

# Chapter 173-204 WAC

## SEDIMENT MANAGEMENT STANDARDS

**WAC**

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**PART I—GENERAL INFORMATION**

**WAC 173-204-100 Authority and purpose.** (1) This chapter is promulgated under the authority of chapter 90.48 RCW, the Water Pollution Control Act; chapter 70.105D RCW, the Model Toxics Control Act; chapter 90.70 RCW, the Puget Sound Water Quality Authority Act; chapter 90.52 RCW, the Pollution Disclosure Act of 1971; chapter 90.54 RCW, the Water Resources Act of 1971; and chapter 43.21C RCW, the state Environmental Policy Act, to establish marine, low salinity and freshwater surface sediment management standards for the state of Washington.

(2) The purpose of this chapter is to reduce and ultimately eliminate adverse effects on biological resources and significant health threats to humans from surface sediment contamination by:

(a) Establishing standards for the quality of surface sediments;

(b) Applying these standards as the basis for management and reduction of pollutant discharges; and

(c) Providing a management and decision process for the cleanup of contaminated sediments.

(3) Part III, Sediment quality standards of this chapter provides chemical concentration criteria, biological effects criteria, human health criteria, and other toxic, radioactive, biological, or deleterious substances criteria which identify surface sediments that have no adverse effects, including no acute or chronic adverse effects on biological resources and no significant health risk to humans, as defined in this regulation. The sediment quality standards provide a regulatory and management goal for the quality of sediments throughout the state.

(4) The sediment criteria of WAC 173-204-320 through 173-204-340 shall constitute surface sediment quality standards and be used to establish an inventory of surface sediment sampling stations where the sediments samples taken from these stations are determined to pass or fail the applicable sediment quality standards.

(5) Part IV, Sediment source control standards of this chapter shall be used as a basis for controlling the effects of point and nonpoint source discharges to sediments through the National Pollutant Discharge Elimination System (NPDES) federal permit program, state water quality management permit programs, issuance of administrative orders or other means determined appropriate by the department. The source control standards establish discharge sediment monitoring requirements and criteria for establishment and maintenance of sediment impact zones.

(6) Part V, Sediment cleanup standards of this chapter establishes administrative procedural requirements and criteria to identify, screen, rank and prioritize, and cleanup contaminated surface sediment sites. The sediment cleanup standards of WAC 173-204-500 through 173-204-590 shall be used pursuant to authorities established under chapters 90.48 and 70.105D RCW.

(7) This chapter establishes and defines a goal of minor adverse effects as the maximum level of sediment contamination allowed in sediment impact zones under the provisions of Part IV, Sediment source control standards and as the cleanup screening levels for identification of sediment cleanup sites and as the minimum cleanup levels to be achieved in all cleanup actions under Part V, Sediment cleanup standards.

(8) Local ordinances establishing requirements for the designation and management of marine, low salinity and freshwater sediments shall not be less stringent than this chapter.

Note: All codes, standards, statutes, rules or regulations cited in this chapter are available for inspection at the Department of Ecology, P.O. Box 47703, Olympia, Washington 98504-7703.

[Statutory Authority: RCW 90.48.220, 96-02-058, § 173-204-100, filed 12/29/95, effective 1/29/96. Statutory Authority: Chapters 43.21C, 70.105D, 90.48, 90.52, 90.54 and 90.70 RCW. 91-08-019 (Order 90-41), § 173-204-100, filed 3/27/91, effective 4/27/91.]

**WAC 173-204-110 Applicability.** (1) The sediment quality standards of WAC 173-204-300 through 173-204-315, and 173-204-350, and the sediment cleanup standards of WAC 173-204-500 through 173-204-580 shall apply to all surface sediments.

(2) The sediment quality standards of WAC 173-204-320, 173-204-330, and 173-204-340 shall apply to marine, low salinity and freshwater surface sediments, respectively.

(3) The source control standards of WAC 173-204-400 through 173-204-420 shall apply to each person's actions which exposes or resuspends surface sediments which exceed, or otherwise cause or potentially cause surface sediments to exceed, the applicable standards of WAC 173-204-320 through 173-204-340.

(4) The sediment recovery zone standards of WAC 173-204-590 shall apply to each person's cleanup action decision made pursuant to WAC 173-204-580 where the selected cleanup action leaves in place marine, low salinity, or freshwater sediments that exceed the applicable sediment quality standards of WAC 173-204-320 through 173-204-340.

(5) The sediment quality standards of WAC 173-204-320 through 173-204-340 shall not apply:

(a) Within a sediment impact zone as authorized by the department under WAC 173-204-415; or

(b) Within a sediment recovery zone as authorized by the department under WAC 173-204-590; or

(c) To particulates suspended in the water column; or

(d) To particulates suspended in a permitted effluent discharge.

(6) Nothing in this chapter shall constrain the department's authority to make appropriate sediment management decisions on a case-specific basis using best professional judgment and latest scientific knowledge for cases where the standards of this chapter are reserved or standards are not available.

[Statutory Authority: Chapters 43.21C, 70.105D, 90.48, 90.52, 90.54 and 90.70 RCW. 91-08-019 (Order 90-41), § 173-204-110, filed 3/27/91, effective 4/27/91.]

**WAC 173-204-120 Antidegradation and designated use policies.** (1) Antidegradation policy. The antidegradation policy of the state of Washington as generally guided by chapters 90.48 and 90.54 RCW, is applicable to any person's new or increased activity and shall apply to this chapter as follows:

(a) Existing beneficial uses shall be maintained and protected and no further degradation which would interfere with or become injurious to existing beneficial uses shall be allowed.

(b) No degradation of existing sediment quality shall be allowed of waters constituting an outstanding national resource, such as waters of national and state parks and scenic and recreation areas, wildlife refuges, and waters of exceptional recreational or ecological significance.

(c) Whenever surface sediments are of a higher quality (i.e., lower chemical concentrations or adverse biological response) than the criteria assigned to said sediments, the

existing surface sediment quality shall be protected and waste and other materials and substances shall not be allowed to contaminate such sediments or reduce the existing sediment quality thereof, except in those instances where:

(i) It is clear, after satisfactory public participation and intergovernmental coordination, that overriding considerations of the public interest will be served;

(ii) All wastes and other materials and substances proposed for discharge that may contaminate such sediments are provided with all known, available and reasonable methods of prevention, control, and treatment and/or best management practices;

(iii) The reduction of existing surface sediment quality is authorized by the department; and

(iv) Existing beneficial uses are maintained and protected, and no degradation which would interfere with and/or become injurious to existing sediment beneficial uses and/or causes long-term, irreparable harm to the environment is allowed.

(2) Designated use policy. The policy of the department and the purpose of this chapter shall be to manage waste discharges and sediment quality so as to protect existing beneficial uses and move towards attainment of designated beneficial uses as specified in section 101 (a)(2) of the federal Clean Water Act (33 U.S.C. 1251, et seq.) and chapter 173-201 WAC, the Water quality standards for surface waters of the state of Washington. This policy is applicable to any person's existing or proposed actions which may affect surface sediment quality.

[Statutory Authority: Chapters 43.21C, 70.105D, 90.48, 90.52, 90.54 and 90.70 RCW. 91-08-019 (Order 90-41), § 173-204-120, filed 3/27/91, effective 4/27/91.]

**WAC 173-204-130 Administrative policies.** The department shall implement this chapter in accordance with the following policies:

(1) The department shall seek to implement, and as necessary modify this chapter to protect biological resources and human health consistent with WAC 173-204-100(2). To implement the intent of this subsection, the department shall use methods that accurately reflect the latest scientific knowledge consistent with the definitions contained in WAC 173-204-200 (14) and (15), as applicable.

(2) At the interface between surface sediments, groundwater or surface water, the applicable standards shall depend on which beneficial use is or could be adversely affected, as determined by the department. If beneficial uses of more than one resource are affected, the most restrictive standards shall apply.

(3) It shall be the goal of the department to modify this chapter so that methods such as confirmatory biological tests, sediment impact zone models, use of contaminated sediment site ranking models, etc., continue to accurately reflect the latest scientific knowledge as established through ongoing validation and refinement.

(4) Any person or the department may propose an alternate technical method to replace or enhance the application of a specific technical method required under this chapter. Using best professional judgment, the department shall provide advance review and approval of any alternate technical method proposed prior to its application. Application and use

of alternate technical methods shall be allowed when the department determines that the technical merit of the resulting decisions will improve the department's ability to implement and meet the intent of this chapter as described in WAC 173-204-100(2), and will remain consistent with the scientific intent of definitions contained in WAC 173-204-200 (14) and (15). The department shall maintain a record of the department's decisions concerning application for use of alternate technical methods pursuant to this subsection. The record shall be made available to the public on request.

(5) Intergovernmental coordination. The department shall ensure appropriate coordination and consultation with federally recognized Indian tribes and local, state, and federal agencies to provide information on and to implement this chapter.

(6) The department shall conduct an annual review of this chapter, and modify its provisions every three years, or as necessary. Revision to this chapter shall be made pursuant to the procedures established within chapter 34.05 RCW, the Administrative Procedure Act.

(7) Review of scientific information. When evaluating this chapter for necessary revisions, the factors the department shall consider include:

(a) New or additional scientific information which is available relating surface sediment chemical quality to acute or chronic adverse effects on biological resources as defined in WAC 173-204-200 (1) and (7);

(b) New or additional scientific information which is available relating human health risk to marine, low salinity, or freshwater surface sediment chemical contaminant levels;

(c) New or additional scientific information which is available relating levels of other toxic, radioactive, biological and deleterious substances in marine, low salinity, or freshwater sediments to acute or chronic adverse effects on biological resources, or to a significant health risk to humans;

(d) New state or federal laws which have established environmental or human health protection standards applicable to surface sediment; or

(e) Scientific information which has been identified for addition, modification or deletion by a scientific review process established by the department.

(8) Public involvement and education. The goal of the department shall be to provide timely information and meaningful opportunities for participation by the public in the annual review conducted by the department under subsection (6) of this section, and any modification of this chapter. To meet the intent of this subsection the department shall:

(a) Provide public notice of the department's decision regarding the results of its annual review of this chapter, including:

(i) The department's findings for the annual review factors identified in subsection (7) of this section;

(ii) The department's decision regarding the need for modification of this chapter based on its annual review; and

(iii) Identification of a time period for public opportunity to comment on the department's findings and decisions pursuant to this subsection.

(b) Provide public notice by mail or by additional procedures determined necessary by the department which may include:

(i) Newspaper publication;

(ii) Other news media;

(iii) Press releases;

(iv) Fact sheets;

(v) Publications;

(vi) Any other method as determined by the department.

(c) Conduct public meetings as determined necessary by the department to educate and inform the public regarding the department's annual review determinations and decisions.

(d) Comply with the rule making and public participation requirements of chapter 34.05 RCW, the Administrative Procedure Act, for any revisions to this chapter.

(9) Test sediments evaluated for compliance with the sediment quality standards of WAC 173-204-320 through 173-204-340 and/or the sediment impact zone maximum criteria of WAC 173-204-420 and/or the cleanup screening levels criteria of WAC 173-204-520 shall be sampled and analyzed using the Puget Sound Protocols or other methods approved by the department. Determinations made pursuant to this chapter shall be based on sediment chemical and/or biological data that were developed using an appropriate quality assurance/quality control program, as determined by the department.

(10) The statutory authority for decisions under this chapter shall be clearly stated in the decision documents prepared pursuant to this chapter. The department shall undertake enforcement actions consistent with the stated authority under which the action is taken. The process for judicial review of these decisions shall be pursuant to the statutes under which the action is being taken.

(11) When the department identifies this chapter as an applicable, or relevant and appropriate requirement for a federal cleanup action under the Comprehensive Environmental Response, Compensation and Liability Act, the department shall identify the entire contents of this chapter as the appropriate state requirement.

[Statutory Authority: RCW 90.48.220, 96-02-058, § 173-204-130, filed 12/29/95, effective 1/29/96. Statutory Authority: Chapters 43.21C, 70.105D, 90.48, 90.52, 90.54 and 90.70 RCW. 91-08-019 (Order 90-41), § 173-204-130, filed 3/27/91, effective 4/27/91.]

## PART II—DEFINITIONS

**WAC 173-204-200 Definitions.** For the purpose of this chapter, the following definitions shall apply:

(1) "Acute" means measurements of biological effects using surface sediment bioassays conducted for time periods that are relatively short in comparison to the life cycle of the test organism. Acute effects may include mortality, larval abnormality, or other endpoints determined appropriate by the department.

(2) "Amphipod" means crustacean of the Class Amphipoda, e.g., Rhepoxynius abronius, Ampelisca abdita, or Eohaustorius estuarius.

(3) "Appropriate biological tests" means only tests designed to measure directly, or through established predictive capability, biologically significant adverse effects to the established or potential benthic or aquatic resources at a given location, as determined by rule by the department.

(4) "Beneficial uses" means uses of waters of the state which include but are not limited to use for domestic, stock watering, industrial, commercial, agricultural, irrigation,

mining, fish and wildlife maintenance and enhancement, recreation, generation of electric power, and preservation of environmental and aesthetic values, and all other uses compatible with the enjoyment of the public waters of the state.

(5) "Best management practices" or "BMPs" means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of surface sediments of the state. BMPs also include treatment requirements, operating procedures and practices to control plant site runoff, spillage or leaks, sludge or water disposal, or drainage from raw material storage.

(6) "Bioassay" means a test procedure that measures the response of living plants, animals, or tissues to a sediment sample.

(7) "Chronic" means measurements of biological effects using sediment bioassays conducted for, or simulating, prolonged exposure periods of not less than one complete life cycle, evaluations of indigenous field organisms for long-term effects, assessment of biological effects resulting from bioaccumulation and biomagnification, and/or extrapolated values or methods for simulating effects from prolonged exposure periods. Chronic effects may include mortality, reduced growth, impaired reproduction, histopathological abnormalities, adverse effects to birds and mammals, or other endpoints determined appropriate by the department.

(8) "Contaminated sediment" means surface sediments designated under the procedures of WAC 173-204-310 as exceeding the applicable sediment quality standards of WAC 173-204-320 through 173-204-340.

(9) "Control sediment sample" means a surface sediment sample which is relatively free of contamination and is physically and chemically characteristic of the area from which bioassay test animals are collected. Control sediment sample bioassays provide information concerning a test animal's tolerance for stress due to transportation, laboratory handling, and bioassay procedures. Control sediment samples cannot exceed the applicable sediment quality standards of WAC 173-204-320 through 173-204-340.

(10) "Department" means the department of ecology.

(11) "Freshwater sediments" means surface sediments in which the sediment pore water contains less than or equal to 0.5 parts per thousand salinity.

(12) "Low salinity sediments" means surface sediments in which the sediment pore water contains greater than 0.5 parts per thousand salinity and less than 25 parts per thousand salinity.

(13) "Marine finfish rearing facilities" shall mean those private and public facilities located within state waters where finfish are fed, nurtured, held, maintained, or reared to reach the size of release or for market sale.

(14) "Marine sediments" means surface sediments in which the sediment pore water contains 25 parts per thousand salinity or greater.

(15) "Minor adverse effects" means a level of effects that:

(a) Has been determined by rule by the department, except in cases subject to WAC 173-204-110(6); and

(b) Meets the following criteria:

(i) An acute or chronic adverse effect to biological resources as measured by a statistically and biologically sig-

nificant response relative to reference in no more than one appropriate biological test as defined in WAC 173-204-200(3); or

(ii) A statistically and biologically significant response that is significantly elevated relative to reference in any appropriate biological test as defined in WAC 173-204-200(3); or

(iii) Biological effects per (b)(i) or (ii) of this subsection as predicted by exceedance of an appropriate chemical or other deleterious substance standard, except where the prediction is overridden by direct biological testing evidence pursuant to (b)(i) and (ii) of this subsection; and

(c) Does not result in significant human health risk as predicted by exceedance of an appropriate chemical, biological, or other deleterious substance standard.

(16) "No adverse effects" means a level of effects that:

(a) Has been determined by rule by the department, except in cases subject to WAC 173-204-110(6); and

(b) Meets the following biological criteria:

(i) No acute or chronic adverse effects to biological resources as measured by a statistically and biologically significant response relative to reference in any appropriate biological test as defined in WAC 173-204-200(3); and

(ii) No acute or chronic adverse biological effect per (b)(i) of this subsection as predicted by exceedance of an appropriate chemical or other deleterious substance standard, except where the prediction is overridden by direct biological testing evidence pursuant to (b)(i) of this subsection; and

(iii) Does not result in significant human health risk as predicted by exceedance of an appropriate chemical, biological, or other deleterious substance standard.

(17) "Other toxic, radioactive, biological, or deleterious substances" means contaminants which are not specifically identified in the sediment quality standards chemical criteria of WAC 173-204-320 through 173-204-340 (e.g., organic debris, tributyltin, DDT, etc.).

