

WSR 18-18-008
PROPOSED RULES
COLUMBIA RIVER
GORGE COMMISSION

[Filed August 23, 2018, 2:14 p.m.]

Original Notice.

Proposal is exempt under RCW 34.05.310(4) or 34.05.330(1).

Title of Rule and Other Identifying Information: Legal descriptions of boundaries for maps of the Columbia River Gorge National Scenic Area Act.

Hearing Location(s): On November 13, 2018, at 9:00 a.m., at Skyline Hospital, 211 N.E. Skyline Drive, White Salmon, WA 98672. Note: the time is the start time for the commission's meeting. The meeting agenda, which will have the hearing time, will be available approximately one week prior to the hearing date.

Date of Intended Adoption: November 13, 2018.

Submit Written Comments to: Jeffrey B. Litwak, Counsel, P.O. Box 730, White Salmon, WA 98672, email jeff.litwak@gorgecommission.org, by October 31, 2018. Note: Comments submitted prior to October 31, 2018, will be addressed in a staff report. The commission accepts written and oral comments until the close of the rule-making hearing.

Assistance for Persons with Disabilities: Contact Nancy Andring, phone 509-493-3323, email nancy.andring@gorgecommission.org, by November 6, 2018.

Purpose of the Proposal and Its Anticipated Effects, Including Any Changes in Existing Rules: This rule adopts legal boundary descriptions for the exterior boundary and special management area boundaries designated in the Columbia River Gorge National Scenic Area Act. The rule also amends the legal boundary descriptions of the urban area boundaries to show coincident angle points, to reflect new angle points where the exterior and SMA boundaries touch the urban area boundaries, and to conform terms, style, abbreviations and acronyms to the newer exterior and SMA boundary descriptions. No urban area boundaries are changed as a result of these amendments to the urban areas legal boundary descriptions. The rule is, in effect, an interpretation of the National Scenic Area Act. The rule will provide greater certainty for landowners and land managers about the precise location of the national scenic area boundaries. Where a legal boundary description in this rule differs from a prior interpretation of a national scenic area boundary, the legal boundary description will supersede the prior interpretation. Existing uses based on a prior interpretation will be managed in accordance with the existing uses provisions of the commission's management plan and county land use ordinances administering the plan. The rule does not change any national scenic area boundary; changes to boundaries may only occur as specified in the National Scenic Area Act. 16 U.S.C. § 544b.

Reasons Supporting Proposal: Congress provided maps of exterior and special management area boundaries with the National Scenic Area Act. The National Scenic Area Act states that the boundaries are "generally depicted." The maps were not as precise as needed for making planning and land development decisions on individual parcels. To date, the commission and United States Forest Service have inter-

preted those maps as needed, which has led to litigation and claims of inconsistent procedure and outcome. Previously, the commission adopted legal descriptions of the thirteen urban areas. This rule making adopts similar descriptions with the same intent of reducing litigation and increasing consistency in surveying urban area boundaries on individual parcels..

Statutory Authority for Adoption: RCW 43.97.015; ORS 196.150; 16 U.S.C. § 544b (a), (b), (e).

Statute Being Implemented: RCW 43.97.015; ORS 196.150; 16 U.S.C. § 544b (a), (b), (e).

Rule is necessary because of federal law, [no further information supplied by agency].

Name of Proponent: Columbia River Gorge Commission, governmental.

Name of Agency Personnel Responsible for Drafting: Jeffrey B. Litwak, Counsel, White Salmon, WA 98672, 509-493-3323; Implementation and Enforcement: Krystyna Wolniakowski, Executive Director, White Salmon, WA 98672, 509-493-3323.

A school district fiscal impact statement is not required under RCW 28A.305.135.

A cost-benefit analysis is not required under RCW 34.05.328. This rule is exempt under RCW 34.05.328(5), including, but not limited to RCW 34.05.328 (5)(b)(iii). This rule adopts without material change 16 U.S.C. §§ 544b (a), (b), and (e).

This rule proposal, or portions of the proposal, is exempt from requirements of the Regulatory Fairness Act because the proposal:

Is exempt under RCW 19.85.025(3) as the rules are adopting or incorporating by reference without material change federal statutes or regulations, Washington state statutes, rules of other Washington state agencies, shoreline master programs other than those programs governing shorelines of statewide significance, or, as referenced by Washington state law, national consensus codes that generally establish industry standards, if the material adopted or incorporated regulates the same subject matter and conduct as the adopting or incorporating rule.

Explanation of exemptions: This rule adopts without material change 16 U.S.C. §§ 544b (a), (b), and (e).

August 23, 2018
 Nancy A. Andring
 Rules Coordinator

AMENDATORY SECTION

350-10-000. Purpose.

(1) This division adopts a Legal Boundary Description of the exterior boundary, the special management areas, and each of the thirteen urban areas designated in the Columbia River Gorge National Scenic Area Act ("National Scenic Area Act" or "Act"). ~~This division may be expanded in the future to include legal descriptions of the exterior boundary of the National Scenic Area and of the boundaries of the special management areas designated in the Act.~~

(2) The maps that Congress enacted as part of the National Scenic Area Act in 1986 were not drawn to carto-

graphic or surveying standards. Congress did not provide any legal boundary description of other documentation accompanying the maps. Different maps enacted in section 4(e) and sections 4(a) and 4(c) of the National Scenic Area Act differ and conflict.

Subsequently, in 1987, the U.S. Forest Service prepared new maps addressing many of the issues with the maps that Congress enacted. The U.S. Forest Service did not provide any legal boundary description, and provided only limited documentation accompanying the maps. The Commission, U.S. Forest Service, and others have used the 1987 maps almost exclusively for administration of the National Scenic Area Act.

The Commission has experienced many situations in which the maps that Congress enacted and the maps that the U.S. Forest Service prepared were drawn to a scale that is too coarse for precision decision making at a parcel level. In addition, improvements in geographic information systems and locational technology have made the identification of precise boundaries more readily available; thus landowners and others involved in land planning expect more precise identification of boundaries established by the National Scenic Area Act.

(3) This rule promotes the efficient and reasonable administration of the National Scenic Area Act and affords interested persons notice of the Commission's interpretation of the maps referenced in section 4(e) of the National Scenic Area Act. This rule shall be applied to carry out these objectives.

Reviser's note: The typographical error in the above material occurred in the copy filed by the Columbia River Gorge Commission and appears in the Register pursuant to the requirements of RCW 34.08.040.

AMENDATORY SECTION

350-10-010. Authority.

Sections 4 (a)(2)(A), 4 (b)(2)(A), and 4 (e)(2) of the National Scenic Area Act specifies that the boundaries of the National Scenic Area, the special management areas, and urban areas are "generally depicted" on maps that Congress enacted as part of the National Scenic Area Act. The Columbia River Gorge Commission, U.S. Forest Service, and Gorge counties need precise legal boundary descriptions to develop and administer the Management Plan and land use ordinances for the National Scenic Area pursuant to sections 6, 7, and 8 of the National Scenic Area Act, ~~and the U.S. Forest Service needs precise legal boundary descriptions before making minor revisions to special management areas pursuant to section 4(c) of the National Scenic Area Act.~~ The Commission needs precise legal boundary descriptions before making minor revisions to the boundaries pursuant to section 4(f) of the National Scenic Area Act. The Commission and U.S. Forest Service therefore have inherent authority to interpret the generally depicted boundaries, consistent with congressional intent, to administer the Act.

Reviser's note: The typographical error in the above material occurred in the copy filed by the Columbia River Gorge Commission and appears in the Register pursuant to the requirements of RCW 34.08.040.

AMENDATORY SECTION

350-10-020. Definitions.

In this rule, unless the context or subject matter requires otherwise:

(1) "Cities" means incorporated cities within the Columbia River Gorge National Scenic Area: Cascade Locks, Hood River, Mosier and The Dalles in Oregon; and White Salmon, Bingen, Stevenson, and North Bonneville in Washington.

(2) "Commission" means the Columbia River Gorge Commission.

(3) "Counties" means Multnomah, Hood River and Wasco counties in Oregon; and Clark, Skamania and Klickitat counties in Washington.

(4) "National Scenic Area" means the Columbia River Gorge National Scenic Area as designated in the Columbia River Gorge National Scenic Area Act, 16 U.S.C. § 544b.

(45) "Legal Boundary Description" or "Legal Boundary Descriptions," when capitalized, means the legal boundary descriptions adopted in section 030(1) below and contained in the ~~appendix~~ appendices to this rule. When not capitalized, the term, "legal boundary description" or "legal boundary descriptions" does not mean the Legal Boundary Descriptions adopted in section 030(1).

Reviser's note: The typographical errors in the above material occurred in the copy filed by the Columbia River Gorge Commission and appear in the Register pursuant to the requirements of RCW 34.08.040.

AMENDATORY SECTION

350-10-030. Adoption and Use of Legal Boundary Descriptions and Maps.

(1) The Commission adopts the Exterior Boundary, Special Management Areas, and Urban Areas Legal Boundary Descriptions contained in ~~the appendix~~ appendices A, B, and C to this rule.

(2) The Commission, counties, cities, landowners, and other interested persons shall use the Legal Boundary Descriptions for all planning, decisions, and other actions requiring reliance on the location of the exterior boundary of the National Scenic Area, a boundary of a special management area, or a boundary of an urban area.

(3) The Legal Boundary Descriptions have not been monumented or otherwise marked on the ground, except that specific angle points and courses may reference monuments and precise features that existed at the time the Commission adopted the Legal Boundary Descriptions. Landowners that want to monument or otherwise mark the Legal Boundary Descriptions on their property shall use a licensed surveyor to do so. The Commission, counties, cities, landowners, and other interested persons shall ~~will~~ not rely on monuments or markings unless a licensed surveyor has placed them.

(4) The Commission shall maintain a graphic representation of the Legal Boundary Descriptions. This graphic representation is illustrative only; it is not an official map of the Legal Boundary Descriptions and shall not be relied on for locating the boundaries described in the Legal Boundary Descriptions.

Reviser's note: The typographical errors in the above material occurred in the copy filed by the Columbia River Gorge Commission and appear in the Register pursuant to the requirements of RCW 34.08.040.

AMENDATORY SECTION

350-10-040. Resolving Prior Interpretations.

The Commission, Commission staff, U.S. Forest Service staff, and surveyors have made prior interpretations of the maps that Congress enacted. These prior interpretations may differ from the Legal Boundary Descriptions. The Legal Boundary Descriptions shall prevail in the event of a difference. Land use claims involving any difference shall be resolved in accordance with the Existing Uses provisions in the applicable county or Commission land use ordinance corresponding to the Existing Uses provisions in Section 7 of the Management Plan.

AMENDATORY SECTION

350-10-050. Natural and Human Management Processes Do Not Affect Exterior, Special Management Area, or Urban Area Boundaries.

(1) The location of the exterior boundary, a special management area boundary or an urban area boundary does not shift in response to natural processes that occur over a long period of time, such as accretion and reliction of rivers and streams or ordinary high water, or as a result of major sudden event, such as an avulsion, flooding, landslide, or earthquake. The exterior boundary, special management area boundary or urban area boundary remains at the location described prior to the event.

(2) The location of the exterior boundary, a special management area boundary or an urban area boundary does not shift in response to management of the normal pool elevation behind Bonneville and The Dalles dams. The normal pool elevation is as defined by dam operations on November 17, 1986.

(3) The location of the exterior boundary, a special management area boundary or an urban area boundary does not shift in response to relocation or realignment of linear features, including but not limited to roads and highways, railroads, pipelines, or powerlines, or their associated rights-of-way or easements. A Legal Boundary Description that uses a linear feature means the linear feature as it existed on November 17, 1986, or as otherwise noted in the Legal Boundary Description.

(4) The location of the exterior boundary, a special management area boundary or an urban area boundary does not shift in response to changes in land management boundaries, including, but not limited to, land use designation, zoning, special district, municipal boundaries and approved urban growth boundaries. A Legal Boundary Description that refers to a land management boundary means the land management boundary as it existed on November 17, 1986, or as otherwise described in the Legal Boundary Description.

(5) The location of the exterior boundary, a special management area boundary or an urban area boundary does not shift in response to other changes, including but not limited to, changes in land ownership, changes to, creation of new; or

consolidation of tax lots, parcels, subdivisions, short plats, or short subdivisions, or changes to any other reference. A Legal Boundary Description that refers to ownership, tax lot, parcel, subdivision, short plat, or short subdivision or other reference means that reference as it existed on April 17, 2017, or as otherwise described in the Legal Boundary Description.

NEW SECTION

350-10-030A. Appendix A

APPENDIX A TO COMMISSION RULE 350-10 LEGAL BOUNDARY DESCRIPTION FOR THE EXTERIOR OF THE COLUMBIA RIVER GORGE NATIONAL SCENIC AREA

Exterior Legal Boundary Description

All corner points and lines of the Public Land Survey System (PLSS) referenced in this description are according to the latest official survey notes and plats, and state authority survey plats in effect as of December 1, 2016, unless otherwise specified. This description notes where it is identical with and where it leaves Special Management Area (SMA) and Urban Area (UA) boundaries. Special Management Area Boundary Angle Points are shown in brackets [AP] and Urban Area Boundary Angle Points are shown in braces {AP}. The hierarchy of the "rules of construction" is observed herein - natural monuments control over artificial monuments, which control over bearings and distances, which control over coordinates. This description will be junior to all senior rights when overlaps may occur. This description shall be considered, along with the final legislation map, as whole and complete per the original legislation creating this scenic area and together they both shall govern all boundaries of this area, and guide future "on-the-ground" surveys. Where the boundary is described as a topographic feature, the actual location of the feature will control the approximate course identifying that part of said boundary. Courses for parallel offsets are measured from the apparent road or trail center lines of the traveled way to determine the boundary and are intended to be used to locate the boundary in the future in the event that the road migrates or becomes indistinguishable; the courses follow the general configuration of the feature and not every turn or bend. The latitudes and longitudes reported for certain corner points and angle points in this description are North American Datum of 1983 (NAD83) (2011) (Epoch2011.00) values where survey-grade Global Positioning System (GPS) data was available, otherwise were determined by Geographical Information Systems (GIS) mapping data with a relative accuracy of ± 40 ft. horizontally, unless otherwise noted.

