migration or to affect the ability to implement cleanup action alternatives.
 - (c) **Groundwater, geology, and hydrogeology.** Groundwater and the geology and hydrogeology must be investigated to adequately characterize:
 - (i) The areal and vertical distribution and concentrations of hazardous substances in the groundwater;

- (ii) The geologic features affecting the fate and transport of hazardous substances, such as the type, physical properties (such as permeability, density, and fracture characteristics), and distribution of bedrock and unconsolidated materials;
 - (iii) The hydrogeological features affecting the fate and transport of hazardous substances, such as:
 - (A) Groundwater flow direction, rate, and vertical and horizontal gradients for affected and potentially affected groundwater;
 - (B) Groundwater divides;
 - (C) Areas of groundwater recharge and discharge;
 - (D) Areas where groundwater interfaces with surface water;
 - (E) Location of public and private water supply wells; and
 - (F) Groundwater quality data; and
 - (iv) The geologic and hydrogeologic features that are likely to affect the ability to implement cleanup action alternatives.
 - (d) **Surface water, sediments, and hydrology.** Surface water, sediments, and the hydrology must be investigated to adequately characterize:
 - (i) The areal and vertical distribution and concentrations of hazardous substances in surface water and sediments;
 - (ii) Significant hydrologic features, such as:
 - (A) Surface drainage patterns and quantities;
 - (B) Areas of erosion and sediment deposition, including estimates of sedimentation rates;
 - (C) Surface waters, including flow rates;
 - (D) Floodplains; and
 - (E) Actual or potential hazardous substance migration routes towards and within these features; and
 - (iii) The properties of surface and subsurface sediments that are likely to affect the type and rate of hazardous substance migration, the potential for recontamination, or the ability to implement cleanup action alternatives.
 - (e) **Air and soil vapor.** The air and soil vapor must be evaluated and, where appropriate, sampled to adequately characterize the potential impacts of vapor migration on subsurface soil gas, on air quality within current and future buildings or other structures, and on outdoor ambient air. Based on contaminant concentrations in soil gas or groundwater, Ecology may require expedited sampling of indoor air quality to assess the

threat to human health. If the measured indoor air concentrations are higher than applicable cleanup levels, Ecology may require an emergency action or an interim action to mitigate the threat to human health.

- (f) Climate.** Sufficient information, based on best available science, must be collected on current and projected local and regional climatological characteristics to determine which could affect the migration of hazardous substances or the resilience of cleanup action alternatives. Relevant characteristics can include temperature extremes, sea level, seasonal patterns of rainfall, the magnitude and frequency of extreme storm events (such as flooding), the potential for landslides, prevailing wind direction and velocity, variations in barometric pressure, and the potential for wildfires.
- (g) Land and resource use.** Sufficient information must be collected on the present and proposed land and resource uses, comprehensive plan, and zoning for the site and potentially affected areas to determine the exposure or potential exposure of human and ecological receptors, including vulnerable populations and overburdened communities, to hazardous substances at the site.
- (h) Human receptors.** Sufficient information must be collected on human receptors, including vulnerable populations and overburdened communities, that are reasonably likely to be exposed or potentially exposed to hazardous substances based on the land and resource uses identified in (g) of this subsection to determine the impact or potential impact of such exposure.
- (i) Natural resources and ecological receptors.** Sufficient information must be collected on natural resources and ecological receptors that are reasonably likely to be exposed or potentially exposed to hazardous substances based on the land and resource uses identified in (g) of this subsection to determine the impact or potential impact of such exposure. This includes any information needed to conduct a sediment evaluation under chapter 173-204 WAC and any information needed to conduct a terrestrial ecological evaluation or establish an exclusion under WAC 173-340-7490 through 173-340-7494.
- (i)** Where appropriate, a terrestrial ecological evaluation may be conducted so as to avoid duplicative studies of soil contamination that will be remediated to address other concerns, such as protection of human health or aquatic ecological receptors. This may be accomplished by evaluating residual threats to the environment after cleanup action alternatives for human health or aquatic ecological protection have been developed. If this approach is used, the remedial investigation may be phased. This approach may not be appropriate at a site where a hazardous substance is primarily an ecological concern and will not obviously be addressed by the cleanup action for the protection of human health, such as zinc; or at a site where the development of a human health based cleanup action is expected to be a lengthy process, and postponing the terrestrial ecological evaluation would cause further harm to the environment.

- (ii) If a simplified or site-specific terrestrial ecological evaluation is not required under WAC 173-340-7491, the basis for the determination must be included in the remedial investigation report.
- (j) **Feasibility of cleanup action alternatives.** Sufficient information must be collected to develop and evaluate cleanup action alternatives in the feasibility study under WAC 173-340-351, such as treatability or pilot studies.
- (k) **Applicability of model remedies.** Sufficient information must be collected to determine whether a model remedy established by Ecology may be used as a cleanup action or a cleanup action component at the site under WAC 173-340-390.

WAC 173-340-351 Feasibility study.

- (1) Purpose.** The purpose of the feasibility study is to develop and evaluate cleanup action alternatives to enable the selection of a cleanup action that meets the requirements in WAC 173-340-360 and conforms, as appropriate, to the expectations in WAC 173-340-370.
- (2) Applicability.**

 - (a) Whether required.** A feasibility study of cleanup action alternatives must be conducted, regardless of which administrative option in WAC 173-340-510 is used to conduct remedial action, except in the following circumstances.

 - (i) Permanent cleanup action completed.** A feasibility study is not required if prior remedial actions at the site constitute a permanent cleanup action and meet the criteria in WAC 173-340-330(5)(b)(i). To qualify for this exemption, sufficient information must be collected and reported to Ecology to demonstrate that the site meets the criteria (see WAC 173-340-350(5)(f) and (5)(g)(v)).
 - (ii) Model remedy selected.** A feasibility study is not required to select a model remedy as the cleanup action or as a component of the cleanup action for a site (see WAC 173-340-390). However, a feasibility study is still required to select any remaining cleanup action components for the site. To qualify for this exemption or partial exemption, sufficient information must be collected and reported to Ecology to demonstrate that the site meets the conditions established by Ecology for using the model remedy (see WAC 173-340-350(6)(k), (5)(f), and (5)(g)(v)).
 - (b) Requirements.** A feasibility study must comply with the requirements in this section and, as applicable, the following:

 - (i)** For sites where there is a release or threatened release to sediment, the requirements in WAC 173-204-550; and
 - (ii)** For sites on the federal National Priorities List, the applicable requirements under the federal cleanup law.
- (3) Timing and phasing.**

 - (a)** Except as otherwise directed by Ecology, a remedial investigation/feasibility study must be completed before cleanup standards are established and a cleanup action is selected. An emergency remedial action or an interim action may be conducted before a remedial investigation/feasibility study is completed.
 - (b)** A remedial investigation/feasibility study may be conducted, or required by Ecology to be conducted, for the entire site or for separate parts of a site, such as a sediment cleanup unit as defined in WAC 173-204-505.

- (c) A remedial investigation/feasibility study may be conducted, or required by Ecology to be conducted, as a single step or as separate steps in the cleanup process.
 - (d) A feasibility study may be conducted, or required by Ecology to be conducted, in phases. For example, additional study may be necessary to evaluate the feasibility of a cleanup action alternative.
 - (4) Administrative options and requirements.** A feasibility study may be conducted under any of the administrative options for remedial action described in WAC 173-340-510. Reporting and public participation requirements depend on the administrative option used to conduct remedial action.
 - (a) Ecology-conducted or Ecology-supervised remedial actions.** For an Ecology-conducted or Ecology-supervised feasibility study, Ecology will provide or require:
 - (i) A feasibility study report that complies with the requirements in subsection (6)(f) of this section and WAC 173-340-840. For Ecology-supervised remedial actions, Ecology may require submittal of a report for its review and approval; and
 - (ii) Public notice of a feasibility study report in accordance with WAC 173-340-600(13).
 - (b) Independent remedial actions.** An independent feasibility study must be reported to Ecology in accordance with WAC 173-340-515.
- (5) Scope.** A feasibility study must adequately evaluate a reasonable number and type of cleanup action alternatives to meet the purposes in subsection (1) of this section.
 - (a)** The scope of the study depends on many factors, including the nature and extent of contamination, the exposure pathways of concern, the human and ecological receptors potentially impacted by the contamination, the characteristics of the site, the type of cleanup action alternatives being evaluated, and any previous evaluations of cleanup action alternatives.
 - (b)** The study may rely on previously collected information about the site and previous evaluations of cleanup action alternatives, such as treatability or pilot studies. Such information may be summarized and incorporated by reference in the feasibility study report to avoid unnecessary duplication.
- (6) Steps.** Except as otherwise directed by Ecology, a feasibility study of cleanup action alternatives must be conducted in accordance with the following steps. The study should remain flexible to avoid collecting unnecessary information or conducting unnecessary evaluations.
 - (a) Step 1: Identify cleanup goals.** Identify the goals for the cleanup action, in addition to compliance with the requirements in WAC 173-340-360.

- (b) Step 2: Identify alternatives.** Identify cleanup action alternatives for evaluation in the study. The alternatives must achieve the goals identified in Step 1 and comply with the requirements in WAC 173-340-360. Include:

 - (i)** A reasonable number and type of alternatives, taking into account:

 - (A)** The characteristics and complexity of the site, including current site conditions and physical constraints; and
 - (B)** The threats posed by the site to human health and the environment, including vulnerable populations and overburdened communities;
 - (ii)** At least one permanent cleanup action alternative;
 - (iii)** For each environmental medium, at least one alternative with a standard point of compliance (see Part 7 of this chapter);
 - (iv)** As appropriate, alternatives with a conditional point of compliance for one or more environmental media (see Part 7 of this chapter); and
 - (v)** As appropriate, alternatives relying on a combination of cleanup action components for an environmental medium (such as treatment of some soil contamination and containment of the remainder). The alternatives must specify remediation levels for each component (see WAC 173-340-355).
- (c) Step 3: Screen alternatives and components.** Based on a preliminary analysis, eliminate from further evaluation the following cleanup action alternatives or components identified in Step 2:

 - (i)** Alternatives that clearly do not meet the requirements for a cleanup action in WAC 173-340-360, including alternatives for which costs are clearly disproportionate to benefits under WAC 173-340-360(5);
 - (ii)** Alternatives or components that are not technically possible at the site.
- (d) Step 4: Evaluate remaining alternatives.** Conduct a detailed evaluation of each remaining cleanup action alternative to determine whether it meets the requirements in WAC 173-340-360 and conforms to the expectations in WAC 173-340-370. If necessary, conduct additional remedial investigations under WAC 173-340-350 to complete the evaluation, including any investigations needed to complete a terrestrial ecological evaluation;
- (e) Step 5: Select preferred alternative.** Based on the detailed evaluation in Step 4, select a preferred cleanup action alternative that meets the requirements in WAC 173-340-360 and conforms, as appropriate, to the expectations in WAC 173-340-370.
- (f) Step 6: Report results.** Report the results of the feasibility study in accordance with subsection (4) of this section. Include the following information in the report:

- (i) If the remedial investigation report is not combined with the feasibility study report, a summary of remedial investigation results, including:
 - (A) The conceptual site model used to develop and evaluate cleanup action alternatives;
 - (B) The proposed cleanup level for each hazardous substance within each affected environmental medium at the site, and the basis for the cleanup level; and
 - (C) Maps, cross-sections, and calculations illustrating the location, estimated amount, and concentration distribution of hazardous substances above the proposed cleanup levels for each affected environmental medium at the site;
- (ii) Results of any additional investigations conducted after completing the remedial investigation report;
- (iii) Results of any treatability or pilot studies needed to develop or evaluate cleanup action alternatives;
- (iv) The cleanup goals identified in Step 1 of the feasibility study;
- (v) The cleanup action alternatives identified in Step 2 of the feasibility study. For each alternative, include:
 - (A) The cleanup action components relied on to clean up each affected environmental medium;
 - (B) For alternatives relying on a combination of cleanup action components to clean up an environmental medium, the proposed remediation levels and the basis for those levels;
 - (C) The proposed point of compliance for each hazardous substance within each affected environmental medium at the site, and the basis for any conditional points of compliance (see Part 7 of this chapter);
 - (D) The location and estimated amount of each hazardous substance to be removed or treated by the alternative and the estimated time frame in which removal or treatment will occur; and
 - (E) The location, estimated amount, and projected concentration distribution of each hazardous substance remaining above proposed cleanup levels after implementing the alternative;
- (vi) The cleanup action alternatives eliminated from further evaluation during the screening process in Step 3 of the feasibility study, and the basis for elimination;
- (vii) Documentation of the detailed evaluation process in Step 4 of the feasibility study, including how impacts on vulnerable populations and overburdened

communities were considered in the evaluation, and the basis for eliminating any alternative from further evaluation;

(viii) The preferred cleanup action alternative selected in Step 5 of the feasibility study, including:

(A) The basis for selecting the alternative and for any non-conformance to the expectations in WAC 173-340-370;

(B) Any local, state, or federal laws applicable to the alternative, including any known permits or approval conditions (see WAC 173-340-710);

(C) As appropriate, proposed indicator hazardous substances for the alternative (see WAC 173-340-703); and

(D) Sufficient information about the alternative to enable Ecology to conduct the evaluations and make the determinations required under chapter 43.21C RCW, the State Environmental Policy Act, and chapter 197-11 WAC, the State Environmental Policy Act Rules;

(ix) Documentation of the proper management and disposal of any waste materials generated as a result of the feasibility study in accordance with applicable state and federal laws; and

(x) Any other information required by Ecology.

WAC 173-340-355 Development of cleanup action alternatives that include remediation levels.

- (1) Purpose.** A cleanup action ~~selected for a site will~~ often ~~involve~~ relies on a combination of cleanup action components to remediate an environmental medium. ~~, such as~~ For example, to remediate soil, a cleanup action may rely on treatment of some soil contamination and containment of the remainder. The purpose of a remediation level is to specify when the various components are used as part of a cleanup action. ~~Remediation levels are used to identify the concentrations (or other methods of identification) of hazardous substances at which different cleanup action components will be used. (See the definition of remediation level in WAC 173-340-200.) Remediation levels may be used at sites where a combination of cleanup actions components are used to achieve cleanup levels at the point of compliance (see the examples in subsection (3)(a) and (c) of this section). Remediation levels may also be used at sites where the cleanup action involves the containment of soils as provided under WAC 173-340-740(6)(f) and at sites conducting interim actions (see the examples in subsection (3)(b) and (d) of this section).~~
- (2) Applicability.** Remediation levels must be established as part of a cleanup action if the cleanup action relies on a combination of cleanup action components to remediate an environmental medium.
- (3) Types.** Remediation levels may be based on a concentration (e.g., all soil above concentration X will be treated), or other method of identification, such as the physical appearance or location of the contamination (e.g., all of the green sludge will be removed from the northwest quadrant of the site).
- (4) Development.** Remediation levels must be developed and evaluated as part of a cleanup action alternative during the feasibility study conducted under WAC 173-340-351. Quantitative or qualitative methods may be used to develop remediation levels. The methods may include a human health or ecological risk assessment. The methods may also consider fate and transport issues. The methods may be simple or complex, as appropriate to the site. Where a quantitative risk assessment is used, see WAC 173-340-357.
- ~~(2)~~(5) Relationship to cleanup levels and cleanup standards.** Remediation levels are not the same as cleanup levels or cleanup standards.

 - (a)** A cleanup level defines the concentration of a hazardous substances above which a contaminated environmental medium (e.g., such as soil) must be remediated in some manner (e.g., such as treatment, containment, or institutional controls). A remediation level, on the other hand, defines the concentration (or other method of identification) of a hazardous substance in a particular an environmental medium ~~above or below at~~ which a particular cleanup action component (e.g., such as soil treatment ~~versus~~ or containment) will be used. Remediation levels, by definition, exceed cleanup levels.
 - (b)** Cleanup levels must be established for every site. Remediation levels, on the other hand, may not be necessary at a site. Whether remediation levels are necessary depends on the cleanup action selected. For example, remediation levels would not be necessary if the selected cleanup action removes for offsite disposal all soil that exceeds

~~the cleanup level at the applicable points of compliance~~ must be established only if a cleanup action relies on a combination of cleanup action components to remediate an environmental medium.

- (c) ~~A~~ Cleanup actions, including those that relying on uses remediation levels a combination of cleanup action components to remediate an environmental medium, must meet each of the ~~minimum~~ requirements ~~specified~~ in WAC 173-340-360, including ~~the requirement that all cleanup actions must comply~~ compliance with cleanup standards. ~~Compliance with cleanup standards requires, in part, that cleanup levels are met at the applicable points of compliance. If the~~ a remedial action does not comply with cleanup standards, the remedial action is an interim action, not a cleanup action. ~~Where a cleanup action involves containment of soils with hazardous substance concentrations exceeding cleanup levels at the point of compliance, the cleanup action may be determined to comply with cleanup standards, provided the requirements specified in WAC 173-340-740 (6)(f) are met.~~

- ~~(3)~~(6) **Examples.** The following examples of cleanup actions that use remediation levels are for illustrative purposes only. All cleanup action alternatives in a feasibility study, including those ~~with proposed~~ using remediation levels, must be evaluated to determine whether they meet each of the ~~minimum~~ requirements ~~specified~~ in WAC 173-340-360 ~~(see WAC 173-340-360 (2)(h)). This evaluation requires, in part, a determination that a more permanent cleanup action is not practicable, based on the disproportionate cost analysis in WAC 173-340-360 (3)(e).~~

- (a) **Example of a site meeting soil cleanup levels at the point of compliance.** Assume ~~that~~ the soil cleanup level for a hazardous substance at a site is 20 ppm. This means any soil exceeding 20 ppm at the applicable point of compliance must be remediated. Further assume ~~that~~ the cleanup action ~~alternative determined to comply with the minimum requirements in WAC 173-340-360 and selected for the site~~ consists of soil treatment treating soil above 100 ppm and removal removing to an offsite landfill soil between 100 and 20 ppm and a remediation level of 100 ppm to define when those two components are used. In this case, 100 ppm is a remediation level that defines which soil will be treated and which soil will be removed from the site. ~~Under the cleanup standard, any soil that exceeds the 20 ppm cleanup level at the applicable point of compliance must be remediated in some manner. Under the selected cleanup action, any soil that exceeds the 100 ppm remediation level must be removed and treated. Any soil that does not exceed the 100 ppm remediation level, but exceeds the 20 ppm cleanup level, must be removed and landfilled.~~ The cleanup action may be determined to comply with the cleanup standard because the 20 ppm soil cleanup level is met at the applicable point of compliance.