(18) "Person" means an individual, firm, corporation, association, partnership, consortium, joint venture, commercial entity, industry, private corporation, port district, special purpose district, irrigation district, unit of local government, state government agency, federal government agency, Indian tribe, or any other entity whatsoever.

(19) "Practicable" means able to be completed in consideration of environmental effects, technical feasibility and cost.

(20) "Puget Sound basin" or "Puget Sound" means:

(a) Puget Sound south of Admiralty Inlet, including Hood Canal and Saratoga Passage;

(b) The waters north to the Canadian border, including portions of the Strait of Georgia;

(c) The Strait of Juan de Fuca south of the Canadian border; and

(d) All the lands draining into these waters as mapped in water resources inventory areas numbers 1 through 19, set forth in water resources management program established pursuant to the Water Resources Act of 1971, chapter 173-500 WAC.

(21) "Puget Sound protocols" means *Puget Sound Estuary Program. 1986. As amended. Recommended Protocols for Measuring Selected Environmental Variables in Puget*

*Sound, U.S. Environmental Protection Agency, Region 10, Seattle, WA (looseleaf).*

(22) "Reference sediment sample" means a surface sediment sample which serves as a laboratory indicator of a test animal's tolerance to important natural physical and chemical characteristics of the sediment, e.g., grain size, organic content. Reference sediment samples represent the nonanthropogenically affected background surface sediment quality of the sediment sample. Reference sediment samples cannot exceed the applicable sediment quality standards of WAC 173-204-320 through 173-204-340.

(23) "Sediment impact zone" means an area where the applicable sediment quality standards of WAC 173-204-320 through 173-204-340 are exceeded due to ongoing permitted or otherwise authorized wastewater, storm water, or nonpoint source discharges and authorized by the department within a federal or state wastewater or storm water discharge permit, or other formal department authorization.

(24) "Sediment recovery zone" means an area where the applicable sediment quality standards of WAC 173-204-320 through 173-204-340 are exceeded as a result of historical discharge activities, and authorized by the department as a result of a cleanup decision made pursuant to WAC 173-204-580, Cleanup action decision.

(25) "Site units" means discrete subdivisions of an individual contaminated sediment site that are being evaluated for the purpose of establishing cleanup standards. Site units are based on consideration of unique locational, environmental, spatial, or other conditions determined appropriate by the department, e.g., cleanup under piers, cleanup in eelgrass beds, cleanup in navigational lanes.

(26) "Surface sediments" or "sediment(s)" means settled particulate matter located in the predominant biologically active aquatic zone, or exposed to the water column. Sediment(s) also includes settled particulate matter exposed by human activity (e.g., dredging) to the biologically active aquatic zone or to the water column.

(27) "Test sediment" means a sediment sample that is evaluated for compliance with the sediment quality standards of WAC 173-204-320 through 173-204-340 and/or the sediment impact zone maximum criteria of WAC 173-240-420 and/or the cleanup screening levels criteria of WAC 173-204-520.

[Statutory Authority: RCW 90.48.220, 96-02-058, § 173-204-200, filed 12/29/95, effective 1/29/96. Statutory Authority: Chapters 43.21C, 70.105D, 90.48, 90.52, 90.54 and 90.70 RCW. 91-08-019 (Order 90-41), § 173-204-200, filed 3/27/91, effective 4/27/91.]

### PART III—SEDIMENT QUALITY STANDARDS

**WAC 173-204-300 Purpose.** The sediment quality standards of WAC 173-204-320 through 173-204-340 include chemical concentration criteria, biological effects criteria, human health criteria, other toxic, radioactive, biological, or deleterious substances criteria, and nonanthropogenically affected sediment quality criteria which are used to identify sediments that have no adverse effects on biological resources, and correspond to no significant health risk to humans. Designation determinations using the sediment quality standards of WAC 173-204-320 through 173-204-

340 shall be conducted as stipulated in WAC 173-204-310, Sediment quality standards designation procedures.

[Statutory Authority: Chapters 43.21C, 70.105D, 90.48, 90.52, 90.54 and 90.70 RCW. 91-08-019 (Order 90-41), § 173-204-300, filed 3/27/91, effective 4/27/91.]

**WAC 173-204-310 Sediment quality standards designation procedures.** Any person may use these procedures to determine a sediment's designation using the applicable sediment quality standards of WAC 173-204-320 through 173-204-340. Any person who designates test sediments using the procedures of this section shall meet the sampling and testing plan requirements of WAC 173-204-600 and records management requirements of WAC 173-204-610. Test sediments designated using the procedures of this section shall be sampled and analyzed using the Puget Sound protocols or other methods approved by the department, and shall use an appropriate quality assurance/quality control program, as determined by the department. A sediment sample that passes the initial designation procedures is designated as complying with the applicable sediment quality standards of WAC 173-204-320 through 173-204-340, until such time as any person or the department confirms the sediment designation as failing the applicable sediment quality standards of WAC 173-204-320 through 173-204-340. A sediment sample that fails the initial designation procedures is designated as not complying with the applicable sediment quality standards of WAC 173-204-320 through 173-204-340, until such time as any person or the department confirms the sediment designation as passing the applicable sediment quality standards of WAC 173-204-320 through 173-204-340. A sediment sample that passes or fails the confirmatory designation procedures is designated as such under the procedures of WAC 173-204-310. Sediments shall be designated with the applicable sediment quality standards of WAC 173-204-320 through 173-204-340 as follows:

(1) Initial designation. Sediments that have been chemically analyzed for the applicable chemical concentration criteria of WAC 173-204-320 through 173-204-340 shall be designated as follows:

(a) Sediments with chemical concentrations equal to or less than all the applicable chemical and human health criteria are designated as having no adverse effects on biological resources, and not posing a significant health threat to humans, and pass the applicable sediment quality standards of WAC 173-204-320 through 173-204-340.

(b) Sediments with chemical concentrations which exceed any one applicable chemical or human health criterion in WAC 173-204-320 through 173-204-340 are designated as having adverse effects on biological resources or posing significant human health threats, and fail the sediment quality standards of WAC 173-204-320 through 173-204-340, pending confirmatory designation.

(2) Confirmatory designation. Any person or the department may confirm the designation of sediments which have either passed or failed initial designation procedures listed in subsection (1) of this section using the applicable biological testing of WAC 173-204-315, as required below. Sediment samples that pass all the required confirmatory biological tests are designated as passing the applicable sediment quality standards of WAC 173-204-320 through 173-204-340,

notwithstanding the sediment's previous initial designation under subsection (1) of this section. Any sediment sample which fails any one of the required confirmatory biological tests shall be designated as failing the applicable sediment quality standards of WAC 173-204-320 through 173-204-340, notwithstanding the sediment's previous initial designation under subsection (1) of this section. The confirmatory biological test standards are described below.

(a) To confirm the designation of a sediment which either passed or failed any applicable chemical concentration criterion established in WAC 173-204-320 through 173-204-340, the sediment shall be tested for:

(i) Two of the acute effects biological tests described in the applicable standards of WAC 173-204-315; and

(ii) One of the chronic effects biological tests described in the applicable standards of WAC 173-204-315.

(b) Sediments with chemical concentrations which either passed or failed any applicable human health criterion of WAC 173-204-320 through 173-204-340 shall be eligible for confirmatory designation as follows: Reserved: The department shall determine on a case-by-case basis the criteria, methods, and procedures necessary to meet the intent of this chapter.

(3) Initial and confirmatory designation of sediments which contain other toxic, radioactive, biological, or deleterious substances. Sediments which contain other toxic, radioactive, biological, or deleterious substances, as defined in WAC 173-204-200(16), shall be designated by the department using the following procedures.

(a) The department shall:

(i) Identify individual contaminants of concern;

(ii) Identify appropriate and practicable sampling and analysis methodologies;

(iii) Identify test interpretation standards for initial and confirmatory designation; and

(iv) Identify acceptable levels of sediment contamination for sediments which contain other toxic, radioactive, biological, or deleterious substances.

(b) Where sediment containing other toxic, radioactive, biological or deleterious substances may also be contaminated by chemicals identified in WAC 173-204-320 through 173-204-340, the department shall require application of the appropriate tests and standards of WAC 173-204-320 through 173-204-340, as determined by the department, in addition to any requirements developed pursuant to (a) of this subsection.

(c) The department may use all or some of the sediment biological tests of WAC 173-204-320 through 173-204-340 to designate sediments with other toxic, radioactive, biological or deleterious substances in cases where those tests are technically appropriate, as determined by the department.

[Statutory Authority: Chapters 43.21C, 70.105D, 90.48, 90.52, 90.54 and 90.70 RCW. 91-08-019 (Order 90-41), § 173-204-310, filed 3/27/91, effective 4/27/91.]

**WAC 173-204-315 Confirmatory marine sediment biological tests.** (1) The following five acute and chronic effects biological tests shall be used to confirm designation of Puget Sound marine sediments using the procedures described in WAC 173-204-310(2). Use of alternate biological

tests shall be subject to the review and approval of the department using the procedures of WAC 173-204-130(4).

(a) Acute effects tests.

(i) Amphipod: Ten-day mortality sediment bioassay for the Amphipod, i.e., *Rhepoxynius abronius*, *Ampelisca abdita*, or *Eohaustorius estuarius*.

(ii) Larval: Any one of the following mortality/abnormality sediment bioassays:

(A) *Crassostrea gigas*, i.e., Pacific oyster;

(B) *Mytilus (edulis) galloprovincialis*, i.e., Blue mussel;

(C) *Strongylocentrotus purpuratus*, i.e., Purple sea urchin;

(D) *Strongylocentrotus droebachiensis*, i.e., Green sea urchin; or

(E) *Dendraster excentricus*, i.e., Sand dollar.

(b) Chronic effects tests.

(i) Benthic infaunal abundance: Abundance of the following major taxa: Class Crustacea, Class Polychaeta, and Phylum Mollusca.

(ii) Juvenile polychaete: Twenty-day growth rate of the juvenile polychaete *Neanthes arenaceodentata*; or

(iii) Microtox saline extract: Decreased luminescence from the bacteria *Vibrio fisheri* after a fifteen minute exposure.

(2) Performance standards for control and reference sediment biological test results. The biological tests of this section shall not be considered valid unless test results for the appropriate control and reference sediments meet the performance standards of (a) through (e) of this subsection. The department may reject the results of a reference sediment biological test based on unacceptably high variability.

(a) Amphipod: The control sediment shall have less than ten percent mortality over the test period. The reference sediment shall have less than twenty-five percent mortality.

(b) Larval: The seawater control sample shall have less than thirty percent combined abnormality and mortality (i.e., a seventy percent normal survivorship at time-final).

(c) Benthic abundance: The reference benthic macroinvertebrate assemblage shall be representative of areas of Puget Sound removed from significant sources of contaminants, and to the extent possible shall have the following characteristics:

(i) The taxonomic richness of benthic macroinvertebrates and the abundances of higher taxonomic groups shall reflect seasonality and natural physical-chemical conditions (e.g., grain size composition and salinity of sediments, water depth) in a reference area, and not be obviously depressed as a result of chemical toxicity;

(ii) Normally abundant species that are known to be sensitive to chemical contaminants shall be present;

(iii) Normally rare species that are known to become abundant only under chemically disturbed conditions shall be rare or absent; and

(iv) The abundances of normally rare species that control community structure through physical modification of the sediment shall be similar to those observed at the test sediment site.

(d) Juvenile polychaete: The control sediment shall have less than ten percent mortality and mean individual growth of  $\geq 0.72$  mg/ind/day per dry weight basis. The reference sediment shall have a mean individual growth rate which is at

least eighty percent of the mean individual growth rate found in the control sediment. Control sediments exhibiting growth below 0.72 mg/ind/day may be approved by the department on a case-by-case basis.

(e) Microtox: Reserved: The department shall determine performance standards on a case-by-case basis as necessary to meet the intent of this chapter.

[Statutory Authority: RCW 90.48.220, 96-02-058, § 173-204-315, filed 12/29/95, effective 1/29/96. Statutory Authority: Chapters 43.21C, 70.105D, 90.48, 90.52, 90.54 and 90.70 RCW. 91-08-019 (Order 90-41), § 173-204-315, filed 3/27/91, effective 4/27/91.]

**WAC 173-204-320 Marine sediment quality standards.** (1) Goal and applicability.

(a) The sediment quality standards of this section shall correspond to a sediment quality that will result in no adverse effects, including no acute or chronic adverse effects on biological resources and no significant health risk to humans.

(b) The marine sediment quality standards of this section shall apply to marine sediments located within Puget Sound as defined in WAC 173-204-200(19).

(c) Non-Puget Sound marine sediment quality standards. Reserved: The department shall determine on a case-by-case basis the criteria, methods, and procedures necessary to meet the intent of this chapter.

(2) Chemical concentration criteria. The chemical concentrations in Table I establish the marine sediment quality standards chemical criteria for designation of sediments.

(a) Where laboratory analysis indicates a chemical is not detected in a sediment sample, the detection limit shall be reported and shall be at or below the Marine Sediment Quality Standards chemical criteria value set in this table.

(b) Where chemical criteria in this table represent the sum of individual compounds or isomers, the following methods shall be applied:

(i) Where chemical analyses identify an undetected value for every individual compound/isomer then the single highest detection limit shall represent the sum of the respective compounds/isomers; and

(ii) Where chemical analyses detect one or more individual compound/isomers, only the detected concentrations will be added to represent the group sum.

(c) The listed chemical parameter criteria represent concentrations in parts per million, "normalized," or expressed, on a total organic carbon basis. To normalize to total organic carbon, the dry weight concentration for each parameter is divided by the decimal fraction representing the percent total organic carbon content of the sediment.

(d) The LPAH criterion represents the sum of the following "low molecular weight polynuclear aromatic hydrocarbon" compounds: Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, and Anthracene. The LPAH criterion is not the sum of the criteria values for the individual LPAH compounds as listed.

(e) The HPAH criterion represents the sum of the following "high molecular weight polynuclear aromatic hydrocarbon" compounds: Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Total Benzo(a)fluoranthenes, Benzo(a)pyrene, Indeno(1,2,3,-c,d)pyrene, Dibenz(a,h)anthracene, and Benzo(g,h,i)perylene. The HPAH criterion is not the sum of

the criteria values for the individual HPAH compounds as listed.

(f) The TOTAL BENZOFLUORANTHENES criterion represents the sum of the concentrations of the "B," "J," and "K" isomers.

Table I  
Marine Sediment Quality Standards—  
Chemical Criteria

CHEMICAL PARAMETER	MG/KG DRY WEIGHT (PARTS PER MILLION (PPM) DRY)
ARSENIC	57
CADMIUM	5.1
CHROMIUM	260
COPPER	390
LEAD	450
MERCURY	0.41
SILVER	6.1
ZINC	410

CHEMICAL PARAMETER	MG/KG ORGANIC CARBON (PPM CARBON)
LPAH	370
NAPHTHALENE	99
ACENAPHTHYLENE	66
ACENAPHTHENE	16
FLUORENE	23
PHENANTHRENE	100
ANTHRACENE	220
2-METHYLNAPHTHALENE	38
HPAH	960
FLUORANTHENE	160
PYRENE	1000
BENZ(A)ANTHRACENE	110
CHRYSENE	110
TOTAL BENZOFLUORANTHENES	230
BENZO(A)PYRENE	99
INDENO (1,2,3,-C,D) PYRENE	34
DIBENZO (A,H) ANTHRACENE	12
BENZO(G,H,I)PERYLENE	31
1,2-DICHLOROBENZENE	2.3
1,4-DICHLOROBENZENE	3.1
1,2,4-TRICHLOROBENZENE	0.81
HEXACHLOROBENZENE	0.38
DIMETHYL PHTHALATE	53
DIETHYL PHTHALATE	61
DI-N-BUTYL PHTHALATE	220
BUTYL BENZYL PHTHALATE	4.9
BIS (2-ETHYLHEXYL) PHTHALATE	47
DI-N-OCTYL PHTHALATE	58
DIBENZOFURAN	15
HEXACHLOROBUTADIENE	3.9
N-NITROSODIPHENYLAMINE	11
TOTAL PCB'S	12

CHEMICAL PARAMETER	UG/KG DRY WEIGHT (PARTS PER BILLION (PPB) DRY)
PHENOL	420
2-METHYLPHENOL	63
4-METHYLPHENOL	670
2,4-DIMETHYL PHENOL	29
PENTACHLOROPHENOL	360
BENZYL ALCOHOL	57
BENZOIC ACID	650

(3) Biological effects criteria. For designation of sediments pursuant to WAC 173-204-310(2), sediments are determined to have adverse effects on biological resources when any one of the confirmatory marine sediment biological tests of WAC 173-204-315(1) demonstrate the following results:

(a) Amphipod: The test sediment has a higher (statistically significant, t test,  $p \leq 0.05$ ) mean mortality than the reference sediment and the test sediment mean mortality exceeds twenty-five percent, on an absolute basis.