This description encompasses land that is identified as

The Exterior Boundary, established in the COLUMBIA RIVER GORGE NATIONAL SCENIC AREA ACT OF 1986, Pub. L. No. 99-663, § 4(a), 100 Stat. 4274, 4276 (1986), located in portions of:

Township 1 North, Range 3 East, and
Township 1 North, Range 4 East, of the Willamette Meridian, in Clark County, Washington,
Township 1 North, Range 5 East,
Township 2 North, Range 5 East,

Township 2 North, Range 6 East,
 Township 3 North, Range 6 East,
 Township 3 North, Range 7 East,
 Township 3 North, Range 7.5 East,
 Township 3 North, Range 8 East,
 Township 3 North, Range 10 East,
 Township 4 North, Range 8 East, and
 Township 4 North, Range 9 East, of the Willamette
 Meridian, in Skamania County, Washington,
 Township 2 North, Range 15 East,
 Township 3 North, Range 10 East,
 Township 3 North, Range 11 East,
 Township 3 North, Range 12 East,
 Township 3 North, Range 13 East,
 Township 3 North, Range 14 East,
 Township 4 North, Range 11 East, and
 Township 4 North, Range 12 East, of the Willamette
 Meridian, in Klickitat County, Washington,
 Township 1 North, Range 12 East,
 Township 1 North, Range 13 East,
 Township 1 North, Range 14 East,
 Township 1 North, Range 15 East,
 Township 2 North, Range 11 East,
 Township 2 North, Range 12 East,
 Township 2 North, Range 13 East,
 Township 2 North, Range 14 East, and
 Township 2 North, Range 15 East, of the Willamette
 Meridian, in Wasco County, Oregon,
 Township 1 North, Range 7 East,
 Township 1 North, Range 8 East,
 Township 2 North, Range 7 East,
 Township 2 North, Range 8 East,
 Township 2 North, Range 9 East,
 Township 2 North, Range 10 East, and
 Township 2 North, Range 11 East, of the Willamette
 Meridian, in Hood River County, Oregon,
 Township 1 North, Range 3 East,
 Township 1 North, Range 4 East,
 Township 1 North, Range 5 East,
 Township 1 North, Range 6 East,
 Township 1 North, Range 7 East,
 Township 1 South, Range 3 East, and
 Township 1 South, Range 4 East, of the Willamette
 Meridian, in Multnomah County, Oregon.

**T. 01 N., R. 03 E., Clark County, Wash-
 ington**

AP 1 **Beginning** at a point on the Oregon-Wash-
 ington State Line in sec. 14, T. 01 N., R. 03
 E., at River Mile 0 of the Sandy River;
 Latitude: 45°34'15.5" N., Longitude:
 122°24'04.7" W.;
 thence on said State line, N. 62°11' E.,
 approximately 2,700 ft. to

AP 2 on said State line;
 thence on said State line N. 80°51' E.,
 approximately 3,030 ft. to

AP 3 on said State line;
 thence on said State line, S. 71°00' E.,
 approximately 7, 440 ft. to

T. 01 N., R. 04 E.

AP 4 on said State line;
 thence on said State line, S. 35°25' E. a dis-
 tance of 5,200 ft. to

AP 5 on said State line;
 thence leaving said State line, N. 32°36' E.,
 approximately 2,380 ft. to

AP 6 at intersection with the right bank of the
 Columbia River at Ordinary High Water
 Mark (OHWM);
 thence along said right bank at OHWM,
 easterly, approximately 5,900 ft. to

AP 7 a point from which the SE cor. of Parcel 2,
 as described in Quit Claim Deed
 9708220225, records of Clark County,
 Washington;
 thence leaving said right bank, N. 27° W.,
 approximately 1,010 ft. to

AP 8 the SE cor. of said Parcel 2;
 thence leaving the original Columbia River
 Gorge National Scenic Area (CRGNSA)
 Exterior Boundary, on the Amended Exte-
 rior Boundary (see Footnote 1), on the east-
 erly line of said Parcel 2, N. 00°44'31" W a
 distance of 406.16 ft. to

AP 8A an angle point in said easterly line;
 thence continuing on said line, N. 00°46'20"
 W. a distance of 760.00 ft. to

AP 8B the NE cor. of said Parcel 2;
 thence on the northerly line and extension
 thereof, N. 76°36'28" W., approximately
 1,880 ft. to

AP 9 at intersection with the southerly extension
 of the easterly line of the City of Washougal
 Sewer Lagoon property, described in Instru-
 ment No. G410909, records of Clark
 County, Washington, and said original
 CRGNSA Exterior Boundary;
 thence on said southerly extension, N.
 02°43'41" E., approximately 1,015 ft. to

AP 10 the SE cor. of said City of Washougal prop-
 erty, as shown in survey for Stevenson,
 Book 5 of Surveys, Page 11, records of
 Clark County, Washington;
 thence on the east line of said property, N.
 02°43'41" E., approximately 685 ft. to

- AP 11 at intersection with the southerly line of the Joseph Gibbon Donation Land Claim (DLC) No. 49; thence on said southerly line, S. 56°16'24" E., approximately 490 ft. to
- AP 12 on said southerly line; thence continuing on said southerly line, S. 70°16'24" E. a distance of 1,098.53 ft. to
- AP 13 on said southerly line; thence continuing on said southerly line S. 80°16'24" E. a distance of 60.00 ft. to
- AP 14 on said southerly line; thence leaving said southerly line, N. 1°18'36" E., approximately 3,460 ft. to
- AP 15 at intersection with the southwesterly extension of the center line of Sunset View Road; thence on said extension and the center line thereof, northeasterly, approximately 3,000 ft. to
- AP 16 at intersection with the center line of Wooding Road; thence on said center line of Wooding Road, northeasterly, approximately 3,555 ft. to
- AP 17 at intersection of the thread of unnamed ravine with the crest of a ridge line; thence ascending said ridge line, northeasterly, approximately 4,700 ft. to
- AP 18 at intersection with the center line of SE 377th Avenue and SE 35th Street; thence N. 45° E. a distance of 2,100 ft. to
- AP 19 thence N. 22° E., approximately 1,100 ft. to
- AP 20 at intersection with the 1,000-ft. contour line, National Geodetic Vertical Datum of 1929 (NGVD 1929); thence along said contour line, easterly, approximately 6,570 ft. to
- AP 21 at intersection with the thread of an unnamed ravine; thence South, approximately 1,250 ft. to
- AP 22 at intersection with the center line of Sunset View Road; thence S. 18° E., approximately 300 ft. to
- AP 23 at intersection with the 900-ft. contour line, NGVD 1929; thence S. 78° E., approximately 2,410 ft. to
- T. 01 N., R. 05 E., Skamania County**
- AP 24 at summit of a minor peak; thence S. 83°40' E., approximately 2680 ft. to
- AP 25 at summit of a minor peak; thence S. 43°55' E. a distance of 1,035 ft. to
- AP 26 thence S. 64°26' E. a distance of 700 ft. to
- AP 27 thence S. 75°48' E., approximately 895 ft. to
- AP 28 at intersection of the center line of Belle Center Road with the center line of an unnamed private road approaching from the North, from which the intersection of the center line of Belle Center Road with the center line of Old Lawton Creek Road bears southwesterly, on said center line of Belle Center Road, approximately 350 ft.; thence on the center line of said Belle Center Road, southeasterly, approximately 3,385 ft. to
- AP 29 at intersection with the center line of Mt. Pleasant Road, identical with AP 14 of the Gates of the Columbia River, Cape Horn Special Management Area (SMA) Legal Boundary Description; thence on said center line of Mt. Pleasant Road, on said SMA Boundary, easterly, approximately 1,930 ft. to
- AP 30 at intersection with the center line of Strunk Road; thence on the center line of said Strunk Road, easterly, approximately 2,925 ft. to
- AP 31 at intersection with the center line of Rim Drive private road; thence on the center line of said Rim Drive, northerly, a distance of 400 ft. to
- AP 32 thence East, approximately 800 ft. to
- AP 33 at intersection with the crest of a ridge line; thence along said ridge line the following general courses:
N. 34°37' E., approximately 945 ft. to
N. 56°50' E., approximately of 810 ft. to
N. 36°35' E., approximately 1,110 ft. to
- AP 36 at intersection with the line between secs. 9 and 10; thence on said line, North, approximately 200 ft. to
- AP 37 the corner of secs. 3, 4, 9, and 10; thence on the line between said secs., 3 and 4, North, approximately 590 ft. to
- AP 38 at intersection with the center line of Mt. Pleasant Road; thence on said center line, northeasterly, approximately 1,250 ft. to

- AP 39A [AP 24] at intersection with the center line of Canyon Creek Road; thence on said center line, easterly, approximately 520 ft. to
- AP 39B [AP 25] at intersection with the N. and S. center line of the SW1/4 of said sec. 3; thence leaving the aforementioned SMA boundary, continuing on said center line, easterly, approximately 420 ft. to
- AP 40 at intersection with the center line of Salmon Falls Road; thence N. 2°16' E., approximately 555 ft. to
- AP 41 at intersection with the crest of a ridge line; thence N. 65°41' E. a distance of 570 ft. to
- AP 42 thence N. 49°39' E., approximately 480 ft. to
- AP 43 [AP 10] at intersection with the N. and S. center line of the aforementioned sec. 3, identical with AP 10 of the Gates of the Columbia River, Beacon Rock SMA Legal Boundary Description; thence on said SMA Boundary, N. 40°48' E., approximately 505 ft. to
- AP 44 [AP 11] at intersection with the thread of Canyon Creek; thence along said thread, northeasterly, approximately 3,765 ft. to
- AP 45 [AP 12] at intersection with the line between sec. 2, T. 01 N., R. 05 E. and sec. 35, T. 02 N., R. 05 E.; thence on said line, East, approximately 3,650 ft. to
- AP 46 [AP 13] the E1/16 cor. of said secs. 2 and 35; thence on the N. and S. center line of the SE1/4 of said sec. 35, North, approximately 1,320 ft. to
- T. 02 N., R. 05 E.**
- AP 47 [AP 14] the SE1/16 corner of said sec. 35; thence on the E. and W. center line of said SE1/4, East, approximately 1,328 ft. to
- AP 48 [AP 15] the S1/16 cor. of secs. 35 and 36; thence on the line between said secs., North, approximately 1,875 ft. to
- AP 49 [AP 16] at intersection with the thread of the aforementioned Canyon Creek; thence along said thread, northeasterly, approximately 3,950 ft. to
- AP 50 [AP 17] at intersection with the line between secs. 25 and 36; thence on said line, East, approximately 2,260 ft. to
- AP 51A [AP 18] the cor. of secs. 25 and 36, T. 2 N., R. 5 E., on the west line of sec. 31, T. 2 N., R. 6 E.; thence on the line between said secs. 25 and 31, N. 00°59' W. a distance of 68.64 ft. to
- AP 51B [AP 19] the cor. of secs. 30 and 31, T. 2 N., R. 6 E., on the east line of said sec. 25; thence on the line between said secs. 25 and 30, N. 00°30' W., approximately 2,020 ft. to
- T. 02 N., R. 06 E.**
- AP 52 [AP 20] at intersection with the center line of the Bonneville Power Administration (BPA) North Bonneville - Troutdale No. 1 Transmission Line; thence on said center line, northeasterly, approximately 5,870 ft. to
- AP 53 [AP 21] at intersection with the line between secs. 29 and 30; thence on said line, N. 00°32' E., approximately 985 ft. to
- AP 54 [AP 22] the cor. of secs. 19, 20, 29, and 30; thence on the line between said secs. 19 and 20, North, approximately 5,280 ft. to
- AP 55 [AP 23] the cor. of secs. 17, 18, 19, and 20; thence on the line between said secs. 17 and 20, East, approximately 5,310 ft. to
- AP 56 [AP 24] the cor. of secs. 16, 17, 20, and 21; thence on the line between said secs. 16 and 17, North, approximately 5,280 ft. to
- AP 57 [AP 25] the cor. of secs. 8, 9, 16, and 17; thence on the line between said secs. 8 and 9, North, approximately 2,670 ft. to
- AP 58 [AP 26] at intersection with the center line of the BPA McNary - Ross No. 1 Transmission Line; thence on said line, northeasterly, approximately 22,660 ft. to
- T. 03 N., R. 06 E.**
- AP 59 [AP 27] at intersection with the line between sec. 36, T. 03 N., R. 06 E., and sec. 31, T. 03 N., R. 07 E.; thence on said line, North, approximately 7,405 ft. to
- AP 60 [AP 28] not used
- AP 61 [AP 29] at intersection with the crest of a ridge line; thence along said ridge line, northeasterly, approximately 3,000 ft. to
- T. 03 N., R. 07 E.**