- (b) **Example of a site not meeting soil cleanup levels at the point of compliance.** Assume ~~that~~ the soil cleanup level for a hazardous substance at a site is 20 ppm. This means any soil exceeding 20 ppm at the applicable point of compliance must be remediated. Further assume ~~that~~ the cleanup action ~~alternative determined to comply with the minimum requirements in WAC 173-340-360 and selected for the site~~ consists of soil treatment treating soil above 100 ppm and containment and a remediation level of 100

~~ppm to define when those two components are used~~ containing soil between 100 and 20 ppm. The 100 ppm concentration is a remediation level that defines which soil will be treated and which soil will be contained at the site. Under the cleanup standard, any soil that exceeds the 20 ppm cleanup level at the applicable point of compliance must be remediated in some manner. Under the selected cleanup action, any soil that exceeds the 100 ppm remediation level must be treated. Any soil that does not exceed the 100 ppm remediation level, but exceeds the 20 ppm cleanup level, must be contained. Residual contamination above the cleanup level will remain at the site. However, assuming Even though contamination above the 20 ppm cleanup level remains at the site, if the cleanup action meets the requirements specified in WAC 173-340-740(6)(f) for soil containment actions, the cleanup action may be determined to comply with cleanup standards.

(c) Example of site meeting groundwater cleanup levels at the point of compliance.

Assume ~~that~~ the groundwater cleanup level for a hazardous substance at a site is 500 ug/l and ~~that~~ a conditional point of compliance is established at the property boundary. This means any groundwater exceeding 500 ug/l at the point of compliance must be remediated. Further assume ~~that~~ the cleanup action ~~alternative determined to comply with the minimum requirements in WAC 173-340-360 and selected for the site~~ consists of: Removing the source of the groundwater contamination (e.g., ~~removal of~~ removing a leaking tank and associated soil contamination above the water table); extracting free product and any groundwater exceeding a concentration of 2,000 ug/l; and utilizing natural attenuation to restore the groundwater to 500 ug/l before it arrives at the property boundary. The ~~groundwater concentration of 2,000 ug/l~~ concentration constitutes is a remediation level ~~because it that~~ defines the concentration of a hazardous substance at which different cleanup action components are used which groundwater will be actively treated and which groundwater will be naturally attenuated at the site. As long as the groundwater meets the 500 ug/l cleanup level at the conditional point of compliance ~~(the property boundary)~~, the cleanup action may be determined to comply with cleanup standards.

(d) Example of a site not meeting groundwater cleanup levels at the point of compliance.

Assume ~~that~~ the groundwater cleanup level at a site is 5 ug/l and ~~that~~ a conditional point of compliance is established at the property boundary. This means any groundwater exceeding 5 ug/l at the point of compliance must be remediated. Further assume ~~that~~ the remedial action selected for the site consists of: Vapor extraction of the soil to nondetectable concentrations (to prevent further groundwater contamination); extraction and treatment of groundwater with concentrations in excess of 100 ug/l; and installation of an air stripping system to treat groundwater at a water supply well beyond the property boundary to less than 5 ug/l. Further assume ~~that~~ the groundwater cleanup level will not be met at the conditional point of compliance (the property boundary). The ~~groundwater~~ concentration of 100 ug/l constitutes is a remediation level ~~because it that~~ defines the concentration of a hazardous substance at which different cleanup action components are used which groundwater will be treated on site. ~~However, in this example, the remedial action does not constitute a cleanup~~

~~action because it does not comply with cleanup standards, one of the minimum requirements for cleanup actions in WAC 173-340-360. Consequently, the~~In this example, the remedial action is ~~considered~~ an interim action, ~~not a cleanup action, until because it does not comply with cleanup standards (that is, it does not achieve the 5 ug/l cleanup level is attained at the conditional point of compliance (the property boundary)).~~

- ~~(4) —~~ **General requirements.** Potential remediation levels may be developed as part of the cleanup action alternatives to be considered during the feasibility study (see WAC ~~173-340-350~~ (8)(c)(i)(D)). These potential remediation levels may be defined as either a concentration or other method of identification of a hazardous substance. Other methods of identification include physical appearance or location (e.g., all of the green sludge will be removed from the northern area of the site). Quantitative or qualitative methods may be used to develop these potential remediation levels. These methods may include a human health risk assessment or an ecological risk assessment. These methods may also consider fate and transport issues. These methods may be simple or complex, as appropriate to the site. Where a quantitative risk assessment is used, see WAC ~~173-340-357~~. All cleanup action alternatives in a feasibility study, including those with proposed remediation levels, must still be evaluated to determine whether they meet each of the minimum requirements specified in WAC ~~173-340-360~~ (see WAC ~~173-340-360(2)(h)~~).

WAC 173-340-357 Quantitative risk assessment of cleanup action alternatives.

- (1) **Purpose.** A cleanup action must protect human health and the environment, including vulnerable populations and overburdened communities (see WAC 173-340-360(3)(a)(i)). A quantitative site-specific risk assessment may be used to help determine whether cleanup action alternatives, including those using/relaying on a remediation level, engineered ~~control and/or~~ institutional controls to limit exposure to contamination remaining at a site, ~~are protective of~~ protect human health and the environment. ~~If a quantitative site-specific risk assessment is used, then other considerations may also be needed in evaluating the protectiveness of the overall cleanup action. Methods other than a quantitative site-specific risk assessment~~ Other methods may ~~also~~ be used in addition to, or instead of, a quantitative site-specific risk assessment to determine if/whether a cleanup action alternative is ~~protective of~~ human health and the environment.
- ~~(2) **Relationship to selection of cleanup actions.** Selecting a cleanup action requires a determination that each of the requirements specified in WAC 173-340-360 is met, including the requirement that the cleanup action is protective of human health and the environment. A quantitative risk assessment conducted under this section may be used to help determine whether a particular cleanup action alternative meets this requirement. A determination that a cleanup action alternative evaluated is protective of human health and the environment does not mean that the other minimum requirements specified in WAC 173-340-360 have been met.~~
- ~~(3)~~(2) **Protection of hHuman health risk assessment.** A quantitative site-specific human health risk assessment may be used to help determine whether cleanup action alternatives, including those using/relaying on a remediation level, engineered ~~control and/or~~ institutional controls to limit exposure, ~~are protective of~~ protect human health. This subsection defines the framework for assessing cleanup action alternatives relying on engineered or institutional controls to limit exposure. ~~For the purpose of this assessment, the default assumptions in the standard Method B and C equations in WAC 173-340-720 through 173-340-750 may be modified as provided for under modified Method B and C. In addition to those modifications, adjustments to the reasonable maximum exposure scenario or default exposure assumptions may also be made. See WAC 173-340-708(3)(d) and (10)(b).~~ References to Method C in this subsection apply to an environmental medium only if the ~~particular~~ medium for which the a remediation level is being established ~~for~~ qualifies for a Method C cleanup level under WAC 173-340-706.
- (a) **Reasonable maximum exposure.** Standard reasonable maximum exposures and corresponding Method B and C equations in WAC 173-340-720 through 173-340-750 may be modified as provided under WAC 173-340-708(3)(d). For example, land uses other than residential and industrial may be used as the basis for an alternative reasonable maximum exposure scenario for the purpose of assessing the protectiveness of a cleanup action alternative that uses/relies on a remediation level, engineered ~~control, and/or~~ institutional controls (such as containment) to limit exposure to contaminated soil.

- (b) **Exposure parameters.** Exposure parameters for the standard Method B and C equations in WAC 173-340-720 through 173-340-750 may be modified as provided in WAC 173-340-708(10).
- (c) **Acceptable risk level.** The acceptable risk level ~~for~~used to establish a remediation levels ~~for a hazardous substance shall~~must be the same as that used ~~for to establish~~ the cleanup level for the substance.
- (d) **Soil to groundwater pathway.** The methods specified in WAC 173-340-747 to develop soil concentrations that are protective of groundwater beneficial uses may also be used ~~during remedy selection~~ to help assess ~~whether the protectiveness to human health of a~~ cleanup action alternative that ~~uses a remediation level, relies on~~ engineered ~~control, and/or~~ institutional controls (such as soil containment) will protect groundwater.
- (e) **Burden of proof, new science, and quality of information.** Any modification of the default assumptions in the standard Method B and C equations, including modification of the standard reasonable maximum exposures and exposure parameters, or any modification of default assumptions or methods specified in WAC 173-340-747 requires compliance with WAC 173-340-702(14), (15) and (16).
- (f) **Commercial gas station scenario.** At active commercial gas stations, where there are retail sales of gasoline or diesel, one of the following may be done to demonstrate when a cap is protective of the soil ingestion and dermal pathways:
 - (i) ~~At active commercial gas stations, where there are retail sales of gasoline and/or diesel,~~ Equations 740-3 and 740-5 may be ~~used with~~modified by reducing the exposure frequency ~~reduced to 0.25 to demonstrate when a cap is protective of the soil ingestion and dermal pathways.~~ This ~~scenario~~exposure frequency is intended to be a conservative estimate of a child trespasser scenario at a commercial gas station where contaminated soil has been excavated and stockpiled or soil is otherwise accessible. To rely on this exposure frequency: ~~Sites using remediation levels~~
 - (A) The cleanup action must ~~also use~~include institutional controls ~~to that~~ prevent uses that could result in a higher level of exposure; and
 - (B) ~~assess the protectiveness for o~~Other exposure pathways (e.g., soil vapors and soil to groundwater) must be assessed to determine whether they are protective; or
 - (ii) Equations 740-3 and 740-5 may ~~also~~ be modified on a site-specific basis as described in WAC 173-340-740(3)(c).
- ~~(4)(3)~~ **Protection of the environment**Ecological risk assessment. A quantitative site-specific ecological risk assessment may be ~~conducted~~used to help determine whether cleanup action alternatives, including those ~~using~~relying on a remediation level, engineered ~~control and/or~~ institutional controls to limit exposure, ~~are protective of~~protect the environment.

WAC 173-340-360 ~~Selection of e~~**Cleanup actions** requirements.

- (1) **Purpose.** ~~This section describes the minimum requirements and procedures for selecting cleanup actions. This section is intended to be used in conjunction with the administrative principles for the overall cleanup process in WAC 173-340-130; the requirements and procedures in WAC 173-340-350 through 173-340-357 and WAC 173-340-370 through 173-340-390; and the cleanup standards defined in WAC 173-340-700 through 173-340-760. This section specifies requirements for cleanup actions and the procedures for determining whether a cleanup action alternative meets those requirements.~~
- (2) **Applicability.** A cleanup action at a contaminated site must comply with the requirements in this section, regardless of which administrative option in WAC 173-340-510 is used to conduct remedial action at the site.
- (a) **Sediment sites and sediment cleanup units.** For sites where there is a release or threatened release to sediment, a cleanup action must also comply with the requirements in WAC 173-204-570.
- (b) **National Priority List sites.** For sites on the federal National Priorities List, a cleanup action must also comply with applicable requirements under the federal cleanup law.
- ~~(2)(3)~~ **Minimum r**Requirements for cleanup actions. ~~All~~A ~~cleanup actions shall~~must meet all of the following requirements in this subsection. ~~Because~~When a ~~cleanup actions will often involve the use of several~~includes more than one ~~cleanup action components at a single site,~~ the overall cleanup action ~~shall~~must ~~meet the requirements of this section.~~ The department Ecology recognizes that some of the requirements contain flexibility and will require the use of professional judgment in determining how to apply them at a particular sites.
- ~~(a)~~ **Threshold requirements.** ~~The cleanup action shall:~~
- ~~(i)~~ Protect human health and the environment;
- ~~(ii)~~ Comply with cleanup standards (see WAC 173-340-700 through 173-340-760);
- ~~(iii)~~ Comply with applicable state and federal laws (see WAC 173-340-710); and
- ~~(iv)~~ Provide for compliance monitoring (see WAC 173-340-410 and 173-340-720 through 173-340-760).
- ~~(b)~~ **Other requirements.** ~~When selecting from cleanup action alternatives that fulfill the threshold requirements, the selected action shall:~~
- ~~(i)~~ Use permanent solutions to the maximum extent practicable (see subsection (3) of this section);
- ~~(ii)~~ Provide for a reasonable restoration time frame (see subsection (4) of this section); and
- ~~(iii)~~ Consider public concerns (see WAC 173-340-600).
- ~~(c)~~ **Groundwater cleanup actions.**

- ~~(i) — Permanent groundwater cleanup actions. A permanent cleanup action shall be used to achieve the cleanup levels for groundwater in WAC 173-340-720 at the standard point(s) of compliance (see WAC 173-340-720(8)) where a permanent cleanup action is practicable or determined by the department to be in the public interest.~~
- ~~(ii) — Nonpermanent groundwater cleanup actions. Where a permanent cleanup action is not required under (c)(i) of this subsection, the following measures shall be taken:~~
 - ~~(A) — Treatment or removal of the source of the release shall be conducted for liquid wastes, areas contaminated with high concentrations of hazardous substances, highly mobile hazardous substances, or hazardous substances that cannot be reliably contained. This includes removal free product consisting of petroleum and other light nonaqueous phase liquid (LNAPL) from the groundwater using normally accepted engineering practices. Source containment may be appropriate when the free product consists of a dense nonaqueous phase liquid (DNAPL) that cannot be recovered after reasonable efforts have been made.~~
 - ~~(B) — Groundwater containment, including barriers or hydraulic control through groundwater pumping, or both, shall be implemented to the maximum extent practicable to avoid lateral and vertical expansion of the groundwater volume affected by the hazardous substance.~~
- ~~(d) — Cleanup actions for soils at current or potential future residential areas and for soils at schools and child care centers. For current or potential future residential areas and for schools and child care centers, soils with hazardous substance concentrations that exceed soil cleanup levels must be treated, removed, or contained. Property qualifies as a current or potential residential area if:~~
 - ~~(i) — The property is currently used for residential use; or~~
 - ~~(ii) — The property has a potential to serve as a future residential area based on the consideration of zoning, statutory and regulatory restrictions, comprehensive plans, historical use, adjacent land uses, and other relevant factors.~~
- ~~(e) — Institutional controls.~~
 - ~~(i) — Cleanup actions shall use institutional controls and financial assurances when required under WAC 173-340-440.~~
 - ~~(ii) — Cleanup actions that use institutional controls shall meet each of the minimum requirements specified in this section, just as any other cleanup action. Institutional controls should demonstrably reduce risks to ensure a protective remedy. This demonstration should be based on a quantitative scientific analysis where appropriate.~~

- ~~(iii) — In addition to meeting each of the minimum requirements specified in this section, cleanup actions shall not rely primarily on institutional controls and monitoring where it is technically possible to implement a more permanent cleanup action for all or a portion of the site.~~
- ~~(f) — **Releases and migration.** Cleanup actions shall prevent or minimize present and future releases and migration of hazardous substances in the environment.~~
- ~~(g) — **Dilution and dispersion.** Cleanup actions shall not rely primarily on dilution and dispersion unless the incremental costs of any active remedial measures over the costs of dilution and dispersion grossly exceed the incremental degree of benefits of active remedial measures over the benefits of dilution and dispersion.~~
- ~~(h) — **Remediation levels.** Cleanup actions that use remediation levels shall meet each of the minimum requirements specified in this section, just as any other cleanup action.~~
 - ~~(i) — Selection of a cleanup action alternative that uses remediation levels requires, in part, a determination that a more permanent cleanup action is not practicable, based on the disproportionate cost analysis (see subsections (2)(b)(i) and (3) of this section).~~
 - ~~(ii) — Selection of a cleanup action alternative that uses remediation levels also requires a determination that the alternative meets each of the other minimum requirements specified in this section, including a determination that the alternative is protective of human health and the environment.~~
- (a) **General requirements.** A cleanup action must:
 - (i) **Protect human health and the environment, including vulnerable populations and overburdened communities;**
 - (ii) **Comply with cleanup standards (see Part 7 of this chapter);**
 - (iii) **Comply with applicable state and federal laws (see WAC 173-340-710);**
 - (iv) **Prevent or minimize present and future releases and migration of hazardous substances in the environment;**
 - (v) **Provide resilience to climate change impacts that have a high likelihood of occurring and severely compromising its long-term effectiveness;**
 - (vi) **Provide for compliance monitoring (see WAC 173-340-410 and Part 7 of this chapter);**
 - (vii) **Not rely primarily on institutional controls and monitoring at a site, or portion thereof, if it is technically possible to implement a more permanent cleanup action;**
 - (viii) **Not rely primarily on dilution and dispersion unless the incremental costs of any active remedial measures over the costs of dilution and dispersion grossly**

exceed the incremental degree of benefits of active remedial measures over the benefits of dilution and dispersion. Determine the benefits and costs using the criteria in subsection (5)(d) of this section;

- (ix) Provide for a reasonable restoration time frame (see subsection (4) of this section); and
- (x) Use permanent solutions to the maximum extent practicable (see subsection (5) of this section).

(b) Action-specific requirements. As applicable, a cleanup action must:

- (i) Use remediation levels in accordance with WAC 173-340-355;
- (ii) Use institutional controls in accordance with WAC 173-340-440;
- (iii) Provide financial assurances in accordance with WAC 173-340-440(11); and
- (iv) Provide for periodic reviews in accordance with WAC 173-340-420(2).

(c) Media-specific requirements.

- (i) A soil cleanup action must treat, remove, or contain contaminated soils located on properties:
 - (A) Where a school or child care center is located;
 - (B) That qualify as a residential area based on current use; or
 - (C) That qualify as a potential future residential area based on zoning, statutory and regulatory restrictions, comprehensive plans, historical use, adjacent land uses, and other relevant factors.
- (ii) A groundwater cleanup action must be permanent (achieve groundwater cleanup levels at the standard point of compliance without further remedial action being required) if:
 - (A) Such an action is practicable; or
 - (B) Ecology determines such an action is in the public interest.
- (iii) A non-permanent groundwater cleanup action must:
 - (A) Treat or remove the source of groundwater contamination at sites where there are liquid wastes, areas contaminated with high concentrations of hazardous substances, highly mobile hazardous substances, or hazardous substances that cannot be reliably contained. This includes removal of free product consisting of petroleum and other light nonaqueous phase liquid (LNAPL) from the groundwater using normally accepted engineering practices. Source containment may be appropriate when the free product consists of a dense nonaqueous

phase liquid (DNAPL) that cannot be recovered after reasonable efforts have been made;

(B) Contain contaminated groundwater to the maximum extent practicable to prevent lateral and vertical expansion of the groundwater volume affected by the hazardous substances and to prevent the migration of the hazardous substances. This includes barriers or hydraulic control through groundwater pumping, or both; and

(C) Provide an alternate water supply or treatment if the cleanup action does not protect an existing use of the groundwater. A cleanup action is not protective of an existing use if a hazardous substance concentration exceeds the protective groundwater concentration for that use.