(b) Larval: The test sediment has a mean survivorship of normal larvae that is less (statistically significant, t test,  $p \leq 0.05$ ) than the mean normal survivorship in the reference sediment and the test sediment mean normal survivorship is less than eighty-five percent of the mean normal survivorship in the reference sediment (i.e., the test sediment has a mean combined abnormality and mortality that is greater than fifteen percent relative to time-final in the reference sediment).

(c) Benthic abundance: The test sediment has less than fifty percent of the reference sediment mean abundance of any one of the following major taxa: Class Crustacea, Phylum Mollusca or Class Polychaeta, and the test sediment abundance is statistically different (t test,  $p \leq 0.05$ ) from the reference sediment abundance.

(d) Juvenile polychaete: The test sediment has a mean individual growth rate of less than seventy percent of the reference sediment mean individual growth rate and the test sediment mean individual growth rate is statistically different (t test,  $p \leq 0.05$ ) from the reference sediment mean individual growth rate.

(e) Microtox: The mean light output of the highest concentration of the test sediment is less than eighty percent of the mean light output of the reference sediment, and the two means are statistically different from each other (t test,  $p \leq 0.05$ ).

(4) Marine sediment human health criteria. Reserved: The department may determine on a case-by-case basis the criteria, methods, and procedures necessary to meet the intent of this chapter.

(5) Marine sediment other toxic, radioactive, biological, or deleterious substances criteria. Other toxic, radioactive, biological or deleterious substances in, or on, sediments shall be at or below levels which cause no adverse effects in marine biological resources, and below levels which correspond to a significant health risk to humans, as determined by the department. The department shall determine on a case-by-case basis the criteria, methods, and procedures necessary to meet the intent of this chapter pursuant to WAC 173-204-310(3).

(6) Nonanthropogenically affected sediment quality criteria. Whenever the nonanthropogenically affected sediment quality is of a lower quality (i.e., higher chemical concentrations, higher levels of adverse biological response, or posing a greater health threat to humans) than the applicable sediment quality standards assigned for said sediments by this chapter, the existing sediment chemical and biological quality shall be identified on an area-wide basis as determined by the department, and used in place of the sediment quality standards of WAC 173-204-320.

[Statutory Authority: RCW 90.48.220, 96-02-058, § 173-204-320, filed 12/29/95, effective 1/29/96. Statutory Authority: Chapters 43.21C, 70.105D, 90.48, 90.52, 90.54 and 90.70 RCW. 91-08-019 (Order 90-41), § 173-204-320, filed 3/27/91, effective 4/27/91.]

**WAC 173-204-330 Low salinity sediment quality standards.** Reserved: The department shall determine on a

case-by-case basis the criteria, methods, and procedures necessary to meet the intent of this chapter.

[Statutory Authority: Chapters 43.21C, 70.105D, 90.48, 90.52, 90.54 and 90.70 RCW. 91-08-019 (Order 90-41), § 173-204-330, filed 3/27/91, effective 4/27/91.]

**WAC 173-204-340 Freshwater sediment quality standards.** Reserved: The department shall determine on a case-by-case basis the criteria, methods, and procedures necessary to meet the intent of this chapter.

[Statutory Authority: Chapters 43.21C, 70.105D, 90.48, 90.52, 90.54 and 90.70 RCW. 91-08-019 (Order 90-41), § 173-204-340, filed 3/27/91, effective 4/27/91.]

**WAC 173-204-350 Sediment quality standards inventory.** (1) The department shall gather available data on sediments and produce an inventory of sediment sampling stations which pass or fail the applicable sediment quality standards of WAC 173-204-320 through 173-204-340. Sediment sampling stations which are evaluated for compliance with the sediment quality standards of WAC 173-204-320 through 173-204-340 and placed on the inventory shall be sampled and analyzed using the Puget Sound Protocols or other methods approved by the department, and shall use an appropriate quality assurance/quality control program, as determined by the department. The sediment quality standards inventory produced per this section shall be used by the department, and made available upon request to the public and other federal, state, and local agencies for the following uses:

(a) To identify and target necessary source control activities, such as discharger monitoring, to eliminate adverse effects on biological resources and significant health threats to humans from sediment contamination;

(b) To identify contaminated sediment cleanup sites per the procedures in WAC 173-204-500 through 173-204-590;

(c) To establish sediment quality ambient monitoring program status and trends analyses and reports;

(d) To identify the sediment quality of areas proposed for dredging, in-water construction, and other actions requiring federal, state, and/or local permits; and

(e) To complete other uses consistent with the intent of this chapter, as determined by the department.

(2) Sources of data. Sediment biological and chemical data shall be gathered by the department for review to produce and update the sediment quality inventory on a biennial basis. Data sources include, but are not limited to:

(a) Sediment data collected by the department for the Puget Sound ambient monitoring program, compliance monitoring of permitted discharges, and special environmental investigations.

(b) Sediment data submitted to the U.S. Army Corps of Engineers in support of dredging permit applications.

(c) Sediment data collected to identify problem areas and needed source controls in Puget Sound as defined in WAC 173-204-200(19), other marine waters, and all low salinity and freshwater areas in Washington state.

(d) Sediment data used or collected in compliance with chapter 70.105D RCW, and the Model Toxics Control Act cleanup regulation, chapter 173-340 WAC.

(e) Sediment data used or collected in compliance with the federal Comprehensive Environmental Response, Compensation and Liability Act.

(f) Sediment data collected as a requirement of a National Pollutant Discharge Elimination System or state discharge permit.

(g) Sediment data derived from other studies including:

(i) Federally sponsored monitoring studies.

(ii) Special monitoring studies conducted by local and municipal governments, or private industry.

(iii) Data derived through Washington state department of natural resources administration of use authorizations.

(3) The inventory shall be updated and made available to the public on a biennial basis.

[Statutory Authority: Chapters 43.21C, 70.105D, 90.48, 90.52, 90.54 and 90.70 RCW. 91-08-019 (Order 90-41), § 173-204-350, filed 3/27/91, effective 4/27/91.]

#### PART IV—SEDIMENT SOURCE CONTROL

**WAC 173-204-400 General considerations.** (1) The standards of WAC 173-204-400 through 173-204-420 specify a process for managing sources of sediment contamination. These procedures include:

(a) Evaluating the potential for a waste discharge to create a sediment impact;

(b) Requiring application for a sediment impact zone authorization;

(c) Verifying whether a discharge has received all known, available and reasonable methods of prevention, control, and treatment prior to discharge, and/or application of best management practices;

(d) Analysis and verification of the potential sediment impact;

(e) Determining whether the sediment impact zone would meet maximum allowable contamination requirements;

(f) Evaluating the proposed sediment impact zone in consideration of locational criteria;

(g) Design and/or constrain the sediment impact zone to be as small, and with the least contamination, as practicable;

(h) Public review of the proposed sediment impact zone authorization;

(i) Issuance of the sediment impact zone authorization with provisions for maintenance and closure; and

(j) Reducing and eventually eliminating the sediment impact zone via renewals and modifications of a sediment impact zone authorization.

(2) Permits and other authorizations of wastewater, storm water, and nonpoint source discharges to surface waters of the state of Washington under authority of chapter 90.48 RCW shall be conditioned so that the discharge receives all known, available and reasonable methods of prevention, control, and treatment, and best management practices prior to discharge, as required by chapters 90.48, 90.52, and 90.54 RCW. The department shall provide consistent guidance on the collection, analysis and evaluation of wastewater, receiving-water, and sediment samples to meet the intent of this section using consideration of pertinent sections of the *Department of Ecology Permit Writers' Manual*, as amended, and other guidance approved by the department.

(3) As determined necessary, the department shall require any person who proposes a new discharge to evaluate the potential for the proposed discharge to cause a violation of the applicable sediment quality standards of WAC 173-204-320 through 173-204-340.

(4) As determined necessary, the department shall require existing permitted discharges to evaluate the potential for the permitted discharge to cause a violation of the applicable sediment quality standards of WAC 173-204-320 through 173-204-340.

(5) Within permits authorizing existing discharges to surface waters of the state of Washington, the department may specify appropriate locations and methodologies for the collection and analysis of representative samples of wastewater, receiving-water, and sediments to evaluate the potential for the discharge to cause a violation of the applicable sediment quality standards of WAC 173-204-320 through 173-204-340.

(6) In establishing the need for, and the appropriate, individual permit monitoring conditions, the department shall consider multiple factors relating to the potential for a discharge to cause a violation of the applicable sediment quality standards of WAC 173-204-320 through 173-204-340 including but not limited to:

(a) Discharge particulate characteristics;

(b) Discharge contaminant concentrations, flow, and loading rate;

(c) Sediment chemical concentration and biological effects levels;

(d) Receiving water characteristics;

(e) The geomorphology of sediments;

(f) Cost mitigating factors such as the available resources of the discharger; and

(g) Other factors determined necessary by the department.

(7) As determined necessary to ensure the wastewater discharge does not cause a violation of the applicable standards of WAC 173-204-320 through 173-204-340, except as authorized by the department under WAC 173-204-415, Sediment impact zones, the department shall stipulate permit terms and conditions which include wastewater discharge average and maximum mass loading per unit time, and wastewater discharge average and maximum chemical concentrations within new and existing facility permits authorizing wastewater discharges to surface waters of the state of Washington.

(8) As determined necessary, the department shall modify wastewater discharge permits whenever it appears the discharge causes a violation, or creates a substantial potential to cause a violation of the applicable sediment quality standards of WAC 173-204-320 through 173-204-340, as authorized by RCW 90.48.520.

(9) To meet the intent of this section, the sediment quality standards of WAC 173-204-320 through 173-204-340 and the sediment impact zone standards of WAC 173-204-415 through 173-204-420 are not considered to be federal discharge permit effluent limits subject to antibacksliding requirements of the federal Clean Water Act. Discharge permit sediment monitoring and sediment impact zone compliance requirements may be used to establish effluent limits sufficient to meet the standards of this chapter.

(10) As determined necessary, the department shall use issuance of administrative actions under authority of chapters 90.48 or 70.105D RCW to implement this chapter.

(11) Wastewater dilution zones. Water quality mixing zones authorized by the department pursuant to chapter 173-201A WAC, Water quality standards for surface waters of the state of Washington, do not satisfy the standards of WAC 173-204-415, Sediment impact zones.

(12) For the sediment source control standards of WAC 173-204-400 through 173-204-420, any and all references to violation of, potential to violate, exceedance of, or potential to exceed the applicable standards of WAC 173-204-320 through 173-204-340 shall also apply to the antidegradation and designated use policies of WAC 173-204-120. Any exceedances or potential exceedances of the antidegradation or designated use policies of WAC 173-204-120 shall meet the applicable requirements of WAC 173-204-400 through 173-204-420.

(13) Under no circumstances shall the provisions of sediment source control standards WAC 173-204-400 through 173-204-420 be construed as providing for the relaxation of discharge permit requirements under other authorities including, but not limited to, chapter 90.48 RCW, the Water Pollution Control Act, chapter 90.54 RCW, the Water Resources Act of 1971, and the Federal Water Pollution Control Act of 1972 and amendments.

[Statutory Authority: RCW 90.48.220, 96-02-058, § 173-204-400, filed 12/29/95, effective 1/29/96. Statutory Authority: Chapters 43.21C, 70.105D, 90.48, 90.52, 90.54 and 90.70 RCW. 91-08-019 (Order 90-41), § 173-204-400, filed 3/27/91, effective 4/27/91.]

**WAC 173-204-410 Sediment quality goal and sediment impact zone applicability.** (1) Goal and policies.

(a) It is the established goal of the department to manage source control activities to reduce and ultimately eliminate adverse effects on biological resources and significant health threats to humans from sediment contamination.

(b) The stated policy of the department shall be to only authorize sediment impact zones so as to minimize the number, size, and adverse effects of all zones, with the intent to eliminate the existence of all such zones whenever practicable. The department shall consider the relationship between environmental effects, technical feasibility and cost in determining whether it is practicable to minimize and/or eliminate sediment impact zones.

(c) The department shall implement the standards of WAC 173-204-400 through 173-204-420 so as to prevent the creation of new contaminated sediment cleanup sites identified under WAC 173-204-530(4).

(2) A sediment impact zone authorization issued by the department under the authority of chapter 90.48 RCW does not constitute authorization to trespass on lands not owned by the applicant. These standards do not address and in no way alter the legal rights, responsibilities, or liabilities of the permittee or landowner of the sediment impact zone for any applicable requirements of proprietary, real estate, tort, and/or other laws not directly expressed as a requirement of this chapter.

(3) Except as identified in subsection (6)(d) of this section, any person may apply for a sediment impact zone under the following conditions:

(a) The person's discharge is provided with all known, available and reasonable methods of prevention, control, and treatment, and meets best management practices as stipulated by the department; and

(b) The person's discharge activity exposes or resuspends sediments which exceed, or otherwise cause or potentially cause sediments to exceed the applicable sediment quality standards of WAC 173-204-320 through 173-204-340, or the antidegradation policy standards of WAC 173-204-120 (1)(a) and (c) within a period of ten years from the later date of either the department's formal approval of the application for a sediment impact zone authorization or the starting date of the discharge.

(4) The department shall only authorize sediment impact zones for permitted wastewater and storm water discharges, and other discharges authorized by the department. The department shall authorize all sediment impact zones via discharge permits or other formal administrative actions.

(5) The department shall not limit the application, establishment, maintenance, or closure of an authorized sediment impact zone via consideration of sediment contamination determined by the department to be the result of unknown, unpermitted or historic discharge sources.

(6) As determined necessary by the department, any person with a permitted discharge shall be required to meet the standards of WAC 173-204-400 through 173-204-420, as follows:

(a) Any person with a new or existing permitted wastewater discharge shall be required to meet the standards of WAC 173-204-400 through 173-204-420;

(b) Any person with a new or existing permitted industrial storm water discharge, regulated as process wastewater in National Pollutant Discharge Elimination System or state discharge permits, shall be required to meet the standards of WAC 173-204-400 through 173-204-420;

(c) Any person with a new or existing permitted storm water or nonpoint source discharge, which fully uses all known, available and reasonable methods of prevention, control, and treatment, and best management practices as stipulated by the department at the time of the person's application for a sediment impact zone, shall be required to meet the standards of WAC 173-204-400 through 173-204-420;

(d) Any person with a storm water discharge, existing prior to the adoption of this chapter, and determined by the department to not be fully using best management practices stipulated by the department at the time of the person's application for a permit from the department, shall be eligible for a sediment impact zone as follows:

(i) The department shall issue sediment impact zone authorizations with requirements for application of best management practices stipulated by the department on an approved time schedule.

(ii) Sediment impact zones authorized by the department for permitted storm water discharges under the applicability provisions of subsection (6)(d) of this section shall be subject to cleanup action determinations made by the department pursuant to WAC 173-204-500 through 173-204-590 when the sediment impact zone maximum criteria of WAC 173-204-420 are exceeded within the authorized sediment impact zone.

(iii) The department shall identify and include best management practices required to meet the sediment impact zone design standards of WAC 173-204-415(4) as soon as practicable within sediment impact zone authorizations established for storm water discharges per WAC 173-204-410 (6)(d).

(7) Dredged material and fill discharge activities subject to authorization under Section 401 of the federal Clean Water Act via chapter 90.48 RCW and chapter 173-225 WAC, establishment of implementation procedures of application for certification, are not subject to the standards of WAC 173-204-415 but are subject to the standards of WAC 173-204-400 through 173-204-410 and 173-204-420 as follows:

(a) Requirements for dredging activities and disposal sites shall be established by the department using best available dredged material management guidelines and applicable federal and state rules. These guidelines shall include the Puget Sound dredged disposal analysis (PSDDA) dredged material testing and disposal requirements cited in:

(i) *Management Plan Report - Unconfined Open-Water Disposal Of Dredged Material, Phase I, (Central Puget Sound), June 1988, or as amended;*

(ii) *Management Plan Report - Unconfined Open-Water Disposal Of Dredged Material, Phase II, (North And South Puget Sound), September 1989, or as amended;* and

(iii) *Users Manual For Dredged Material Management In Puget Sound, November 1990, or as amended.*

(b) In coordination with other applicable federal and state and local dredged material management programs, the department may issue administrative orders to establish approved disposal sites, to specify disposal site use conditions, and to specify disposal site monitoring requirements.

(c) The department may authorize sediment impact zones for dredged material disposal via federal Clean Water Act Section 401 certification actions.