- AP 62 the summit of a minor peak;
[AP 30] thence descending along the crest of a ridge line, easterly, approximately 3,900 ft. to
- AP 63 at a four-way intersection of unnamed primitive roads;
[AP 31] thence ascending along said ridge line, easterly, 2,030 ft. to
- AP 64 at intersection with the center line of the
[AP 32] BPA McNary - Ross No. 1 Transmission Line;
thence on said center line, easterly, approximately 11,295 ft. to
- AP 65 at intersection with the N. and S. center line
[AP 33] of sec. 27;
thence leaving the aforementioned SMA Boundary, continuing on center line of said transmission line, easterly, approximately 5,480 ft. to
- AP 66 at intersection with the N. and S. center line
of sec. 26;
thence on said center line, North, approximately 790 ft. to
- AP 67 the 1/4 cor. of secs. 23 and 26;
thence on the N. and S. center line of said sec. 23, North, approximately 5,280 ft. to
- AP 68 the 1/4 cor. of secs. 14 and 23;
thence on the N. and S. center line of said sec. 14, North, approximately 765 ft. to
- AP 69 at intersection with the northeasterly ridge
line descending from a minor peak;
thence along said ridge line, northeasterly, approximately 4,320 ft. to
- AP 70 at intersection with the 2,400-ft. contour
line, NGVD 1929;
thence N. 76°19' E. a distance of 1,295 ft. to
- AP 71 thence S. 67°51' E. a distance of 1,780 ft. to
- AP 72 thence S. 84°28' E., approximately 1,415 ft. to
- AP 73 the summit of a minor peak;
thence S. 84°09' E., approximately 700 ft. to
- T. 03 N., R. 07.5 E.**
- AP 74 at intersection with the 2,400-ft. contour
line, NGVD 1929;
thence easterly, approximately 1,795 ft. to
- AP 75 at intersection of the 2,000-ft. contour line,
NGVD 1929 with the thread of Carson
Creek;
thence on said contour, easterly, approximately 3,990 ft. to
- AP 76 at intersection with the line between sec. 13,
T. 03 N., R. 07.5 E., and sec. 18, T. 03 N., R.
08 E.;;
thence on the line between said secs., N.
01°25' E. a distance of 2,655 ft. to
- AP 77 thence East a distance of 2,280 ft. to
- T. 03 N., R. 08 E.**
- AP 78 thence N. 72°16' E., approximately 1,130 ft.
to
- AP 79 at intersection with the right bank of the
Wind River at OHWM;
thence along said right bank at intersection
with OHWM, northeasterly, a distance of
795 ft. to
- AP 80 thence leaving said right bank, N. 78°48' E.,
approximately 1,125 ft. to
- AP 81A the cor. of secs. 7, 8, 17, and 18, identical
with the Carson, Washington, UAB Legal
Boundary Description;
thence on the line between said secs. 8 and
17, identical with said UAB, S. 88°24' E.,
approximately 2,120 ft. to
- AP 81B at intersection with the 560-ft contour line,
NGVD 1929, leaving said UA Boundary,
continuing on the line between said secs. 8
and 17, S. 88°24' E., approximately 469 ft.
to
- AP 82A the S1/4 cor. of said sec. 8;
thence continuing on the line between said
secs. 8 and 17, S. 87°02' E., approximately
2,928 ft. to
- AP 82B the SE cor. of said sec. 8;
thence on the east line of said sec. 8, N.
00°05' W., approximately 4,871 ft. to
- AP 83 the cor. of secs. 5 and 8;
thence on the east line of said sec. 5, N.
00°14' W., approximately 600 ft. to
- AP 84 at intersection with the crest of a ridge line;
thence ascending along said ridge line, east-
erly, approximately 1,700 ft. to
- AP 85 the summit of a minor peak;
thence continuing along said ridge line,
easterly, approximately 1,735 ft. to
- AP 86 the summit of a minor peak;
thence continuing along said ridge line,
easterly, approximately 1,080 ft. to
- AP 87 the summit of a minor peak;
thence S. 42°38' E., approximately 750 ft. to

- AP 88 at intersection with the center line of National Forest (N.F.) Road 6808; thence on said center line, easterly, approximately 3,000 ft. to
- AP 89 at intersection with the center line of N.F. Road 016; thence ascending N. 52°45' E., approximately 830 ft. to
- AP 90 at intersection with the crest of a ridge line; thence descending along ridge line, easterly, approximately 1,380 ft. to
- AP 91 a saddle in said ridge line; thence ascending along said ridge line, easterly, approximately 1,435 ft. to
- AP 92 the summit of a minor peak; thence descending along the crest of a ridge line, easterly, approximately 1,070 ft. to
- AP 93 a saddle in said ridge line; thence ascending along said ridge line, easterly, approximately 610 ft. to
- AP 94 the summit of a minor peak; thence descending along the crest of a ridge line, easterly, approximately 1,000 ft. to
- AP 95 a saddle in said ridge line; thence ascending along said ridge line, easterly, approximately 1,110 ft. to
- AP 96 the summit of a minor peak; thence descending along the crest of a ridge line, northeasterly, approximately 930 ft. to
- AP 97 a saddle in said ridge line; thence ascending along said ridge line, northeasterly, approximately 730 ft. to
- AP 98 the summit of a minor peak; thence descending along the crest of a ridge line, easterly, approximately 590 ft. to
- AP 99 a saddle in said ridge line; thence N. 12°24' E., approximately 740 ft. to
- AP 100 at intersection with center line of an unnamed primitive road; thence N. 18°49' E., approximately 510 ft. to
- AP 101 at intersection with center line of an unnamed primitive road; thence ascending N. 38°36' E., approximately 725 ft. to
- AP 102 at intersection with the crest of a ridge line; thence ascending along said ridge line, northeasterly, approximately 2,550 ft. to
- AP 103 the summit of a minor peak; thence descending along the crest of a ridge line, northeasterly, approximately 1,650 ft. to
T. 04 N., R. 08 E.
- AP 104 at intersection with N.F. Road 6808, identical with Triangle Pass; thence ascending along said ridge line, easterly, approximately 1,475 ft. to
T. 04 N., R. 09 E.
- AP 105 the summit of a minor peak; thence along the crest of a ridge line, easterly, approximately 3,090 ft. to
- AP 106 the summit of a minor peak; thence descending along the crest of a ridge line, southeasterly, approximately 1,375 ft. to
- AP 107 at intersection with the north line of sec. 6, T. 03 N., R. 09 E.; thence on the north line of said sec. 6, East, approximately 610 ft. to
- AP 108 the cor. of secs. 5 and 6; thence on the north line of said sec. 5, East, approximately 1,313 ft. to
- AP 109 the W1/16 cor. on the north line of said sec. 5; thence on the N. and S. center line of the W1/2 of said sec. 5, S. 00°01' E., approximately 5,275 ft. to
T. 03 N., R. 09 E.
- AP 110 the W1/16 cor. between secs. 5 and 8; thence on the line between said secs., West, approximately 1,320 ft. to
- AP 111 the cor. of secs. 5, 6, 7, and 8; thence on the line between said secs. 7 and 8, S. 00°01' E., approximately 5,280 ft. to
- AP 112 the cor. of secs. 7, 8, 17, and 18; thence on the line between secs. 8 and 17, N. 89°43' E., approximately, 775 ft. to
- AP 113 at intersection with the crest of a ridge line; thence ascending along said ridge line, southeasterly, approximately 440 ft. to
- AP 114 the summit of Augspurgen Mountain; thence along the crest of a ridge line easterly and southeasterly, approximately 14,160 ft. to
- AP 115 the summit of Cook Hill; thence descending along the crest of a ridge line, northeasterly, approximately 1,665 ft. to

- AP 116 at intersection of the center line of Bunker Keys Road with the thread of an unnamed ravine to the southeast; thence along said ridge line, easterly, approximately 3,850 ft. to
- AP 117 at thread of an unnamed ravine; thence N. 60°16' E., approximately 1,190 ft. to
- AP 118 at intersection with the crest of a ridge line; thence along said ridge line, northeasterly, approximately 1,125 ft. to
- AP 119 at intersection with the 1,400-ft. contour line, NGVD 1929; thence N. 24°47'E., approximately 860 ft. to
- AP 120 at intersection of the center line of Cook-Underwood Road with the line between secs. 14 and 23; thence northeasterly, approximately 640 ft. to
- AP 121 at intersection of the thread of Bunker Creek with the crest line of the break of the Little White Salmon River, as shown on survey for Broughton Lumber Company, Auditor's File Number (AFN) 2009173545, records of Skamania County, Washington, from which the 1/4 cor. of said secs. 14 and 23 bears S. 14°29'31" W. a distance of 179.61 ft.; thence along said break line, identical with said survey line, northerly, approximately 1,840 ft. to
- AP 122 at intersection with the N. and S. center line of sec. 14; thence leaving said survey line, continuing along said break, northerly, approximately 2,335 ft. to
- AP 123 at intersection with the E. and W. center line of the NW1/4 of said sec. 14; thence continuing along said break, identical with the aforementioned survey line, northerly, approximately 4,590 ft. to
- AP 124 at intersection with the southerly extension of the westerly boundary of the Willard National Fish Hatchery as described in Book 33 of Deeds, page 429, records of Skamania County, Washington; thence on said southerly extension, N. 04°31'17" E. a distance of 445.24 ft. to
- AP 125 the SW cor. of said hatchery, a brass disc in concrete, as shown in the aforementioned survey; thence on the westerly boundary of said hatchery, N. 04°31'17" E., approximately 250 ft. to
- AP 126 at intersection with the center line of Willard Road; thence on said center line, northerly, approximately 2,805 ft. to
- AP 127 at intersection with the line between secs. 2 and 11; thence on the line between said secs., easterly, approximately 1,160 ft. to
- AP 128 the cor. of secs. 1, 2, 11, and 12; thence on the line between said secs. 11 and 12, S. 08°19'14" W. a distance of 1,665.96 ft. to
- AP 129 the intersection with the center line of Cook-Underwood Road; thence on said center line, identical with the aforementioned survey, southerly, approximately 2,240 ft. to
- AP 130 at intersection with the aforementioned break; thence along said break, southerly, approximately 7,815 ft. to
- AP 131 a 5/8-in. iron rod with red plastic cap inscribed Klein and Associates WA 42690, as shown in the aforementioned survey; thence S. 11°26'03" E. a distance of 48.13 ft. to
- AP 132 thence leaving said break S. 39°58' E., approximately 485 ft. to
- AP 133A at intersection with the center line of Cook - Underwood Road; thence S. 62°52' E. a distance of 1,060 ft. to
- AP 133B at intersection with the crest of the ridge line of Chemawa Hill; thence along said ridge line, easterly, approximately 1,040 ft. to
- AP 134 at a 6-ft. fiberglass post as established in survey for Saddleback Wind Mountain Power Project, AFN 2007167932, records of Skamania County, Washington; thence along said ridge line, identical with said survey, the following courses:
S. 86°56'03" E. a distance of 179.61 ft. to
S. 76°36'14" E. a distance of 187.84 ft. to
N. 84°46'00" E. a distance of 2,539.88 ft. to
N. 82°26'54" E. a distance of 460.18 ft. to
N. 75°56'05" E. a distance of 683.90 ft. to
N. 59°35'54" E. a distance of 404.10 ft. to
- T. 03 N., R. 10 E.**
- AP 140 N. 29°06'37" E. a distance of 535.56 ft. to
- AP 141 N. 42°03'58" E. a distance of 1,321.37 ft. to

- AP 142 at intersection with the thread of an unnamed ravine;
thence across the westerly slope of Underwood Mountain, identical with the aforementioned survey, N. 32°26'15" E. a distance of 1,026.33 ft. to
- AP 143 thence continuing across said westerly slope, identical with said survey, N. 15°00'52" E. a distance of 761.43 ft. to
- AP 144 at intersection with the center line of an unnamed primitive road;
thence continuing across said westerly slope, identical with said survey, N. 02°47'01" W. a distance of 599.14 ft. to
- AP 145 at intersection with the center line of an unnamed primitive road;
thence continuing across said westerly slope, identical with said survey, along the following courses:
N. 30°07'03" E. a distance of 680.51 ft. to
- AP 146 N. 50°55'05" E. a distance of 1,094.10 ft. to
- AP 147 N. 32°58'21" E. a distance of 725.04 ft. to
- AP 148 N. 25°12'38" W. a distance of 546.42 ft. to
- AP 149 N. 25°50'55" E. a distance of 737.50 ft. to
- AP 150 N. 50°40'20" E. a distance of 1,007.69 ft. to
- AP 151 at intersection with the center line of an unnamed primitive road;
thence continuing across said westerly slope, identical with said survey, along the following courses:
S. 78°22'50" E. a distance of 503.70 ft. to
- AP 152 N. 67°07'32" E. a distance of 388.70 ft. to
- AP 153 at intersection with the center line of an unnamed primitive road;
thence across the northerly slope, identical with said survey, along the following courses:
S. 87°34'48" E. a distance of 887.73 ft. to
- AP 154 S. 44°06'22" E. a distance of 425.31 ft. to
- AP 155 S. 59°55'31" E. a distance of 1,289.76 ft. to
- AP 156 from which the 1/4 cor. of secs. 7 and 8 bears S. 84°19'41" W. a distance of 2,264.58 ft.;
thence leaving said survey, ascending easterly slope of Underwood Mountain, S. 64°27' E., approximately 540 ft. to
- AP 157 thence S. 23°04' E., approximately 1,860 ft. to
- AP 158 thence descending easterly slope of Underwood Mountain, S. 76°59' E., approximately 900 ft. to
- AP 159 thence S. 58°57' E., approximately 970 ft. to
- AP 160 at intersection with the center line of forest road CG3010;
thence continuing to descending, S. 70°20' E., approximately 1,145 ft. to
- AP 161 thence S. 58°27' E., approximately 1,330 ft. to
- AP 162 thence S. 80°10' E., approximately 550 ft. to
- AP 163 at intersection with the center line of Little Buck Creek County Road;
thence ascending, S. 80°23' E., approximately 1,125 ft. to
- AP 164 thence N. 56°12' E., approximately 1,310 ft. to
- AP 165 the summit of a minor peak;
thence descending, N. 73°56' E., approximately 845 ft. to
- AP 166 at intersection with the center line of Lacock-Kelchner County Road;
thence N. 66°56' E., approximately 525 ft. to
- AP 167 thence N. 49°55' E., approximately 750 ft. to
- AP 168 at intersection with the thread of an unnamed creek;
thence N. 06°08' W., approximately 1,410 ft. to
- AP 169 the summit of Green Mountain;
thence descending the crest of a ridge line, northerly, approximately 4,230 ft. to
- AP 170 from which the line between secs. 3 and 10 bears S. a distance of 485 ft.;
thence N. 81°18' E., approximately 370 ft. to
- AP 171 thence S 34°17' E., approximately 190 ft. to
- AP 172 at intersection with the right bank of the former Northwestern Lake, at Normal Pool Elevation 294 ft., NGVD 1929;
thence S. 77°00' E., approximately 610 ft. to
- T. 03 N., R. 10 E., Klickitat County**
- AP 173 at intersection of the left bank of said lake at Normal Pool Elevation with the thread of an unnamed creek;
thence S. 43°59' E., approximately 320 ft. to
- AP 174 at intersection with the line between secs. 3 and 10, from which the 1/4 cor. of said secs. bears N. 88°40'06" W. a distance of 509.36 ft., a 5/8-in. iron rod as shown in Short Plat No. SP-93-11 for SDS Lumber Company, AFN 238784, records of Klickitat County, Washington;