(d) **Public concerns and tribal rights and interests.** For Ecology-conducted or Ecology-supervised remedial actions, Ecology must consider the following when selecting a cleanup action:

(i) Public concerns, including the concerns of vulnerable populations and overburdened communities, identified under WAC 173-340-600(13) and (14); and

(ii) Indian tribes' rights and interests in their tribal lands identified under WAC 173-340-620.

~~(3) **Determining whether a cleanup action uses permanent solutions to the maximum extent practicable.**~~

~~(a) **Purpose.** This subsection describes the requirements and procedures for determining whether a cleanup action uses permanent solutions to the maximum extent practicable, as required under subsection (2)(b)(i) of this section. A determination that a cleanup action meets this one requirement does not mean that the other minimum requirements specified in subsection (2) of this section have been met. To select a cleanup action for a site, a cleanup action must meet each of the minimum requirements specified in subsection (2) of this section.~~

~~(b) **General requirements.** When selecting a cleanup action, preference shall be given to permanent solutions to the maximum extent practicable. To determine whether a cleanup action uses permanent solutions to the maximum extent practicable, the disproportionate cost analysis specified in (c) of this subsection shall be used. The analysis shall compare the costs and benefits of the cleanup action alternatives evaluated in the feasibility study. The costs and benefits to be compared are the evaluation criteria identified in (f) of this subsection.~~

~~(c) **Permanent cleanup action defined.** A permanent cleanup action or permanent solution is defined in WAC 173-340-200.~~

- ~~(d) — **Selection of a permanent cleanup action.** A disproportionate cost analysis shall not be required if the department and the potentially liable persons agree to a permanent cleanup action that will be identified by the department as the proposed cleanup action in the draft cleanup action plan.~~
- ~~(e) — **Disproportionate cost analysis.**~~
- ~~(i) — **Test.** Costs are disproportionate to benefits if the incremental costs of the alternative over that of a lower cost alternative exceed the incremental degree of benefits achieved by the alternative over that of the other lower cost alternative.~~
- ~~(ii) — **Procedure.**~~
- ~~(A) — The alternatives evaluated in the feasibility study shall be ranked from most to least permanent, based on the evaluation of the alternatives under (f) of this subsection and the definition of permanent solution in (c) of this subsection.~~
- ~~(B) — The most practicable permanent solution evaluated in the feasibility study shall be the baseline cleanup action alternative against which cleanup action alternatives are compared. If no permanent solution has been evaluated in the feasibility study, the cleanup action alternative evaluated in the feasibility study that provides the greatest degree of permanence shall be the baseline cleanup action alternative.~~
- ~~(C) — The comparison of benefits and costs may be quantitative, but will often be qualitative and require the use of best professional judgment. In particular, the department has the discretion to favor or disfavor qualitative benefits and use that information in selecting a cleanup action. Where two or more alternatives are equal in benefits, the department shall select the less costly alternative provided the requirements of subsection (2) of this section are met.~~
- ~~(f) — **Evaluation criteria.** The following criteria shall be used to evaluate and compare each cleanup action alternative when conducting a disproportionate cost analysis under (e) of this subsection to determine whether a cleanup action is permanent to the maximum extent practicable.~~
- ~~(i) — **Protectiveness.** Overall protectiveness of human health and the environment, including the degree to which existing risks are reduced, time required to reduce risk at the facility and attain cleanup standards, on-site and offsite risks resulting from implementing the alternative, and improvement of the overall environmental quality.~~
- ~~(ii) — **Permanence.** The degree to which the alternative permanently reduces the toxicity, mobility or volume of hazardous substances, including the adequacy of the alternative in destroying the hazardous substances, the reduction or~~

~~elimination of hazardous substance releases and sources of releases, the degree of irreversibility of waste treatment process, and the characteristics and quantity of treatment residuals generated.~~

- ~~(iii) — **Cost.** The cost to implement the alternative, including the cost of construction, the net present value of any long-term costs, and agency oversight costs that are cost recoverable. Long-term costs include operation and maintenance costs, monitoring costs, equipment replacement costs, and the cost of maintaining institutional controls. Cost estimates for treatment technologies shall describe pretreatment, analytical, labor, and waste management costs. The design life of the cleanup action shall be estimated and the cost of replacement or repair of major elements shall be included in the cost estimate.~~
- ~~(iv) — **Effectiveness over the long term.** Long-term effectiveness includes the degree of certainty that the alternative will be successful, the reliability of the alternative during the period of time hazardous substances are expected to remain on-site at concentrations that exceed cleanup levels, the magnitude of residual risk with the alternative in place, and the effectiveness of controls required to manage treatment residues or remaining wastes. The following types of cleanup action components may be used as a guide, in descending order, when assessing the relative degree of long-term effectiveness: Reuse or recycling; destruction or detoxification; immobilization or solidification; on-site or offsite disposal in an engineered, lined and monitored facility; on-site isolation or containment with attendant engineering controls; and institutional controls and monitoring.~~
- ~~(v) — **Management of short-term risks.** The risk to human health and the environment associated with the alternative during construction and implementation, and the effectiveness of measures that will be taken to manage such risks.~~
- ~~(vi) — **Technical and administrative implementability.** Ability to be implemented including consideration of whether the alternative is technically possible, availability of necessary offsite facilities, services and materials, administrative and regulatory requirements, scheduling, size, complexity, monitoring requirements, access for construction operations and monitoring, and integration with existing facility operations and other current or potential remedial actions.~~
- ~~(vii) — **Consideration of public concerns.** Whether the community has concerns regarding the alternative and, if so, the extent to which the alternative addresses those concerns. This process includes concerns from individuals, community groups, local governments, tribes, federal and state agencies, or any other organization that may have an interest in or knowledge of the site.~~

(4) Determining whether a cleanup action provides for a reasonable restoration time frame.

(a) **Purpose.** The restoration time frame is the period of time needed for a cleanup action to achieve cleanup levels at the point of compliance (see WAC 173-340-200). This subsection ~~describes~~specifies the requirements and procedures for determining whether a cleanup action alternative provides for a reasonable restoration time frame, as required under subsection ~~(2)(b)(ii)~~(3)(a)(ix) of this section. ~~A determination that a cleanup action meets this one requirement does not mean that the other minimum requirements specified in subsection (2) of this section have been met. To select a cleanup action for a site, a cleanup action must meet each of the minimum requirements specified in subsection (2) of this section.~~

(b) Applicability.

(i) **Whether evaluation required.** An evaluation of whether a cleanup action alternative provides a reasonable restoration time frame must be conducted unless a model remedy is selected as the cleanup action. The evaluation must be conducted regardless of which administrative option in WAC 173-340-510 is used to conduct remedial action at the site.

(ii) **Evaluation requirements.**

(A) For restoration of environmental media other than sediment, the evaluation must be conducted in accordance with this subsection;

(B) For restoration of sediment, the evaluation must be conducted in accordance with WAC 173-204-570(5).

~~(b)(c)~~ **Factors**Evaluation. To determine whether a cleanup action alternative provides for a reasonable restoration time frame, the following factors ~~to~~must be considered~~include the following~~ at a minimum:

(i) Potential risks posed by the site to human health and the environment, including vulnerable populations and overburdened communities;

(ii) Practicability of achieving a shorter restoration time frame; A restoration time frame is not reasonable if an active remedial measure with a shorter restoration time frame is practicable;

(iii) Long-term effectiveness of the alternative. A longer restoration time frame may be reasonable if the alternative has a greater degree of long-term effectiveness than one that primarily relies on on-site or off-site disposal, isolation, or containment;

~~(iii)~~(iv) Current use of the site, surrounding areas, and associated resources that are, or may be, affected by releases from the site;

~~(iv)~~(v) Potential future use of the site, surrounding areas, and associated resources that are, or may be, affected by releases from the site;

~~(v)~~(vi) Availability of alternative water supplies;

- ~~(vi)~~(vii) Likely effectiveness and reliability of institutional controls;
 - (viii) Ability to control and monitor migration of hazardous substances from the site;
 - ~~(viii)~~(ix) Toxicity of the hazardous substances at the site;~~and~~
 - ~~(ix)~~(x) Natural processes that reduce concentrations of hazardous substances and have been documented to occur at the site or under similar site conditions~~;~~ and
 - (xi) For Ecology-conducted or Ecology-supervised remedial actions, public concerns identified under WAC 173-340-600(13) and (14) and Indian tribes' rights and interests in their tribal lands identified under WAC 173-340-620.
- ~~(e)~~ — A longer period of time may be used for the restoration time frame for a site to achieve cleanup levels at the point of compliance if the cleanup action selected has a greater degree of long term effectiveness than on-site or offsite disposal, isolation, or containment options.
- ~~(d)~~(c) **Cleanup levels below area background concentrations.** ~~When~~At sites where area background concentrations ~~(see, as defined in WAC 173-340-200 for definition)~~, would result in recontamination of the site to levels that exceed cleanup levels~~;~~
- (i) The remedial action must achieve area background concentrations within a reasonable restoration time frame, as determined under (c) of this subsection;
 - (ii) ~~that portion of the cleanup action which addresses cleanup~~Cleaning up the site below area background concentrations may be delayed until the off-site sources of hazardous substances are controlled~~;~~ and
 - (iii) ~~In these cases, the~~The remedial action ~~shall be considered~~is an interim action until cleanup levels are attained.
- ~~(e)~~(d) **Cleanup levels below technically possible concentrations.** At sites ~~W~~where cleanup levels determined under Method C in WAC 173-340-706 are below concentrations that are technically possible ~~concentrations to achieve;~~
- (i) The remedial action must achieve concentrations that are technically possible to achieve ~~shall be met~~ within a reasonable restoration time frame, ~~considering the factors in subsection (b)~~as determined under (c) of this subsection~~;~~ and
 - (ii) ~~In these cases, the~~The remedial action ~~shall be considered~~is an interim action until cleanup levels are attained.
- ~~(f)~~ — Extending the restoration time frame shall not be used as a substitute for active remedial measures, when such actions are practicable.
- (5) **Determining whether a cleanup action uses permanent solutions to the maximum extent practicable.**
- (a) **Purpose.** This subsection specifies the requirements and procedures for determining whether a cleanup action uses permanent solutions to the maximum extent practicable,

as required under RCW 70A.305.030(1) and subsection (3)(a)(x) of this section. A permanent cleanup action or permanent solution is defined in WAC 173-340-200.

(b) Applicability. The evaluation required under this subsection must be conducted unless a permanent cleanup action alternative or a model remedy is selected as the cleanup action. The evaluation must be conducted regardless of which administrative option in WAC 173-340-510 is used to conduct the cleanup action.

(c) Procedure. To determine which cleanup action alternative included in the feasibility study uses permanent solutions to the maximum extent practicable, do the following:

(i) Step 1: Determine the benefits and costs of each cleanup action alternative using the criteria in (d) of this subsection.

(A) The estimation and comparison of benefits and costs may be quantitative, but will often be qualitative and require the use of best professional judgment.

(B) On a site-specific basis, Ecology may weight the criteria in (d) of this subsection and favor or disfavor qualitative benefit and cost estimates in the analysis.

(C) For Ecology-conducted or Ecology-supervised remedial actions, when determining or weighting the benefits in (d) of this subsection, Ecology must consider:

(i) Public concerns identified under WAC 173-340-600(13) and (14); and

(ii) Indian tribes' rights and interests in their tribal lands identified under WAC 173-340-620.

(ii) Step 2: Rank the cleanup action alternatives by degree of permanence. To determine the relative permanence of an alternative, consider the definition of a permanent cleanup action in WAC 173-340-200 and the criteria in (d)(ii) of this subsection.

(iii) Step 3: Identify the initial baseline alternative for use in the disproportionate cost analysis in Step 4.

(A) If the feasibility study includes only one permanent cleanup action alternative, use that alternative as the initial baseline.

(B) If the feasibility study includes more than one permanent cleanup action alternative, determine which permanent cleanup action alternative is the most cost-effective (that is, the alternative with the lowest cost per degree of benefit) and use it as the initial baseline. Eliminate from further evaluation the less cost-effective permanent cleanup action alternatives.

- (C) If all permanent cleanup action alternatives are eliminated from evaluation in the feasibility study during the screening process in WAC 173-340-350(7)(c)(iii), use the most permanent cleanup action alternative identified in Step 2 as the initial baseline.
- (iv) **Step 4:** Conduct a disproportionate cost analysis of the ranked list of cleanup action alternatives identified in Step 2. Use the cleanup action alternative identified in Step 3 as the initial baseline for the analysis.

 - (A) **Analysis.** To conduct the analysis, do the following:

 - (I) First, compare the costs and benefits of the baseline alternative with the costs and benefits of the next most permanent alternative; and
 - (II) Second, determine whether the incremental costs of the baseline alternative over the next most permanent alternative are disproportionate to the incremental degree of benefits of the baseline alternative over the next most permanent alternative.
 - (B) **Decision.** Based on the results of the analysis, do the following:

 - (I) If the incremental costs are not disproportionate to the incremental degree of benefits, the baseline alternative uses permanent solutions to the maximum extent practicable and the analysis under this subsection is complete.
 - (II) If the benefits of the two alternatives are the same or similar, the lower cost alternative uses permanent solutions to the maximum extent practicable and the analysis under this subsection is complete.
 - (III) If the incremental costs are disproportionate to the incremental degree of benefits, eliminate the baseline alternative from further analysis and make the next most permanent alternative the baseline for further analysis. Repeat Step 4. However, if the new baseline is the least permanent alternative on the ranked list of alternatives identified in Step 2, that alternative uses permanent solutions to the maximum extent practicable and the analysis under this subsection is complete.
- (d) **Criteria.** When conducting a disproportionate cost analysis under this subsection, use the following criteria to evaluate and compare the costs and benefits of each cleanup action alternative:

- (i) Protectiveness.** The degree to which the alternative protects human health and the environment, including vulnerable populations and overburdened communities. When assessing protectiveness, consider at least the following:

 - (A)** The degree to which the alternative reduces existing risks;
 - (B)** The time required for the alternative to reduce risks at the site and attain cleanup standards;
 - (C)** The on-site and offsite risks remaining after implementing the alternative; and
 - (D)** Improvement of the overall environmental quality;
- (ii) Permanence.** The degree to which the alternative permanently reduces the toxicity, mobility, or mass of, or exposure to, hazardous substances, including:

 - (A)** The adequacy of the alternative in destroying the hazardous substances;
 - (B)** The reduction or elimination of hazardous substance releases and sources of releases;
 - (C)** The degree of irreversibility of waste treatment process; and
 - (D)** The characteristics and quantity of treatment residuals generated;
- (iii) Effectiveness over the long term.** The degree to which the alternative is likely to be effective over the long term, including for vulnerable populations and overburdened communities.

 - (A) Factors.** When assessing the long-term effectiveness of the alternative, consider at least the following:

 - (I)** The degree of certainty that the alternative will be successful;
 - (II)** The reliability of the alternative during the period of time hazardous substances are expected to remain on-site at concentrations that exceed cleanup levels;
 - (III)** The resilience of the alternative to climate change impacts;
 - (IV)** The magnitude of residual risk with the alternative in place; and
 - (V)** The effectiveness of controls required to manage treatment residues or remaining wastes.
 - (B) Hierarchy.** Except as provided for sediment sites and cleanup units in WAC 173-204-570(4), when assessing the relative degree of long-term effectiveness of cleanup action components, the following types of components may be used as a guide, in descending order:

 - (I)** Reuse or recycling;

- (II) Destruction or detoxification;
 - (III) Immobilization or solidification;
 - (IV) On-site or offsite disposal in an engineered, lined and monitored facility;
 - (V) On-site isolation or containment with attendant engineering controls; and
 - (VI) Institutional controls and monitoring;
- (iv) **Management of implementation risks.** The risks to human health and the environment, including vulnerable populations and overburdened communities, associated with the alternative during construction and implementation, and the effectiveness of the alternative to manage such risks;
- (v) **Technical and administrative implementability.** The ability to implement the alternative, including consideration of:
 - (A) The technical difficulty of designing, constructing, and otherwise implementing the alternative in a reliable and effective manner, regardless of cost;
 - (B) The availability of necessary offsite facilities, services, and materials;
 - (C) Administrative and regulatory requirements;
 - (D) Scheduling, size, and complexity;
 - (E) Monitoring requirements;
 - (F) Access for construction operations and monitoring; and
 - (G) Integration with existing facility operations and other current or potential remedial actions; and
- (vi) **Costs.** The costs of remedial actions necessary to implement the alternative, including:
 - (A) **Construction costs**, such as pre-construction engineering design and permitting, physical construction (including labor, equipment, materials, and contingencies), waste management and disposal, compliance monitoring during construction (including sampling and analysis), construction management, establishment of institutional controls, regulatory oversight, and quality assurance and quality control; and
 - (B) **Post-construction costs**, such as operation and maintenance activities necessary to maintain the effectiveness of a constructed cleanup action component, waste management and disposal, replacement or repair of equipment (including labor, equipment, and materials), permit renewal,

compliance monitoring (including sampling and analysis), maintaining institutional controls, financial assurances, periodic reviews, post-construction management, and regulatory oversight.

(I) Design life. Estimate the design life of cleanup action components, including engineered controls. If the period of time in which a component is needed exceeds the design life of the component, include the cost of replacing or repairing the component in the cost estimate.

(II) Future costs. Future costs may be discounted using present worth analysis. When discounting future costs, do the following:

- Estimate future costs using an appropriate construction cost index; and
- Discount future costs using the current U.S. Treasury nominal interest rate for bonds of comparable maturity to the period of analysis. If project costs exceed thirty years, use the current U.S. Treasury thirty-year nominal interest rate.