(d) As determined necessary by the department, the department may authorize sediment impact zones for dredged material disposal via administrative orders issued under authority of chapter 90.48 RCW. The department shall authorize sediment impact zones for all Puget Sound dredged disposal analysis disposal sites via administrative orders issued under authority of chapter 90.48 RCW.

(e) Administrative orders and certifications establishing sediment impact zones for dredged material disposal sites shall describe establishment, maintenance, and closure requirements for the authorized site, consistent with the requirements described in (a) of this subsection.

(8) The source control standards of WAC 173-204-400 through 173-204-420 are applicable in cases where the sediment quality standards of WAC 173-204-320 through 173-204-340 are reserved.

[Statutory Authority: RCW 90.48.220, 96-02-058, § 173-204-410, filed 12/29/95, effective 1/29/96. Statutory Authority: Chapters 43.21C, 70.105D, 90.48, 90.52, 90.54 and 90.70 RCW. 91-08-019 (Order 90-41), § 173-204-410, filed 3/27/91, effective 4/27/91.]

### **WAC 173-204-412 Marine finfish rearing facilities.**

(1) Purpose. This section sets forth the applicability of this chapter to marine finfish rearing facilities only. This section also identifies marine finfish rearing facility siting, operation, closure and monitoring requirements to meet the intent of this chapter, as applicable.

(12/29/95)

(2) Applicability. Marine finfish rearing facilities and their associated discharges are not subject to the authority and purpose standards of WAC 173-204-100 (3) and (7), and the marine sediment quality standards of WAC 173-204-320 and the sediment impact zone maximum criteria of WAC 173-204-420, within and including the distance of one hundred feet from the outer edge of the marine finfish rearing facility structure. Marine finfish rearing facilities are not subject to the sediment impact zone standards of WAC 173-204-415.

(3) Sediment monitoring. Sediment quality compliance and monitoring requirements for marine finfish rearing facilities shall be addressed through National Pollutant Discharge Elimination System or other permits issued by the department for facility operation. Marine finfish rearing facilities shall meet the following sediment quality monitoring requirements:

(a) Any person with a new facility shall identify a baseline sediment quality prior to facility operation for benthic infaunal abundance, total organic carbon and grain size in the location of the proposed operation and downcurrent areas that may be potentially impacted by the facility discharge;

(b) Any person with an existing operating facility shall monitor sediment quality for total organic carbon levels and identify the location of any sediments in the area of the facility statistically different (t test,  $p \leq 0.05$ ) from the total organic carbon levels identified as facility baseline levels or statistically different from the applicable total organic carbon levels as identified in Table 1:

Silt-Clay Particles (percent Dry Weight)	Total Organic Carbon (percent Dry Weight)
0-20	0.5
20-50	1.7
50-80	3.2
80-100	2.6

(c) The locations and frequency of monitoring for total organic carbon, benthic infaunal abundance and other parameters shall be determined by the department and identified in the applicable National Pollutant Discharge Elimination System permit;

(d) Antibacterials. Reserved: The department shall determine on a case-by-case basis the methods, procedure, locations, and frequency for monitoring antibacterials associated with the discharge from a marine finfish rearing facility;

(e) Closure. All permitted marine finfish rearing facilities shall monitor sediments impacted during facility operation to document recovery of sediment quality to background levels. The department shall determine on a case-by-case basis the methods, procedure, locations, and frequency for monitoring sediments after facility closure.

(4) Sediment impact zones. Marine finfish rearing facilities and their associated discharges that are permitted under a National Pollutant Discharge Elimination System permit are hereby provided a sediment impact zone by rule for any sediment quality impacts and biological effects within and including the distance of one hundred feet from the outer edge of the marine finfish rearing facility structure.

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(a) The department may authorize an individual marine finfish rearing facility sediment impact zone for any sediments beyond a distance of one hundred feet from the facility perimeter via National Pollutant Discharge Elimination System permits or administrative actions. The authorized sediment impact zone shall meet the benthic infaunal abundance requirements of the sediment impact zone maximum criteria, WAC 173-204-420 (3)(c)(iii). Marine finfish rearing facilities that exceed the sediment quality conditions of subsection (3)(b) of this section beyond a distance of one hundred feet from the facility perimeter shall:

(i) Begin an enhanced sediment quality monitoring program to include benthic infaunal abundance consistent with the requirements of the National Pollutant Discharge Elimination System permit. The sediment quality monitoring program shall include a benthic infaunal abundance reference sediment sample as required in subsection (3)(a) of this section or a benthic infaunal abundance reference sediment sample in compliance with WAC 173-204-200(21); and

(ii) Be consistent with the sediment source control general considerations of WAC 173-204-400 and the sediment quality goal and sediment impact zone applicability requirements of WAC 173-204-410, apply for a sediment impact zone as determined necessary by the department.

(b) Administrative orders or permits establishing sediment impact zones for marine finfish rearing facilities shall describe establishment, maintenance, and closure requirements as determined necessary by the department.

[Statutory Authority: RCW 90.48.220, 96-02-058, § 173-204-412, filed 12/29/95, effective 1/29/96.]

**WAC 173-204-415 Sediment impact zones.** The purpose of this section is to set forth the standards for establishment, maintenance, and closure of sediment impact zones to meet the intent of sediment quality dilution zones authorized pursuant to RCW 90.48.520, except for sediment impact zones authorized under WAC 173-204-410(7). The department shall authorize all sediment impact zones via discharge permits or other formal administrative actions.

(1) General requirements. Authorization, modification and renewal of a sediment impact zone by the department shall require compliance with the following general requirements:

(a) Permits authorizing wastewater discharges to surface waters of the state of Washington under authority of chapter 90.48 RCW shall be conditioned so that the discharge receives:

(i) All known, available and reasonable methods of prevention, control, and treatment prior to discharge, as required by chapters 90.48, 90.52, and 90.54 RCW; and

(ii) Best management practices as stipulated by the department.

(b) The maximum area, and maximum chemical contaminant concentration and/or allowable maximum biological effect level within sediments assigned to a sediment impact zone shall be as authorized by the department, in accordance with the standards of this section.

(c) The department shall determine that the person's activity generating effluent discharges which require authorization of a sediment impact zone is in the public interest.

(d) The department shall determine that any person's activity generating effluent discharges which require authorization of a sediment impact zone has adequately addressed alternative waste reduction, recycling, and disposal options through application of all known, available and reasonable methods of prevention, control, and treatment to minimize as best practicable the volume and concentration of waste contaminants in the discharge.

(e) The area boundaries of the sediment impact zone established by the department shall include the minimum practicable surface area, not to exceed the surface area allowed under subsection (4) of this section.

(f) Adverse effects to biological resources within an authorized sediment impact zone shall be maintained at the minimum chemical contamination and biological effects levels practicable at all times. The department shall consider the relationship between environmental effects, technical feasibility and cost in determining the minimum practicable chemical contamination and biological effects levels. Adverse effects to biological resources within an authorized sediment impact zone shall not exceed a minor adverse effects level as a result of the discharge, as determined by the procedures of subsection (4) of this section.

(g) The operational terms and conditions for the sediment impact zone shall be maintained at all times.

(h) Final closure of the sediment impact zone shall be conducted in strict accordance with the department's sediment impact zone authorization.

(i) Documents authorizing a sediment impact zone shall require that the permitted discharge not result in a violation of the applicable sediment quality standards of WAC 173-204-320 through 173-204-340, outside the area limits of the established zone.

(j) All applications to the department for sediment impact zone authorizations shall be subject to public notice, comment and hearing procedures defined but not limited to the applicable discharge permit or other formal administrative action requirements of chapter 43.21C RCW, the State Environmental Policy Act, chapter 197-11 WAC, SEPA rules, chapter 90.48 RCW, chapter 163-216 WAC, the State waste discharge permit program, and chapter 173-220 WAC, National Pollutant Discharge Elimination System Permit Program prior to issuance of the authorization. In determining the need for, location, and/or design of any sediment impact zone authorization, the department shall give consideration to all comments received during public review of the proposed sediment impact zone application.

(2) Application requirements.

(a) Whenever, in the opinion of the department, as a result of an ongoing or proposed effluent discharge, a person violates, shall violate, or creates a substantial potential to violate the sediment quality standards of WAC 173-204-320 through 173-204-340 as applicable within a period of ten years from the later date of either the department's evaluation of the ongoing discharge or the starting date of the proposed discharge, the department may require application for a sediment impact zone authorization under authority of chapter 90.48 RCW.

(b) Any person with a proposed or permitted effluent discharge shall apply to the department for authorization of a sediment impact zone when:

(i) The department requires the sediment impact zone application by written notification; or

(ii) The person independently identifies that the ongoing or proposed effluent discharge violates, shall violate, or creates a substantial potential to violate the applicable sediment quality standards of WAC 173-204-320 through 173-204-340 within a period of ten years from the later date of the person's evaluation of the ongoing discharge or the starting date of the proposed discharge, using the procedures of this section.

(c) As necessary, the department may require any person to submit a sediment impact zone application in multiple steps concurrent with its ongoing review and determination concerning the adequacy of the application. The application shall provide the sediment impact zone design information required in subsection (4) of this section and other such information the department determines necessary. The application shall also provide the legal location and landowner(s) of property proposed for use as, or potentially affected by, a sediment impact zone, and shall be accompanied by such other relevant information as the department may require. The department shall issue a written approval of the complete sediment impact zone application prior to or concurrent with authorizing a sediment impact zone.

(d) Submittal of an application to the department for authorization of a sediment impact zone under the terms and conditions of this section shall establish the applicant's interim compliance with requirements of chapter 90.48 RCW and this chapter, as determined by the department. The department may authorize an interim compliance period within a valid discharge permit or administrative order to ensure ultimate compliance with chapter 90.48 RCW and this chapter. The interim compliance period shall not continue beyond the date of issuance of a sediment impact zone authorization within a valid discharge permit issued by the department.

(e) Prior to authorization, the department shall make a reasonable effort to identify and notify all landowners, adjacent landowners, and lessees affected by the proposed sediment impact zone. The department shall issue a sediment impact zone notification letter to any person it believes to be a potentially affected landowner and other parties determined appropriate by the department. The notification letter shall be sent by certified mail, return receipt requested, or by personal service. The notification letter shall provide:

(i) The name of the person the department believes to be the affected landowner;

(ii) The names and addresses of other affected landowners to whom the department has sent a proposed sediment impact zone notification letter;

(iii) The name and address of the sediment impact zone applicant;

(iv) A general description of the location, size, and contamination level proposed for the sediment impact zone;

(v) The intention of the department to release all specific sediment impact zone application information to the public upon written request to the department;

(vi) The determination of the department concerning whether the proposed sediment impact zone application meets the standards of this section;

(vii) The intention of the department whether to authorize the proposed sediment impact zone; and

(viii) Notification that the affected landowners, adjacent landowners, and lessees may comment on the proposed sediment impact zone authorization shall be submitted in writing to the department within thirty days from the date of receipt of the notification letter, unless the department provides an extension.

(f) Prior to authorization, the department shall issue a sediment impact zone notification letter to affected port districts, the Washington state department of natural resources marine lands division, the U.S. Army Corps of Engineers, and other parties determined appropriate by the department. The notification letter shall be sent by certified mail, return receipt requested, or by personal service. The notification letter shall provide the information required under (e) of this subsection.

(3) Locational considerations. The department shall require any person applying for a sediment impact zone to submit information concerning potential location considerations of the zone. The location of an authorized sediment impact zone shall avoid whenever possible and minimize adverse impacts to areas of special importance. Prior to authorization of a sediment impact zone, the department shall consider all pertinent information from the applicant, all affected parties, local, state and federal agencies, federally recognized Indian tribes, and the public concerning locational considerations, including but not limited to:

(a) Spawning areas;

(b) Nursery areas;

(c) Waterfowl feeding areas;

(d) Shellfish harvest areas;

(e) Areas used by species of economic importance;

(f) Tribal areas of significance;

(g) Areas determined to be ecologically unique;

(h) Water supply intake areas;

(i) Areas used for primary contact public recreation;

(j) High quality waters that constitute an outstanding national resource; and

(k) Areas where sediment quality is substantially better than levels necessary for protection of biological resources and human health.

(4) Design requirements. The location, areal limitations, and degree of effects allowed within an authorized sediment impact zone shall be determined by application of the department's sediment impact zone computer models "CORMIX," "PLUMES," and/or "WASP," or an alternate sediment impact zone model(s) approved by the department under WAC 173-204-130(4), as limited by the standards of this section and the department's best professional judgment. The models shall be used by the department or by the discharger as required by the department, to estimate the impact of any person's wastewater or storm water discharge on the receiving water and sediment quality for a period of ten years from the later date of either the department's formal approval of the application for a sediment impact zone authorization or the starting date of the discharge.

(a) Data requirements. The discharger shall submit the following information to determine requirements for estab-

ishment and authorization of a sediment impact zone, as required by the department:

(i) Data reports and analyses results for all samples of wastewater or storm water, receiving water, and sediments collected by the discharger or other parties relating to evaluation of the potential effects of the permitted discharge, as required by WAC 173-204-400.

(ii) Data reports and analyses results determined necessary to:

(A) Apply discharge modeling to the permitted discharge; and

(B) To identify and evaluate potential alternative chemical and biological effects of the discharge on the receiving water and sediments; and

(C) To identify and evaluate potential alternatives to define the areal size and location of a sediment impact zone needed by the discharge.

(iii) Data reports and analyses results from the discharger's application of the "CORMIX," "PLUMES," and/or "WASP" or an alternate sediment impact zone model(s) approved by the department under WAC 173-204-130(4), to the permitted discharge to identify and evaluate:

(A) Potential alternative chemical and biological effects of the discharge on the receiving water and sediments; and

(B) Potential alternatives for the areal distribution and location of a potential sediment impact zone required by the discharge.

(iv) Preferred alternative for closure of the potential sediment impact zone by active removal and/or natural recovery, and identified costs of the preferred closure method.

(b) Overlapping sediment impact zones. Overlapping sediment impact zones, as predicted by the "CORMIX," "PLUMES," and/or "WASP" models or an alternate sediment impact zone model(s) approved by the department under WAC 173-204-130(4), and the department's best professional judgment, shall be authorized only as follows:

(i) The applicable sediment impact zone maximum criteria of WAC 173-204-420 shall not be exceeded as a result of the multiple discharge sediment impact zones overlap; and

(ii) If the department determines that the applicable chemical contaminant concentration and biological effects restrictions of WAC 173-204-420 would be exceeded as a result of the overlap of multiple discharge sediment impact zones, the department may authorize the sediment impact zones after:

(A) Application of a waste load allocation process to the individual permitted discharges to identify individual permit effluent limitations necessary to meet:

(I) The applicable chemical contaminant concentration and biological effects restrictions for sediment impact zones required by this section; and/or

(II) Storm water best management practices required by the department; and

(B) Establishment of individual permit compliance schedules for the multiple permitted discharges to ensure compliance with:

(I) The permit effluent limitations established by the department using the waste load allocation process and best professional judgment; and

(II) The standards of WAC 173-204-400 through 173-204-420.

(5) Maintenance requirements.

(a) The department shall review sediment impact zone monitoring conducted by the discharger to evaluate compliance with the department's sediment impact zone authorization and the standards of WAC 173-204-400 through 173-204-420. The department may require additional sediment impact zone monitoring when the department determines that any sediment sampling station within an authorized sediment impact zone exceeds the sediment impact zone maximum criteria of WAC 173-204-420 or violates the sediment impact zone authorization as a result of the discharge.

(b) Whenever the department can clearly demonstrate that, as a result of an effluent discharge, a discharger violates, shall violate, or creates a substantial potential to violate the department's sediment impact zone authorization, or the sediment impact zone maximum criteria of WAC 173-204-420, the department shall:

(i) Provide written notification and supporting documentation of the department's clear demonstration determination to the affected discharger;

(ii) Establish a reasonable time frame for the affected discharger to either submit a written statement and supporting documentation rebutting the department's clear demonstration determination, or accept the department's determination. The discharger may use the clear demonstration methods identified in (c) of this subsection for rebuttal of the department's clear demonstration; and

(iii) Provide written notification of the department's determination concerning approval or denial of the submitted clear demonstration rebuttal to the discharger.