- thence on the line established by said survey, S. 55°12'25" E. a distance of 1,259.80 ft. to
- AP 175 thence S. 70°08'16" E. a distance of 214.73 ft. to
- AP 176 thence S. 82°02'23" E., approximately 683 ft. to
- AP 177 at intersection with the center line of Washington State Highway 141;
thence S. 65°01' E., approximately 535 ft. to
- AP 178 at intersection with the thread of an unnamed ravine;
thence along said thread, southeasterly, approximately 1,760 ft. to
- AP 179 at intersection with the 800-ft. contour, NGVD 1929;
thence ascending westerly slope of Bald Mountain along the following courses:
N. 67°15' E., approximately 545 ft. to
- AP 180 N. 34°36' E., approximately 310 ft. to
- AP 181 N. 65°51' E., approximately 1,210 ft. to
- AP 182 N. 88°03' E., approximately 350 ft. to
- AP 183 N. 66°00' E., approximately 615 ft. to
- AP 184 at saddle of a ridge line;
thence continuing ascent of Bald Mountain along the following courses:
S. 81°42' E., approximately 535 ft. to
- AP 185 S. 49°29' E., approximately 520 ft. to
- AP 186 S. 32°19' E., approximately 1,285 ft. to
- AP 187 at intersection with the crest of a ridge line of Bald Mountain;
thence along said ridge line, N. 86°08' E., approximately 225 ft. to
- AP 188 thence N. 29°16' E. a distance of 520 ft. to
- AP 189 on westerly slope of Bald Mountain;
thence ascending, N. 27°22' E., approximately 745 ft. to
- AP 190 the summit of a minor peak;
thence descending, along the following courses:
S. 61°19' E., approximately 1,805 ft. to
- AP 191 S. 45°17' E., approximately 700 ft. to
- AP 192 S. 70°40' E., approximately 125 ft. to
- AP 193 S. 33°38' E., approximately 455 ft. to
- AP 194 S. 32°37' E., approximately 890 ft. to
- AP 195 S. 71°52' E., approximately 515 ft. to
- AP 196 at intersection of the center line of Wnuk County Road with the line between sec. 12, T. 03 N., R. 10 E. and sec. 7, T. 03 N., R. 11 E.;
- thence on the line between said secs., South, approximately 1,460 ft. to
- AP 197 the cor. of secs. 12 and 13, T. 03 N., R. 10 E. and secs. 7 and 18, T. 03 N., R. 11 E.;
- thence on the line between said secs. 13 and 18, southerly, approximately 2,385 ft. to
- AP 198 at intersection with the White Salmon and Bingen, Washington, Urban Area (UA) Boundary, identical with AP 29 of said UA Legal Boundary Description;
- {AP 29} thence on with said Boundary, N. 90° E. a distance of 1,189.0 ft. to
- T. 03 N., R. 11 E.**
- AP 199 thence across the easterly slope of Cemetery Hill, South a distance of 773.0 ft. to
- {AP 30}
- AP 200 thence descending, N. 90° E., approximately 1,430 ft. to
- {AP 31}
- AP 201 at intersection with the N. and S. center line of sec. 18;
- {AP 32}
- thence on said N. and S. center line, S. 0°29'38" E., approximately 2,055 ft. to
- AP 202 the 1/4 cor. of secs. 18 and 19, perpetuated
- {AP 33}
- with a 5/8-in. iron rod with aluminum cap driven into a 1-in iron pipe as shown in Short Plat SP 97-16, AFN 1003866, records of Klickitat County, Washington;
- thence leaving the aforementioned UA Boundary, on the line between said secs., East, approximately 2,640 ft. to
- AP 203 the cor. of secs. 17, 18, 19, and 20;
- thence on the line between said secs. 17 and 20, East, approximately 5,280 ft. to
- AP 204 the cor. of secs. 16, 17, 20, and 21;
- thence on the line between said secs. 20 and 21, South, approximately 5,280 ft. to
- AP 205 the cor. of secs. 20, 21, 28, and 29;
- thence on the line between said secs. 21 and 28, East, approximately 2,645 ft. to
- AP 206 the 1/4 cor. of said secs. 21 and 28;
- thence on the N. and S. center line of said sec. 28, South, approximately 1,320 ft. to
- AP 207 the N1/16 cor. of said sec. 28, identical with
- {AP 1}
- AP 1 of the Burdoin Mountain SMA Legal Boundary Description;
- thence on the E. and W. center line of the NE1/4 of said sec., on said SMA Boundary, East, approximately 2,643 ft. to

- AP 208 the N1/16 cor. between secs. 27 and 28;
[AP 2] thence on the E. and W. center line of the NW1/4 of said sec. 27, East, approximately 2,631 ft. to
- AP 209 the N1/16 cor. of said sec. 27;
[AP 3] thence on the N. and S. center line of said sec., North, approximately 1,320 ft. to
- AP 210 the 1/4 cor. of secs. 22 and 27;
[AP 4] thence on the line between said secs., East, approximately 2,628 ft. to
- AP 211 the cor. of secs. 22, 23, 26, and 27;
[AP 5] thence on the line between said secs. 22 and 23, North, approximately 5,280 ft. to
- AP 212 the cor. of secs. 14, 15, 22, and 23;
[AP 6] thence on the line between said secs. 15 and 22, N. 89°49' W., approximately 2,631 ft. to
- AP 213 the 1/4 cor. of said secs.;
[AP 7] thence on the N. and S. center line of said sec. 15, North, approximately 2,640 ft. to
- AP 214 the C1/4 cor. of said sec. 15;
[AP 8] thence on the E. and W. center line of said sec., S. 89°54'30" E., approximately 2,633 ft. to
- AP 215 the 1/4 cor. of secs. 14 and 15;
[AP 9] thence on the E. and W. center line of said sec. 14, N. 89°44' E., approximately 5,276 ft. to
- AP 216 the 1/4 cor. of secs. 13 and 14;
[AP 10] thence on the line between said secs., North, approximately 2,640 ft. to
- AP 217 the cor. of secs. 11, 12, 13, and 14;
[AP 11] thence on the line between said secs. 11 and 12, North, approximately 1,320 ft. to
- AP 218 the S1/16 cor. between secs. 11 and 12;
[AP 12] thence on the E. and W. center line of the SE1/4 of said sec. 11, S. 89°47'15" W., approximately 2,639 ft. to
- AP 219 the S1/16 cor. of said sec. 11;
[AP 13] thence on the N. and S. center line of said sec., North, approximately 1,320 ft. to
- AP 220 the C1/4 cor. of said sec. 11;
[AP 14] thence on the E. and W. center line of said sec., S. 89°51'30" W., approximately 2,641 ft. to
- AP 221 the 1/4 cor. of secs. 10 and 11;
[AP 15] thence on the E. and W. center line of said sec. 10, N. 89°56' W., approximately 275 ft. to
- AP 222 at intersection with the center line of Bates County Road;
[AP 16] thence on said center line, northwesterly, approximately 3,255 ft. to
- AP 223 at intersection with the N. and S. center line of said sec. 10;
[AP 17] thence on said center line, North, approximately 1,045 ft. to
- AP 224 the 1/4 cor. of secs. 3 and 10;
[AP 18] thence on the N. and S. center line of said sec. 3, North a distance of 1,000 ft. to
- AP 225 thence East, approximately 1,330 ft. to
[AP 19]
- AP 226 at intersection with the N. and S. center line of the E1/2 of said sec. 3;
[AP 20] thence on said center line, North, approximately 4,360 ft. to
- AP 227 the E1/16 cor. between said sec. 3 and sec. 34, T. 4 N., R. 11 E.;
[AP 21] thence on the N. and S. center line of the SE1/4 of said sec. 34, North, approximately 2,160 ft. to (see Footnote 2)
- T. 04 N., R. 11 E.**
- AP 228 the NW cor. of Parcel 13, as described in Corrected Warranty Deed, AFN 1086793, records of Klickitat County, Washington;
[AP 22] thence on the northerly line of said parcel, easterly, approximately 1,315 ft. to
- AP 229 the NE cor. of said Parcel 13, on the line between secs. 34 and 35;
[AP 23] thence on the line between said secs., South, approximately 2,160 ft. to
- AP 230 the cor. of secs. 34 and 35, T. 04 N., R. 11 E., and secs. 2 and 3, T. 03 N., R. 11 E.;
[AP 24] thence on the line between said secs. 2 and 35, East, approximately 1,320 ft. to
- AP 231 the W1/16 cor. between said secs.;
[AP 25] thence S. 26°28' E., approximately 3,165 ft. to
- T. 03 N., R. 11 E.**
- AP 232 at intersection with the N. and S. center line of said sec. 2;
[AP 26] thence on said N. and S. center line as shown on Survey, AFN 1100614, records of Klickitat County, Washington, S. 00°37'41" W. a distance of 1,175 ft. to
- AP 233 the S1/16 cor. of said sec. 2;
[AP 27] thence on the E. and W. center line of the SE1/4 of said sec., as shown on said survey, S. 89°24'10" E. a distance of 2,648.36 ft. to

- AP 234 [AP 28] the S1/16 cor. between secs. 1 and 2; thence on the line between said secs., as shown on said survey, N. 00°55'04" E. a distance of 666.50 ft. to
- AP 235 [AP 29] the N-S1/64 cor. between said secs.; thence on the E. and W. center line of the NW1/4 SW1/4 of said sec. 1, East, approximately 660 ft. to
- AP 236 [AP 30] the NW-SW1/64 cor. of said sec.; thence on the N. and S. center line of the NW1/4 SW1/4 of said sec. North, approximately 660 ft. to
- AP 237 [AP 31] the W-W1/64 cor. of said sec.; thence on the E. and W. center line of said sec., East, approximately 660 ft. to
- AP 238 [AP 32] the W1/16 cor. of said sec.; thence on the N. and S. center line of the NW1/4 of said sec., North, approximately 2,640 ft. to
- AP 239 [AP 33] the W1/16 cor. between said sec. 1 and sec. 36, T. 04 N., R. 11 E.; thence on the N. and S. center line of the SW1/4 of said sec. 36, North, approximately 650 ft. to
T. 04 N., R. 11 E.
- AP 240 [AP 34] at intersection with the 2,200-ft. contour line, NGVD 1929; thence along said contour line, northeasterly, approximately 9,920 ft. to
T. 04 N., R. 12 E.
- AP 241 [AP 35] at intersection with a line from which the N. and S. center line of the SW1/4 of sec. 30 bears westerly a distance of 740 ft. when measured perpendicular therefrom; thence on said line, parallel with said N. and S. center line, North, approximately 1,520 ft. to
- AP 242 [AP 36] at intersection with the E. and W. center line of said sec. 30; thence on said center line, East, approximately 3,210 ft. to
- AP 243 [AP 37] the 1/4 cor. of secs. 29 and 30; thence on the line between said secs., South, approximately 2,640 ft. to
- AP 244 [AP 38] the cor. of secs. 29, 30, 31, and 32; thence on the line between said secs. 31 and 32, South, approximately 2,400 ft. to
- AP 245 [AP 39] at intersection with the center line of the BPA North Bonneville-Midway No. 1 Transmission Line; thence on said center line, S. 74°08' W., approximately 5,430 ft. to
- AP 246 [AP 40] at intersection with the line between sec. 36, T. 04 N., R. 11 E., and sec. 31, T. 04 N., R. 12 E.; thence on the line between said secs., South, approximately 1,600 ft. to
- AP 247A [AP 41A] the cor. of sec. 36, T. 04 N., R. 11 E. and sec. 31, T. 04 N., R. 12 E.; thence on the line between said sec. 31, and sec. 1, T. 03 N., R. 11 E., S. 89° 35' 40" E. a distance of 196.36 ft. to
- AP 247B [AP 41B] the NE cor. of said sec. 1; thence on the line between Rs. 11 and 12 E., southerly, approximately 5,551 ft. to
T. 03 N., R. 12 E.
- AP 248 [AP 42] the cor. of secs. 1 and 12, T. 03 N., R. 11 E., and secs. 6 and 7, T. 03 N., R. 12 E.; thence on the line between said secs. 12 and 7, South, approximately 2,640 ft. to
- AP 249 [AP 43] the 1/4 cor. of said secs.; thence on the E. and W. center line of said sec. 7, East, approximately 2,630 ft. to
- AP 250 [AP 44] the C1/4 of said sec. 7; thence leaving the aforementioned Burdoin Mountain SMA Boundary, continuing on said center line, East, approximately 2,630 ft. to
- AP 251 the 1/4 cor. of secs. 7 and 8; thence on the line between said secs., North, approximately 2,640 ft. to
- AP 252 the cor. of secs. 5, 6, 7, and 8; thence on the line between said secs. 5 and 8, S. 89°49' E., approximately 5,293 ft. to
- AP 253 the cor. of secs. 4, 5, 8, and 9; thence on the line between said secs. 4 and 9, S. 89°51' E., approximately 5,265 ft. to
- AP 254 the cor. of secs. 3, 4, 9, and 10; thence on the line between said secs. 9 and 10, South, approximately 5,280 ft. to
- AP 255 the cor. of secs. 9, 10, 15, and 16; thence on the line between said secs. 10 and 15, easterly, approximately 5,478 ft. to
- AP 256 the cor. of secs. 10, 11, 14, and 15; thence on the line between said secs. 14 and 15, South, approximately 1,105 ft. to