WAC 173-340-370 Cleanup action ~~Expectations for cleanup action alternatives.~~

~~The department has the following expectations for the development of cleanup action alternatives under WAC 173-340-350 and the selection of cleanup actions under WAC 173-340-360. These expectations represent the types of cleanup actions the department considers likely results of the remedy selection process described in WAC 173-340-350 through 173-340-360; however, the department recognizes that there may be some sites where cleanup actions conforming to these expectations are not appropriate. Also, selecting a cleanup action that meets these expectations shall not be used as a substitute for selecting a cleanup action under the remedy selection process described in WAC 173-340-350 through 173-340-360.~~ Ecology has the following expectations for cleanup actions. The expectations represent the likely results of the cleanup action selection process described in WAC 173-340-350 through 173-340-390. Ecology recognizes that conformance with the expectations may not be appropriate at some sites. Selecting a cleanup action conforming to the expectations is not a substitute for conducting a feasibility study. The expectations must be considered when evaluating cleanup action alternatives in the feasibility study. Any non-conformance of the preferred cleanup action alternative to the expectations must be documented and explained in the feasibility study report.

- (1) ~~The department~~Ecology expects that treatment technologies will be emphasized at sites containing liquid wastes, areas contaminated with high concentrations of hazardous substances, highly mobile materials, and/or discrete areas of hazardous substances that lend themselves to treatment.
- (2) To minimize the need for long-term management of contaminated materials, ~~the department~~Ecology expects that all hazardous substances will be destroyed, detoxified, and/or removed to concentrations below cleanup levels throughout sites containing small volumes of hazardous substances.
- (3) ~~The department~~Ecology recognizes the need to use engineering controls, such as containment, for sites or portions of sites that contain large volumes of materials with relatively low levels of hazardous substances where treatment is impracticable.
- (4) ~~In order to~~To minimize the potential for migration of hazardous substances, ~~the department~~Ecology expects that active measures will be taken to prevent precipitation and subsequent runoff from coming into contact with contaminated soils and waste materials. When such measures are impracticable, such as during active cleanup, ~~the department~~Ecology expects that site runoff will be contained and treated prior to release from the site.
- (5) ~~The department~~Ecology expects that when hazardous substances remain on-site at concentrations ~~which exceed~~ing cleanup levels, those hazardous substances will be consolidated to the maximum extent practicable where needed to minimize the potential for direct contact and migration of hazardous substances; ~~;~~
- (6) ~~The department~~Ecology expects that, ~~for facilities adjacent to a surface water body,~~ active measures will be taken to prevent/minimize releases to surface water or sediment via surface runoff and groundwater discharges in excess of cleanup levels. ~~The department~~Ecology expects that dilution will not be the sole method for demonstrating compliance with cleanup standards in these instances.

- (7) ~~The department~~Ecology expects that natural attenuation of hazardous substances may be appropriate at sites where:
- (a) Source control (including removal and/or treatment of hazardous substances) has been conducted to the maximum extent practicable;
 - (b) Leaving contaminants on-site during the restoration time frame does not pose an unacceptable threat to human health or the environment;
 - (c) There is evidence that natural biodegradation or chemical degradation is occurring and will continue to occur at a reasonable rate at the site; and
 - (d) Appropriate monitoring requirements are conducted to ensure that the natural attenuation process is taking place and that human health and the environment are protected.
- (8) ~~The department~~Ecology expects that cleanup actions conducted under this chapter will not result in a significantly greater ~~overall~~long-term threat to human health and the environment from hazardous substances, either at the site being cleaned up or at another site involved with the cleanup action, than other cleanup action alternatives.

WAC 173-340-380 Cleanup action plan.

- (1) Purpose.** The purpose of a cleanup action plan is to document the selected cleanup action and to specify the cleanup standards and other requirements the cleanup action must meet.
- (2) Applicability.**

 - (a) Whether required.** A cleanup action must be selected and a cleanup action plan must be developed regardless of which administrative option in WAC 173-340-510 is used to conduct remedial action at the site.
 - (b) Requirements.** A cleanup action plan must comply with the requirements in this section. For sites where there is a release or threatened release to sediment, a cleanup action plan must also comply with the requirements in WAC 173-204-575.
- (3) Timing.** Except as otherwise directed by Ecology, a remedial investigation/feasibility study must be completed before cleanup standards are established and a cleanup action is selected. An emergency remedial action or an interim action may be conducted before a cleanup action is selected.
- (4) Administrative options and requirements.** A cleanup action may be selected and a cleanup action plan may be developed under any of the administrative options for remedial action described in WAC 173-340-510. Reporting and public participation requirements depend on the administrative option used to conduct remedial action.

 - (a) Ecology-conducted or Ecology-supervised remedial actions.** For an Ecology-conducted or Ecology-supervised cleanup action, Ecology will:

 - (i)** Select the cleanup action and establish the cleanup standards and other requirements that the cleanup action must meet;
 - (ii)** Issue a draft cleanup action plan that includes the information required in subsection (5) of this section. For routine actions, Ecology may include the draft cleanup action plan in an order or decree instead of in a separate document;
 - (iii)** Provide or require public notice of the draft cleanup action plan in accordance with WAC 173-340-600(14);
 - (iv)** After review and consideration of public comments, issue a final cleanup action plan. For routine actions, Ecology may include the final cleanup action plan in an order or decree instead of in a separate document;
 - (v)** Provide notice of the final cleanup action plan in accordance with WAC 173-340-600(14); and
 - (vi)** If Ecology subsequently determines, following implementation of the selected cleanup action, that the cleanup standards or, where applicable, remediation levels established in the cleanup action plan cannot be achieved, Ecology will provide notice of the determination in accordance with WAC 173-340-600(15).

(b) Independent remedial actions. An independent cleanup action plan must be reported to Ecology in accordance with WAC 173-340-515.

(1)(4) Draft Content of cleanup action plan. ~~The department shall issue a draft cleanup action plan for a cleanup action to be conducted by the department or by a potentially liable person under an order or decree.~~ A cleanup action plan must include the following information and provide a ~~The~~ level of detail in the draft cleanup action plan shall be commensurate with the complexity of the site and ~~proposed~~ cleanup action.

~~(a)~~ The draft cleanup action plan shall include the following:

~~(i)(a)~~ A general description of the ~~proposed~~ cleanup action ~~developed~~ selected in accordance with WAC 173-340-350 through 173-340-390, including any model remedy;

~~(ii)(b)~~ A summary of the rationale for selecting the ~~proposed alternative~~ cleanup action, including any model remedy;

(c) For Ecology-conducted or Ecology-supervised remedial actions, a brief summary of how Ecology considered the following when selecting the cleanup action:

(i) Public concerns identified under WAC 173-340-600(13) and (14); and

(ii) Indian tribes' rights and interests in their tribal lands identified under WAC 173-340-620;

~~(iii)(d)~~ A brief summary of the other cleanup action alternatives evaluated in the remedial investigation/feasibility study;

~~(iv)(e)~~ Cleanup standards and, where applicable, remediation levels, for each hazardous substance and for each environmental medium of concern at the site;

(f) Any changes to the default assumptions or reasonable maximum exposure scenarios used to establish cleanup standards or to demonstrate the protectiveness of the cleanup action;

~~(v)(g)~~ The schedule for ~~implementation of~~ implementing the cleanup action plan including, if known, the restoration time frame;

~~(vi)(h)~~ Any ~~institutional controls, if any,~~ required as part of the ~~proposed~~ cleanup action;

~~(vii)(i)~~ Any ~~Applicable state and federal laws, if any,~~ for the ~~proposed~~ cleanup action, when these are known at this step in the cleanup process. ~~(t) This does not preclude subsequent identification of applicable state and federal laws~~;

~~(viii)(j)~~ A preliminary determination by ~~the department~~ Ecology that the ~~proposed~~ cleanup action will comply with WAC 173-340-360; and

~~(ix)(k)~~ Where ~~If~~ the cleanup action involves on-site containment, specification of the types, levels concentrations, and amounts of hazardous substances remaining on site and the measures that will be used to prevent migration of and ~~contact with these~~ exposure to the substances.

- ~~(b)~~ For routine actions the department may use an order or decree to fulfill the requirements of a cleanup action plan, provided that the information in (a) of this subsection is included in an order or decree. The scope of detail for the required information shall be commensurate with the complexity of the site and proposed cleanup action.
- ~~(2)~~ **Public participation.** The department will provide public notice and opportunity for comment on the draft cleanup plan, as required in WAC 173-340-600(13).
- ~~(3)~~ **Final cleanup action plan.** After review and consideration of the comments received during the public comment period, the department shall issue a final cleanup action plan and publish its availability in the *Site Register* and by other appropriate methods. If the department determines, following the implementation of the preferred alternative, that the cleanup standards or, where applicable, remediation levels established in the cleanup action plan cannot be achieved, the department shall issue public notice of this determination.
- ~~(4)~~(5) **Federal cleanup**National priorities list sites. For ~~federal cleanup~~ sites on the national priorities sites list, Ecology may use a record of decision or an order or consent decree prepared under the federal cleanup law ~~may be used by the department~~ to meet the requirements of this section, provided that:
- (a) The cleanup action meets the requirements ~~under~~in WAC 173-340-360;
 - (b) The state ~~has concurred~~concurs with the cleanup action; and
 - (c) The public ~~An opportunity~~ was provided ~~for the public to~~an opportunity to comment on the cleanup action.

WAC 173-340-390 Model remedies.

- (1) **Purpose.** The purpose of model remedies is to streamline and accelerate the selection of a cleanup action ~~s that protect human health and the environment, with a preference for permanent solutions to the maximum extent practicable~~ for routine types of cleanup projects at sites with common features and lower risk to human health and the environment.
- (2) **Development of model remedies.** ~~The department may, from time to time, identify~~ Ecology may establish model remedies for common categories of ~~facilities~~ sites, types of ~~contamination~~ hazardous substances, types of media, and geographic areas. ~~In identifying a model remedy, the department shall identify the circumstances for which application of the model remedy meets the requirements under WAC 173-340-360. The department shall provide an opportunity for the public to review and comment on any proposed model remedies. When establishing a model remedy, Ecology will:~~
 - (a) Identify the applicability of the model remedy for use at a site, the site characterization required under WAC 173-340-350 to select the model remedy, and the compliance monitoring required under WAC 173-340-410 to implement the model remedy;
 - (b) Describe how the model remedy meets the cleanup standards established under Part 7 of this chapter and the requirements for cleanup actions in WAC 173-340-360; and
 - (c) Provide the public with notice and an opportunity to comment on the proposed model remedy and the conditions under which it may be used at a site. The public comment period must be at least thirty days.
- (3) **Soliciting proposals.** When developing model remedies, Ecology will solicit and consider proposals from qualified persons. The proposals must, in addition to describing the model remedy, provide the information required under subsection (2)(a) and (b) of this section.
- ~~(3) **Applicability and effect of model remedies.** Where a site meets the circumstances identified by the department under subsection (2) of this section, the components of the model remedy may be selected as the cleanup action, or as a portion of the cleanup action. At such sites, it shall not be necessary to conduct a feasibility study under WAC 173-340-350(8) or a disproportionate cost analysis under WAC 173-340-360(3) for those components of a cleanup action to which a model remedy applies.~~
- ~~(4) **Public notice and participation.** Where a model remedy is proposed as the cleanup action or as a portion of the cleanup action, the cleanup action plan is still subject to the same public notice and participation requirements in this chapter as any other cleanup action.~~
- (4) **Selection.** A model remedy may be selected as a cleanup action, or as a component of a cleanup action, at a site without conducting a feasibility study under WAC 173-340-351, provided that:
 - (a) The site meets the conditions for using the model remedy identified by Ecology under subsection (2)(a) of this section; and

- (b)** For Ecology-conducted and Ecology-supervised remedial actions, Ecology provides or requires public notice of the proposed use of the model remedy in the draft cleanup action plan under WAC 173-340-380.

Part 6 – Public Participation and Tribal Engagement

WAC 173-340-600 Public ~~notice~~notification and participation.

- (1) **Purpose.** Public participation is an integral part of ~~the department's~~Ecology's responsibilities under chapter 70A.305 RCW, the Model Toxics Control Act. ~~The department's~~Ecology's goal is to provide the public with timely information and meaningful opportunities for participation that are commensurate with each site. ~~The department~~Ecology will meet this goal through a public participation program that includes:
- (a) Site-specific information on Ecology's website;
 - (b) A Contaminated Site Register and, if requested, site-specific electronic alerts of changes to site information; and
 - (c) For Ecology-conducted and Ecology-supervised remedial actions, The early planning and development of a site-specific public participation plans; the provision of public notices of proposed actions; a site register; and public meetings or hearings; and the participation of regional citizens' advisory committees.
- ~~(2) **Other requirements.** In addition to the requirements in this section, other sections of this chapter contain specific notice requirements that must also be followed. See WAC 173-340-720 for notice requirements on an off-property conditional point of compliance and cleanup levels for groundwater flowing into nearby surface water; WAC 173-340-545 for public notice requirements for private rights of action; WAC 173-340-440 for local government notification requirements for restrictive covenants; and WAC 173-340-310 for public notice requirements for emergency or interim actions required by the department as a result of an initial investigation.~~
- ~~(4)~~(2) **Public notice.** Whenever public notice of a proposed action is required ~~by chapter 70.105D RCW~~under this chapter, ~~the department shall, at a minimum,~~Ecology will provide or require at least the following notice and opportunity to comment as described in this section except as specified for the biennial report in WAC 173-340-340.
- (a) **Notification methods.**
 - (i) **Website.** Ecology will make the proposed action publicly available on Ecology's website under subsection (5) of this section;
 - (ii) **Electronic alert.** If requested, Ecology will alert a person electronically of the proposed action's availability under subsection (6) of this section;
 - (iii) **Contaminated Site Register.** Ecology will provide notice of the proposed action's availability in the Contaminated Site Register under subsection (7) of this section.
 - ~~(a)~~(iv) **Request for Persons requesting notice.** ~~Notice shall~~Written notice must be mailed sent to persons who have made a timely request of Ecology. A request for notice is timely if received before or during the public comment period for the current phase of remedial action at the facility site. However, the receipt of a request for notice ~~shall~~does not require ~~the department~~Ecology to extend the

comment period associated with the notice. Ecology may use an electronic alert under subsection (6) of this section to satisfy this requirement.

~~(b)(v)~~ **Mail**Persons residing within potentially affected vicinity. ~~Notice shall~~Written notice must be ~~mailed~~sent to persons ~~who reside~~residing within the potentially affected vicinity of the proposed action. The potentially affected vicinity ~~shall~~ includes all property within and contiguous to the site and any other area that ~~the department~~Ecology determines to be directly affected by the proposed action.

~~(d)(vi)~~ **Other**Appropriate news media. ~~Written~~A notice of the proposed action ~~shall~~must be ~~mailed~~sent to any ~~other~~ news media that ~~the department~~Ecology determines to be appropriate. ~~The department~~Ecology may consider how a news medium compares with the newspaper of largest circulation in terms of: Audience reached; timeliness; adequacy in conveying the particular information in the notice; cost; or other relevant factors.

~~(e)(vii)~~ **Newspaper publication.** If required under chapter 70A.305 RCW or by Ecology, ~~written~~A notice of the proposed action ~~shall~~must be published in the newspaper of largest circulation in the city or county of the proposed action, by one or more of the following methods: Display ad; legal notice; or any other appropriate format, as determined by ~~the department~~Ecology.

(b) Comment opportunity.

~~(e)(i)~~ **Comment periods.** ~~All~~A public notices ~~shall~~must indicate the public comment period on the proposed action. Unless ~~stated~~otherwise specified in this chapter, the public comment periods ~~shall~~must be ~~for at least~~at least thirty days ~~at a minimum.~~ ~~The department~~Ecology may extend the public comment period, as appropriate.

(ii) Public meetings. During any comment period announced by a public notice issued under this chapter, if ten or more persons request a public meeting on the subject of the public notice, Ecology will hold a public meeting for the purpose of receiving comments.

~~(f)(c)~~ **~~Combining public comment requirements~~**Consolidating notice and comment opportunities. Whenever reasonable, ~~the department shall~~Ecology will consolidate public notice ~~and opportunities for public comment required~~ under this chapter with ~~public~~ notice and comment ~~requirements~~opportunities required under other laws and regulations.

~~(g)(d)~~ **Site-specific risk assessment.** For public notices describing cleanup plans that use site-specific risk assessment or would restrict future site or resource use, the public notice ~~shall~~must specifically identify the restrictions and invite comments on these elements of the cleanup plan. This notice ~~shall~~must also include a statement indicating the availability of public participation grants ~~and of the department's citizen technical~~

~~advisor for providing technical assistance to citizens on site-specific risk assessment and other issues related to site remediation.~~

- (3) ~~Criteria~~ **Additional opportunities.** ~~In order to~~ To promote effective and meaningful public participation, ~~the department~~ Ecology may ~~determine that~~ provide or require public participation opportunities in addition to those specifically required ~~by chapter 70.105D RCW, or under~~ this chapter, ~~are appropriate and should be provided.~~ In making this determination, ~~the department~~ Ecology may consider:

- (a) Known or potential risks to human health and the environment that could be avoided or reduced by providing information to the public;
- (b) Public concerns about the ~~facility~~ site;
- (c) The need to contact the public in order to gather information about the ~~facility~~ site;
- (d) The extent to which the public's opportunity to affect subsequent ~~departmental~~ Ecology decisions at the ~~facility~~ site may be limited or foreclosed ~~in the future~~;
- (e) The need to prevent disclosure of confidential, unverified, or enforcement-sensitive information;
- (f) The routine nature of the contemplated remedial action;
- (g) Interest in expediting remedial action at the site; and
- ~~(g)~~ (h) Any other factors as determined by ~~the department~~ Ecology.