(c) For the purpose of this section, a clear demonstration shall consist of:

(i) Use of the sediment impact zone model(s) "CORMIX," "PLUMES," and/or "WASP" or other model(s) to demonstrate a discharge(s) is the source of the violation or potential violation; and

(ii) Use of one or more of the following methods to demonstrate a violation of the sediment impact zone authorization or the sediment impact zone maximum criteria of WAC 173-204-420:

(A) Direct sediment sampling. A violation of the sediment impact zone authorization and/or the sediment impact zone maximum criteria of WAC 173-204-420 is demonstrated when:

(I) The average chemical concentration for three stations within the sediment impact zone exceeds the sediment impact zone maximum criteria of WAC 173-204-420 due to the discharge source. This concentration average shall not include stations for which complete biological testing information shows that the biological effects requirements of WAC 173-204-420, or the authorized sediment impact zone if applicable, are met; or

(II) The biological effects at each of any three stations within the sediment impact zone exceed the sediment impact zone maximum biological effects criteria of WAC 173-204-420 or the authorized sediment impact zone as applicable, due to the discharge source; or

(B) Monitoring data which demonstrates a chemical contaminant concentration gradient toward the discharge source exists in sediments which violates the sediment impact zone authorization or the standards of WAC 173-204-420; or

(C) A trend analysis of the effluent chemical discharge quality and in-place sediment monitoring data which statistically demonstrates an ongoing violation or substantial potential to violate the sediment impact zone authorization or the standards of WAC 173-204-420; or

(D) Field depositional (e.g., sediment traps) and/or effluent particulate (e.g., centrifuge analysis) data which demonstrate an ongoing violation or substantial potential to violate the sediment impact zone authorization or the standards of WAC 173-204-420; or

(E) Mathematical or computer modeling which demonstrates an ongoing violation or substantial potential to violate the sediment impact zone authorization or the standards of WAC 173-204-420.

(d) The department's response to a clear demonstration of a violation or potential violation shall be to require maintenance activities in the following order:

(i) Require reanalysis of whether the discharger's effluent treatment complies with all known, available and reasonable methods of prevention, control, and treatment and best management practices based on the data used to establish the clear demonstration;

(ii) Alter the authorized sediment impact zone size and/or degree of effects consistent with the standards of this section and the results of direct sediment sampling;

(iii) Reduce impacts of the existing or potential violation by requiring additional discharge controls or additional sediment impact zone maintenance activities which can include, but are not limited to:

(A) Dredging and removal of sediments, solely for sediment impact zone maintenance needs or coordinated with maintenance dredging of commercially important areas, e.g., navigational lanes or ship berthing areas;

(B) Dredging, treatment, and replacement of sediments within the sediment impact zone; and/or

(C) Capping of sediments within the sediment impact zone;

(iv) Limit the quantity and/or quality of the existing permitted discharge; and/or

(v) Withdraw the department's sediment impact zone authorization and require final closure of the zone.

(e) All sediment impact zone maintenance actions conducted under this chapter shall provide for landowner review of the maintenance action plans prior to implementation of the action. In cases where the discharger is not able to secure access to lands subject to the sediment impact zone maintenance actions of this subsection, the department may facilitate negotiations or other proceedings to secure access to the lands. Requests for department facilitation of land access shall be submitted to the department in writing by the responsible discharger.

(6) Closure planning and requirements.

(a) The discharger shall select and identify a preferred method for closure of a sediment impact zone in the application required by WAC 173-204-415(2). Closure methods can include either active cleanup and/or natural recovery and monitoring. The department shall incorporate the discharger's identified closure method in the sediment impact zone authorization.

(b) The department may require closure of authorized sediment impact zones when the department determines that:

(i) The discharger has violated the sediment impact zone maintenance standards of subsection (5) of this section; or

(ii) The department determines that:

(A) The wastewater or storm water discharge quality will not violate the applicable sediment quality standards of WAC 173-204-320 through 173-204-340; or

(B) A sediment impact zone is no longer needed or eligible under the standards of WAC 173-204-410 through 173-204-415.

(7) Modification of sediment impact zones. The department may modify sediment impact zone authorization requirements where the nature of a person's activity which generates, transports, disposes, prevents, controls, or treats effluent discharges has substantially changed and been demonstrated to the department's satisfaction. The modification may occur after consideration of the following:

(a) Reduction of effects. Assessment of the discharge activities and treatment methods shall be conducted by the discharger to demonstrate to the satisfaction of the department that:

(i) Elimination of the sediment impact zone is not practicable; and

(ii) Further reduction in any existing or proposed sediment impact zone area size and/or level of contamination or effects is not practicable in consideration of discharge requirements for all known, available and reasonable methods of prevention, control, and treatment, best management practices, and applicable waste reduction and recycling provisions.

(b) Alterations. There are substantial alterations or additions to the person's activity generating effluent discharges which require authorization of a sediment impact zone which occur after permit issuance and justify application of permit conditions different from, or absent in, the existing permit.

(c) New information. Sediment impact zones may be modified when new information is received by the department that was not available at the time of permit issuance that would have justified the application of different sediment impact zone authorization conditions.

(d) New regulations. The standards or regulations on which the permit was based have changed by amended standards, criteria, or by judicial decision after the permit was issued.

(e) Changes in technology. Advances in waste control technology that qualify as "all known, available and reasonable methods of prevention, control, and treatment" and "best management practices" shall be adopted as permit requirements, as appropriate, in all permits reissued by the department.

(8) Renewal of previously authorized sediment impact zones. Renewal of sediment impact zones previously authorized under the standards of WAC 173-204-410 and this section shall be allowed under the following conditions:

(a) The department determines the discharge activities and treatment methods meet all known, available and reasonable methods of prevention, control, and treatment and best management practices as stipulated by the department; and

(b) The discharger demonstrates to the department's satisfaction that the discharge activities comply with the standards of WAC 173-204-400 through 173-204-420 and with the existing sediment impact zone authorization; and

(c) Reduction of effects. The discharger conducts an assessment of the permitted discharge activities and treatment methods and demonstrates to the department's satisfaction that:

(i) Elimination of the sediment impact zone is not practicable; and

(ii) A further reduction in any existing or proposed sediment impact zone area size and/or level of contamination is not practicable in consideration of discharge requirements for all known, available and reasonable methods of prevention, control, and treatment, best management practices, and applicable waste reduction and recycling provisions.

[Statutory Authority: RCW 90.48.220, 96-02-058, § 173-204-415, filed 12/29/95, effective 1/29/96. Statutory Authority: Chapters 43.21C, 70.105D, 90.48, 90.52, 90.54 and 90.70 RCW. 91-08-019 (Order 90-41), § 173-204-415, filed 3/27/91, effective 4/27/91.]

**WAC 173-204-420 Sediment impact zone maximum criteria.** This section establishes minor adverse effects as the maximum chemical contaminant concentration, maximum health risk to humans, maximum biological effects level, maximum other toxic, radioactive, biological, or deleterious substance level, and maximum nonanthropogenically affected sediment quality level allowed within authorized sediment impact zones due to an existing or proposed discharge. If the department determines that the standards of this section are or will be exceeded as a result of an existing or proposed discharge(s), the department shall authorize a sediment impact zone or modify a sediment impact zone authorization consistent with the standards of WAC 173-204-400 through 173-204-420 such that individual permit effluent limitations, requirements, and compliance time periods are sufficient to meet the standards of this section as applicable.

(1) Applicability.

(a) The marine sediment impact zone maximum chemical criteria, and the marine sediment biological effects criteria, and the marine sediment human health criteria, and the marine sediment other toxic, radioactive, biological or deleterious substance criteria and the marine sediment nonanthropogenically affected sediment criteria of this section shall apply to marine sediments within Puget Sound.

(b) Non-Puget Sound marine sediment impact zone maximum criteria. Reserved: The department shall determine on a case-by-case basis the criteria, methods, and procedures necessary to meet the intent of this chapter.

(c) Low salinity sediment impact zone maximum criteria. Reserved: The department shall determine on a case-by-case basis the criteria, methods, and procedures necessary to meet the intent of this chapter.

(d) Freshwater sediment impact zone maximum criteria. Reserved: The department shall determine on a case-by-case basis the criteria, methods, and procedures necessary to meet the intent of this chapter.

(2) Puget Sound marine sediment impact zone maximum chemical criteria. The maximum chemical concentration levels that may be allowed within an authorized sediment impact zone due to a permitted or otherwise authorized discharge shall be at or below the chemical levels stipulated in Table II, Sediment Impact Zone Maximum Chemical Criteria, except as provided for by the marine sediment biological effects restrictions of subsection (3) of this section, and any compli-

ance time periods established under WAC 173-204-410 (6)(d) and 173-204-415.

(a) Where laboratory analysis indicates a chemical is not detected in a sediment sample, the detection limit shall be reported and shall be at or below the Marine Sediment Quality Standards chemical criteria value set in WAC 173-204-320(2).

(b) Where chemical criteria in this table represent the sum of individual compounds or isomers, the following methods shall be applied:

(i) Where chemical analyses identify an undetected value for every individual compound/isomer then the single highest detection limit shall represent the sum of the respective compounds/isomers; and

(ii) Where chemical analyses detect one or more individual compound/isomers, only the detected concentrations will be added to represent the group sum.

(c) The listed chemical parameter criteria represent concentrations in parts per million, "normalized," or expressed, on a total organic carbon basis. To normalize to total organic carbon, the dry weight concentration for each parameter is divided by the decimal fraction representing the percent total organic carbon content of the sediment.

(d) The LPAH criterion represents the sum of the following "low molecular weight polynuclear aromatic hydrocarbon" compounds: Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, and Anthracene. The LPAH criterion is not the sum of the criteria values for the individual LPAH compounds as listed.

(e) The HPAH criterion represents the sum of the following "high molecular weight polynuclear aromatic hydrocarbon" compounds: Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Total Benzofluoranthenes, Benzo(a)pyrene, Indeno(1,2,3,-c,d)pyrene, Dibenzo(a,h)anthracene, and Benzo(g,h,i)perylene. The HPAH criterion is not the sum of the criteria values for the individual HPAH compounds as listed.

(f) The TOTAL BENZOFLUORANTHENES criterion represents the sum of the concentrations of the "B," "J," and "K" isomers.

Table II  
Puget Sound Marine Sediment Impact Zones  
Maximum Chemical Criteria

CHEMICAL PARAMETER	MG/KG DRY WEIGHT (PARTS PER MILLION (PPM) DRY)
ARSENIC	93
CADMIUM	6.7
CHROMIUM	270
COPPER	390
LEAD	530
MERCURY	0.59
SILVER	6.1
ZINC	960

  

CHEMICAL PARAMETER	MG/KG ORGANIC CARBON (PPM CARBON)
LPAH	780
NAPHTHALENE	170
ACENAPHTHYLENE	66
ACENAPHTHENE	57
FLUORENE	79
PHENANTHRENE	480
ANTHRACENE	1200
2-METHYLNAPHTHALENE	64

CHEMICAL PARAMETER	MG/KG ORGANIC CARBON (PPM CARBON)
HPAH	5300
FLUORANTHENE	1200
PYRENE	1400
BENZ(A)ANTHRACENE	270
CHRYSENE	460
TOTAL BENZOFLUORANTHENES	450
BENZO(A)PYRENE	210
INDENO (1,2,3,-C,D) PYRENE	88
DIBENZO (A,H) ANTHRACENE	33
BENZO(G,H,I)PERYLENE	78
1,2-DICHLOROBENZENE	2.3
1,4-DICHLOROBENZENE	9
1,2,4-TRICHLOROBENZENE	1.8
HEXACHLOROBENZENE	2.3
DIMETHYL PHTHALATE	53
DIETHYL PHTHALATE	110
DI-N-BUTYL PHTHALATE	1700
BUTYL BENZYL PHTHALATE	64
BIS (2-ETHYLHEXYL) PHTHALATE	78
DI-N-OCTYL PHTHALATE	4500
DIBENZOFURAN	58
HEXACHLOROBUTADIENE	6.2
N-NITROSODIPHENYLAMINE	11
TOTAL PCB'S	65

CHEMICAL PARAMETER	UG/KG DRY WEIGHT (PARTS PER BILLION (PPB) DRY)
PHENOL	1200
2-METHYLPHENOL	63
4-METHYLPHENOL	670
2,4-DIMETHYL PHENOL	29
PENTACHLOROPHENOL	690
BENZYL ALCOHOL	73
BENZOIC ACID	650

(3) Puget Sound marine sediment impact zone maximum biological effects criteria. The maximum biological effects level that may be allowed within an authorized sediment impact zone shall be at or below a minor adverse biological effects level. The acute and chronic effects biological tests of WAC 173-204-315(1) may be used to determine compliance with the minor adverse biological effects restriction within an authorized sediment impact zone as follows:

(a) When using biological testing to determine compliance with the maximum biological effects criteria within a sediment impact zone, a person shall select and conduct any two acute effects tests and any one chronic effects test.

(b) The biological tests shall not be considered valid unless test results for the appropriate control and reference sediment samples meet the performance standards described in WAC 173-204-315(2).

(c) The sediment impact zone maximum biological effects level is established as that level below which any two of the biological tests in any combination exceed the criteria of WAC 173-204-320(3), or one of the following biological test determinations is made:

(i) Amphipod: The test sediment has a higher (statistically significant,  $t$  test,  $p \leq 0.05$ ) mean mortality than the reference sediment and the test sediment mean mortality is greater than a value represented by the reference sediment mean mortality plus thirty percent; or

(ii) Larval: The test sediment has a mean survivorship of normal larvae that is less (statistically significant,  $t$  test,  $p \leq 0.05$ ) than the mean normal survivorship in the reference sediment sample and the test sediment mean normal survivorship is less than seventy percent of the mean normal sur-

vivorship in the reference sediment (i.e., the test sediment has a mean combined abnormality and mortality that is greater than thirty percent relative to time-final in the reference sediment); or

(iii) Benthic abundance: The test sediment has less than fifty percent of the reference sediment mean abundance of any two of the following major taxa: Class Crustacea, Phylum Mollusca or Class Polychaeta and the test sediment abundances are statistically different ( $t$  test,  $p \leq 0.05$ ) from the reference sediment abundances; or

(iv) Juvenile polychaete: The test sediment has a mean individual growth rate of less than fifty percent of the reference sediment mean individual growth rate and the test sediment mean individual growth rate is statistically different ( $t$  test,  $p \leq 0.05$ ) from the reference sediment mean individual growth rate.

(4) Puget Sound marine sediment impact zone maximum human health criteria. Reserved: The department may determine on a case-by-case basis the criteria, methods, and procedures necessary to meet the intent of this chapter.

(5) Puget Sound marine sediment impact zone maximum other toxic, radioactive, biological, or deleterious substances criteria. Other toxic, radioactive, biological or deleterious substances in, or on, sediments shall be below levels which cause minor adverse effects in marine biological resources, or which correspond to a significant health risk to humans, as determined by the department. The department shall determine on a case-by-case basis the criteria, methods, and procedures necessary to meet the intent of this chapter.

(6) Puget Sound marine sediment impact zone maximum nonanthropogenically affected sediment criteria. Whenever the nonanthropogenically affected sediment quality is of a lower quality (i.e., higher chemical concentrations, higher levels of adverse biological response, or posing a higher threat to human health) than the applicable sediment impact zone maximum criteria established under this section, the existing sediment chemical and biological quality shall be identified on an area-wide basis as determined by the department, and used in place of the standards of WAC 173-204-420.

[Statutory Authority: RCW 90.48.220, 96-02-058, § 173-204-420, filed 12/29/95, effective 1/29/96. Statutory Authority: Chapters 43.21C, 70.105D, 90.48, 90.52, 90.54 and 90.70 RCW. 91-08-019 (Order 90-41), § 173-204-420, filed 3/27/91, effective 4/27/91.]

## PART V—SEDIMENT CLEANUP STANDARDS

**WAC 173-204-500 Sediment cleanup decision process and policies.** (1) The standards of WAC 173-204-500 through 173-204-590 are procedures which specify a cleanup decision process for managing contaminated sediments. These procedures include:

- Screening sediment station clusters of potential concern;
- Conducting hazard assessments to identify cleanup sites;
- Ranking sites identified in (b) of this subsection;
- Determining the appropriate site cleanup authority;
- Conducting a site cleanup study;
- Determining the site-specific cleanup standard;
- Selecting a site cleanup action; and

(h) Where necessary, authorizing a cleanup site sediment recovery zone.

(2) Under this chapter, the department may require or take those actions necessary to implement the standards of WAC 173-204-500 through 173-204-580 for all contaminated sediment stations on the inventory identified in WAC 173-204-350.

(3) The cleanup process and procedures under this chapter and under other laws may be combined. The department may initiate a cleanup action under this chapter and may upon further analysis determine that another law is more appropriate, or vice versa.

(4) It is the policy of the department to manage sediment cleanup actions towards the goal of reducing and ultimately eliminating adverse effects on biological resources and significant health threats to humans from sediment contamination. To achieve this goal, the department will pursue sediment cleanup decisions and cleanup standards that are as close as practicable to the sediment quality standards of WAC 173-204-320 through 173-204-340, including the consideration of net environmental effects, cost and technical feasibility. The department shall only authorize sediment recovery zones so as to minimize the number, size and adverse effects of all zones, with the intent to eliminate the existence of all such zones whenever practicable.