- AP 257 at intersection with the crest of a ridge line; thence descending said ridge line along the following general courses:
S. 35°35' E., approximately 150 ft. to
- AP 258 S. 84°59' E., approximately 175 ft. to
- AP 259 S. 56°00' E., approximately 255 ft. to
- AP 260 at intersection with the thread of an unnamed ravine;
thence along the crest of a broad ridge line the following general courses:
S. 70°45' E., approximately 555 ft. to
- AP 261 S. 25°51' E., approximately 465 ft. to
- AP 262 S. 40°59' E., approximately 400 ft. to
- AP 263 S. 73°27' E., approximately 830 ft. to
- AP 264 S. 13°10' E., approximately 200 ft. to
- AP 265 S. 24°40' W., approximately 2,100 ft. to
- AP 266 at intersection with the center line of Silva Ridge Road;
thence descending the crest of a ridge line, S. 50°32' W., approximately 690 ft. to
- AP 267 at intersection with a saddle in said ridge line;
thence ascending said ridge line S. 08°20' W., approximately 495 ft. to
- AP 268 at summit of a minor peak;
thence descending said ridge line, S. 56°34' W., approximately 350 ft. to
- AP 269 a 1-1/4-in. iron pipe with 2-1/2-in. aluminum cap, as established in Short Plat SP 98-17, AFN 1005796, records of Klickitat County, Washington;
thence along said ridge line as shown on said Short Plat, S. 08°40'36" W. a distance of 1,889.80 ft. to
- AP 270 a 1-1/4-in. iron pipe with 2-1/2-in. aluminum cap, as established in said Short Plat;
thence descending along said ridge line, S. 08°48' W., approximately 1,195 ft. to
- AP 271 at intersection of the line between secs. 22 and 23 with center line of an unnamed road;
thence on said center line, southerly, approximately 1,085 ft. to
- AP 272 at intersection with an unnamed road approaching from the northwest;
thence continuing on said center line, southerly, approximately 2,845 ft. to
- AP 273 the summit of a minor peak;
thence descending said ridge line along the following general courses:
S. 55°19' E., approximately 785 ft. to
- AP 274 S. 25°11' E., approximately 1,925 ft. to
- AP 275 S. 63°18' E., approximately 1,435 ft. to
- AP 276 S. 47°55' E., approximately 265 ft. to
- AP 277 at intersection with the thread of the Klickitat River;
thence ascending, S. 45°47' E. a distance of 490 ft. to
- AP 278 thence S. 64°04' E., approximately 1,845 ft. to
- AP 279 the summit of a minor peak;
thence along the crest of a ridge line the following general courses:
N. 64°49' E., approximately 720 ft. to
- AP 280 S. 55°13' E., approximately 1,710 ft. to
- AP 281 S. 33°38' E., approximately 265 ft. to
- AP 282 S. 31°26' E., approximately 350 ft. to
- AP 283 S. 13°26' E., approximately 490 ft. to
- AP 284 S. 32°47' E., approximately 280 ft. to
- AP 285 S. 61°16' E., approximately 330 ft. to
- AP 286 the summit of a minor peak;
thence continuing along said ridge line the following general courses:
N. 45°51' E., approximately 635 ft. to
- AP 287 N. 58°28' E., approximately 865 ft. to
- AP 288 S. 61°21' E., approximately 1,560 ft. to
- T. 03 N., R. 13 E.**
- AP 289 S. 66°58' E., approximately 865 ft. to
- AP 290 S. 53°03' E., approximately 325 ft. to
- AP 291 the intersection of the center line of the Lyle-Centerville Highway with the northerly extension of the easterly line of the land shown on survey for Lauterbach, at AFN 1033283, records of Klickitat County, Washington;
thence on said extension and the easterly line thereof, S. 29°17'25" E., approximately 410 ft. to
- AP 292 at intersection with the northerly right-of-way of Rowland Road, identical with a 5/8-in. iron rod with red plastic cap as shown on said survey;
thence across said Rowland Road, S. 30° E., approximately 100 ft. to
- AP 293 at intersection with the southerly right-of-way of said Rowland Road, identical with a 5/8-in. iron rod with red plastic cap, the northerly cor. between Lots 1 and 2, Short Plat SP-99-38, at AFN 1015179, records of Klickitat County, Washington;

- thence along the crest of a ridge line, as established on said Short Plat, S. 30°45'00" E. a distance of 968.13 ft. to
- AP 294 a 5/8-in. iron rod with red plastic cap as shown on said Short Plat;
thence S. 20°35'31" E. a distance of 493.44 ft. to
- AP 295 at intersection with the line between sec. 31, T. 03 N., R. 13 E. and sec. 6, T. 02 N., R. 13 E., an iron pipe with brass cap, as shown on said Short Plat;
thence on the line between said secs., S. 89°41'38" E. a distance of 486.63 ft. to
- AP 296 the 1/4 cor. of said secs.;
thence continuing on said sec. line, East, approximately 2,640 ft. to
- AP 297 the cor. of secs. 31 and 32, T. 03 N., R. 13 E., and secs. 5 and 6, T. 02 N., R. 13 E.;
thence on the line between said secs. 5 and 32, East, approximately 5,280 ft. to
- AP 298 the cor. of secs. 32 and 33, T. 03 N., R. 13 E., and secs. 4 and 5, T. 02 N., R. 13 E.;
thence on the line between said secs. 4 and 33, East, approximately 5,280 ft. to
- AP 299 the cor. of secs. 33 and 34, T. 03 N., R. 13 E., and secs. 3 and 4, T. 02 N., R. 13 E.;
thence on the line between said secs. 33 and 34, North, approximately 2,640 ft. to
- AP 300 the 1/4 cor. of said secs. 33 and 34;
thence on the E. and W. center line of said sec. 34, East, approximately 5,304 ft. to
- AP 301 the 1/4 cor. of secs. 34 and 35;
thence on the E. and W. center line of said sec. 35, East, approximately 2,632 ft. to
- AP 302 the C1/4 cor. of said sec. 35;
thence on the N. and S. center line of said sec., North, approximately 2,640 ft. to
- AP 303 the 1/4 cor. of secs. 26 and 35;
thence on the line between said secs., East, approximately 2,624 ft. to
- AP 304 the cor. of secs. 25, 26, 35, and 36;
thence on the line between said secs. 25 and 36, East, approximately 2,640 ft. to
- AP 305 the 1/4 cor. of said secs.;
thence on the N. and S. center line of said sec. 25, North, approximately 2,640 ft. to
- AP 306 the C1/4 cor. of said sec.;
thence on the E. and W. center line of said sec., East, approximately 2,633 ft. to
- AP 307 the 1/4 cor. of sec. 25, and sec. 30, T. 03 N., R. 14 E.;
thence on the E. and W. center line of said sec. 30, East, approximately 5,439 ft. to
T. 03 N., R. 14 E.
- AP 308 the 1/4 cor. of secs. 29 and 30;
thence on the line between said secs., South, approximately 2,640 ft. to
- AP 309 the cor. of secs. 29, 30, 31, and 32;
thence on the line between said secs. 29 and 32, S. 89°36' E., approximately 5,247 ft. to
- AP 310 the cor. of secs. 28, 29, 32, and 33;
thence on the line between said secs. 32 and 33, South approximately 2,640 ft. to
- AP 311 the 1/4 cor. of said secs. 32 and 33;
thence on the E. and W. center line of said sec. 33, East, approximately 5,280 ft. to
- AP 312 the 1/4 cor. of secs. 33 and 34;
thence on the line between said secs., South, approximately 2,640 ft. to
- AP 313 the cor. of said secs. 33 and 34, and secs. 3 and 4, T. 02 N., R. 14 E.;
thence on the line between said secs. 3 and 34, East, approximately 5,280 ft. to
- AP 314 the cor. of secs. 34 and 35, T. 03 N., R. 14 E., and secs. 2 and 3, T. 02 N., R. 14 E.;
thence on the line between said secs. 2 and 35, East, approximately 5,280 ft. to
- AP 315 the cor. of secs. 35 and 36, T. 03 N., R. 14 E., and secs. 1 and 2, T. 02 N., R. 14 E.;
thence on the line between said secs. 35 and 36, North, approximately 1,320 ft. to
- AP 316 the S1/16 cor. between said secs.;
thence on the E. and W. center line of the S1/2 of said sec. 36, S. 89°56'30" E., approximately 5,283 ft. to
- AP 317 the S1/16 cor. between sec. 36, T. 03 N., R. 14 E., and sec. 31, T. 03 N., R. 15 E.;
thence on the line between said secs., South, approximately, 1,320 ft. to
- AP 318 the cor. of sec. 36, T. 03 N., R. 14 E., sec. 31, T. 03 N., R. 15 E., sec. 1, T. 02 N., R. 14 E., and sec. 6, T. 02 N., R. 15 E.;
thence on the line between said secs. 31 and 6, S. 89°43' E., approximately 5,390 ft. to
T. 02 N., R. 15 E.
- AP 319 the cor. of secs. 31 and 32, T. 03 N., R. 15 E., and secs. 5 and 6, T. 02 N., R. 15 E.;
thence on the line between said secs. 32 and 5, S. 89°43' E., approximately 2,640 ft. to

AP 320 the 1/4 cor. of said secs.;
thence on the N. and S. center line of said
sec. 5, South, approximately 2,640 ft. to

AP 321 the C1/4 cor. of said sec.;
thence on the E. and W. center line of said
sec., East, approximately 2,653 ft. to

AP 322 the 1/4 cor. of secs. 4 and 5;
thence on the E. and W. center line of said
sec. 4, N. 89°55'30" E., approximately
5,300 ft. to

AP 323 the 1/4 cor. of secs. 3 and 4;
thence on the E. and W. center line of said
sec. 3, East, approximately 5,297 ft. to

AP 324 the 1/4 cor. of secs. 2 and 3;
thence on the E. and W. center line of said
sec. 2, East, approximately 2,648 ft. to

AP 325 the C1/4 cor. of said sec.;
thence on the N. and S. center line of said
sec., North, approximately 2,640 ft. to

AP 326 the 1/4 cor. of said sec. 2, and sec. 35, T. 03
N., R. 15 E.;
thence on the line between said secs. 35 and
2, S. 89°43' E., approximately 2,640 ft. to

AP 327 the cor. of secs. 35 and 36, T. 03 N., R. 15
E., and secs. 1 and 2, T. 02 N., R. 15 E.;
thence on the line between said secs. 1 and
2, South, approximately 5,280 ft. to

AP 328 the cor. of secs. 1, 2, 11, and 12;
thence on the line between said secs. 11 and
12, South a distance of 5,280 ft. to

AP 329 the cor. of secs. 11,12, 13, and 14;
thence on the line between said secs. 13 and
14, South a distance of 880 ft. to

AP 330 thence East a distance of 3,700 ft. to

AP 331 thence South, approximately 635 ft. to

AP 332 at intersection with the Oregon-Washington
State Line in said sec. 13, T. 02 N., R. 15 E.;
thence on said State line, S. 42°59' W.,
approximately 9,115 ft. to

AP 333 on said State line;
thence S. 74°51' W., approximately 4,595 ft.
to

AP 334 on said State line;
thence N. 56°10' W., approximately 850 ft.
to

AP 335 at intersection with the line between Wasco
County and Sherman County, Oregon, iden-
tical with "a point on the boundary of the
State opposite the mouth of the Deschutes
River", as described in Oregon Revised

Statutes (O.R.S.) 201.330, amended 1967;
thence along said county line, S. 11°31' E.,
approximately 2,260 ft. to

T. 02 N., R. 15 E., Wasco County, Oregon

AP 336 the main channel at the mouth of the
Deschutes River;
thence continuing along said county line,
identical with said main channel, upstream,
southerly, approximately 8,920 ft. to

AP 337 from which the intersection of said main
channel with the thread of Ferry Springs
Canyon bears N. 48°16' E. a distance of 155
ft.;

thence ascending N. 74°14' W., approxi-
mately 1,605 ft. to

AP 338 thence N. 42°07' W., approximately 665 ft.
to

AP 339 at intersection with the crest of a ridge line;
thence ascending said ridge line the follow-
ing general courses:
S. 37°05' W., approximately 2,145 ft. to

AP 340 S. 21°21' W., approximately 905 ft. to

AP 341 S. 05°49' E., approximately 870 ft. to

AP 342 S. 36°32' W., approximately 765 ft. to

T. 01 N., R. 15 E.

AP 343 S. 61°23' W., approximately 1,490 ft. to

AP 344 at intersection with the crest of Fulton Ridge
line;
thence along the crest of Fulton Ridge line
the following general courses:
N. 59°33' W., approximately 1,315 ft. to