- ~~(5) — Public meetings.~~ During any comment period announced by a public notice issued under this chapter, ~~if ten or more persons request a public meeting on the subject of the public notice, the department shall hold a public meeting for the purpose of receiving comments.~~

- ~~(6)~~ (4) **Additional methods.** ~~In addition to "public notice" required by chapter 70.105D RCW, or this chapter, the department may use any of the following methods to~~ To provide information to the public, Ecology may use or require any of the following methods in addition to those specifically required under this chapter:

- (a) Press releases;
- (b) Fact sheets;
- (c) Public meetings and transcription of such meetings;
- (d) Publications;
- (e) Personal contact by ~~department~~ Ecology employees;
- (f) Posting signs at the ~~facility~~ site;
- (g) Notice in the Contaminated Site Register;
- (h) Notice through the internet;

- (i) Any other methods as determined by ~~the department~~Ecology.
- (5) **Site-specific information on website.** For sites on the contaminated sites list and the no further action sites list, Ecology will make at least the following site-specific information publicly available on Ecology's website:
- (a) The site's current listing and remedial action status identified under WAC 173-340-330;
 - (b) The site's current hazard rankings identified under WAC 173-340-320;
 - (c) Any initial investigation report prepared under WAC 173-340-310;
 - (d) For Ecology-conducted or Ecology-supervised remedial actions:
 - (i) Any proposed action requiring public notice under this chapter;
 - (ii) Any final cleanup action plan issued under WAC 173-340-380; and
 - (iii) Any Ecology determination that the selected cleanup action cannot achieve established cleanup standards or, where applicable, remediation levels;
 - (e) For independent remedial actions:
 - (i) Any independent remedial investigation, interim action, or cleanup action report required under WAC 173-340-515(4) and received by Ecology; and
 - (ii) The results of any Ecology review of an independent remedial action, including any written opinion issued by Ecology under WAC 173-340-515(5);
 - (f) Whether institutional controls are currently required, and any document implementing, amending, or removing an institutional control under WAC 173-340-440;
 - (g) Whether periodic reviews are currently required, and any periodic review report prepared under WAC 173-340-420; and
 - (h) Any other information Ecology considers appropriate for inclusion.
- (6) **Site-specific electronic alerts.** For sites on the contaminated sites list and the no further action sites list, Ecology will provide a person, if requested, a site-specific electronic alert when the site information specified in subsection (5) of this subsection is added or changed on Ecology's website. Ecology will establish the means for providing such electronic alerts.
- ~~(7) **Site Register.** The department shall regularly publish, make available electronically, and maintain a publication called the *Site Register*, which provides notice of the following:~~
- ~~(a) Determinations of no further action under WAC 173-340-320;~~
 - ~~(b) Results of site hazard rankings;~~
 - ~~(c) Availability of annual and biennial reports;~~
 - ~~(d) Issuance of enforcement orders, agreed orders, or proposed consent decrees;~~

- ~~(e) — Public meetings or hearings;~~
- ~~(f) — Scoping notice of department conducted remedial investigation/feasibility study;~~
- ~~(g) — Availability of remedial investigation/feasibility study reports and draft and final cleanup plans;~~
- ~~(h) — Change in site status or placing sites on or removing sites from the hazardous sites list under WAC 173-340-330;~~
- ~~(i) — Availability of engineering design reports under WAC 173-340-400;~~
- ~~(j) — Schedules developed under WAC 173-340-140;~~
- ~~(k) — Reports of independent cleanup actions received under WAC 173-340-300;~~
- ~~(l) — Beginning of negotiations or discussions under WAC 173-340-520 and 173-340-530;~~
- ~~(m) — Deadline extensions or missed deadlines under WAC 173-340-140;~~
- ~~(n) — A summary of any notices received under WAC 173-340-545 for cleanup actions and interim actions being conducted where a private right of action is anticipated;~~
- ~~(o) — A list of available department publications, including guidance, technical reports and policies pertinent to remedial actions;~~
- ~~(p) — The results of department review of reports on independent remedial actions submitted under WAC 173-340-515; and~~
- ~~(q) — Any other notice that the department considers appropriate for inclusion.~~

(7) Contaminated Site Register. Ecology will maintain and regularly publish a *Contaminated Site Register*.

- (a) Publication.** Ecology will establish the method for publishing the *Contaminated Site Register*, which may include making it publicly available on Ecology's website, electronically distributing it to interested persons, or any other method deemed appropriate by Ecology.
- (b) Content.** Ecology will include notice of the following in the *Contaminated Site Register*:
 - (i)** The availability of any legislative report required under chapter 70A.305 RCW related to remedial action;
 - (ii)** Any rulemaking notice requiring publication in the Washington State Register under chapter 34.05 RCW related to remedial action;
 - (iii)** The availability of any Ecology publication related to remedial action, including any new, revised, or rescinded interpretive or policy statement requiring notice in the Washington State Register under RCW 34.05.230;
 - (iv)** Any proposed substantive change to the site hazard assessment and ranking process developed under WAC 173-340-320(2);

- (v) Any update to Ecology’s strategic plans or performance assessments required under WAC 173-340-340(1) and (3);
 - (vi) Any additional resource allocation factors specified by Ecology under WAC 173-340-340(2)(d);
 - (vii) Any proposed model remedy developed under WAC 173-340-390(2);
 - (viii) Any change to the program support cost multiplier calculated under WAC 173-340-550(2)(c);
 - (ix) Any change to the list of Ecology-approved sampling and analysis methods maintained under WAC 173-340-830(4)(a);
 - (x) Any initial investigation determination under WAC 173-340-310(6) resulting in the listing of a site on either the contaminated sites list or the no further action sites list. The notice must include instructions on how to sign up for electronic alerts about the site under WAC 173-340-600(6);
 - (xi) For Ecology-conducted or Ecology-supervised remedial actions:
 - (A) Any initiation of a negotiation for a consent decree under WAC 173-340-520 or a discussion for an agreed order under WAC 173-340-530;
 - (B) Any proposed action requiring public notice under this chapter, including any related public meeting or hearing;
 - (C) Any issuance of a final cleanup action plan under WAC 173-340-380; and
 - (D) Any Ecology determination that the selected cleanup action cannot achieve established cleanup standards or, where applicable, remediation levels;
 - (xii) For independent remedial actions:
 - (A) Any notice of a planned independent interim action or cleanup action submitted to Ecology in anticipation of a private right of action under WAC 173-340-545(3)(a); and
 - (B) Any proposed area-wide groundwater conditional point of compliance under WAC 173-340-720(8)(d)(iii)(D); and
 - (xiii) Any other notice that Ecology considers appropriate for inclusion.
- (8) Evaluation of public participation needs.** ~~As part of requiring or conducting a remedial action at any facility~~For Ecology-conducted and Ecology-supervised remedial actions, ~~the department shall~~Ecology will evaluate public participation needs at the ~~facility~~site. The evaluation ~~shall~~must include an identification of the potentially affected vicinity for the remedial action. For sites where site-specific risk assessment is used, ~~the department shall~~Ecology will also evaluate public

interest in the site, significant public concerns regarding future site use, and public values to be addressed through the public participation plan.

(9) Public participation plans. For Ecology-conducted and Ecology-supervised remedial actions, except emergency remedial actions, Ecology will ensure that a public participation plan is developed and implemented.

(a) Purpose and Scope. ~~The~~ A public participation plans ~~required by this section are~~ is intended to encourage a coordinated and effective public involvement tailored to the public's needs at a ~~particular facility~~ site, and facilitate equitable participation by the public. The scope of ~~a~~ the plan ~~shall~~ must be commensurate with: ~~the nature of the proposed remedial actions; the level of public concern; and the risks posed by the facility~~

(i) The threats posed by the site to human health and the environment, including vulnerable populations and overburdened communities;

(ii) The level of public concern regarding the threats; and

(iii) The nature of the proposed remedial actions to address the threats.

(b) Early planning encouraged. In order to develop an appropriate plan, ~~the department~~ Ecology or a potentially liable person or prospective purchaser (if submitting a plan to ~~the department~~ Ecology) should engage in an early planning process to assess the public participation needs at the ~~facility~~ site. This process may include identifying and conferring with individuals, community groups, local governments, non-federally recognized tribes, public agencies, or any other organizations that may have an interest in or knowledge of the ~~facility~~ site.

(c) Plan Development. ~~The department shall~~ Ecology will develop the plan, or work with ~~the~~ a potentially liable person or prospective purchaser to develop the plan.

(i) If a plan already exists for ~~a facility~~ the site, ~~the department shall~~ Ecology will consider whether the existing plan is still appropriate or whether the plan should be amended. For example, a plan originally developed to address a remedial investigation/feasibility study may need to be amended to address implementation phases.

~~**(d) Plans required.** As part of requiring or conducting a remedial action, except emergency actions, at any site that has been assigned a hazard ranking score, the department shall ensure that a public participation plan is developed and implemented. The department may also require the development of a public participation plan as part of an agreed order (see WAC 173-340-530) or consent decree (see WAC 173-340-520) for facilities that have not been assigned a hazard ranking score.~~

~~**(e)** If the variables proposed to be modified in a site-specific risk assessment or alternative reasonable maximum exposure scenario may affect the significant public concerns regarding future land uses and exposure scenarios, then the department shall assure~~

~~appropriate public involvement and comment opportunities will occur as identified in the public participation plan.~~

~~(f)(ii)~~ **Plan as part of order or decree.** ~~Unless otherwise directed by Ecology, A~~ potentially liable person or prospective purchaser requesting an agreed order under WAC 173-340-530 or a consent decree under WAC 173-340-520 ~~will ordinarily be required to~~ must submit a proposed ~~public participation~~ plan as part of its request ~~for an agreed order or a consent decree~~. If a plan already exists for the ~~facility~~ site, the potentially liable person or prospective purchaser may either resubmit the existing plan with any proposed amendments or submit an entirely new proposed plan. The proposed plan may be revised during the course of discussions ~~or negotiations~~ on the agreed order ~~(see WAC 173-340-530)~~ or negotiations on the consent decree ~~(see WAC 173-340-520)~~. The final ~~public participation~~ plan may become part of the agreed order or consent decree.

~~(g)(d)~~ **Contents.** ~~The~~ A public participation plan ~~shall~~ must include the following:

- (i) Applicable public notice requirements and how these will be met, including:
 - (A) When public notice will occur;
 - (B) ~~The~~ length of the comment periods accompanying each notice;
 - (C) ~~The~~ potentially affected vicinity and any other areas to be provided notice, to the extent known~~;~~
- (ii) Information repositories. The plan should identify at least one location where the public can review information about the remedial action. Multiple locations may be appropriate~~;~~
- (iii) Methods of identifying the public's concerns. Such methods may include~~;~~ ~~interviews;~~ ~~questionnaires;~~ ~~meetings;~~ ~~contacts with community groups or other organizations that have an interest in the site;~~ or ~~establishing citizen advisory groups for sites;~~ ~~or obtaining advice from the appropriate regional citizens' advisory committee.~~
- (iv) Methods of addressing the public's concerns and conveying information to the public. These may include any of the methods listed in subsection ~~(6)~~ (4) of this section~~;~~
- (v) Coordination of public participation requirements. The plan should identify any public participation requirements of other applicable federal, state or local laws, and address how such requirements can be coordinated. For example, if ~~Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)~~ the federal cleanup law applies to the proposed action, the plan should explain how ~~CERCLA~~ the federal cleanup law and this chapter's public comment periods will be coordinated~~;~~

- (vi) Amendments to the plan. The plan should outline the process for amending the plan. Any amendments must be approved by ~~the department~~Ecology; and
 - ~~(vii) Citizen technical advisor: A statement indicating the availability of the department's citizen technical advisor for providing technical assistance to citizens on issues related to the investigation and cleanup of the site.~~
 - (viii) Any other elements that ~~the department~~Ecology determines to be appropriate for inclusion in the final public participation plan.
- (e) **Site-specific risk assessment.** If the variables proposed to be modified in a site-specific risk assessment or alternative reasonable maximum exposure scenario may affect the significant public concerns regarding future land uses and exposure scenarios, Ecology will assure appropriate public involvement and comment opportunities will occur as identified in the plan.
- ~~(h)~~(f) **Implementation.** ~~The department shall~~Ecology retains approval authority over the actions taken by a potentially liable person or prospective purchaser to implement the plan.
- (10) **Consent decrees.** ~~In addition to any other applicable public participation requirements, the following shall be required for consent decrees~~Ecology will provide or require the following notice and comment opportunities when negotiating a consent decree under WAC 173-340-520.
 - (a) **Public participation plan.** ~~A plan meeting the requirements of subsection (9) of this section shall be developed when required by subsection (9)(d) of this section.~~Ecology will develop, or require the development of, a public participation plan in accordance with subsection (9) of this section.
 - (b) **Notice of negotiations.** When ~~the department~~Ecology decides to proceed with negotiations for a consent decree, ~~it shall place a notice~~Ecology will notify the public in the Contaminated Site Register advising the public that negotiations have begun. This notice ~~shall~~must include the name of the ~~facility~~site, a general description of the subject of the ~~consent~~ decree, and the deadlines for negotiations.
 - (c) **Public ~~N~~notice of proposed decree.** ~~The department shall~~Ecology will provide or require public notice of a proposed consent decree in accordance with subsection (2) of this section. The public notice may be ~~combined~~consolidated with public notice of other documents under this chapter, such as a cleanup action plan, or notice required under other laws.
 - (i) **Timing.** The public must be provided with notice and an opportunity to comment on a proposed consent decree before Ecology agrees to a settlement.
 - (ii) **Content.** ~~The n~~Notice of a proposed consent decree shall must briefly:
 - ~~(i)~~(A) Identify and generally describe the ~~facility~~site;
 - ~~(ii)~~(B) Identify the person~~(s)~~ who are parties to the consent decree;

- ~~(iii)~~(C) Generally describe the remedial action proposed in the proposed consent decree, including institutional controls and permit exemptions authorized under RCW ~~70.105D.090~~ 70A.305.090;
- ~~(iv)~~(D) Indicate the ~~date~~, place, date, and time of ~~the any planned~~ public hearing on the proposed consent decree. ~~Where~~If a public hearing is not planned, specify the procedures for requesting one and indicate that Ecology will only hold a public hearing ~~will only be held~~ if at least ten persons request one ~~and the procedures for requesting a public hearing~~; and
- ~~(v)~~(E) Invite the public to comment at ~~the~~a public hearing (if applicable) or in writing.
- (iii) **Comment opportunity.** ~~The public comment period shall run for~~Ecology will provide the public at least thirty days from the date ~~of the issuance of~~ the notice is issued to comment on the proposed consent decree.
- ~~(d)~~(iv) **Public hearing.** ~~The department shall~~Ecology will hold a public hearing on the proposed consent decree for the purpose of providing the public with an opportunity to comment whenever ten or more persons request a public hearing or whenever ~~the department~~Ecology determines a public hearing is necessary.
- ~~(e)~~(d) **Revisions**Public notice of substantial changes to proposed decree. If the state and the potentially liable person or prospective purchaser agree to substantial changes to ~~the~~a proposed consent decree, ~~the department shall~~Ecology will provide or require additional public notice ~~and opportunity to comment~~of the proposed changes in accordance with subsection (2) of this section.
- ~~(f)~~ **Extensions.** ~~The department shall publish in the next Site Register the extension of deadlines for designated high priority sites.~~
- (11) **Agreed orders.** ~~In addition to any other applicable public participation requirements, the following shall be required for~~Ecology will provide or require the following notice and comment opportunities when discussing an agreed orders under WAC 173-340-530.

 - (a) **Public participation plan.** Ecology will develop, or require the development of, A plan meeting the requirements of subsection (9) of this section shall be developed when required by subsection (9)(d) of this section a public participation plan in accordance with subsection (9) of this section.
 - (b) **Notice of discussions.** When ~~the department~~Ecology decides to proceed with discussions for an agreed order, it shall place a noticeEcology will notify the public in the Contaminated Site Register ~~advising the public that discussions have commenced.~~ This notice ~~shall~~must include the name of the facility~~site~~, a general description of the subject of the order, and the deadlines for discussions.

- (c) **Public notice of proposed agreed orders.** ~~Public notice shall be provided by the department for any agreed order~~ Ecology will provide or require public notice of a proposed agreed order in accordance with subsection (2) of this section. The public notice may be consolidated with public notice of other documents under this chapter, such as a cleanup action plan, or notice required under other laws.
- (i) **Timing.** Ecology will provide or require notice of a proposed agreed order before or concurrent with the issuance of the agreed order. ~~The For all agreed orders, n~~notice ~~shall~~ must be ~~mailed~~ provided no later than three days after Ecology issues ~~the issuance of~~ the agreed order. ~~For all agreed orders, the comment period shall be at least thirty days. Unless Ecology determines that it is not in the public interest, The~~an agreed order may ~~be~~ become effective before the comment period ~~is over ends~~, unless the department determines it is in the public interest to complete the public comment period before the effective date of the agreed order. ~~The department may determine that it is in the public interest to provide public notice before the effective date of any agreed order or to hold a public meeting or hearing on the agreed order.~~
- (ii) **Content.** Notice of a proposed agreed orders ~~shall~~ must briefly:
- (i) **(A)** Identify and generally describe the ~~facility~~ site;
- (ii) **(B)** Identify the person ~~(s)~~ s who are parties to the agreed order;
- (iii) **(C)** Generally describe the remedial action proposed in the proposed agreed order, including institutional controls and permit exemptions authorized under RCW ~~70.105D.090~~ 70A.305.090; and
- (iv) **(D)** Invite the public to comment on the proposed agreed order.
- (ii) **Comment opportunity.** Ecology will provide the public at least thirty days from the date the notice is issued to comment on a proposed agreed order.
- (iii) **Public hearing.** Ecology may hold a public meeting or hearing on a proposed agreed order if it determines that it is in the public interest.
- (d) **RevisionsPublic notice of substantial changes to proposed order.** ~~If the department~~Ecology and the potentially liable person or prospective purchaser agree to substantial changes to ~~the~~a proposed agreed order, ~~the department shall~~Ecology will provide ~~or require~~ additional public notice ~~and opportunity to comment~~of the proposed changes in accordance with subsection (2) of this section.
- ~~(e) — Extensions. The department shall publish in the next Site Register the extension of deadlines for designated high priority sites.~~
- (12) **Enforcement orders.** ~~In addition to any other applicable public participation requirements, the department shall provide public notice of all enforcement orders~~Ecology will provide the public with the following notice and comment opportunities when preparing an enforcement order under WAC 173-340-540.

- (a) Public participation plan.** Ecology will develop a public participation plan in accordance with subsection (9) of this section.
- (b) Public notice of proposed order.** Ecology will provide public notice of a proposed enforcement order in accordance with subsection (2) of this section. The public notice may be consolidated with notice of other documents under this chapter, such as a cleanup action plan, or under other laws.

 - (i) Timing.** Ecology will provide notice of a proposed enforcement order before or concurrent with the issuance of the order.