(5) The department shall endeavor to make sediment cleanup decisions in an expeditious manner, as soon as all needed information is available, consistent with the availability of department resources and the priority of the cleanup site.

[Statutory Authority: Chapters 43.21C, 70.105D, 90.48, 90.52, 90.54 and 90.70 RCW. 91-08-019 (Order 90-41), § 173-204-500, filed 3/27/91, effective 4/27/91.]

**WAC 173-204-510 Screening sediment station clusters of potential concern.** (1) Using the sediment quality standards inventory of WAC 173-204-350, the department shall analyze the sediment sampling data to identify station clusters of potential concern and station clusters of low concern per the standards of this section. Station clusters of potential concern shall be further evaluated using the hazard assessment standards of WAC 173-204-530. Station clusters of low concern shall remain on the inventory and no further cleanup action determinations shall be taken by the department until the stations are reexamined per subsection (5) of this section.

(2) A station cluster is defined as any number of stations from the inventory of WAC 173-204-350 that are determined to be spatially and chemically similar. For the purpose of identifying a station cluster of potential concern per the procedures of this subsection, three stations with the highest contaminant concentration for any particular contaminant or the highest degree of biological effects as identified in WAC 173-204-520 are selected from a station cluster. This procedure may be repeated for multiple chemicals identified in WAC 173-204-520, recognizing that the three stations with the highest concentration for each particular contaminant may be different and the respective areas for all chemicals may overlap. The department shall review the inventory of WAC 173-204-350 to identify station clusters of potential concern via the following process:

(a) Identify if available, the three stations within a station cluster with the highest concentration of each chemical contaminant identified in WAC 173-204-520, Cleanup screening levels criteria; and

(b) For each contaminant identified in (a) of this subsection, determine the average concentration for the contaminant at the three stations identified in (a) of this subsection; and

(c) Identify if available, three stations within the station cluster with the highest level of biological effects for the biological tests identified in WAC 173-204-315(1); and

(d) If the average contaminant concentration for any three stations identified in (a) of this subsection, exceeds the applicable cleanup screening level in WAC 173-204-520, then the station cluster is defined as a station cluster of potential concern; and

(e) If the biological effects at each of the three stations from (c) of this subsection exceeds the cleanup screening level in WAC 173-204-520, then the station cluster is defined as a station cluster of potential concern; and

(f) If neither of the conditions of (d) or (e) of this subsection apply, then the station cluster is defined as a station cluster of low concern; and

(g) If the department determines that any three stations within a station cluster exceed the sediment cleanup screening levels human health criteria or the other toxic, radioactive, biological, or deleterious substances criteria or the non-anthropogenically affected criteria of WAC 173-204-520, then the station cluster is defined as a station cluster of potential concern.

(3) Notification. When a station cluster of potential concern has been identified, the department shall issue notification to the landowners, lessees, onsite dischargers, adjacent dischargers, and other persons determined appropriate by the department prior to the department's conducting a hazard assessment as defined in WAC 173-204-530.

(4) No further cleanup action determinations shall be taken with station clusters of low concern until the inventory of WAC 173-204-350 is updated and the stations reexamined per subsection (5) of this section. Station clusters of low concern shall receive no further consideration for active cleanup, unless new information indicates an increase of chemical contamination at the stations in question. Station clusters of low concern shall be evaluated by the department for improved source control and/or monitoring requirements of this chapter.

(5) The department may at any time reexamine a station or group of stations to reevaluate and identify station clusters of potential concern following the procedures of subsection (2) of this section when new information demonstrates to the department's satisfaction that reexamination actions are necessary to fulfill the purposes of WAC 173-204-500 through 173-204-590.

[Statutory Authority: RCW 90.48.220, 96-02-058, § 173-204-510, filed 12/29/95, effective 1/29/96. Statutory Authority: Chapters 43.21C, 70.105D, 90.48, 90.52, 90.54 and 90.70 RCW. 91-08-019 (Order 90-41), § 173-204-510, filed 3/27/91, effective 4/27/91.]

**WAC 173-204-520 Cleanup screening levels criteria.**

(1) Applicability.

(a) The marine sediment cleanup screening levels chemical criteria, and the marine sediment biological effects criteria

ria, and the marine sediment other toxic, radioactive, biological, or deleterious substance criteria, and the marine sediment nonanthropogenically affected criteria of this section shall apply to marine sediments within Puget Sound. The cleanup screening levels establish minor adverse effects as the level above which station clusters of potential concern are defined, and at or below which station clusters of low concern are defined, per the procedures identified in WAC 173-204-510(2). The cleanup screening levels also establish the levels above which station clusters of potential concern are defined as cleanup sites, per the procedures identified in WAC 173-204-530, Hazard assessment. The criteria in Table III and this section also establish minor adverse effects as the Puget Sound marine sediment minimum cleanup level to be used in evaluation of cleanup alternatives per the procedures of WAC 173-204-560, and selection of a site cleanup standard(s) per the procedures of WAC 173-204-570.

(b) Non-Puget Sound marine sediment cleanup screening levels and minimum cleanup levels criteria. Reserved: The department shall determine on a case-by-case basis the criteria, methods, and procedures necessary to meet the intent of this chapter.

(c) Low salinity sediment cleanup screening levels and minimum cleanup levels criteria. Reserved: The department shall determine on a case-by-case basis the criteria, methods, and procedures necessary to meet the intent of this chapter.

(d) Freshwater sediment cleanup screening levels and minimum cleanup levels criteria. Reserved: The department shall determine on a case-by-case basis the criteria, methods, and procedures necessary to meet the intent of this chapter.

(2) Puget Sound marine sediment cleanup screening levels and minimum cleanup levels chemical criteria. The chemical concentration criteria in Table III establish the Puget Sound marine sediment cleanup screening levels and minimum cleanup levels chemical criteria.

(a) Where laboratory analysis indicates a chemical is not detected in a sediment sample, the detection limit shall be reported and shall be at or below the Marine Sediment Quality Standards chemical criteria value set in WAC 173-204-320(2).

(b) Where chemical criteria in this table represent the sum of individual compounds or isomers, the following methods shall be applied:

(i) Where chemical analyses identify an undetected value for every individual compound/isomer then the single highest detection limit shall represent the sum of the respective compounds/isomers; and

(ii) Where chemical analyses detect one or more individual compound/isomers, only the detected concentrations will be added to represent the group sum.

(c) The listed chemical parameter criteria represent concentrations in parts per million, "normalized," or expressed, on a total organic carbon basis. To normalize to total organic carbon, the dry weight concentration for each parameter is divided by the decimal fraction representing the percent total organic carbon content of the sediment.

(d) The LPAH criterion represents the sum of the following "low molecular weight polynuclear aromatic hydrocarbon" compounds: Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, and Anthracene. The LPAH

criterion is not the sum of the criteria values for the individual LPAH compounds as listed.

(e) The HPAH criterion represents the sum of the following "high molecular weight polynuclear aromatic hydrocarbon" compounds: Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Total Benzo(a)fluoranthenes, Benzo(a)pyrene, Indeno(1,2,3,-c,d)pyrene, Dibenzo(a,h)anthracene, and Benzo(g,h,i)perylene. The HPAH criterion is not the sum of the criteria values for the individual HPAH compounds as listed.

(f) The TOTAL BENZOFLUORANTHENES criterion represents the sum of the concentrations of the "B," "J," and "K" isomers.

Table III  
Puget Sound Marine Sediment  
Cleanup Screening Levels  
and  
Minimum Cleanup Levels —  
Chemical Criteria

CHEMICAL PARAMETER	MG/KG DRY WEIGHT (PARTS PER MILLION (PPM) DRY)
ARSENIC	93
CADMIUM	6.7
CHROMIUM	270
COPPER	390
LEAD	530
MERCURY	0.59
SILVER	6.1
ZINC	960
CHEMICAL PARAMETER	MG/KG ORGANIC CARBON (PPM CARBON)
LPAH	780
NAPHTHALENE	170
ACENAPHTHYLENE	66
ACENAPHTHENE	57
FLUORENE	79
PHENANTHRENE	480
ANTHRACENE	1200
2-METHYLNAPHTHALENE	64
HPAH	5300
FLUORANTHENE	1200
PYRENE	1400
BENZ(A)ANTHRACENE	270
CHRYSENE	460
TOTAL BENZOFLUORANTHENES	450
BENZO(A)PYRENE	210
INDENO (1,2,3,-C,D) PYRENE	88
DIBENZO (A,H) ANTHRACENE	33
BENZO(G,H,I)PERYLENE	78
1,2-DICHLOROBENZENE	2.3
1,4-DICHLOROBENZENE	9
1,2,4-TRICHLOROBENZENE	1.8
HEXACHLOROBENZENE	2.3
DIMETHYL PHTHALATE	53
DIETHYL PHTHALATE	110
DI-N-BUTYL PHTHALATE	1700
BUTYL BENZYL PHTHALATE	64
BIS (2-ETHYLHEXYL) PHTHALATE	78
DI-N-OCTYL PHTHALATE	4500
DIBENZOFURAN	58
HEXACHLOROBUTADIENE	6.2
N-NITROSODIPHENYLAMINE	11
TOTAL PCB'S	65
CHEMICAL PARAMETER	UG/KG DRY WEIGHT (PARTS PER BILLION (PPB) DRY)
PHENOL	1200
2-METHYLPHENOL	63
4-METHYLPHENOL	670
2,4-DIMETHYL PHENOL	29

CHEMICAL PARAMETER	UG/KG DRY WEIGHT (PARTS PER BILLION (PPB) DRY)
PENTACHLOROPHENOL	690
BENZYL ALCOHOL	73
BENZOIC ACID	650

(3) Puget Sound marine sediment cleanup screening levels and minimum cleanup level biological criteria. The biological effects criteria of this subsection establish the Puget Sound marine sediment cleanup screening level, and the Puget Sound marine sediment minimum cleanup level criteria.

(a) The acute and chronic effects biological tests of WAC 173-204-315(1) shall be used to:

(i) Identify the Puget Sound marine sediment cleanup screening level for the purpose of screening sediment station clusters of potential concern using the procedures of WAC 173-204-510(2); and

(ii) Identify the Puget Sound marine sediment cleanup screening level for the purpose of identifying station clusters of low concern and/or cleanup sites using the hazard assessment procedures of WAC 173-204-530(4); and/or

(iii) Identify the Puget Sound marine sediment minimum cleanup level to confirm minimum cleanup level determinations using the procedures of WAC 173-204-570(3).

(b) When using biological testing to determine if station clusters exceed the cleanup screening level or to identify the minimum cleanup level for a contaminated site, test results from at least two acute effects tests and one chronic effects test shall be evaluated.

(c) The biological tests shall not be considered valid unless test results for the appropriate control and reference sediment samples meet the performance standards described in WAC 173-204-315(2).

(d) The cleanup screening level and minimum cleanup level is exceeded when any two of the biological tests exceed the criteria of WAC 173-204-320(3); or one of the following test determinations is made:

(i) Amphipod: The test sediment has a higher (statistically significant,  $t$  test,  $p \leq 0.05$ ) mean mortality than the reference sediment and the test sediment mean mortality is greater than a value represented by the reference sediment mean mortality plus thirty percent.

(ii) Larval: The test sediment has a mean survivorship of normal larvae that is less (statistically significant,  $t$  test,  $p \leq 0.05$ ) than the mean normal survivorship in the reference sediment and the test sediment mean normal survivorship is less than seventy percent of the mean normal survivorship in the reference sediment (i.e., the test sediment has a mean combined abnormality and mortality that is greater than thirty percent relative to time-final in the reference sediment).

(iii) Benthic abundance: The test sediment has less than fifty percent of the reference sediment mean abundance of any two of the following major taxa: Class Crustacea, Phylum Mollusca or Class Polychaeta and the test sample abundances are statistically different ( $t$  test,  $p \leq 0.05$ ) from the reference abundances.

(iv) Juvenile polychaete: The test sediment has a mean individual growth rate of less than fifty percent of the reference sediment mean individual growth rate and the test sediment mean individual growth rate is statistically different ( $t$

test,  $p \leq 0.05$ ) from the reference sediment mean individual growth rate.

(4) Puget Sound marine sediment cleanup screening levels and minimum cleanup levels human health criteria. Reserved: The department may determine on a case-by-case basis the criteria, methods, and procedures necessary to meet the intent of this chapter.

(5) Puget Sound marine sediment cleanup screening levels and minimum cleanup levels other toxic, radioactive, biological, or deleterious substances criteria. Other toxic, radioactive, biological, or deleterious substances in, or on, sediments shall be at or below levels which cause minor adverse effects in marine biological resources, or which correspond to a significant health risk to humans, as determined by the department. The department shall determine on a case-by-case basis the criteria, methods, and procedures necessary to meet the intent of this chapter.

(6) Puget Sound marine sediment cleanup screening levels and minimum cleanup levels nonanthropogenically affected sediment criteria. Whenever the nonanthropogenically affected sediment quality is of a lower quality (i.e., higher chemical concentrations, higher levels of adverse biological response, or posing a higher threat to human health) than the applicable cleanup screening levels or minimum cleanup levels criteria established under this section, the existing sediment chemical and biological quality shall be identified on an area-wide basis as determined by the department, and used in place of the standards of WAC 173-204-520.

[Statutory Authority: RCW 90.48.220, 96-02-058, § 173-204-520, filed 12/29/95, effective 1/29/96. Statutory Authority: Chapters 43.21C, 70.105D, 90.48, 90.52, 90.54 and 90.70 RCW. 91-08-019 (Order 90-41), § 173-204-520, filed 3/27/91, effective 4/27/91.]

**WAC 173-204-530 Hazard assessment and site identification.** (1) Purpose. A hazard assessment shall be performed to gather existing and available information to further characterize each station cluster of potential concern identified per WAC 173-204-510.

(2) Hazard assessment requirements. Onsite dischargers, lessees, landowners, and adjacent dischargers shall submit, upon the department's request, all existing and available information that would enable the department to:

(a) Determine the concentration and/or areal extent and depth of sediment contamination at the station cluster of potential concern by:

(i) Identifying the contaminants exceeding the applicable sediment quality standards of WAC 173-204-320 through 173-204-340;

(ii) Identifying individual stations within the station cluster of potential concern which exceed the sediment cleanup screening levels criteria of WAC 173-204-520;

(iii) Identifying the level of toxicity to the applicable biological test organisms of WAC 173-204-320 through 173-204-340;

(iv) Determining where the applicable sediment quality standards of WAC 173-204-320 through 173-204-340, for any given contaminant, is met;

(v) Determining if concentrations of chemicals exist that potentially present a significant threat to human health;

(vi) Defining the location where the minimum cleanup level as defined in WAC 173-204-570 is met.

(b) Identify and characterize the present and historic source or sources of the contamination.

(c) Identify the location of sediment impact zones authorized under WAC 173-204-415.

(d) Identify sensitive resources in the vicinity of the station cluster of potential concern.

(e) Provide other information as determined necessary by the department for ranking sites under WAC 173-204-540.

(3) The department shall also compile existing and available information from other federal, state, and local governments that pertain to the topics in subsection (2) of this section.

(4) To identify cleanup sites, the department shall use all available information of acceptable quality gathered from the hazard assessment to evaluate station clusters of potential concern identified pursuant to WAC 173-204-510(2). For the purpose of identifying a cleanup site per the procedures of this subsection, three stations with the highest contaminant concentration for any particular contaminant or the highest degree of biological effects as identified in WAC 173-204-520 are selected from a station cluster of potential concern. This procedure may be repeated for multiple chemicals identified in WAC 173-204-520, recognizing that the three stations with the highest concentration for each particular contaminant may be different and the respective areas for all chemicals may overlap. The department shall review the list of station clusters of potential concern to identify cleanup sites via the following process:

(a) Identify if available, three stations within the station cluster of potential concern with the highest level of biological effects for the biological tests identified in WAC 173-204-315(1).

(b) Station clusters of potential concern where the level of biological effects for any three stations within the station cluster of potential concern exceeds the cleanup screening levels of WAC 173-204-520(3) shall be defined as cleanup sites.

(c) Identify if available, the three stations within a station cluster of potential concern with the highest concentration of each chemical contaminant identified in WAC 173-204-520, Cleanup screening levels criteria. For the purpose of identifying a cleanup site per the procedures of this subsection, stations that meet the biological standards of WAC 173-204-520(3) shall not be included in the evaluation of chemical contaminant concentrations.

(d) For each contaminant identified in (c) of this subsection, determine the average concentration for the contaminant at the three stations identified in (c) of this subsection.

(e) Station clusters of potential concern for which any average chemical concentration identified in (d) of this subsection exceeds the cleanup screening level chemical criteria of Table III shall be defined as cleanup sites.

(f) After completion of the hazard assessment, if neither of the conditions of (b) or (e) of this subsection apply, then the station cluster is defined as a station cluster of low concern.