AP 345 N. 37°03' W., approximately 1,485 ft. to

T. 02 N., R. 15 E.

AP 346 N. 39°06' W., approximately 1,330 ft. to

AP 347 N. 29°24' W., approximately 1,635 ft. to

AP 348 N. 21°51' W., approximately 1,635 ft. to

AP 349 N. 51°45' W., approximately 925 ft. to

AP 350 N. 71°20' W., approximately 700 ft. to

AP 351 N. 64°49' W., approximately 3,150 ft. to

AP 352 N. 85°43' W., approximately 1,210 ft. to

AP 353 N. 57°04' W., approximately 1,010 ft. to

AP 354 N. 23°42' W., approximately 520 ft. to

AP 355 N. 41°55' W., approximately 2,160 ft. to

AP 356 N. 73°49' W., approximately 2,460 ft. to

AP 357 N. 82°45' W., approximately 4,529 ft. to

AP 358 N. 79°05' W., approximately 715 ft. to

T. 02 N., R. 14 E.

- AP 359 N. 50°28' W., approximately 1,535 ft. to
 AP 360 thence descending, N. 86°35' W., approximately 650 ft. to
 AP 361 at intersection with saddle between Fulton Ridge line and Kaser Ridge line; thence ascending, N. 87°38' W., approximately 1,655 ft. to
 AP 362 the crest of Kaser Ridge line; thence along the crest of Kaser Ridge line the following general courses:
 S. 69°14' W., approximately 1,520 ft. to
 AP 363 N. 86°56' W., approximately 1,120 ft. to
 AP 364 S. 78°19' W., approximately 1,900 ft. to
 AP 365 S. 86°29' W., approximately 1,480 ft. to
 AP 366 N. 80°45' W., approximately 1,660 ft. to
 AP 367 N. 84°43' W., approximately 1,885 ft. to
 AP 368 thence descending, S. 85°07' W., approximately 2,510 ft. to
 AP 369 on the crest of the divide between the Columbia River and Fifteenmile Creek; thence along said divide the following general courses:
 S. 76°14' W., approximately 1,210 ft. to
 AP 370 S. 79°33' W., approximately 1,040 ft. to
 AP 371 S. 69°48' W., approximately 510 ft. to
 AP 372 S. 85°34' W., approximately 820 ft. to
 AP 373 S. 46°12' W., approximately 520 ft. to
 AP 374 S. 22°58' W., approximately 505 ft. to
 AP 375 thence ascending, S. 08°06' W., approximately 465 ft. to
 AP 376 the crest of Signal Hill; thence along the crest of Signal Hill the following general courses:
 S. 74°44' W., approximately 1,050 ft. to
 AP 377 S. 58°41' W., approximately 745 ft. to
 AP 378 S. 37°31' W., approximately 1,310 ft. to
 AP 379 S. 10°12' W., approximately 1,965 ft. to
 AP 380 S. 31°19' W., approximately 690 ft. to
 AP 381 the summit of Signal Hill; thence descending, S. 27°55' E., approximately 945 ft. to
 AP 382 thence S. 02°53' E., approximately 820 ft. to
 AP 383 at intersection with the thread of an unnamed ravine; thence along said thread, southwesterly, approximately 3,405 ft. to
 AP 384 at intersection with the thread of Fifteenmile Creek; thence along said thread, southeasterly, approximately 3,155 ft. to
 AP 385 thence leaving said thread, S. 25°53' E., approximately 345 ft. to
T. 01 N., R. 14 E.
 AP 386 at intersection with the center line of Lower Eightmile County Road; thence ascending, S. 10°51' E., approximately 1,725 ft. to
 AP 387 at intersection with the crest of a ridge line; thence descending, S. 29°36' W., approximately 320 ft. to
 AP 388 thence descending, S. 51°45' W., approximately 440 ft. to
 AP 389 at intersection with the thread of an unnamed ravine; thence ascending, S. 51°12' W. a distance of 1,325 ft. to
 AP 390 at intersection with the crest of a ridge line; thence along said ridge line the following general courses:
 S. 59°57' W., approximately 660 ft. to
 AP 391 S. 28°52' W., approximately 3,340 ft. to
 AP 392 at intersection with the summit of a ridge line; thence descending along said ridge line the following general courses:
 S. 57°41' W., approximately 860 ft. to
 AP 393 S. 53°21' W., approximately 1,080 ft. to
 AP 394 N. 84°38' W., approximately 845 ft. to
 AP 395 N. 16°34' W., approximately 710 ft. to
 AP 396 N. 72°35' W., approximately 595 ft. to
 AP 397 S. 54°50' W., approximately 640 ft. to
 AP 398 S. 75°10' W., approximately 1,245 ft. to
 AP 399 at intersection with the center line of U.S. Highway 197; thence S. 75°05' W., approximately 360 ft. to
 AP 400 thence S. 85°14' W., approximately 2,115 ft. to
T. 01 N., R. 13 E.
 AP 401 thence S. 49°06' W., approximately 325 ft. to
 AP 402 at intersection with the 400-ft. contour line, NGVD 1929; thence along said contour line, southwesterly, a distance of 1,905 ft. to

- AP 403 on said contour line;
thence, N. 75°54' W., approximately 495 ft.
to
- AP 404 at intersection with the center line of an
unimproved road;
thence ascending N. 36°00' W., approxi-
mately 1,405 ft. to
- AP 405 the summit of a minor peak;
thence N. 22°59' W., approximately 830 ft.
to
- AP 406 on the crest of a ridge line between
Threemile Creek and City of The Dalles;
thence along said ridge line the following
general courses:
S. 64°22' W., approximately 1,810 ft. to
- AP 407 S. 53°02' W., approximately 1,070 ft. to
- AP 408 S. 68°15' W., approximately 300 ft. to
- AP 409 N. 70°29' W., approximately 785 ft. to
- AP 410 S. 51°56' W., approximately 1,025 ft. to
- AP 411 S. 66°20' W., approximately 935 ft. to
- AP 412 S. 36°36' W., approximately 910 ft. to
- AP 413 S. 61°59' W., approximately 990 ft. to
- AP 414 S. 71°56' W., approximately 475 ft. to
- AP 415 N. 88°49' W., approximately 380 ft. to
- AP 416 at intersection with the center line of BPA
Big Eddy - Troutdale No. 1 Transmission
Line;
thence on said center line, S. 56°21' W.,
approximately 1,740 ft. to
- AP 417 at intersection with the center line of the
Northern Wasco County People's Utility
District (P.U.D.) Transmission Line;
thence on the center line of said P.U.D.
Transmission Line, S. 02°44' E., approxi-
mately 440 ft. to
- AP 418 on said center line;
thence on said center line, S. 35°04' W.,
approximately 3,690 ft. to
- AP 419 at intersection with the crest of the divide
between Threemile Creek and Dry Hollow;
thence along said divide the following gen-
eral courses:
S. 20°07' W., approximately 900 ft. to
- AP 420 S. 35°46' W., approximately 1,965 ft. to
- AP 421 S. 47°41' W., approximately 785 ft. to
- AP 422 S. 53°23' W., approximately 1,705 ft. to
- AP 423 S. 38°25' W., approximately 1,425 ft. to
- AP 424 S. 34°22' W., approximately 715 ft. to
- AP 425 S. 15°45' W., approximately 1,125 ft. to
- AP 426 S. 11°50' W., approximately 1,645 ft. to
- AP 427 S. 40°56' W., approximately 1,275 ft. to
- AP 428 S. 54°31' W., approximately 995 ft. to
- AP 429 N. 77°14' W., approximately 495 ft. to
- AP 430 the summit of a minor peak;
thence descending along the crest of a broad
ridge line, N. 02°19' W., approximately
3,015 ft. to
- AP 431 on a pronounced ridge line;
thence descending along said ridge line the
following general courses:
N. 29°22' W., approximately 1,465 ft. to
- AP 432 N. 11°19' W., approximately 1,950 ft. to
- AP 433 N. 34°10' W., approximately 890 ft. to
- AP 434 N. 22°33' W., approximately of 905 ft. to
- AP 435 at intersection with the 800-ft. contour line,
NGVD 1929;
thence along said contour line, southerly,
approximately 1,725 ft. to
- AP 436 at intersection with the thread of Whisky
Gulch;
thence continuing along on said contour
line, northerly, approximately 6,385 ft. to
- AP 437 thence continuing along on said contour
line, southwesterly, approximately 2,355 ft.
to
- AP 438 at intersection with the thread of an
unnamed ravine;
thence along said thread, northerly, approx-
imately 640 ft. to
- AP 439 at intersection with the 600-ft. contour line,
NGVD 1929;
thence N. 79°57' W., approximately 780 ft.
to
- AP 440 thence S. 54°10' W., approximately 985 ft.
to
- AP 441 thence S. 58°05' W., approximately 1,270 ft.
to
- AP 442 thence N. 48°22' W., approximately 210 ft.
to
- AP 443 at intersection with the thread of Mill Creek;
thence along said thread, northeasterly,
approximately 1,305 ft. to
- AP 444 at intersection with the northerly line of the
Theodor Mesplie DLC No. 44;
thence N. 43°03' E., approximately 315 ft.
to
- AP 445 at intersection with the center line of an
unimproved road;

- thence N. 12°47' E., approximately 385 ft. to
- AP 446 at intersection with the thread of an unnamed ravine; thence on said thread, northerly, approximately 1,535 ft. to
- AP 447 at intersection with the line between secs. 7 and 18; thence leaving said ravine, N. 14°16' W., approximately 900 ft. to
- AP 448 at intersection with the thread of another unnamed ravine; thence northwesterly, along said thread, approximately 1,585 ft. to
- T. 01 N., R. 12 E.:**
- AP 449 at confluence of the threads of two unnamed ravines; thence S. 86°30' W., approximately 2,090 ft. to
- AP 450 thence N. 43°00' W., approximately 205 ft. to
- AP 451 at intersection with the crest of a ridge line; thence along said ridge line the following general courses:
N. 40°55' E., approximately 2,570 ft. to
- AP 452 N. 23°35' E., approximately 1,215 ft. to
- T. 01 N., R. 13 E.**
- AP 453 N. 43°45' E., approximately 540 ft. to
- AP 454 N. 53°25' E., approximately 900 ft. to
- AP 455 N. 37°51' E., approximately 1,355 ft. to
- AP 456 N. 20°35' E., approximately 840 ft. to
- AP 457 at intersection with the 1,360-ft. contour line, NGVD 1929, as shown on County Survey (C.S.) Book 11 Page 193, records of Wasco County, Oregon; thence on line established in said survey, N. 04°59'11" E. a distance of 1,388.45 ft. to
- AP 458 thence continuing on said line, N. 02°05'51" E. a distance of 4,784.54 ft. to
- T. 02 N., R. 13 E.**
- AP 459 the summit of a minor peak; thence descending the crest of a broad ridge line, N. 21°05' W., approximately 710 ft. to
- AP 460 thence continuing descent, N. 37°50' W., approximately 1,900 ft. to
- AP 461 thence N. 86°40' W., approximately 1,025 ft. to
- AP 462 at intersection of the center line of McDonald Way with the line between secs. 30 and 31; thence N. 52°13' W., approximately 780 ft. to
- T. 02 N., R. 12 E.**
- AP 463 at intersection with the center line of Chenoweth Creek County Road; thence ascending, on the following courses:
N. 50°43' W. a distance of 1,735 ft. to
N. 75°10' W. a distance of 1,680 ft. to
N. 60°02' W., approximately 875 ft. to
- AP 464
AP 465
AP 466 the summit of a minor peak, identical with the divide between Badger Creek and Chenoweth Creek; thence along said divide the following general courses:
N. 81°59' W., approximately 275 ft. to
S. 59°58' W., approximately 1,695 ft. to
- AP 467
AP 468
AP 469 S. 86°43' W., approximately 460 ft. to
at intersection with the center line of an unnamed primitive road; thence along said center line, westerly, approximately 6,925 ft. to
- AP 470 at intersection with the crest of a ridge line; thence ascending along said ridge line the following general courses:
N. 22°34' W., approximately 1,160 ft. to
N. 38°40' W., approximately 650 ft. to
N. 30°43' W., approximately 335 ft. to
N. 46°12' W., approximately 310 ft. to
- AP 471
AP 472
AP 473
AP 474 at intersection of the 2,000-ft. contour line, NGVD 1929, with the crest of the divide between Badger Creek and Rowena Creek; thence along said divide the following general courses:
N. 42°18' E., approximately 1,185 ft. to
N. 67°23' E., approximately 900 ft. to
- AP 475
AP 476
AP 477
AP 478
AP 479
AP 480
AP 481
AP 482 N. 36°04' E., approximately 775 ft. to
N. 25°55' E., approximately 1,500 ft. to
N. 45°09' E., approximately 1,460 ft. to
N. 40°52' E., approximately 685 ft. to
N. 65°43' E., approximately 600 ft. to
N. 55°05' E., approximately 830 ft. to
at intersection with the 1,840-ft. contour line, NGVD 1929; thence N. 35°39' E. a distance of 465 ft. to

- AP 483 thence N. 18°34' E. a distance of 665 ft. to
- AP 484 thence N. 30°01' E. a distance of 780 ft. to
- AP 485 thence N. 62°59' E., approximately 365 ft. to
- AP 486 at intersection of the center line of Ortley private road with the center line of an unnamed primitive road; thence on the center line of said primitive road, easterly, approximately 2,315 ft. to
- AP 487 at intersection with the southwesterly extension of the thread of an unnamed ravine; thence along said southwesterly extension and the thread thereof, northeasterly, approximately 2,695 ft. to
- AP 488 [AP 44] at intersection with the E. and W. center line of sec. 13, identical with AP 44 of the Rowena SMA Legal Boundary Description; thence on said center line, on said SMA Boundary, West, approximately 1,075 ft. to
- AP 489 [AP 1] the 1/4 cor. of secs. 13 and 14; thence on the line between said secs., North, approximately 2,640 ft. to
- AP 490 [AP 2] the cor. of secs. 11, 12, 13, and 14; thence on the line between said secs. 11 and 14, N. 89°46' W., approximately 5,244 ft. to
- AP 491 [AP 3] the cor. of secs. 10, 11, 14, and 15; thence on the line between said secs. 10 and 15, N 89°30' W., approximately 5,264 ft. to
- AP 492 [AP 4] the cor. of secs. 9, 10, 15, and 16; thence leaving said SMA Boundary, on the line between said secs. 9 and 16, N. 89°35' W., approximately 5,282 ft. to
- AP 493 the cor. of secs. 8, 9, 16, and 17; thence on the line between said secs. 8 and 17, N. 89°57' W., approximately 3,130 ft. to
- AP 494 at intersection with the thread of an unnamed ravine; thence along said thread, westerly, approximately 6,640 ft. to
- AP 495 at intersection with the thread of Dry Creek; thence along said thread, northwesterly, approximately 3,850 ft. to
- AP 496 at intersection with the northerly right-of-way line of Dry Creek County Road; thence along said right-of-way line, northwesterly, approximately 2,690 ft. to
- T. 02 N., R. 11 E.**
- AP 497 at intersection with the line between secs. 1 and 12; thence on the line between said secs., S. 88°22' W., approximately 290 ft. to
- AP 498 {AP 8} at intersection with the thread of Mosier Creek, identical with AP 8, Mosier UA Boundary Legal Description; thence continuing on the line between said secs., on said UA Boundary, S. 88°22' W., approximately 150 ft. to
- AP 499 {AP 7B} thence leaving said UA Boundary, S. 48°25' W., approximately 195 ft. to
- AP 500 thence S. 34°19' W. a distance of 980 ft. to
- AP 501 thence S. 41°24' W. a distance of 1,085 ft. to
- AP 502 thence S. 36°37' W. a distance of 770 ft. to
- AP 503 thence S. 04°03' W., approximately 180 ft. to
- AP 504 at intersection with the crest of the divide between Mosier Creek and Rock Creek at the 800-ft. contour line, NGVD 1929; thence along said divide the following general courses:
S. 33°04' W., approximately 825 ft. to
- AP 505 S. 52°04' W., approximately 730 ft. to
- AP 506 S. 03°28' E., approximately 675 ft. to
- AP 507 S. 15°38' E., approximately 680 ft. to
- AP 508 S. 19°35' E., approximately 520 ft. to
- AP 509 S. 33°50' W., approximately 1,825 ft. to
- AP 510 S. 21°59' W., approximately 1,755 ft. to
- AP 511 S. 45°25' W., approximately 285 ft. to
- AP 512 S. 19°25' W., approximately 515 ft. to
- AP 513 S. 66°12' W., approximately 540 ft. to
- AP 514 N. 89°10' W., approximately 1,110 ft. to
- AP 515 S. 34°20' W., approximately 1,705 ft. to
- AP 516 S. 59°52' W., approximately 1,615 ft. to
- AP 517 S. 56°15' W., approximately 865 ft. to
- AP 518 S. 48°03' W., approximately 910 ft. to
- AP 519 S. 17°19' W., approximately 465 ft. to
- AP 520 S. 75°31' W., approximately 450 ft. to
- AP 521 S. 32°54' W., approximately 265 ft. to
- AP 522 S. 60°48' W., approximately 280 ft. to
- AP 523 S. 44°45' W., approximately 765 ft. to
- AP 524 S. 53°12' W., approximately 740 ft. to
- AP 525 S. 60°30' W., approximately 1,080 ft. to
- AP 526 S. 17°21' E., approximately 685 ft. to
- AP 527 S. 22°00' E., approximately 1,135 ft. to
- AP 528 S. 61°10' W., approximately 730 ft. to
- AP 529 S. 17°01' W., approximately 1,285 ft. to
- AP 530 S. 01°44' E., approximately 1,005 ft. to
- AP 531 S. 49°51' W., approximately 260 ft. to