 - (A)** Except in ~~the case of~~ emergencies, Ecology will provide the notice ~~shall be mailed~~ no later than three days after ~~the date of the issuance of~~ Ecology issues the enforcement order.
 - (B)** In emergencies, Ecology will provide the notice ~~shall be mailed~~ no later than ten days after ~~the issuance of~~ Ecology issues the enforcement order.
 - ~~(a)(ii)~~ **(ii) Contents of notice.** ~~All notices~~ Notice of a proposed enforcement order ~~shall~~ must briefly:

 - ~~(i)(A)~~ **(A)** Identify and generally describe the ~~facility~~ site;
 - ~~(ii)(B)~~ **(B)** Identify the person ~~(s)~~ who are parties to the enforcement order;
 - ~~(iii)(C)~~ **(C)** Generally describe the terms of the proposed enforcement order, including institutional controls and permit exemptions authorized under RCW ~~70.105D.090~~ 70A.305.090; and
 - ~~(iv)(D)~~ **(D)** Invite the public to comment on the proposed enforcement order.
 - (iii) Comment opportunity.** Ecology will provide the public at least thirty days from the date Ecology issues the notice to comment on a proposed enforcement order.
- (b) Public notice of substantial changes to proposed order.** ~~The department~~ Ecology may amend the enforcement order ~~on the basis of~~ based on public comments. ~~The department shall provide additional public notice and opportunity to comment if~~ Ecology substantially changes the enforcement order ~~is substantially changed~~, Ecology will provide additional public notice of the proposed changes in accordance with subsection (2) of this section.
- (13) Remedial investigation/feasibility study.** ~~In addition to any other applicable public participation requirements, the following shall be required during a remedial investigation/feasibility study.~~ For Ecology-conducted and Ecology-supervised remedial actions, Ecology will require or provide the public with the following notice and comment opportunities during a remedial investigation and/or feasibility study conducted under WAC 173-340-350 and/or 173-340-351.

- (a) **ScopingPublic notice of work plan.** ~~When the department elects to perform a remedial investigation/feasibility study, the department shall provide public notice and an opportunity to comment on the scope of the remedial investigation/feasibility study.~~ For Ecology-conducted remedial actions, Ecology will provide public notice of a remedial investigation work plan in accordance with subsection (2) of this section. Ecology will provide the public at least thirty days from the date Ecology issues the notice to comment on the plan.
- ~~(b) — Extensions.~~ ~~The department shall publish in the next Site Register the extension of deadlines for designated high-priority sites.~~
- ~~(c)(b)~~ **Public notice of Rreport.** ~~The department shall~~ Ecology will provide or require public notice of a remedial investigation and/or feasibility study reports ~~prepared under WAC 173-340-350~~ in accordance with subsection (2) of this section. ~~This~~ The public notice may be ~~combined~~ consolidated with public notice of ~~the~~ a draft cleanup action plan. When deciding whether to consolidate public notice, Ecology will consider the factors in subsection (3) of this section.
- (i) **Content.** ~~At a minimum, public notice shall~~ Notice of a remedial investigation and/or feasibility study report must briefly:
- ~~(i)(A)~~ (A) Describe the site; ~~and~~
- (B) Describe the remedial investigation and/or feasibility study results;
- ~~(ii)(C)~~ (C) If available, identify ~~the department's~~ Ecology's proposed cleanup action and provide an explanation for its selection; and
- ~~(iii)(D)~~ (D) Invite public comment on the report.
- (ii) **Comment opportunity.** ~~The public comment period shall extend for~~ Ecology will provide the public at least thirty days from the date ~~of mailing of~~ the notice is issued to comment on a remedial investigation and/or feasibility study report.
- (14) **Selection of cleanup actions.** ~~In addition to any other applicable public participation requirements, the department shall:~~ For Ecology-conducted and Ecology-supervised remedial actions, Ecology will require or provide the public with the following notice and comment opportunities when selecting a cleanup action under WAC 173-340-380.
- ~~(a) — Provide a notice of availability of draft or final cleanup action plans and a brief description of the proposed or selected alternative in the Site Register;~~
- ~~(b)(a)~~ **Public notice of draft cleanup action plan.** ~~Provide public notice of the draft cleanup action plan.~~ When issuing a draft cleanup action plan, Ecology will provide or require public notice of the plan in accordance with subsection (2) of this section. A notice of a draft cleanup plan The public notice may be combined consolidated with public notice on theof a remedial investigation/feasibility study report or a proposed order or decree. Notice of a draft cleanup action plan may be combined with notice on a draft consent decree or on an order.

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must be provided in accordance with subsection (2) of this section. Ecology will provide the public at least thirty days from the date the notice is issued to comment on the plan.

(c) Notice of failure of selected cleanup action.

(i) If Ecology determines, following implementation of the selected cleanup action, that the cleanup standards or, where applicable, remediation levels established in the cleanup action plan cannot be achieved, Ecology will:

(A) Make the determination publicly available on Ecology's website under subsection (5) of this section;

(B) If requested, notify a person electronically of the determination's availability under subsection (6) of this section; and

(C) Provide notice of the determination in the *Contaminated Site Register* under subsection (7) of this section.

(ii) If Ecology makes the determination based on a periodic review under WAC 173-340-420, Ecology may consolidate notice of the determination with public notice of the periodic review under subsection (18) of this section.

(16) ~~**Routine cleanup and interim actions.**~~ ~~In addition to any other applicable public participation requirements, the following will be required for routine cleanup actions and interim actions.~~ For Ecology-conducted and Ecology-supervised remedial actions, Ecology will provide or require public notice of a draft interim action plan prepared under WAC 173-340-430. The public notice must be provided in accordance with subsection (2) of this section. The public notice may be consolidated with public notice of a proposed order or decree.

~~**(a)** Public notice shall be provided for any proposed routine cleanup or interim actions. This public notice shall be combined with public notice of an order or settlement whenever practicable.~~

(b)(a) Content. ~~At a minimum, public notice shall~~ Notice of a draft interim action plan must briefly:

(i) Describe the site;

(ii) Identify the proposed interim action, including institutional controls and the permit exemptions authorized under RCW ~~70.105D.090~~ 70A.305.090;

(iii) Identify the likely or planned schedule for the proposed interim action;

(iv) Reference any planning documents prepared for the proposed interim action;

(v) Identify ~~department~~ Ecology staff who may be contacted for further information; and

(vi) Invite public comment on the ~~routine cleanup or~~ proposed interim action.

- (b) Comment period.** ~~The public comment period shall extend for~~ Ecology will provide the public at least thirty days from the date ~~of the mailing of~~ the notice is issued to comment on a proposed interim action.
- (17) Removing sites from contaminated sites list.** For Ecology-conducted and Ecology-supervised remedial actions, Ecology will provide public notice before removing a site from the contaminated sites list under WAC 173-340-330. The public notice must be provided in accordance with subsection (2) of this section. Ecology will provide the public at least thirty days from the date Ecology issues the notice to comment on the proposed removal from the contaminated sites list.
- (18) Periodic reviews.** For Ecology-conducted and Ecology-supervised remedial actions, Ecology will provide public notice of a periodic review report prepared under WAC 173-340-420. The public notice must be provided in accordance with subsection (2) of this section. Ecology will provide the public at least thirty days from the date Ecology issues the notice to comment on a periodic review.
- (19) Institutional controls.** For Ecology-conducted and Ecology-supervised remedial actions, before amending or removing an institutional control required under WAC 173-340-440, Ecology will provide or require public notice on the proposal in accordance with subsection (2) of this section. Ecology will provide the public at least thirty days from the date the notice is issued to comment on the proposal.
- (20) Independent remedial actions.**
- (a)** For independent remedial actions, Ecology will notify the public of the following using the methods specified in subsections (5) and (6) of this section:
- (i)** The site's listing and remedial action status identified under WAC 173-340-330;
 - (ii)** The site's current hazard rankings identified under WAC 173-340-320;
 - (iii)** Any initial investigation report prepared under WAC 173-340-310;
 - (iv)** Any independent remedial investigation, interim action, or cleanup action report required under WAC 173-340-515(4) and received by Ecology;
 - (v)** The results of any Ecology review of an independent remedial action, including any written opinion issued by Ecology under WAC 173-340-515(5);
 - (vi)** Any periodic review of a site under WAC 173-340-420; and
 - (vii)** Any document implementing, amending, or removing an institutional control under WAC 173-340-440.
- (b)** Ecology will provide notice of the following independent remedial actions in the *Contaminated Site Register* under subsection (7) of this section:

- (i) Any notice of a planned independent interim action or cleanup action submitted to Ecology in anticipation of a private right of action under WAC 173-340-545(3)(a); and
 - (ii) Any proposed area-wide groundwater conditional point of compliance under WAC 173-340-720(8)(d)(iii)(D).
 - (c) For independent remedial actions, Ecology may provide public notice of any proposed action for which public notice is required under this chapter for an Ecology-conducted or Ecology-supervised remedial action.
- (1721) Public participation grants.** RCW ~~70.105D.070~~70A.305.180(4) requires funds be allocated for public participation grants to persons, including groups, who may be adversely affected by a release or threatened release of a hazardous substance. Persons interested in applying for such grants are encouraged to contact ~~the department~~Ecology to learn about available funding, grant application procedures, and deadlines. See chapter 173-321 WAC for additional information on public participation grants.
- ~~(18) **Technical assistance.** There is created within the department a citizen technical advisor office to provide independent technical assistance to citizens concerning the Model Toxics Control Act and remedial actions occurring under the act. This office will be established upon the effective date of this rule revision and continue for three years. Before the end of the three-year period, the department will work with citizen and business representatives to evaluate the effectiveness of this office and to determine whether the office should continue. The costs of this office shall be recovered by the department as provided for in WAC 173-340-550.~~
- (22) Other requirements.** The following sections of this chapter specify additional requirements for providing notice or opportunity to comment.
- (a) WAC 173-340-310(6)(e)(vi) contains focused notice requirements for emergency or interim actions required by Ecology as a result of an initial investigation.
 - (b) WAC 173-340-320(2)(b) contains notice and comment requirements for developing and updating the site hazard assessment and ranking process.
 - (c) WAC 173-340-330(9)(a) and 173-340-335(5)(a) contain requirements for making the contaminated sites list and the no further action sites list publicly available.
 - (d) WAC 173-340-340(4)(a) contains requirements for making Ecology's strategic plans and performance assessments publicly available.
 - (e) WAC 173-340-390(2)(c) contains notice and comment requirements for developing model remedies.
 - (f) WAC 173-340-440(10) contains local government consultation requirements for proposing institutional controls.
 - (g) WAC 173-340-545(3) contains public notice requirements for private rights of action.

- (h) WAC 173-340-720(6)(c)(A) contains focused notice and comment requirements for establishing site-specific non-potable groundwater cleanup levels.
- (i) WAC 173-340-720(8)(d) contains focused notice and comment requirements for establishing off-property conditional points of compliance.

~~WAC 173-340-610 — Regional citizens' advisory committees.~~

- ~~(1) — The department shall establish regional citizens' advisory committees as part of a public participation program. The regional citizens' advisory committees are intended to promote meaningful and effective public involvement in the department's remedial action program under chapter 70.105D RCW. The committees will advise the department as to the concerns of citizens locally and regionally regarding the remedial actions within each committee's region, with emphasis on issues that affect the region as a whole, rather than site-specific concerns.~~
- ~~(2) — **Location.** There shall be a regional citizens' advisory committee representing each geographic region of the state served by a regional office of the department.~~
- ~~(3) — **Membership.** At any time, each committee shall have no fewer than five and no more than twelve members. The director shall, no later than July 1, 1990, appoint five members to each committee to represent citizens' interests in the region. These members shall serve three-year terms that may be renewed at the director's discretion. These members should represent citizen interests in the region.~~
 - ~~(a) — The director may appoint up to seven additional members to represent communities that may be affected by the remedial actions within each region. These members shall serve two-year terms that may be renewed at the director's discretion.~~
 - ~~(b) — At no time shall more than twenty five percent of the membership of any committee consist of persons who are elected or appointed public officials or their representatives.~~
 - ~~(c) — The department shall advise the public as to whether any vacancies exist on the committees, and shall accept applications from interested citizens.~~
 - ~~(d) — The following persons shall not be eligible to serve on any committee:~~
 - ~~(i) — Persons whom the department has found are potentially liable persons under WAC 173-340-500 with regard to any facility that is currently the subject of department investigative, remedial or enforcement actions, not including compliance monitoring;~~
 - ~~(ii) — Agents or employees of such potentially liable persons as described in (d)(i) of this subsection; and~~
 - ~~(iii) — Agents or employees of the department.~~
 - ~~(e) — A member shall refrain from participating in a committee matter if that member for any reason cannot act fairly and in the public interest with regard to that matter.~~
 - ~~(f) — The director may dismiss a member for cause in accordance with the terms of the regional citizens' advisory committee charter.~~
- ~~(4) — **Meetings.** The committees shall meet at least twice a year at the regional offices or elsewhere as agreed upon by a committee and the department. Appropriate department staff may attend these meetings. The department shall brief the committees on the program's major planned and ongoing activities for the year.~~

- ~~(a) — The department and the committees may agree to additional meetings.~~
- ~~(b) — Each committee will designate one of its members to serve as chair. The committee chairs shall meet every year with the program manager or his/her designee.~~
- ~~(c) — All committee meetings shall be open to the public. The department shall inform the public of committee meetings.~~

~~(5) — Resources allocated to the committees.~~

- ~~(a) — The department shall determine, after consulting with the committees, the amount of staff time and other department resources that shall be available to the committees for each biennium.~~
- ~~(b) — The department shall designate staff to work with the committees.~~
- ~~(c) — Members shall be reimbursed for travel expenses (as provided for in chapter 43.03 RCW) for any meetings approved by the department.~~

~~(6) — Responsibilities. The committees are directed to:~~

- ~~(a) — Meet at least twice annually;~~
- ~~(b) — Inform citizens within each region as to the existence of the committees and their availability as a resource;~~
- ~~(c) — Review the department's biennial program priorities, and advise the department of citizen concerns regarding the program priorities;~~
- ~~(d) — Advise the department of community concerns about the cleanup program's activities and develop proposals for addressing these concerns. Committees may use issues at specific sites as a foundation for understanding regional issues;~~
- ~~(e) — Annually prepare a brief report to the department describing:
 - ~~(i) — Major citizen concerns that have been brought to the committee's attention during the past year;~~
 - ~~(ii) — Any committee proposals or recommendations to address these concerns;~~
 - ~~(iii) — The committee's plans for the coming year; and~~
 - ~~(iv) — Any other information or issues which the committee believes appropriate for inclusion.~~~~
- ~~(f) — The committees are encouraged to work with the department and the public to develop additional committee goals or responsibilities.~~

WAC 173-340-620 Tribal engagement.

- (1) Purpose.** Tribal engagement is an integral part of Ecology’s responsibilities under chapter 70A.305 RCW, the Model Toxics Control Act. Ecology’s goal is to provide Indian tribes with timely information, effective communication, continuous opportunities for collaboration and, when necessary, government-to-government consultation, as appropriate for each site.
- (2) Applicability.** This section applies to Ecology-conducted and Ecology-supervised remedial actions affecting Indian tribes’ rights or interests in their tribal lands.
- (3) Tribal engagement plan.**

 - (a)** Ecology will develop a site tribal engagement plan that identifies Indian tribes that may be adversely affected by the site, opportunities for government-to-government collaboration and consultation, and protocols for communication.
 - (b)** Ecology encourages early planning and engagement. Ecology will seek to engage affected Indian tribes before initiating a remedial investigation or an interim action at a site.
- (4) Relationship with public participation.** Engagement of Indian tribes under this section must be in addition to and independent of any public participation process under this chapter or applicable laws.

Other Focal Sections

WAC 173-340-450 Releases from regulated underground storage tanks systems.

- ~~(1) — **Purpose.** The purpose of this section is to set forth the requirements for addressing releases that may pose a threat to human health or the environment from an underground storage tank (UST) regulated under chapter 90.76 RCW.~~
- ~~(a) — Releases from USTs exempted under chapter 90.76 RCW and rules adopted therein are still subject to all other requirements of this chapter.~~
- ~~(b) — Unless the department requires otherwise, UST owners and UST operators regulated under chapter 90.76 RCW shall comply with the requirements in this section after confirmation of an UST release that may pose a threat to human health or the environment.~~
- ~~(2) — **Initial response.** Within twenty four hours of confirmation of an UST release, the UST owner or the UST operator shall perform the following actions:~~
- ~~(a) — Report the UST release to the department and other authorities with jurisdiction, in accordance with rules adopted under chapter 90.76 RCW and any other applicable law;~~
- ~~(b) — Remove as much of the hazardous substance from the UST as is possible and necessary to prevent further release to the environment;~~
- ~~(c) — Eliminate or reduce any fire, explosion or vapor hazards in such a way as to minimize any release of hazardous substances to surface water and groundwater; and~~
- ~~(d) — Visually inspect any aboveground releases or exposed belowground releases and prevent the hazardous substance from spreading into surrounding soils, groundwater and surface water.~~
- ~~(3) — **Interim actions.**~~
- ~~(a) — As soon as possible but no later than twenty days following confirmation of an UST release, the UST owner or the UST operator shall perform the following interim actions:~~
- ~~(i) — Continue to monitor and mitigate any additional fire and safety hazards posed by vapors or free product that may have migrated from the UST into structures in the vicinity of the site, such as sewers or basements;~~
- ~~(ii) — Reduce the threat to human health and the environment posed by contaminated soils that are excavated or discovered as a result of investigation or cleanup activities. Treatment, storage and disposal of soils must be carried out in compliance with all applicable federal, state and local requirements;~~
- ~~(iii) — Test for hazardous substances in the environment where they are most likely to be present. Such testing shall be done in accordance with a sampling and analysis plan prepared under WAC 173-340-820. The sample types, sample locations, and measurement methods shall be based on the nature of the stored substance, type of subsurface soils, depth to groundwater and other factors as appropriate for identifying the presence and source of the release. If~~

~~contaminated soil is found in contact with the groundwater or soil contamination appears to extend below the lowest soil sampling depth, then testing shall include the installation of groundwater monitoring wells to test for the presence of possible groundwater contamination. Information gathered for the site check or closure site assessment conducted under rules adopted under chapter 90.76 RCW, which sufficiently characterizes the releases at the site, may be substituted for the testing required under this paragraph;~~

~~(iv) — The testing performed under (a)(iii) of this subsection shall use the analytical methods specified in WAC 173-340-830 and include, at a minimum, the following:~~

~~(A) — For petroleum product releases, the concentration(s) of hazardous substances potentially present at the site, as appropriate for the type of petroleum product(s) released. The minimum testing requirements are specified in Table 830-1.~~

~~(B) — The hazardous substance stored and any likely decomposition by-products where a hazardous substance other than petroleum may be present; and~~

~~(C) — Any other tests required by the department; and~~

~~(v) — Investigate for the presence of free product.~~

~~(4) — **Free product removal.** At sites where investigations indicate free product is present, the UST owner or the UST operator shall conduct, as soon as possible after discovery, an interim action to remove the free product while continuing, as necessary, any other actions required under this section. To accomplish this the UST owner or UST operator shall:~~