(g) Station clusters of potential concern where the department determines that any three stations within the station cluster of potential concern exceed the sediment cleanup

screening levels human health criteria or the other toxic, radioactive, biological, or deleterious substances criteria or the nonanthropogenically affected criteria of WAC 173-204-520, shall be defined as cleanup sites.

[Statutory Authority: RCW 90.48.220, 96-02-058, § 173-204-530, filed 12/29/95, effective 1/29/96. Statutory Authority: Chapters 43.21C, 70.105D, 90.48, 90.52, 90.54 and 90.70 RCW. 91-08-019 (Order 90-41), § 173-204-530, filed 3/27/91, effective 4/27/91.]

**WAC 173-204-540 Ranking and list of sites.** (1) Purpose. The department shall prepare and maintain a list of contaminated sediment sites in the order of their relative hazard ranking. From this list, the department shall select sites where action shall be taken.

(2) Site ranking. The department shall evaluate each cleanup site identified by the procedures in WAC 173-204-530 on a consistent basis using the procedure described in *Sediment Ranking System ("SEDRANK"), January 1990*, and all additions and revisions thereto or other procedures approved by the department. The purpose of ranking is to estimate, based on technical information compiled during the hazard assessment procedures in WAC 173-204-530, the relative potential risk posed by the site to human health and the environment. Information obtained during hazard assessment, plus any additional data specified in "SEDRANK," shall be included in the site hazard ranking evaluation.

(3) Considerations in ranking. In conducting sediment site ranking, the department shall assess both human health hazard and ecological hazard, and consider chemical toxicity, affected resources, and site characteristics for both types of hazards. The department shall also use best professional judgment and other information as necessary on a case-by-case basis to conduct site ranking.

(4) Site reranking. The department may, at its discretion, rerank a site. To rerank a site, the department shall use any additional information within the scope of the hazard ranking evaluation criteria and best professional judgment to establish that a significant change in rank should result.

(5) List of ranked sites.

(a) Contaminated sediment sites that are ranked via "SEDRANK" shall be placed on a list in the order of their relative hazard ranking. The list shall describe the current status of cleanup action at each site and be updated on an annual basis. The department may change a site's status to reflect current conditions on a more frequent basis. The status for each site shall be identified as one or more of the following:

(i) Sites awaiting cleanup action;

(ii) Sites where voluntary, incidental, partial or department initiated cleanup actions, as defined in WAC 173-204-550, are in progress;

(iii) Sites where a cleanup action has been completed and confirmational monitoring is underway;

(iv) Sites with sediment recovery zones authorized under WAC 173-204-590; and/or

(v) Other categories established by the department.

(b) The department shall routinely publish and make the list available to be used in conjunction with a review of ongoing and proposed regulatory actions to determine where and when a cleanup action should be taken. The department shall also make the list available to landowners and dischargers at or near listed sites, and to the public.

(6) Site delisting.

(a) The department may remove a site from the list only after it has determined that:

(i) All cleanup actions except confirmational monitoring have been completed and compliance with the site cleanup study and report and cleanup standard(s) has been achieved; or

(ii) The listing of the site was erroneous.

(b) A site owner or operator may request that a site be removed from the list by submitting a petition to the department. The petition shall state the reason for the site delisting request, and as determined appropriate by the department, shall include thorough documentation of all investigations performed, all cleanup actions taken, and all compliance monitoring data and results to demonstrate to the department's satisfaction that the site cleanup standards have been achieved. 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.

(c) The department shall maintain a record of sites that have been removed from the list under (a) of this subsection. This record shall be made available to the public on request.

(7) Relisting of sites. The department may relist a site which has previously been removed if it determines that the site requires further cleanup action.

(8) Delisting notice. The department shall provide public notice and an opportunity to comment when the department proposes to remove a site from the list.

(9) Relationship to hazardous sites list. The department may additionally evaluate cleanup sites on the site list developed under subsection (5) of this section for possible inclusion on the hazardous sites list published under WAC 173-340-330.

[Statutory Authority: Chapters 43.21C, 70.105D, 90.48, 90.52, 90.54 and 90.70 RCW. 91-08-019 (Order 90-41), § 173-204-540, filed 3/27/91, effective 4/27/91.]

#### **WAC 173-204-550 Types of cleanup and authority.**

(1) Purpose. The department acknowledges that cleanups of contaminated sediment sites can occur under the authority of chapter 90.48 or 70.105D RCW. Sediment cleanups may also be initiated by the federal government pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). This section describes the department's role in department initiated and other cleanup actions.

(2) The department shall use best professional judgment and other information as necessary on a case-by-case basis to determine the appropriate administrative authority for conducting, or requiring contaminated sediment cleanup actions based on, but not limited to, the following considerations:

(a) Source of contaminants requiring cleanup including spills, dredging actions, and wastewater and/or storm water discharges;

(b) Significance of contamination threat to human health and the environment including the degree of contamination and types and number of contaminants;

(c) Public perception concerning the contaminant threat to human health and the environment;

(d) Personal or corporate financial status of the landowner(s) and/or discharger(s);

(e) Enforcement compliance history of the landowner(s) and/or discharger(s);

(f) Status of existing or pending federal, state, or local legal orders or administrative actions; and

(g) Size of cleanup action proposed or determined necessary.

(3) The types of cleanup actions below establish scenarios recognized by the department which may occur to effect cleanup of contaminated sediment sites. All of these types of cleanup actions shall be subject to administrative review and approval of the department under chapters 90.48 and/or 70.105D RCW.

(a) Department initiated cleanup. Department initiated cleanup actions occur when the department uses its authority under chapter 90.48 and/or 70.105D RCW to conduct or require and/or otherwise effect cleanup to meet the intent of this chapter.

(b) Voluntary cleanup. Voluntary cleanup actions are initiated by parties other than the department. The department shall encourage voluntary cleanup actions whenever possible, and as early as possible, to meet the intent of this chapter.

(c) Incidental cleanup. Incidental cleanup actions are conducted when other state or federally permitted activities are ongoing in and/or around the contaminated sediment site. Early coordination of incidental cleanup actions with the department is encouraged to meet the intent of this chapter, chapter 70.105D RCW, and chapter 90.48 RCW, as appropriate.

(d) Partial cleanup. Partial cleanup actions may be conducted when completion of cleanup study requirements under WAC 173-204-560 has identified and proposed discrete site units and cleanup standards, the department has approved the selection of the partial cleanup alternative per the standards of WAC 173-204-580, and the department has determined that awaiting action or decision on conducting a complete site cleanup would have a net detrimental effect on the environment or human health.

(e) CERCLA cleanup. Pursuant to the federal Comprehensive Environmental Response, Compensation and Liability Act, the department may identify chapter 173-204 WAC as an applicable state requirement for cleanup actions conducted by the federal government.

[Statutory Authority: Chapters 43.21C, 70.105D, 90.48, 90.52, 90.54 and 90.70 RCW. 91-08-019 (Order 90-41), § 173-204-550, filed 3/27/91, effective 4/27/91.]

**WAC 173-204-560 Cleanup study.** (1) Purpose. This section describes cleanup study plan and report standards which meet the intent of cleanup actions required under authority of chapter 90.48 and/or 70.105D RCW, and/or this chapter. Cleanup actions required under authority of chapter 70.105D RCW shall also meet all standards of chapter 173-340 WAC, the Model Toxics Control Act cleanup regulation. The cleanup study plan and report standards in this chapter include activities to collect, develop, and evaluate sufficient information to enable consideration of cleanup alternatives and selection of a site-specific sediment cleanup standard prior to making a cleanup decision. Each person performing a cleanup action to meet the intent of this chapter shall submit

a cleanup study plan and cleanup study report to the department for review and written approval prior to implementation of the cleanup action. The department may approve the cleanup study plan as submitted, may approve the cleanup study plan with appropriate changes or additions, or may require preparation of a new cleanup study plan.

(2) Scope of cleanup study plan. The scope of a cleanup study plan shall depend on the specific site informational needs, the site hazard, the type of cleanup action proposed, and the authority cited by the department to require cleanup. In establishing the necessary scope of the cleanup study plan, the department may consider cost mitigation factors, such as the financial resources of the person(s) responsible for the cleanup action. In all cases sufficient information must be collected, developed, and evaluated to enable the appropriate selection of a cleanup standard under WAC 173-204-570 and a cleanup action decision under WAC 173-204-580. The sediment cleanup study plan shall address:

- (a) Public information/education;
- (b) Site investigation and cleanup alternatives evaluation;
- (c) Sampling plan and recordkeeping; and
- (d) Site safety.

(3) Cleanup study plan public information/education requirements. The cleanup study plan shall encourage coordinated and effective public involvement commensurate with the nature of the proposed cleanup action, the level of public concern, and the existence of, or potential for adverse effects on biological resources and/or a threat to human health. The cleanup study plan shall address proposed activities for the following subjects:

- (a) When public notice will occur, the length of the comment periods accompanying each notice, the potentially affected vicinity, and any other areas to be provided notice;
- (b) Where public information repositories will be located to provide site information to the public;
- (c) Methods for identifying the public's concerns, e.g., interviews, questionnaires, community group meetings, etc.;
- (d) Methods for providing information to the public, e.g., press releases, public meetings, fact sheets, etc.;
- (e) Coordination of public participation requirements mandated by other federal, state, or local laws;
- (f) Amendments to the planned public involvement activities; and
- (g) Any other elements that the department determines to be appropriate for inclusion in the cleanup study plan.

(4) Cleanup study plan site investigation and cleanup alternatives evaluation requirements. The content of the cleanup study plan for the site investigation and cleanup alternatives evaluation is determined by the type of cleanup action selected as defined under WAC 173-204-550. As determined by the department, the cleanup study plan shall address the following subjects:

- (a) General site information. General information, including: Project title; name, address, and phone number of project coordinator; legal description of the cleanup site; area and volume dimensions of the site; present owners and operators of contaminant source discharges to site; chronological listing of past owners and operators of contaminant source discharges to the site and their respective operational history;

and other pertinent information determined by the department.

(b) Site conditions map. An existing site conditions map which illustrates site features as follows:

- (i) Property boundaries.
- (ii) The site boundary defined by the individual contaminants exceeding the applicable sediment quality standards of WAC 173-204-320 through 173-204-340 at the point where the concentration of the contaminant would meet the:
  - (A) Cleanup objective; and
  - (B) Minimum cleanup level; and
  - (C) Recommended cleanup standards.
- (iii) Surface and subsurface topography.
- (iv) Surface and subsurface structures.
- (v) Utility lines.
- (vi) Navigation lanes.
- (vii) Current and ongoing sediment sources.
- (viii) Other pertinent information determined by the department.

(c) Site investigation. Sufficient investigation to characterize the distribution of sediment contamination present at the site, and the threat or potential threat to human health and the environment. Where applicable to the site, these investigations shall address the following:

(i) Surface water and sediments. Investigations of surface water hydrodynamics and sediment transport mechanisms to characterize significant hydrologic features such as: Site surface water drainage patterns, quantities and flow rates, areas of sediment erosion and deposition including estimates of sedimentation rates, and actual or potential contaminant migration routes to and from the site and within the site. Sufficient surface water and sediment sampling shall be performed to adequately characterize the areal and vertical distribution and concentrations of contaminants. Recontamination potential of sediments which are likely to influence the type and rate of contaminant migration, or are likely to affect the ability to implement alternative cleanup actions shall be characterized;

(ii) Geology and groundwater system characteristics. Investigations of site geology and hydrogeology to adequately characterize the physical properties and distribution of sediment types, and the characteristics of groundwater flow rate, groundwater gradient, groundwater discharge areas, and groundwater quality data which may affect site cleanup alternatives evaluations;

(iii) Climate. Information regarding local and regional climatological characteristics which are likely to affect surface water hydrodynamics, groundwater flow characteristics, and migration of sediment contaminants such as: Seasonal patterns of rainfall; the magnitude and frequency of significant storm events; prevailing wind direction and velocity;

(iv) Land use. Information characterizing human populations exposed or potentially exposed to sediment contaminants released from the site and present and proposed uses and zoning for shoreline areas contiguous with the site; and

(v) Natural resources and ecology. Information to determine the impact or potential impact of sediment contaminants from the site on natural resources and ecology of the area such as: Sensitive environment, local and regional habitat, plant and animal species, and other environmental receptors.

(d) Sediment contaminant sources. A description of the location, quantity, areal and vertical extent, concentration and sources of active and inactive waste disposal and other sediment contaminant discharge sources which affect or potentially affect the site. Where determined relevant by the department, the following information shall be obtained by the department from the responsible discharger:

- (i) The physical and chemical characteristics, and the biological effects of site sediment contaminant sources;
- (ii) The status of source control actions for permitted and unpermitted site sediment contaminant sources; and
- (iii) A recommended compliance time frame for known permitted and unpermitted site sediment contaminant sources which affect or potentially affect implementation of the timing and scope of the site cleanup action alternatives.

(e) Human health risk assessment. The current and potential threats to human health that may be posed by sediment site contamination shall be evaluated using a risk assessment procedure approved by the department.

(f) Cleanup action alternatives. Each cleanup study plan shall include an evaluation of alternative cleanup actions that protect human health and the environment by eliminating, reducing, or otherwise controlling risks posed through each exposure pathway and migration route. The number and types of alternatives to be evaluated shall take into account the characteristics and complexity of the site.

(i) The proposed site cleanup alternatives may include establishment of site units, as defined in WAC 173-204-200(24), with individual cleanup standards within the range required by WAC 173-204-570, based on site physical characteristics and complexity, and cleanup standard alternatives established on consideration of cost, technical feasibility, and net environmental impact.

(ii) The proposed site cleanup alternatives may include establishment of a sediment recovery zone as authorized under WAC 173-204-590, Sediment recovery zones. Establishment or expansion of a sediment recovery zone shall not be used as a substitute for active cleanup actions, when such actions are practicable and meet the standards of WAC 173-204-580. The cleanup study plan shall include the following information for evaluation of sediment recovery zone alternatives:

(A) The time period during which a sediment recovery zone is projected to be necessary based on source loading and net environmental recovery processes determined by application of the department's sediment recovery zone computer models "CORMIX," "PLUMES," and/or "WASP," or an alternate sediment recovery zone model(s) approved by the department under WAC 173-204-130(4) as limited by the standards of this section and the department's best professional judgment;

(B) The legal location and landowner(s) of property proposed as a sediment recovery zone;

(C) Operational terms and conditions including, but not limited to proposed confirmational monitoring actions for discharge effluent and/or receiving water column and/or sediment chemical monitoring studies and/or bioassays to evaluate ongoing water quality, sediment quality, and biological conditions within and adjacent to the proposed or authorized sediment recovery zone to confirm source loading and recovery rates in the proposed sediment recovery zone.

(D) Potential risks posed by the proposed sediment recovery zone to human health and the environment;

(E) The technical practicability of elimination or reduction of the size and/or degree of chemical contamination and/or level of biological effects within the proposed sediment recovery zone; and

(F) Current and potential use of the sediment recovery zone, surrounding areas, and associated resources that are, or may be, affected by releases from the zone.

(G) The need for institutional controls or other site use restrictions to reduce site contamination risks to human health.

(iii) A phased approach for evaluation of alternatives may be required for certain sites, including an initial screening of alternatives to reduce the number of potential remedies for the final detailed evaluation. The final evaluation of cleanup action alternatives that pass the initial screening shall consider the following factors:

(A) Overall protection of human health and the environment, time required to attain the cleanup standard(s), and on-site and offsite environmental impacts and risks to human health resulting from implementing the cleanup alternatives;

(B) Attainment of the cleanup standard(s) and compliance with applicable federal, state, and local laws;

(C) Short-term effectiveness, including protection of human health and the environment during construction and implementation of the alternative; and

(D) Long-term effectiveness, including degree of certainty that the alternative will be successful, long-term reliability, magnitude of residual, biological and human health risk, and effectiveness of controls for ongoing discharges and/or controls required to manage treatment residues or remaining wastes cleanup and/or disposal site risks;

(g) Ability to be implemented. The ability to be implemented including the potential for landowner cooperation, consideration of technical feasibility, availability of needed offsite facilities, services and materials, administrative and regulatory requirements, scheduling, monitoring requirements, access for construction, operations and monitoring, and integration with existing facility operations and other current or potential cleanup actions;

(h) Cost, including consideration of present and future direct and indirect capital, operation, and maintenance costs and other foreseeable costs;

(i) The degree to which community concerns are addressed;

(j) The degree to which recycling, reuse, and waste minimization are employed; and

(k) Environmental impact. Sufficient information shall be provided to fulfill the requirements of chapter 43.21C RCW, the State Environmental Policy Act. Discussions of significant short-term and long-term environmental impacts, significant irrevocable commitments of natural resources, significant alternatives including mitigation measures, and significant environmental impacts which cannot be mitigated shall be included.