- AP 532 at intersection with the line between secs. 27 and 28, identical with the line between Hood River County and Wasco County, Oregon;
thence along said line, N. 00°28'32" E., as shown on C.S. 451, records of Wasco County, Oregon, approximately 290 ft. to
- AP 533 at intersection with the thread of an unnamed ravine;
thence along said thread, northwesterly, approximately 1,485 ft. to
- T. 02 N., R. 11 E., Hood River County**
- AP 534 at intersection with the thread of Rock Creek;
thence ascending along the following courses:
N. 59°49' W. a distance of 325 ft. to
- AP 535 S. 86°24' W. a distance of 505 ft. to
- AP 536 S. 27°25' W. a distance of 285 ft. to
- AP 537 S. 20°58' W., approximately 625 ft. to
- AP 538 the summit of a minor peak;
thence along the crest of a ridge line the following general courses:
S. 67°17' W., approximately 310 ft. to
- AP 539 N. 88°40' W., approximately 1,030 ft. to
- AP 540 S. 58°53' W., approximately 735 ft. to
- AP 541 thence descending, leaving said ridge line, S. 39°52' W., approximately 825 ft. to
- AP 542 at intersection with the thread of an unnamed ravine;
thence ascending, S. 75°21' W., approximately 630 ft. to
- AP 543 at intersection with the crest of a ridge line;
thence along said ridge line the following general courses:
N. 51°36' W., approximately 525 ft. to
- AP 544 N. 35°02' W., approximately 345 ft. to
- AP 545 N. 17°06' W., approximately 655 ft. to
- AP 546 thence leaving said ridge line, ascending, N. 75°13' W., approximately 620 ft. to
- AP 547 thence N. 52°14' W. a distance of 505 ft. to
- AP 548 thence N. 04°43' W., approximately 345 ft. to
- AP 549 at intersection with the easterly edge of a primitive road (see Footnote 3);
thence along said easterly edge the following general courses:
N. 14°37' E., approximately 690 ft. to
- AP 550 N. 03°33' E., approximately 1,755 ft. to
- AP 551 N. 07°48' W., approximately 935 ft. to
- AP 552 N. 23°21' E., approximately 725 ft. to
- AP 553 N. 33°48' W., approximately 525 ft. to
- AP 554 N. 10°33' W., approximately 585 ft. to
- AP 555 at intersection with the crest of divide between Rock Creek and the Hood River;
thence along said divide the following general courses:
N. 11°59' W., approximately 1,160 ft. to
- AP 556 N. 07°30' W., approximately 1,350 ft. to
- AP 557 N. 21°00' E., approximately 1,005 ft. to
- AP 558 N. 16°00' W., approximately 870 ft. to
- AP 559 N. 41°48' W., approximately 620 ft. to
- AP 560 N. 05°17' W., approximately 600 ft. to
- AP 561 N. 03°28' E., approximately 2,200 ft. to
- AP 562 N. 14°26' W., approximately 1,090 ft. to
- AP 563 N. 28°15' W., approximately 465 ft. to
- AP 564 N. 29°46' W., approximately 660 ft. to
- AP 565 N. 02°04' E., approximately 595 ft. to
- AP 566 N. 46°40' E., approximately 645 ft. to
- AP 567 at intersection with the 2,000-ft. contour line, NGVD 1929;
thence descending the following courses:
N. 68°33' E. a distance of 880 ft. to
- AP 568 N. 52°02' E. a distance of 575 ft. to
- AP 569 N. 71°50' E. a distance of 1,100 ft. to
- AP 570 N. 45°58' E. a distance of 320 ft. to
- AP 571 N. 08°36' E., approximately 455 ft. to
- AP 572 at intersection of the line between secs. 8 and 9 and the center line of Old Dalles Drive;
thence ascending the following courses:
N. 01°05' W. a distance of 375 ft. to
- AP 573 N. 33°43' W. a distance of 485 ft. to
- AP 574 N. 15°08' W. a distance of 880 ft. to
- AP 575 N. 16°18' W., approximately 1,105 ft. to
- AP 576 at intersection with the crest of the divide between the Columbia River and Whiskey Creek;
thence along said divide the following general courses:
S. 76°10' W., approximately 645 ft. to
- AP 577 S. 70°12' W., approximately 375 ft. to
- AP 578 S. 56°23' W., approximately 895 ft. to
- AP 579 S. 75°33' W., approximately 570 ft. to
- AP 580 N. 53°52' W., approximately 715 ft. to
- AP 581 the summit of a minor peak;
thence leaving said divide, N. 56°20' W. a distance of 740 ft. to

- AP 582 thence N. 69°17' W., approximately 825 ft. to
- AP 583 a 5/8-in. iron rod established by LS 1815 as noted on the Plat of Pine Crest P.U.D. Phase 2, Instrument No. 20163382, records of Hood River County, Oregon, and concurred with by the United States Forest Service (U.S.F.S), Hood River County, and the Columbia River Gorge Commission as noted in Minor Amendment of Zone Boundary Adjustment #06-331, records of Hood River County Planning and Building Services;
thence on the line established by said LS 1815 and shown on said plat, N. 82°21'19" W., approximately 2,675 ft. to
- AP 584 at intersection with the center line of the BPA Hood River - The Dalles Transmission Line;
thence on said center line, northwesterly, approximately 1,975 ft. to
- AP 585 on said center line;
thence continuing on said center line, westerly, approximately 3,460 ft. to
- T. 02 N., R. 10 E.**
- AP 586 at intersection with the westerly crest of the break line of the Hood River;
thence along said break line, northerly, approximately 2,880 ft. to
- AP 587 at intersection with the line between Tps. 02 N. and 03 N.;
thence on said line, N. 89°27'48" W., approximately 245 ft. to
- AP 588 identical with AP 20, Hood River UA Legal Boundary Description;
{AP 20} thence on said line, on said UA Boundary, N. 89°27'48" W., approximately 4,660 ft. to
- AP 589 at intersection with the southerly bank of Indian Creek at OHWM;
{AP 21} thence along said southerly bank ay OHWM, westerly, approximately 3,800 ft. to
- AP 590 at intersection with the easterly right-of-way line of Indian Creek Road;
{AP 22} thence continuing along the aforementioned southerly bank, S. 48°37' W., approximately 800 ft. to
- AP 591 at intersection with the line between secs. 2 and 3;
{AP 23} thence on said line, N. 00°26' E., approximately 1,720 ft. to
- AP 592 the cor. of secs. 2 and 3, T. 02 N., R. 10 E., and secs. 34 and 35, T. 03 N., R. 10 E.;
{AP 24} thence leaving the aforementioned UA Boundary, on the line between said secs. 3 and 34, West, approximately 5,280 ft. to
- AP 593 the cor. of secs. 3 and 4, T. 02 N., R. 10 E., and secs. 33 and 34, T. 03 N., R. 10 E.;
thence on the line between said secs. 4 and 33, West, approximately 5,280 ft. to
- AP 594A the cor. of secs. 4 and 5, T. 02 N., R. 10 E., and secs. 32 and 33, T. 03 N., R. 10 E.;
thence on the line between said secs. 5 and 32, West, approximately 2,640 ft. to
- AP 594B the 1/4 cor. of said secs. 5 and 32, identical with AP 6 of the Gates of the Columbia River Gorge, Oregon Falls SMA Legal Boundary Description;
[AP 6] thence on said SMA Boundary, continuing on the line between said secs., West, approximately 2,640 ft. to
- AP 595 the cor. of secs. 5 and 6, T. 02 N., R. 10 E., and secs. 31 and 32, T. 03 N., R. 10 E.;
[AP 7] thence on the line between said secs. 5 and 6, as shown on Survey of Columbia Gorge National Scenic Area Boundary, C.S. 99099, records of Hood River County, Oregon, S. 01°39'55" W. a distance of 1,334.12 ft. to
- AP 596 the N1/16 cor. between said secs. 5 and 6, a 5/8-in. iron rod with plastic cap inscribed "County Surveyor", as shown on said survey;
[AP 8] thence on the E. and W. center line of the NE1/4 of said sec. 6, N. 89°35'34" W. a distance of 1,681.96 ft. to
- AP 597 at intersection with the crest of a ridge line, as shown on said survey;
[AP 9] thence along said ridge line, southwesterly, approximately 5,055 ft. to
- AP 598 at intersection with the line between sec. 1, T. 02 N., R. 09 E., and sec. 6, T. 02 N., R. 10 E.;
[AP 10] thence continuing along said ridge line, as shown on said survey, southwesterly, approximately 8,160 ft. to
- T. 02 N., R. 09 E.**
- AP 599 at intersection with line between secs. 12 and 13;
[AP 11] thence on the line between said secs., N. 89°43' W., approximately 260 ft. to

- AP 600 [AP 12] the cor. of secs. 11, 12, 13, and 14; thence on the line between said secs. 11 and 14, S. 89°51' W., approximately 5,247 ft. to
- AP 601 [AP 13] the cor. of secs. 10, 11, 14, and 15; thence on the line between said secs. 10 and 15, S. 89°48' W., approximately 5,258 ft. to
- AP 602 [AP 14] the cor. of secs. 9, 10, 15, and 16; thence on the line between said secs. 9 and 16, S. 89°48' W., approximately 100 ft. to
- AP 603 [AP 15] at intersection with the 3,600-ft. contour line, NGVD 1929; thence along said contour line, westerly, approximately 22,700 ft. to
- AP 604 [AP 16] at intersection with the line between Rs. 08 and 09 E.; thence continuing along said contour line, westerly and northerly, approximately 1,365 ft. to
T. 02 N., R. 08 E.
- AP 605 [AP 17] at intersection with the line between Rs. 08 and 09 E.; thence continuing along said contour line, northerly, westerly, and southerly, approximately 10,010 ft. to
T. 02 N., R. 09 E.
- AP 606 [AP 18] at intersection with the line between Rs. 08 and 09 E.; thence continuing along said contour line, westerly, approximately 16,895 ft. to
T. 02 N., R. 08 E.
- AP 607 [AP 19] at intersection with the crest of Nick Eaton Ridge line; thence along said ridge line the following general courses:
N. 38°49' W., approximately 695 ft. to
- AP 608 [AP 20] N. 26°53' W., approximately 510 ft. to
- AP 609 [AP 21] N. 33°00' W., approximately 730 ft. to
- AP 610 [AP 22] N. 00°51' W., approximately 345 ft. to
- AP 611 [AP 23] N. 21°30' W., approximately 405 ft. to
- AP 612 [AP 24] N. 38°17' W., approximately 910 ft. to
- AP 613 [AP 25] N. 48°16' W., approximately 460 ft. to
- AP 614 [AP 26] N. 68°10' W., approximately 395 ft. to
- AP 615 [AP 27] the summit of a minor peak; thence descending along the crest of a ridge line, S. 87°39' W., approximately 835 ft. to a saddle in said ridge line; thence ascending along said ridge line, N. 85°43' W., approximately 430 ft. to
- AP 616 [AP 28]
- AP 617 [AP 29] the summit of a minor peak; thence descending the crest of the divide line between Falls Creek and Camp Creek along the following general courses:
S. 02°44' W., approximately 615 ft. to
S. 32°17' W., approximately 940 ft. to
S. 52°08' W., approximately 865 ft. to
S. 70°25' W., approximately 645 ft. to
S. 63°06' W., approximately 1,110 ft. to
S. 77°51' W., approximately 225 ft. to
- AP 618 [AP 30]
- AP 619 [AP 31]
- AP 620 [AP 32]
- AP 621 [AP 33]
- AP 622 [AP 34]
- AP 623 [AP 35] at intersection with the center line of the Herman Creek Trail; thence S. 85°22' W., approximately 3,475 ft. to
- AP 624 [AP 36] at intersection with the crest of a ridge line; thence ascending, S. 17°44' W. a distance of 775 ft. to
- AP 625 [AP 37] thence ascending, S. 19°51' W., approximately 835 ft. to
- AP 626 [AP 38] at intersection with the center line of the Pacific Crest National Scenic Trail; thence along said center line, southwesterly, approximately 3,890 ft. to
- AP 627 [AP 39] at intersection with the 3,600-ft. contour line, NGVD 1929; thence along said contour line, southwest-erly, approximately 18,400 ft. to
- AP 628 [AP 40] at intersection with the thread of Ruckel Creek; thence continuing along said contour line, southwesterly, 1,125 ft. to
- AP 629 [AP 41] at intersection with the crest of a ridge line; thence descending along said ridge line the following general courses:
S. 72°40' W., approximately 730 ft. to
S. 70°50' W., approximately 1,440 ft. to
S. 78°32' W., approximately 1,805 ft. to
T. 02 N., R. 07 E.
- AP 630 [AP 42]
- AP 631 [AP 43]