~~(a) — Conduct free product removal to the maximum extent practicable and in a manner that minimizes the spread of hazardous substances, by using recovery and disposal techniques appropriate to the hydrogeologic conditions at the site. The objective of free product removal system must be, at a minimum, to stop the free product migration;~~

~~(b) — Properly treat, discharge, or dispose of any hazardous substance, water, sludge or any other materials collected in the free product removal process in compliance with all applicable local, state, and federal regulations and permits; and~~

~~(c) — Handle all flammable products safely to prevent fires and explosions.~~

~~(5) — **Reporting requirements.** The following reports are required to be submitted to the department:~~

~~(a) — **Status report.** Within twenty days after an UST release, the UST owner or UST operator shall submit a status report to the department. The status report shall identify if known, the types, amounts, and locations of hazardous substances released, how the release occurred, evidence confirming the release, actions taken under subsections (2) and (3) of this section, any planned remedial actions, and any results of work done up to the time of the report. This report may be provided verbally to the department.~~

- ~~(b) — **Site characterization reports.** Within ninety days after release confirmation, unless directed to do otherwise by the department, the UST owner or UST operator shall submit a report to the department about the site and nature of the release. This report shall be submitted to the department in writing and may be combined with the twenty-day status report, if the information required is available at that time. The site characterization report shall include, at a minimum, the following information:~~
- ~~(i) — The information required for the status report under (a) of this subsection;~~
 - ~~(ii) — A site conditions map indicating approximate boundaries of the property, all areas where hazardous substances are known or suspected to be located, and sampling locations. This map may consist of a sketch of the site at a scale sufficient to illustrate this information;~~
 - ~~(iii) — Available data regarding surrounding populations, surface and groundwater quality, use and approximate location of wells potentially affected by the release, subsurface soil conditions, depth to groundwater, direction of groundwater flow, proximity to and potential for affecting surface water, locations of sewers and other potential conduits for vapor or free product migration, surrounding land use, and proximity to sensitive environments;~~
 - ~~(iv) — Results of tests for hazardous substances performed under subsection (3)(a)(iii) and (iv) of this section;~~
 - ~~(v) — Results of the free product investigation required under subsection (3)(a)(v) of this section;~~
 - ~~(vi) — Results of all completed site investigations, interim actions and cleanup actions and a description of any remaining investigations, cleanup actions and compliance monitoring that are planned or underway; and~~
 - ~~(vii) — Information on the free product removal efforts at sites where investigations indicate free product is present. This shall include, at a minimum, the following information:~~
 - ~~(A) — Name of the person responsible for implementing the free product removal measures;~~
 - ~~(B) — The estimated quantity, type, and thickness of free product observed or measured in wells, boreholes and excavations;~~
 - ~~(C) — The type of free product recovery system used;~~
 - ~~(D) — The location of any on-site or offsite discharge during the recovery operation;~~
 - ~~(E) — The type of treatment applied to, and the effluent quality expected from, any discharge;~~

~~(F) — The steps taken and planned to obtain necessary permits for any discharge;~~

~~(G) — Disposition of recovered free product; and~~

~~(viii) — Any other information required by the department.~~

~~(6) — Remedial investigation and feasibility study.~~

~~(a) — If the initial cleanup actions taken at an UST site do not achieve cleanup levels throughout the site, a remedial investigation and feasibility study may need to be conducted in accordance with WAC 173-340-350. The scope of a remedial investigation and feasibility study will depend on the informational needs at the site. UST owners and operators shall conduct a remedial investigation and feasibility study for sites where the following conditions exist:~~

~~(i) — There is evidence that the release has caused hazardous substances to be present in the groundwater in excess of the groundwater standards adopted under chapter 90.48 RCW or cleanup levels in WAC 173-340-720 (Table 720-1);~~

~~(ii) — Free product is found; or~~

~~(iii) — Where otherwise required by the department.~~

~~(b) — UST owners and UST operators shall submit the information collected for the remedial investigation/feasibility study to the department as soon as practicable. The information may be included with other reports submitted under this section.~~

~~(c) — If the department determines, based on the results of the remedial investigation/feasibility study or other information, that additional remedial action is required, the department may require the UST owner or the UST operator to submit engineering documents as described in WAC 173-340-400.~~

~~(7) — Cleanup actions. Unless directed to do otherwise by the department, cleanup actions performed by UST owners or UST operators shall comply with the cleanup standards described in WAC 173-340-700 through 173-340-760 and the requirements for the selection of cleanup actions in WAC 173-340-350 through 173-340-390.~~

~~(8) — Independent cleanup actions. In addition to work performed under subsections (2) through (5), and (7) of this section, UST owners or UST operators performing independent cleanup actions shall:~~

~~(a) — Notify the department of their intention to begin cleanup. This can be included with other reports under this section;~~

~~(b) — Comply with any conditions imposed by the department to assure adequate protection of human health and the environment; and~~

~~(c) Within ninety days of completion of the cleanup action, submit the results of all investigations, interim and cleanup actions and compliance monitoring not previously submitted to the department.~~

(1) Applicability.

(a) Releases. This section applies only to underground storage tank (UST) systems regulated under chapter 173-360A WAC from which there has been a confirmed release of a regulated substance that may pose a threat to human health or the environment. Under chapter 173-360A WAC, UST system owners and operators and regulated service providers must report such a release to Ecology within twenty-four hours.

(b) Persons. This section applies only to UST system owners and operators. UST system owners and operators must comply with the requirements in this section in addition to the other requirements in this chapter.

(c) Other requirements. This section does not alter the applicability of requirements in other sections in this chapter.

(2) Purpose. Under chapter 173-360A WAC, UST system owners and operators must investigate and clean up confirmed releases in accordance with the requirements of this chapter. This section specifies interim actions that UST system owners and operators must perform immediately or shortly after confirming a release to reduce threats posed by the release, prevent any further release, and characterize the nature and extent of the release. Further remedial action may be necessary under this chapter to investigate and clean up the release. WAC 173-340-120 provides an overview of the cleanup process in this chapter.

(3) Enforcement. UST system owners and operators who violate any requirement in this chapter are subject to enforcement, including civil penalties and orders, under:

(a) Chapter 70A.305 RCW and this chapter; or

(b) Chapter 70A.355 RCW and chapter 173-360A WAC.

(4) Administrative options. The interim actions specified in this section may be conducted under any of the procedures described in WAC 173-340-510.

(5) Interim actions. UST owners and operators must perform the following interim actions after confirming a release.

(a) Initial response. Within twenty-four hours of release confirmation, UST system owners and operators must:

(i) Remove as much of the hazardous substance from the UST system as is possible and necessary to prevent further release to the environment;

(ii) Eliminate or reduce any fire, explosion, or vapor hazards and do so in a manner that minimizes any release of hazardous substances to surface water and groundwater; and

(iii) Visually inspect any aboveground releases or exposed belowground releases and prevent further migration of released hazardous substances into surrounding soils, groundwater, and surface water.

(b) **Initial site characterization.** Within thirty days of release confirmation, UST system owners and operators must investigate the site to identify the hazardous substances released, the source of the release, the media impacted by the release, and the potential for vapors from contaminated soil or groundwater to enter building, utility vaults, or other structures. At a minimum, UST system owners and operators must:

(i) Develop a sampling and analysis plan meeting the requirements of WAC 173-340-820. The sampling and analysis plan must be based on the substances currently or previously stored in the UST system, type of subsurface soils, depth to groundwater, vapor intrusion pathways, and other factors as appropriate for identifying the presence and source of the release;

(ii) Collect, handle, and analyze samples in accordance with the requirements in WAC 173-340-830;

(iii) Collect samples in the environment where hazardous substances are most likely to be present;

(iv) Investigate groundwater for the presence of hazardous substances and free product if there is evidence of any of the following conditions at the site:

(A) Contaminated soil is in contact with the groundwater;

(B) Contaminated soil extends below the lowest soil sampling depth;

(C) Groundwater contamination has been detected or observed;

(D) The release has migrated to surface water or wetlands; or

(E) There is no evidence of the conditions in (b)(iii)(A) through (D) of this subsection, but UST owners and operators cannot demonstrate to Ecology's satisfaction that the release does not pose a threat to groundwater;

(v) Analyze collected samples for the hazardous substances released from the UST system, including:

(A) For petroleum, the substances specified in Table 830-1 based on the product stored; and

(B) For other hazardous substances, the substance stored and any likely decomposition by-products;

(vi) Conduct any other investigations required by Ecology; and

- (vii) Properly manage and dispose any waste materials, including contaminated soil and water, generated as a result of the initial site characterization in accordance with applicable state and federal laws. See WAC 173-340-710.
 - (c) **Free product removal.** If free product is discovered at the site, as soon as possible but no later than thirty days after release confirmation, UST system owners and operators must initiate actions to remove the free product while continuing, as necessary, any other actions required under this section. At a minimum, UST system owners and operators must:
 - (i) Conduct free product removal to the maximum extent practicable and in a manner that minimizes the spread of hazardous substances by using recovery and disposal techniques appropriate to the hydrogeologic conditions at the site. At a minimum, the free product removal system must be designed and operated to stop the free product migration;
 - (ii) Properly treat, discharge, or dispose of any hazardous substance, water, sludge or any other materials collected in the free product removal process in accordance with applicable state and federal laws. See WAC 173-340-710;
 - (iii) Handle all flammable products safely to prevent fires and explosions;
 - (iv) Monitor, in accordance with WAC 173-360A-0665(4), for the presence of free product at least quarterly; and
 - (v) Unless otherwise directed by Ecology, submit to Ecology written quarterly progress reports describing the results of the monitoring and free product removal actions. The first report may be combined with the interim action report required under subsection (6) of this section.
 - (d) **Continuing obligations.** UST system owners and operators must continue to conduct the following measures to abate hazards at the site while continuing, as necessary, any other remedial action required under this chapter:
 - (i) Monitor and mitigate any additional fire and safety hazards posed by vapors or free product that may have migrated from the UST system into nearby buildings or other structures, such as underground utilities;
 - (ii) Reduce the threat to human health and the environment posed by contaminated soils excavated or discovered as a result of any remedial action; and
 - (iii) Properly manage and dispose any waste materials, including contaminated soil and water, generated as a result of any remedial action in accordance with applicable state and federal laws. See WAC 173-340-710.
- (6) **Interim action report.** Within ninety days of release confirmation, UST system owners and operators must submit an interim action report to Ecology about the site and nature of the

release. This report must comply with the submittal requirements in WAC 173-340-840 and include, at a minimum, the following information:

- (a) A summary of the initial response actions required under subsection (5)(a) of this section, and any resulting information and data;
- (b) The results of the initial site characterization required under subsection (5)(b) of this section, and any other investigations conducted at the site, including:
 - (i) The source(s) of the releases;
 - (ii) An explanation of how the releases occurred;
 - (iii) The hazardous substances released, and the estimated quantity of hazardous substances released;
 - (iv) The media contaminated by those releases and, to the extent known, the nature and extent of contamination within those media, and sample locations.
 - (A) If groundwater has not been tested, UST system owners and operators must include a demonstration that the release does not pose a threat to groundwater.
 - (B) If no potential vapor intrusion pathways have been identified, UST system owners and operators must include a demonstration that there is no potential for vapors from contaminated soil or groundwater to enter buildings, utility vaults, or other structures;
 - (v) The results of the free product investigation, if applicable; and
 - (vi) To the extent known, the pathways of exposure at the site and the human or ecological receptors affected by the releases;
- (c) The physical characteristics of the site, including:
 - (i) The location of tax parcels, property boundaries, right-of-ways, and above and below-ground structures;
 - (ii) The geology of the site, including subsurface soil conditions;
 - (iii) The hydrology of the site, including depth to groundwater, direction of groundwater flow, approximate location of wells potentially affected by the release, proximity of the release to and potential for affecting surface water and wetlands, the quality and use of groundwater and surface water;
 - (iv) The location of underground utilities and other potential conduits for vapor or free product migration; and
 - (v) The population and uses of the site and surrounding area;
- (d) Diagrams and cross-sections of the site, as appropriate, reflecting the information required in (b) and (c) of this subsection;

- (e) At sites where investigations indicate free product is present, information on the free product removal efforts, including:
 - (i) Name of the person responsible for implementing the free product removal measures;
 - (ii) The estimated quantity, type, and thickness of free product observed or measured in wells, boreholes and excavations;
 - (iii) The type of free product recovery system used;
 - (iv) If the recovery or monitoring of free product results in any discharges, then:
 - (A) The location of such discharges;
 - (B) The type of treatment applied to, and the effluent quality expected from such discharges; and
 - (C) The steps taken and planned to obtain necessary permits for such discharges; and
 - (v) Disposition of recovered free product and other contaminated materials generated by site investigations and cleanup;
- (f) A description of any other on-going or completed remedial actions, and the results of such actions;
- (g) A description of any planned remedial actions;
- (h) The type of mechanism used to meet the financial responsibility requirements of WAC 173-360A-1045(2)(a), and if the mechanism is an insurance policy, then:
 - (i) Whether a claim has been made on the policy; and
 - (ii) Whether the insurer has accepted or denied the claim; and
- (i) Any other information required by Ecology.
- (7) Periodic updates on remedial actions.** At least every three years after release confirmation or more frequently as directed by Ecology, UST system owners and operators must update the interim action report required under subsection (6) of this section and submit it to Ecology unless:
 - (a) The site has been removed from the contaminated sites list under WAC 173-340-330;
 - (b) Ecology is conducting remedial actions at the site or is supervising remedial actions at the site under an order or decree; or
 - (c) The site is enrolled in a technical assistance program under WAC 173-340-515(5) or chapter 374-80 WAC.

WAC 173-340-510 Administrative options for remedial actions.

At sites where Ecology has determined remedial action is necessary under the state cleanup law, it is the responsibility of each and every liable person to conduct remedial action so that the sites are cleaned up well and expeditiously. This section provides an overview of the administrative options for remedial action and the process for initiating remedial action. If there are any inconsistencies between this section and any specifically referenced sections, the referenced section governs.

~~(1) — **Policy.** It is the responsibility of each and every liable person to conduct remedial action so that sites are cleaned up well and expeditiously where a release or threatened release of a hazardous substance requires remedial action. Potentially liable persons are encouraged to initiate discussions and negotiations with the department and the office of the attorney general that may lead to an agreement on the remedial action to be conducted with the state of Washington. The department may provide informal advice and assistance on the development of proposals for remedial action, as provided by WAC 173-340-515. Any approval by the department or the state of remedial action shall occur by one of the means described in subsections (2) and (3) of this section.~~

~~(2) — **Actions initiated by the potentially liable person.** Potentially liable persons may initiate a remedial action, as follows:~~

~~(a) — A person may initiate negotiations for a consent decree by submitting a letter under WAC 173-340-520(1).~~

~~(b) — A person may request an agreed order by submitting a letter under WAC 173-340-530.~~

~~(3) — **Action initiated by the department.** The department may initiate remedial action by:~~

~~(a) — Issuing a letter inviting negotiations on a consent decree under WAC 173-340-520(2); or~~

~~(b) — Requesting an agreed order under WAC 173-340-530; or~~

~~(c) — Issuing an enforcement order under WAC 173-340-540.~~

~~(4) — **Department remedial action.** Nothing in this chapter shall preclude the department from taking appropriate remedial action on its own at any time. Except for emergency actions and initial investigations, reasonable effort will be made to notify potentially liable persons before the department takes remedial actions for which the recovery of public funds can be sought under RCW 70.105D.050(3).~~

(1) **Independent remedial action.** A person may investigate or clean up a site independently, without Ecology supervision or approval, except as provided under WAC 173-340-515(2).

(a) **Standards.** When reviewing an independent remedial action, Ecology determines whether it complies with the substantive requirements of the state cleanup law. Persons conducting an independent remedial action do so at their own risk. Ecology may require additional remedial action if it determines that such action is necessary under the state cleanup law. See WAC 173-340-515(3).

- (b) Reports.** Persons conducting independent remedial action must report all remedial investigations, interim actions, and cleanup actions to Ecology. Reports must include sufficient information for Ecology to determine whether the remedial action meets the substantive requirements of the state cleanup law. See WAC 173-340-515(4).
 - (c) Technical assistance.** Persons planning or conducting independent remedial action may request technical assistance from Ecology, including advice on how to investigate and clean up a site and written opinions on whether a planned or completed remedial action meets the substantive requirements of the state cleanup law. Ecology may charge a fee for providing requested technical assistance. PLIA may also provide technical assistance for certain sites under RCW 70A.330.040(7) and chapter 374-80 WAC.
 - (2) Ecology-supervised remedial action.** Ecology may supervise the investigation or cleanup of a site by a potentially liable person or a prospective purchaser under an order or decree. Such persons are encouraged to initiate discussions and negotiations with Ecology and the attorney general that may lead to an agreement with the state of Washington on the remedial action to be conducted at a site. Ecology and the state will only approve of remedial action if it is an Ecology-supervised remedial action.
 - (a) Consent decree.** Ecology and the attorney general may require remedial action as part of a settlement agreement with a potentially liable person or a prospective purchaser. A settlement agreement must be entered as a consent decree issued by a court of competent jurisdiction. See RCW 70A.305.040(4) and (5), and WAC 173-340-520.
 - (i) Settlement.** A consent decree may contain a covenant not to sue and provide protection from contribution claims.
 - (ii) Initiation.** Negotiations for a consent decree may be initiated by a potentially liable person, a prospective purchaser, or Ecology.
 - (b) Agreed order.** Ecology may issue an order requiring remedial action with which a potentially liable person or a prospective purchaser agrees to comply. See RCW 70A.305.020(1), 70A.305.050(1), and 70A.305.040(6) and WAC 173-340-530.
 - (i) No settlement.** An agreed order is not a settlement agreement and does not contain a covenant not to sue or provide protection from contributions claims.
 - (ii) Initiation.** Discussions for an agreed order may be initiated by a potentially liable person, a prospective purchaser, or Ecology.
 - (c) Enforcement order.** Ecology may issue an enforcement order requiring a potentially liable person to conduct remedial action. See RCW 70A.305.050(1) and WAC 173-340-540.
 - (3) Ecology-conducted remedial action.** Ecology may take appropriate remedial action to investigate or clean up a site at any time. Ecology typically conducts remedial action when a potentially liable person cannot be identified or when such persons are technically or financially unable to conduct remedial action. Ecology may seek to recover its remedial action costs from

potentially liable persons. Except for emergency actions and initial investigations, Ecology will make a reasonable effort to notify potentially liable persons before conducting remedial action. See RCW 70A.305.030(1) and 70A.305.050(3).