(5) Cleanup study plan — sampling plan and record-keeping requirements. The cleanup study plan shall address proposed sampling and recordkeeping activities to meet the standards of WAC 173-204-600, Sampling and testing plan

standards, and WAC 173-204-610, Records management, and the standards of this section.

(6) Cleanup study plan site safety requirements. The cleanup study plan shall address proposed activities to meet the requirements of the Occupational Safety and Health Act of 1970 (29 U.S.C. Sec. 651 et seq.) and the Washington Industrial Safety and Health Act (chapter 49.17 RCW), and regulations promulgated pursuant thereto. These requirements are subject to enforcement by the designated federal and state agencies. Actions taken by the department under this chapter do not constitute an exercise of statutory authority within the meaning of section (4)(b)(1) of the Occupational Safety and Health Act.

(7) Cleanup study report. Each person performing a cleanup action to meet the intent of this chapter shall submit a cleanup study report to the department for review and written approval of a cleanup decision prior to implementation of the cleanup action. The sediment cleanup study report shall include the results of cleanup study site investigations conducted pursuant to subsection (4) of this section, and preferred and alternate cleanup action proposals based on the results of the approved cleanup study plan.

(8) Sampling access. In cases where the person(s) responsible for cleanup is not able to secure access to sample sediments on lands subject to a cleanup study plan approved by the department, the department may facilitate negotiations or other proceedings to secure access to the lands. Requests for department facilitation of land access for sampling shall be submitted to the department in writing by the person(s) responsible for the cleanup action study plan.

[Statutory Authority: RCW 90.48.220, 96-02-058, § 173-204-560, filed 12/29/95, effective 1/29/96. Statutory Authority: Chapters 43.21C, 70.105D, 90.48, 90.52, 90.54 and 90.70 RCW, 91-08-019 (Order 90-41), § 173-204-560, filed 3/27/91, effective 4/27/91.]

**WAC 173-204-570 Sediment cleanup standards.** (1) Applicability and purpose. This section establishes the sediment cleanup standards requirements for cleanup actions required under authority of chapter 90.48 and/or 70.105D RCW, and/or this chapter, and describes the process to determine site-specific cleanup standards.

(2) Cleanup objective. The sediment cleanup objective shall be to eliminate adverse effects on biological resources and significant health threats to humans from sediment contamination. The sediment cleanup objective for all cleanup actions shall be the sediment quality standards as defined in WAC 173-204-320 through 173-204-340, as applicable. The sediment cleanup objective identifies sediments that have no acute or chronic adverse effects on biological resources, and which correspond to no significant health risk to humans, as defined in this chapter.

(3) Minimum cleanup level. The minimum cleanup level is the maximum allowed chemical concentration and level of biological effects permissible at the cleanup site to be achieved by year ten after completion of the active cleanup action.

(a) The minimum cleanup levels criteria of WAC 173-204-520 shall be used in evaluation of cleanup alternatives per the procedures of WAC 173-204-560, and selection of a site cleanup standard(s) per the procedures of this section.

(12/29/95)

(b) The Puget Sound marine sediment minimum cleanup level is established by the following:

(i) Sediments with chemical concentrations at or below the chemical criteria of Table III shall be determined to meet the minimum cleanup level, except as provided in (b)(iv) of this subsection; and

(ii) Sediments with chemical concentrations that are higher than the chemical criteria of Table III shall be determined to exceed the minimum cleanup level, except as provided in (b)(iii) of this subsection; and

(iii) Sediments with biological effects that do not exceed the levels of WAC 173-204-520(3) shall be determined to meet the minimum cleanup level; and

(iv) Sediments with biological effects that exceed the levels of WAC 173-204-520(3) shall be determined to exceed the minimum cleanup level; and

(v) Sediments which exceed the sediment minimum cleanup level human health criteria or the other toxic, radioactive, biological, or deleterious substances criteria or the nonanthropogenically affected criteria of WAC 173-204-520 as determined by the department, shall be determined to exceed the minimum cleanup level.

(4) Sediment cleanup standard. The sediment cleanup standards are established on a site-specific basis within an allowable range of contamination. The lower end of the range is the sediment cleanup objective as defined in subsection (2) of this section. The upper end of the range is the minimum cleanup level as defined in subsection (3) of this section. The site specific cleanup standards shall be as close as practicable to the cleanup objective but in no case shall exceed the minimum cleanup level. For any given cleanup action, either a site-specific sediment cleanup standard shall be defined, or multiple site unit sediment cleanup standards shall be defined. In all cases, the cleanup standards shall be defined in consideration of the net environmental effects (including the potential for natural recovery of the sediments over time), cost and engineering feasibility of different cleanup alternatives, as determined through the cleanup study plan and report standards of WAC 173-204-560.

(5) All cleanup standards must ensure protection of human health and the environment, and must meet all legally applicable federal, state, and local requirements.

[Statutory Authority: Chapters 43.21C, 70.105D, 90.48, 90.52, 90.54 and 90.70 RCW, 91-08-019 (Order 90-41), § 173-204-570, filed 3/27/91, effective 4/27/91.]

**WAC 173-204-580 Cleanup action decision.** (1) Each person performing a cleanup action to meet the intent of this chapter shall comply with the standards of WAC 173-204-560(7), Cleanup study report. Except for cleanups conducted under chapter 70.105D RCW, the department shall review each cleanup study report and issue a written approval of one or more of the cleanup action alternatives described in the cleanup study report, or issue a written disapproval of all alternatives described in the cleanup study report. The department's approval of one or more cleanup study report cleanup action alternatives shall constitute the cleanup decision and shall be referenced in one or more permit or administrative authorities established under chapter 90.48 or 70.105D RCW, Section 401 of the federal Clean Water Act, chapter 173-225 WAC, establishment of implementation procedures

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of application for certification, or other administrative authorities available to the department. The department may approve the cleanup alternative recommended in the cleanup study report, may approve a different alternative discussed in the report, or may approve an alternative(s) with appropriate conditions. The department's disapproval of all cleanup study report cleanup action alternatives shall be issued by certified mail, return receipt requested, to the cleanup action proponent(s). The procedures for department review of the cleanup study report and selection of a cleanup action under chapter 70.105D RCW shall be in accordance with the procedures of chapter 173-340 WAC.

(2) All cleanup actions conducted under this chapter shall meet the following requirements:

(a) Receive department review and written approval of the preferred and/or alternate cleanup actions and necessary sediment recovery zones proposed in the cleanup study report prior to implementing a cleanup action(s);

(b) Achieve a degree of cleanup that is protective of human health and the environment;

(c) Achieve compliance with applicable state, federal, and local laws;

(d) Achieve compliance with site cleanup standards;

(e) Achieve compliance with sediment source control requirements pursuant to WAC 173-204-400 through 173-204-420, if necessary;

(f) Provide for landowner review of the cleanup study plan and report, and consider public concerns raised during review of the draft cleanup report; and

(g) Provide adequate monitoring to ensure the effectiveness of the cleanup action.

(3) Cleanup time frame.

(a) The cleanup action selected shall provide for a reasonable time frame for completion of the cleanup action, based on consideration of the following factors:

(i) Potential risks posed by the site to biological resources and human health;

(ii) Practicability of achieving the site cleanup standards in less than a ten-year period;

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

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

(v) Likely effectiveness and reliability of institutional controls;

(vi) Degree of, and ability to control and monitor, migration of contamination from the site; and

(vii) Natural recovery processes which are expected to occur at the site that will reduce concentrations of contaminants.

(b) The department may authorize cleanup time frames that exceed the ten-year period used in deriving the site cleanup standards of WAC 173-204-570(4) where cleanup actions are not practicable to accomplish within a ten-year period.

(4) In evaluating cleanup action alternatives, the department shall consider:

(a) The net environmental effects of the alternatives, including consideration of residual effects, recovery rates,

and any adverse effects of cleanup construction or disposal activities;

(b) The relative cost-effectiveness of the alternatives in achieving the approved site cleanup standards; and

(c) The technical effectiveness and reliability of the alternatives.

(5) Public participation. The department shall provide opportunity for public review and comment on all cleanup action study plans, reports, and decisions reviewed and approved by the department, for cleanup actions conducted under this chapter.

(6) Land access. In cases where the person(s) responsible for cleanup is not able to secure access to lands subject to a cleanup action decision made pursuant to this section, the department may facilitate negotiations or other proceedings to secure access to the lands. Requests for department facilitation of land access shall be submitted to the department in writing by the person(s) named in the cleanup action approval.

[Statutory Authority: Chapters 43.21C, 70.105D, 90.48, 90.52, 90.54 and 90.70 RCW. 91-08-019 (Order 90-41), § 173-204-580, filed 3/27/91, effective 4/27/91.]

**WAC 173-204-590 Sediment recovery zones.** (1) The purpose of this section is to set forth the requirements for establishment and monitoring of sediment recovery zones to meet the intent of sediment quality dilution zones authorized pursuant to RCW 90.48.520. The standards of this section are applicable to cleanup action decisions made pursuant to WAC 173-204-580 where selected actions leave in place marine, low salinity, or freshwater sediments that exceed the applicable sediment quality standards of WAC 173-204-320 through 173-204-340.

(2) General requirements. Authorization of a sediment recovery zone by the department shall require compliance with the following general requirements:

(a) The sediment recovery zone shall be determined by application of the department's sediment recovery zone computer models "CORMIX," "PLUMES," and/or "WASP," or an alternate sediment recovery zone model(s) approved by the department under WAC 173-204-130(4) as limited by the standards of this section and the department's best professional judgment.

(b) The department shall provide specific authorization for a sediment recovery zone within the written approval of the cleanup study report and cleanup decision required under WAC 173-204-580.

(c) The time period during which a sediment recovery zone is authorized by the department shall be so stated in the department's written approval of the cleanup study report and cleanup decision.

(d) The department's written sediment recovery zone authorization shall identify the legal location and landowners of property proposed as a sediment recovery zone.

(e) Operational terms and conditions for the authorized sediment recovery zone pursuant to subsection (5) of this section shall be maintained at all times.

(f) Where cleanup is not practicable pursuant to the analysis under WAC 173-204-570(4), sediment recovery zones may be authorized for periods in excess of ten years.

(3) A sediment recovery zone authorization issued by the department under the authority of chapter 90.48 or 70.105D RCW, or other administrative means available to the department, does not constitute authorization to trespass on lands not owned by the applicant. These requirements do not address, and in no way alter, the legal rights, responsibilities, or liabilities of the permittee or landowner of the sediment recovery zone for any applicable requirements of proprietary, real estate, tort, and/or other laws not directly expressed as a requirement of this chapter.

(4) Prior to authorization, the department shall make a reasonable effort to identify and notify all landowners affected by the proposed sediment recovery zone. The department shall issue a sediment recovery zone notification letter to any person it believes to be a potentially affected landowner and other parties determined appropriate by the department. The notification letter shall be sent by certified mail, return receipt requested, or by personal service. The notification letter shall provide:

(a) The name of the person the department believes to be the affected landowner; and

(b) The names of other affected landowners to whom the department has sent a proposed sediment recovery zone notification letter; and

(c) The name of the sediment recovery zone applicant; and

(d) A general description of the proposed sediment recovery zone including the chemical(s) of concern by name and concentration, and the area of affected sediment; and

(e) The determination of the department concerning whether the proposed sediment recovery zone application meets the standards of this section; and

(f) The intention of the department whether to authorize the proposed sediment recovery zone; and

(g) Notification that the affected landowner may comment on the proposed sediment recovery zone. Any landowner comments shall be submitted in writing to the department within thirty days from the date of receipt of the notification letter, unless the department provides an extension.

(5) As determined necessary by the department, operational terms and conditions for the sediment recovery zone may include completion and submittal to the department of discharge effluent and/or receiving water column and/or sediment chemical monitoring studies and/or bioassays to evaluate ongoing water quality, sediment quality, and biological conditions within and adjacent to the proposed or authorized sediment recovery zone.

(6) The department shall review all data or studies conducted in accordance with a sediment recovery zone authorization to ensure compliance with the terms and conditions of the authorization and the standards of this section. Whenever, in the opinion of the department, the operational terms and conditions of a sediment recovery zone or the standards of this section are violated or there is a potential to violate the sediment recovery zone authorization or the standards of this section, or new information or a reexamination of existing information indicates the sediment recovery zone is no longer appropriate, the department may at its discretion:

(a) Require additional chemical or biological monitoring as necessary;

(b) Revise the sediment recovery zone authorization as necessary to meet the standards of this section;

(c) Require active contaminated sediment maintenance actions including additional cleanup in accordance with the standards of WAC 173-204-500 through 173-204-580; and/or

(d) Withdraw the department's authorization of the sediment recovery zone.

[Statutory Authority: RCW 90.48.220, 96-02-058, § 173-204-590, filed 12/29/95, effective 1/29/96. Statutory Authority: Chapters 43.21C, 70.105D, 90.48, 90.52, 90.54 and 90.70 RCW. 91-08-019 (Order 90-41), § 173-204-590, filed 3/27/91, effective 4/27/91.]

## PART VI—SAMPLING AND TESTING PLANS/RECORDKEEPING

**WAC 173-204-600 Sampling and testing plan standards.** (1) Applicability. These standards apply to:

(a) Any person who samples sediments to determine compliance with this chapter;

(b) Any person who makes application to the department for authorization of a sediment impact zone under the standards of WAC 173-204-400 through 173-204-420; and

(c) Any person who samples sediments consistent with cleanup action plans approved and cleanup actions conducted under this chapter.

(2) All applicable persons shall at a minimum, develop, keep, and abide by a sediment sampling and testing plan. The sampling and testing plan shall be available for inspection at the request of the department. Sediment sampling and testing plans shall identify sampling dates, sample types, sample depths, sample composites, sample locations, sample positioning methods, sampling personnel, sampling equipment and methods, a description of methods of chemical analysis and biological testing, and quality assurance/quality control procedures.

(3) Sediment sampling locations and procedures and testing protocols and interpretations shall be those included in the Puget Sound protocols as amended and/or other methods approved by the department.

(4) The department reserves the right to revise these sampling and testing protocols when:

(a) The Puget Sound protocols are modified or updated per the approval of the department; or

(b) The department determines the Puget Sound protocols are not applicable to, or appropriate for analysis of sediment chemical contamination in any given case.

[Statutory Authority: Chapters 43.21C, 70.105D, 90.48, 90.52, 90.54 and 90.70 RCW. 91-08-019 (Order 90-41), § 173-204-600, filed 3/27/91, effective 4/27/91.]

**WAC 173-204-610 Records management.** (1) Applicability. These standards apply to:

(a) Any person who samples sediments to determine compliance with this chapter;

(b) Any person who makes application to the department for authorization of a sediment impact zone under the standards of WAC 173-204-400 through 173-204-420.

(2) All applicable persons shall keep sediment sampling and testing records as follows:

(a) Sediment sampling and testing plans which identify sampling dates, sample types, sample composites, sample locations, sample depths, sample positioning method, sampling personnel, sampling equipment and methods, quality assurance/quality control plans, and sampling procedures.

(b) Sediment removal records which identify removal dates, dredging contractor/equipment, volume of sediment removed, analytical data generated during the sediment removal process, and sediment disposal location(s).

(c) Records and results of sediment analyses conducted in accordance with this chapter, or as required under activities authorized under chapter 173-225 WAC, establishment of implementation procedures of application for certification.

(d) Records and results of inspections conducted as required under chapter 173-225 WAC, establishment of implementation procedures of application for certification.

(e) Sediment treatment records.

(f) Sediment onsite capping records.

(g) Sediment disposal records which identify sediment disposal location(s), onsite operating records, sediment volumes, disposal site property owner(s), and the chemical/biological nature of effluent discharges from the disposal location including the name, location, and quality of the receiving water.

(3) All sediment records as required under subsection (2) of this section must be furnished upon request, and made available at all reasonable times for inspection, by any officer, employee, or representative of the department who is designated by the director.

(4) All sediment records as required in this section shall be maintained for a period not less than ten years after the issuance, modification, or renewal of the applicable permit, or administrative order, or certification, or cleanup site delisting under WAC 173-204-540(6), whichever is greater.

[Statutory Authority: Chapters 43.21C, 70.105D, 90.48, 90.52, 90.54 and 90.70 RCW. 91-08-019 (Order 90-41), § 173-204-610, filed 3/27/91, effective 4/27/91.]

**WAC 173-204-620 Severability.** If any provision of this chapter or its application to any person or circumstance is held invalid, the remainder of this chapter or the application of the provision to other persons or circumstances shall not be affected.

[Statutory Authority: Chapters 43.21C, 70.105D, 90.48, 90.52, 90.54 and 90.70 RCW. 91-08-019 (Order 90-41), § 173-204-620, filed 3/27/91, effective 4/27/91.]