WAC 173-340-815 Cultural resource protection.

- (1) **Purpose.** This section specifies requirements that are intended to avoid, minimize, or mitigate adverse effects from remedial actions on archeological and historic archaeological sites, historic buildings and structures, traditional cultural places, sacred sites, and other cultural resources.
- (2) **Applicable laws.** Remedial actions must comply with applicable state and federal laws regarding cultural resource protection, including:
- (a) The National Historic Preservation Act of 1966, as amended (54 U.S.C. 300101 et seq.);
 - (b) The Archaeological and Historic Preservation Act of 1974, as amended (54 U.S.C. 312501 et seq.);
 - (c) The Archaeological Resource Protection Act of 1979, as amended (16 U.S.C 470aa et seq.);
 - (d) The Native American Graves Protection and Repatriation Act of 1990, as amended (25 U.S.C. 3001 et seq.);
 - (e) Chapter 27.53 RCW, Archaeological Sites and Resources;
 - (f) Chapter 27.44 RCW, Indian Graves and Records;
 - (g) Chapter 68.50 RCW, Human Remains; and
 - (h) Chapter 68.60 RCW, Abandoned and Historic Cemeteries and Historic Graves.
- (3) **Consultations and inadvertent discovery plans.**
- (a) **Applicability.** The requirements in this subsection apply to:
- (i) Ecology-conducted remedial actions, except initial investigations;
 - (ii) Ecology-supervised remedial actions; and
 - (iii) Ecology-funded independent remedial actions.
- (b) **Requirements.** Before any person conducts a field activity capable of affecting a cultural resource, if encountered, Ecology will:
- (i) Consult with the department of archaeology and historic preservation and affected Indian tribes on the potential effects of planned remedial actions on cultural resources at the site, unless the remedial action is subject to Section 106 review under the National Historic Preservation Act of 1966, as amended (54 U.S.C. 300101 et seq.); and
 - (ii) Prepare or require an inadvertent discovery plan for the site.
 - (A) The inadvertent discovery plan must be prepared using the applicable form provided by Ecology or an equivalent document that includes the same or more comprehensive information.

- (B) For Ecology-supervised remedial actions, Ecology may require submittal of the inadvertent discovery plan for its review.
- (C) The inadvertent discovery plan must be readily available during all remedial actions at the site. Persons conducting remedial actions at the site must be familiar with the contents and location of the plan.
- (D) The inadvertent discovery plan must be updated as needed to reflect the discovery of cultural resources.

WAC 173-340-830 **Analytical**~~Sampling and analysis~~ procedures.

- (1) **Purpose.** This section specifies ~~acceptable analytical methods and other testing requirements for sites where remedial action is being conducted under this chapter~~ requirements for sampling and analysis activities conducted as part of a remedial action. These activities include sample collection, handling, preservation, transportation, holding time, preparation, laboratory analysis, method detection limits, practical quantitation limits, quality assurance, quality control, data reporting, and other technical requirements and specifications.
- (2) **Applicability.** All sampling and analysis activities conducted as part of a remedial action must comply with the requirements in this sections and, for sites where there is a release or threatened release to sediment, the requirements in chapter 173-204 WAC.
- ~~(2) — General requirements.~~
- (a) ~~— All hazardous substance analyses shall be conducted by a laboratory accredited under chapter 173-50 WAC, unless otherwise approved by the department.~~
- (b) ~~— All analytical procedures used shall be conducted in accordance with a sampling and analysis plan prepared under WAC 173-340-820.~~
- (c) ~~— Tests for which methods have not been specified in this section shall be performed using standard methods or procedures such as those specified by the American Society for Testing of Materials, when available, unless otherwise approved by the department.~~
- (d) ~~— Samples shall be analyzed consistent with methods appropriate for the site, the media being analyzed, the hazardous substances being analyzed for, and the anticipated use of the data.~~
- (e) ~~— The department may require or approve modifications to the standard analytical methods identified in subsection (3) of this section to provide lower quantitation limits, improved accuracy, greater precision, or to address the factors in (d) of this subsection.~~
- (f) ~~— Limits of quantitation. Laboratories shall achieve the lowest practical quantitation limits consistent with the selected method and WAC 173-340-707.~~
- (g) ~~— Where there is more than one method specified in subsection (3) of this section with a practical quantitation limit less than the cleanup standard, any of the methods may be selected. In these situations, considerations in selecting a particular method may include confidence in the data, analytical costs, and considerations relating to quality assurance or analysis efficiencies.~~
- (h) ~~— The department may require an analysis to be conducted by more than one method in order to provide higher data quality. For example, the department may require that different separation and detection techniques be used to verify the presence of a hazardous substance (“qualification”) and determine the concentration of the hazardous substance (“quantitation”).~~

~~(i) The minimum testing requirements for petroleum-contaminated sites are identified in Table 830-1.~~

~~(3) Analytical methods.~~

~~(a) The methods used for sample collection, sample preservation, transportation, allowable time before analysis, sample preparation, analysis, method detection limits, practical quantitation limits, quality control, quality assurance and other technical requirements and specifications shall comply with the following requirements, as applicable:~~

~~(i) **Method 1. Test Methods for Evaluating Solid Waste**, Physical/Chemical Methods, U.S. EPA, SW-846, fourth update (2000);~~

~~(ii) **Method 2. Guidelines Establishing Test Procedures for the Analysis of Pollutants**, 40 C.F.R. Chapter 1, Part 136, and Appendices A, B, C, and D, U.S. EPA, July 1, 1999;~~

~~(iii) **Method 3. Standard Methods for the Examination of Water and Wastewater**, American Public Health Association, American Water Works Association, and Water Pollution Control Federation, 20th edition, 1998;~~

~~(iv) **Method 4. Recommended Protocols for Measuring Selected Environmental Variables in Puget Sound**, Puget Sound Estuary Program/Tetra Tech, 1996 edition;~~

~~(v) **Method 5. Quality Assurance Interim Guidelines for Water Quality Sampling and Analysis**, Groundwater Management Areas Program, Washington Department of Ecology, Water Quality Investigations Section, December 1986;~~

~~(vi) **Method 6. Analytical Methods for Petroleum Hydrocarbons**, Ecology publication #ECY-97-602, June 1997; or~~

~~(vii) Equivalent methods subject to approval by the department.~~

~~(b) The methods used for a particular hazardous substance at a site shall be selected in consideration of the factors in subsection (2) of this section.~~

~~(c) **Groundwater.** Methods 1, 2, 3 and 4, as described in (a) of this subsection, may be used to determine compliance with WAC 173-340-720.~~

~~(d) **Surface water.** Methods 1, 2, 3, 4 and 5 as described in (a) of this subsection, may be used to determine compliance with WAC 173-340-730.~~

~~(e) **Soil.** Method 1, as described in (a) of this subsection, may be used to determine compliance with WAC 173-340-740 and 173-340-745.~~

~~(f) **Air.** Appropriate methods for determining compliance with WAC 173-340-750 shall be selected on a case-by-case basis, in consideration of the factors in subsection (2) of this section.~~

(3) Plans. All sampling and analysis must be conducted in accordance with a sampling and analysis plan prepared under WAC 173-340-820.

(4) Methods.

(a) All sampling and analysis must be conducted in accordance with an Ecology-approved method or, if Ecology has not approved an applicable method, a standard method or procedure such as those specified by the American Society for Testing of Materials, when available.

(i) Ecology will maintain a list of Ecology-approved methods and make the list publicly available on Ecology's website.

(ii) Ecology will provide notice in the *Contaminated Site Register* when Ecology adds or removes a method from the list of Ecology-approved methods.

(iii) Ecology will maintain a record of its decisions to add or remove a method from the list of Ecology-approved methods.

(iv) Any person may propose another method for Ecology review and approval.

(b) The methods used to collect, handle, and analyze samples must be appropriate for the site, the media being analyzed, the hazardous substances being analyzed for, and the anticipated use of the data.

(c) Ecology may require or approve modifications to a method identified under (a) of this subsection to provide lower quantitation limits, improved accuracy, greater precision, or to address the factors in (b) of this subsection.

(d) Ecology may require an analysis to be conducted by more than one method in order to provide higher data quality. For example, Ecology may require that different separation and detection techniques be used to verify the presence of a hazardous substance ("qualification") and determine the concentration of the hazardous substance ("quantitation").

(e) If Ecology has approved more than one method with a practical quantitation limit less than the cleanup level, any of those methods may be used. When selecting a method in these situations, consider confidence in the data, analytical costs, quality assurance, and analysis efficiencies.

(5) Laboratories.

(a) All hazardous substance analyses must be conducted by a laboratory accredited under chapter 173-50 WAC, unless otherwise approved by Ecology.

(b) Laboratories must achieve the lowest practical quantitation limits consistent with the selected method and WAC 173-340-707.

(6) Petroleum testing. The minimum testing requirements for petroleum releases are identified in Table 830-1.

Conforming Changes in Other Sections

WAC 173-340-420 Periodic reviews.

...

- (5) ~~Notice and public comment~~Public participation or notification. ~~The department shall publish a notice of all periodic reviews in the *Site Register* and provide an opportunity for public comment. The department shall also notify all potentially liable persons known to the department of the results of the periodic review.~~

(a) For an Ecology-conducted or an Ecology-supervised remedial action, Ecology will:

- (i) Provide public notice of a periodic review in accordance with WAC 173-340-600(18); and
- (ii) Notify all potentially liable persons known to Ecology of the results of the periodic review.

(b) For an independent remedial action, Ecology will provide notice of a periodic review in accordance with WAC 173-340-600(20).

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WAC 173-340-440 Institutional controls.

...

- (12) ~~Removal of restrictions~~Amendment or removal of institutional controls. ~~If the conditions at the site requiring an institutional control under subsection (4) of this section no longer exist, then the owner may submit a request to the department 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.~~
- (a) Request. Any person who has an interest in the real property subject to an institutional control may submit a request to Ecology that the control be amended or removed if the conditions at the site requiring the control under subsection (4) of this section have changed or no longer exist. The request must be in writing.
- (b) Determination. If Ecology determines that the conditions requiring an institutional control under subsection (4) of this section have changed or no longer exist, then the institutional control must be amended or removed.
- (c) Public participation or notification.
- (i) For Ecology-conducted or Ecology-supervised remedial actions, Ecology will provide or require public notice of any proposal to amend or remove an institutional control in accordance with WAC 173-340-600(19).
- (ii) For independent remedial actions, Ecology will provide notice of any amendment or removal of an institutional control in accordance with WAC 173-340-600(20).

WAC 173-340-515 Independent remedial actions.

...

(4) Reports to the department.

- (a) **Applicability and timing.** Any person who conducts an independent remedial investigation, interim action, or cleanup action for a release that is required to be reported under WAC 173-340-300 ~~shall~~must submit a written report to the department within ninety days of the completion of the action. For the purposes of this section, the department will consider an interim action or cleanup action complete if no remedial action other than compliance monitoring has occurred at the site for ninety days. This does not preclude earlier reporting of such actions ~~or reporting of site investigations~~. See WAC 173-340-450 for additional requirements for reporting independent remedial actions for releases from ~~underground storage tanks~~ UST systems regulated under chapter 173-360A WAC.
- (b) **Content.** ~~The~~An independent remedial action report ~~shall~~must include the information in WAC 173-340-300 ~~(2)~~(3) if not already reported, and enough information to determine if the ~~independent~~ remedial action meets the substantive requirements of this chapter, including, the results of all site investigations, cleanup actions, and compliance monitoring planned or under-way. If a restrictive covenant is used, it must be included in the report and it must meet the requirements specified in WAC 173-340-440(9). The department may require additional reports on the work conducted.
- (c) **Initial investigation.** If the independent remedial investigation, interim action, or cleanup action is completed within ninety days of release discovery, ~~a single written report may be submitted on both the release and the action taken. The report shall contain the information specified in provision (b) of this subsection and shall be submitted within ninety days of completion of the remedial action~~ the department may defer completing any needed initial investigation of the release to enable review of the independent remedial action and report in accordance with WAC 173-340-310(5)(b).
- (d) **Notification.** The department ~~shall publish in the Site Register a notice of all reports on~~ will provide notice of an independent remedial investigation, interim actions, and/or cleanup actions ~~report~~ received under this section in accordance with WAC 173-340-600(20). ~~If deemed necessary, the department shall also conduct an initial investigation under WAC 173-340-310.~~
- (e) **Liability.** Neither submission of information on an independent remedial action nor any response by the department shall release the person submitting the report or any other person from liability. The department reserves all rights to pursue any subsequent action it deems appropriate.

- (5) **Technical consultations.** The department may provide informal advice and assistance (technical consultations) on the administrative and technical requirements of this chapter to persons conducting or otherwise interested in an independent remedial action. Such advice or assistance is advisory only and not binding on the department. This advice may include written

opinions. These written opinions shall be limited to whether the independent remedial actions or proposals for those actions meet the substantive requirements of this chapter and/or whether the department believes further remedial action is necessary at the facility.

(a) Upon completing the review of an independent remedial action report or proposal that is voluntarily submitted for the department's review and opinion, the department will:

~~(a)~~(i) Provide a written opinion regarding the remedial actions performed or proposed at the site;

~~(b)~~(ii) Provide a written opinion regarding the remedial actions performed at the site and remove the site ~~or a portion of the site~~ from the ~~hazardous~~contaminated sites list if the department has sufficient information to show that the independent remedial actions are appropriate to characterize and address contamination at the site, as ~~provided for~~specified in WAC 173-340-330~~(4)(b)(5)(b)~~; or

~~(c)~~(iii) Provide a written opinion describing the deficiencies with the remedial action or proposal for a remedial action at the site.

(b) It is the department's policy, in conducting reviews under this subsection, to promote independent remedial actions by delisting sites ~~or portions of sites~~ whenever petitions and supporting documents show that the actions taken are appropriate to characterize and address the contamination at the site.

(c) The department will provide notice of a written opinion issued under this subsection in accordance with WAC 173-340-600(20).

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Corrections in Part 7

Section or Equation	Correction
Section 704(2)(c)	Concentrations that result in no significant adverse effects on the protection and propagation of terrestrial ecological receptors using the procedures specified in WAC 173-340-7490 through 173-340- 7493 7494, unless it is demonstrated under those sections that establishing a soil concentration is unnecessary;
Equation 720-1	ED = Exposure duration (1.0) (6 years)
Equation 720-3	INH(i) = Inhalation correction fraction factor for petroleum component (i) (use value of 2 for volatile organic compounds and 1 for all other components [unitless])
Equation 730-1	UCF2 = Unit conversion factor (1,000 grams/ kg liter)
Equation 730-2	UCF2 = Unit conversion factor (1,000 grams/ kg liter)
Equation 740-3	ABS = Dermal absorption fraction for petroleum component (i) (unitless). May use chemical-specific values or the following defaults: <ul style="list-style-type: none"> • 0.0005 for volatile petroleum components with vapor pressure <u>> = benzene</u> • 0.03 for volatile petroleum components with vapor pressure <u>< benzene</u> • 0.1 for other petroleum components
Equation 740-4	ABS = Dermal absorption fraction (unitless). May use chemical-specific values or the following defaults: <ul style="list-style-type: none"> • 0.01 for inorganic hazardous substances • 0.0005 for volatile organic compounds with vapor pressure <u>> = benzene</u> • 0.03 for volatile organic compounds with vapor pressure <u>< benzene</u> • 0.1 for other organic hazardous substances
Equation 740-5	ABS = Dermal absorption fraction (unitless). May use chemical-specific values or the following defaults: <ul style="list-style-type: none"> • 0.01 for inorganic hazardous substances • 0.0005 for volatile organic compounds with vapor pressure <u>> = benzene</u> • 0.03 for volatile organic compounds with vapor pressure <u>< benzene</u> and for mixtures of dioxins and/or furans • 0.1 for other organic hazardous substances
Section 745(3)(b)(iii)	Concentrations that result in no significant adverse effects on the protection and propagation of terrestrial ecological receptors using the procedures specified in WAC 173-340-7490 through 173-340- 7493 7494, unless it is demonstrated under those sections that establishing a soil concentration is unnecessary; and
Equation 745-3	ABS = Dermal absorption fraction for petroleum component (i) (unitless). May use chemical-specific values or the following defaults: <ul style="list-style-type: none"> • 0.0005 for volatile petroleum components with vapor pressure <u>> = benzene</u>

	<ul style="list-style-type: none"> 0.03 for volatile petroleum components with vapor pressure < benzene 0.1 for other petroleum components
Equation 745-4	<p>ABS = Dermal absorption fraction (unitless). May use chemical-specific values or the following defaults:</p> <ul style="list-style-type: none"> 0.01 for inorganic hazardous substances 0.0005 for volatile organic compounds with vapor pressure > = benzene 0.03 for volatile organic compounds with vapor pressure < benzene 0.1 for other organic hazardous substances
Equation 745-5	<p>ABS = Dermal absorption fraction (unitless). May use chemical-specific values or the following defaults:</p> <ul style="list-style-type: none"> 0.01 for inorganic hazardous substances 0.0005 for volatile organic compounds with vapor pressure > = benzene 0.03 for volatile organic compounds substances with vapor pressure < benzene and for mixtures of dioxins and/or furans 0.1 for other organic hazardous substances
Equation 747-2	<p>Koc = Soil organic carbon-water partitioning coefficient (ml/g)(L/kg). See (c)(i) of this subsection.</p>
Section 7493(2)(a)(i)	<p>The person conducting the evaluation may eliminate hazardous substances from further consideration where the maximum or the upper ninety-five percent confidence limit soil concentration found at the site does not exceed ecological indicator concentrations described in Table 749-3. For industrial or commercial land uses, only the wildlife values need to be considered. Any chemical that exceeds the ecological indicator concentrations shall be included as a chemical of ecological concern in the evaluation unless it can be eliminated based on the factors listed in WAC 173-340-708<u>703</u>(2)(b).</p>
Section 750(3)(c)(i)	<p>The inhalation absorption percentage<u>fraction</u> may be modified if the requirements of WAC 173-340-702 (14), (15), (16) and WAC 173-340-708(10) are met;</p>
Section 750(6)	<p>Points of compliance. Cleanup levels established under this section shall be attained in the ambient <u>(outdoor) air and air within any building, utility vault, manhole or other structure large enough for a person to fit into,</u> throughout the site. For sites determined to be industrial sites under the criteria in WAC 173-340-745, the department may approve a conditional point of compliance not to exceed the property boundary. A conditional point of compliance shall not be approved if use of a conditional point of compliance would pose a threat to human health or the environment.</p>