- AP 632 [AP 44] S. 65°15' W., approximately 215 ft. to
- AP 633 [AP 45] N. 80°47' W., approximately 380 ft. to
- AP 634 [AP 46] S. 87°21' W., approximately 675 ft. to
- AP 635 [AP 47] thence leaving said ridge line, descending, S. 80°34' W. a distance of 435 ft. to
- AP 636 [AP 48] thence descending, S. 55°02' W., approximately 905 ft. to
- AP 637 [AP 49] at intersection with the 1,600-ft. contour line, NGVD 1929; thence descending, S. 33°13' W., approximately 550 ft. to
- AP 638 [AP 50] at intersection with the 1,200-ft. contour line, NGVD 1929; thence along said contour line, easterly, approximately 405 ft. to
- AP 639 [AP 51] at intersection with the thread of an unnamed ravine; thence along said thread, southwesterly, approximately 565 ft. to
- AP 640 [AP 52] at intersection with the 800-ft. contour line, NGVD 1929; thence along said contour line, southerly, approximately 13,810 ft. to
- AP 641 [AP 53] at intersection with the line between Rs. 07 and 08 E.; thence continuing along said contour line, southeasterly, approximately 1,050 ft. to
- T. 02 N., R. 08 E.**
- AP 642 [AP 54] at intersection with the S. line of T. 02 N., R. 08 E.; thence continuing along said contour line, southerly, approximately 1,270 ft. to
- T. 02 N., R. 07 E.**
- AP 643 [AP 55] at intersection with the line between Tps. 02 and 01 N. as depicted on Amended Protraction Diagram Unit 7 Index, September 23, 1994, records of BLM; thence continuing along said contour line, southerly, approximately 2,350 ft. to
- AP 644 [AP 56] from which the intersection of the thread of Eagle Creek with the center line of the 4-1/2-Mile Bridge bears northwesterly a distance of 540 ft.; thence across Eagle Creek, S. 17°08' W., approximately 200 ft. to
- AP 645 [AP 57] at intersection with the 800-ft. contour line, NGVD 1929; thence along said contour line, northwesterly, approximately 3,050 ft. to
- T. 01 N., R. 07 E.**
- AP 646 [AP 58] at intersection with the line between Tps. 01 and 02 N.; thence continuing along said contour line, northwesterly, approximately 18,500 ft. to
- T. 02 N., R. 07 E.**
- AP 647 [AP 59] at intersection with the crest of a ridge line; thence ascending said ridge line along the following general courses; S. 66°36' W., approximately 670 ft. to S. 37°32' W., approximately 830 ft. to
- AP 648 [AP 60] S. 30°52' W., approximately 635 ft. to
- AP 649 [AP 61] S. 56°24' W., approximately 200 ft. to
- AP 650 [AP 62] S. 00°03' E., approximately 440 ft. to
- AP 651 [AP 63] S. 27°58' W., approximately 195 ft. to
- AP 652 [AP 64] S. 66°26' W., approximately 410 ft. to
- AP 653 [AP 65] S. 74°29' W., approximately 645 ft. to
- AP 654 [AP 66] S. 68°48' W., approximately 550 ft. to
- AP 655 [AP 67] at intersection with the line between Hood River County and Multnomah County, identical with the line extending "due south of the SE cor. of the northeast quarter of sec. 22," as described in O.R.S. 201.140, amended 1967; thence continuing along said ridge line, S. 70°19' W., approximately 830 ft. to
- T. 02 N., R. 07 E., Multnomah County**
- AP 657 [AP 69] at intersection with the center line of the Tanner Butte Trail; thence along said center line, southerly, approximately 2,410 ft. to
- AP 658 [AP 70] at intersection with the crest of a ridge line; thence descending along said ridge line the following general courses: S. 84°59' W., approximately 1,845 ft. to

- AP 659 [AP 71] S. 77°37' W., approximately 1,195 ft. to
- AP 660 [AP 72] N. 75°54' W., approximately 750 ft. to
- AP 661 [AP 73] N. 67°09' W., approximately 1,190 ft. to
- AP 662 [AP 74] at intersection with the center line of Forest Road 777;
thence on said center line, southerly, approximately 4,700 ft. to
- AP 663 [AP 75] at intersection with the line between Tps. 01 and 02 N.;
thence continuing on said center line, southerly, approximately 5,275 ft. to
- T. 01 N., R. 07 E.**
- AP 664 [AP 76] at intersection with the thread of an unnamed ravine, adjacent to the Tanner Creek Trailhead;
thence along said thread, westerly, approximately 620 ft. to
- AP 665 [AP 77] at intersection with the thread of Tanner Creek;
thence ascending on the following courses:
S. 72°47' W. a distance of 1,410 ft. to
- AP 666 [AP 78] S. 78°47' W a distance of 1,960 ft. to
- AP 667 [AP 79] S. 04°11' W. a distance of 1,150 ft. to
- AP 668 [AP 80] S. 39°18' W. a distance of 850 ft. to
- AP 669 [AP 81] the intersection of the 3,200-ft. contour line, NGVD 1929 with the center line of the BPA Wautoma - Ostrander No. 1 Transmission Line;
thence on said contour line, westerly and southerly, approximately 13,585 ft. to
- AP 670 [AP 82] at intersection with a line extending East from the cor. of secs. 12 and 13, T. 01 N., R. 06 E.;
thence on said line, West, approximately 3,835 ft. to
- AP 671 [AP 83] the cor. of said secs. 12 and 13
thence on the line between said secs., N. 89°49' W., approximately 5,293 ft. to
- T. 01 N., R. 06 E.**
- AP 672 [AP 84] the cor. of secs. 11, 12, 13, and 14;
thence on the line between said secs. 13 and 14, S. 00°01' E., approximately 5,280 ft. to
- AP 673 [AP 85] the cor. of secs. 13, 14, 23, and 24;
thence on the line between said secs. 14 and 23, S. 89°56' W., approximately 2,653 ft. to
- AP 674 [AP 86] the 1/4 cor. of said secs.;
thence on the N. and S. center line of said sec. 23, S. 00°01'30" E., approximately 3,960 ft. to
- AP 675 [AP 87] the S1/16 cor. of said sec.;
thence on the E. and W. center line of the SW1/4 of said sec., S. 89°56' W., approximately 2,666 ft. to
- AP 676 [AP 88] the S1/16 cor. of secs. 22 and 23;
thence on the E. and W. center line of the SE1/4 of said sec. 22, N. 89°42'30" W., approximately 2,647 ft. to
- AP 677 [AP 89] the S1/16 cor. of said sec.;
thence on the N. and S. center line of said sec., S. 00°02'30" E., approximately 1,320 ft. to
- AP 678 [AP 90] the 1/4 cor. of secs. 22 and 27;
thence on the N. and S. center line of said sec. 27, S. 00°02'30" E., approximately 2,640 ft. to
- AP 679 [AP 91] the C1/4 cor. of said sec.;
thence S. 64°22' W., approximately 2,990 ft. to
- AP 680 [AP 92] the intersection of the line between secs. 27 and 28 with the crest of a ridge line;
thence ascending said ridge line, southwest-erly, approximately 5,415 ft. to
- AP 681 [AP 93] at intersection with the center line of East Larch Mountain Road;
thence on said center line, westerly and northerly, approximately 6,355 ft. to
- AP 682 [AP 94] at intersection with the thread of an unnamed ravine (see Footnote 4);
thence along said thread, westerly, approximately 4,185 ft. to
- AP 683 [AP 95] at intersection with the N. and S. center line of sec. 30;
thence on said center line, N. 00°02'15" W., approximately 1,115 ft. to
- AP 684 [AP 96] the C1/4 cor. of said sec.;
thence on the E. and W. center line of said sec., N. 89°27' W., approximately 2,652 ft. to
- AP 685 [AP 97] the 1/4 cor. of said sec. 30, and sec. 25, T. 01 N., R. 05 E.;
thence on the line between said secs., North, approximately 2,643 ft. to

- AP 686 [AP 98] the cor. of secs. 19 and 30, T. 01 N., R. 06 E., and secs. 24 and 25, T. 01 N., R. 05 E.; thence on the line between said secs. 19 and 24, North, approximately 2,640 ft. to
- AP 687 [AP 99] the 1/4 cor. of said secs. 19 and 24; thence on the E. and W. center line of said sec. 24, N. 89°54'30" W., approximately 2,662 ft. to
- T. 01 N., R. 05 E.**
- AP 688 [AP 100] the C1/4 cor. of said sec.; thence on the N. and S. center line of said sec., South, approximately 1,320 ft. to
- AP 689 [AP 101] the S1/16 cor. of said sec.; thence on the E. and W. center line of the SW1/4 of said sec., S. 89°59'45" W., approximately 1,330 ft. to
- AP 690 [AP 102] the SW1/16 cor. of said sec.; thence on the N. and S. center line of the SW1/4 of said sec., South, approximately 1,320 ft. to
- AP 691 [AP 103] the W1/16 cor. of secs. 24 and 25; thence on the line between said secs. S. 89°54' W., approximately 1,330 ft. to
- AP 692 [AP 104] the cor. of secs. 23, 24, 25, and 26; thence on the line between said secs. 25 and 26, South, approximately 5,280 ft. to
- AP 693 [AP 105] the cor. of secs. 25, 26, 35, and 36; thence on the line between said secs. 26 and 35, West, approximately 2,644 ft. to
- AP 694 [AP 106] the 1/4 cor. of said secs.; thence on the N. and S. center line of said sec. 35, South, approximately 2,640 ft. to
- AP 695 [AP 107] the C1/4 cor. of said sec.; thence on the E. and W. center line of said sec., West, approximately 2,642 ft. to
- AP 696 [AP 108] the 1/4 cor. of secs. 34 and 35; thence on the E. and W. center line of said sec. 34, S. 89°50'30" W., approximately 5,302 ft. to
- AP 697 [AP 109] the 1/4 cor. of secs. 33 and 34; thence on the E. and W. center line of said sec. 33, West, approximately 5,260 ft. to
- AP 698 [AP 110] the 1/4 cor. of secs. 32 and 33; thence on the E. and W. center line of said sec. 32, S. 89°38'30" W., approximately 5,294 ft. to
- AP 699A [AP 111] the 1/4 cor. of secs. 31 and 32; thence on the E. and W. center line of said sec. 31, S. 89°55'30" W., approximately 450 ft. to
- AP 699B [AP 112] at intersection with the center line of Larch Mountain Road; thence leaving said SMA Boundary, continuing on said center line, S. 89°55'30" W., approximately 4,838 ft. to
- AP 700 the 1/4 cor. of sec. 31, T. 01 N., R. 05 E., and sec. 36, T. 01 N., R. 04 E.; thence on the E. and W. center line of said sec. 36, West, approximately 5,289 ft. to
- T. 01 N., R. 04 E.**
- AP 701 the 1/4 cor. of secs. 35 and 36; thence on the E. and W. center line of said sec. 35, West, approximately 5,289 ft. to
- AP 702 the 1/4 cor. of secs. 34 and 35; thence on the E. and W. center line of said sec. 34, N. 89°50' W., approximately 5,273 ft. to
- AP 703 the 1/4 cor. of secs. 33 and 34; thence on the E. and W. center line of said sec. 33, West, approximately 5,262 ft. to
- AP 704 the 1/4 cor. of secs. 32 and 33; thence on the E. and W. center line of said sec. 32, West, approximately 5,283 ft. to
- AP 705 the 1/4 cor. of secs. 31 and 32; thence on the E. and W. center line of said sec. 31, West, approximately 4,780 ft. to
- AP 706 at intersection with the center line of the Historic Columbia River Highway; thence on said center line, southerly, approximately 2,935 ft. to
- AP 707 at intersection with the line between said sec. 31 and sec. 6, T. 01 S., R. 04 E.; thence continuing on said center line, southerly and easterly, approximately 5,905 ft. to
- T. 01 S., R. 04 E.**
- AP 708 at intersection with the westerly boundary of Dabney State Park; thence on said westerly boundary and the southerly extension thereof, southerly, approximately 525 ft. to
- AP 709 at intersection with the OHWM on the left bank of the Sandy River; thence along said left bank at intersection with OHWM, westerly, approximately 4,755 ft. to
- AP 710 at intersection with the line between Rs. 03 and 04 E.; thence continuing along said left bank, northerly, approximately 1,570 ft. to
- T. 01 S., R. 03 E.**

AP 711 at intersection with the line between Rs. 03 and 04 E.;
thence continuing along said left bank,
northerly, approximately 1,160 ft. to

T. 01 S., R. 04 E.

AP 712 at intersection with the line between Tps. 01 S. and 01 N.;
thence continuing along said left bank,
northerly, approximately 2,325 ft. to

T. 01 N., R. 04 E.

AP 713 at intersection with the line between Rs. 03 and 04 E.;
thence continuing along said left bank,
northerly, approximately 1,950 ft. to

T. 01 N., R. 03 E.

AP 714 at intersection with the line between Rs. 03 and 04 E.;
thence continuing along said left bank,
northerly, approximately 720 ft. to

T. 01 N., R. 04 E.

AP 715 thence continuing along said left bank,
northerly, approximately 820 ft. to

T. 01 N., R. 03 E.

AP 716 [AP 10] at intersection with the E. and W. center line of the SE1/4 of sec. 25, identical with AP 10 of the Gates of the Columbia River Gorge, Sandy River Delta, SMA Legal Boundary Description;
thence continuing along said left bank at OHWM and the northerly extension thereof, along said SMA Boundary, northerly, approximately 17,510 ft. to

AP 717 [AP 11] at intersection with the left bank of the Columbia River at MLW;
thence along said left bank at MLW, easterly, approximately, 1,100 ft. to

AP 718 [AP 12] at intersection with a line perpendicular to the Oregon-Washington State Line at River Mile 0 of the Sandy River;
thence leaving said SMA Boundary, on said perpendicular line, N. 27°49' W., approximately 1,000 ft. to

AP 1 the **Point of Beginning**

the Area being 292,786 Acres, more or less.

SOURCE MAPS AND DOCUMENTS:

1. The following maps referenced in the Columbia River Gorge National Scenic Area Act:

a. Boundary Map, Columbia River Gorge National Scenic Area, NSA-001 sheets 1 and 2 (September 1986);

b. Special Management Areas, Columbia River Gorge National Scenic Area, SMA-002 sheets 1 through 17 (September 1986);

c. Urban Areas, Columbia River Gorge National Scenic Area, UA-004 sheets 1 through 11 (September 1986)

These maps were reviewed for consistency with the USFS Maps (see 2. below) for this description.

2. In January 1987, the United States Forest Service developed maps, sheets 1 through 29 (USFS Maps) based upon the Congressional Maps. The Commission and U.S. Forest Service used the USFS Maps as the primary National Scenic Area maps until adopting this legal description. The USFS Maps are generally the basis for this description.

3. Reference documents, including relevant recorded surveys, plats, deeds, and decisions are, with this reference, made a part of this description. Copies of all source maps and reference documents are available at the Columbia River Gorge Commission and U.S. Forest Service, National Scenic Area offices.

FOOTNOTES:

1. Angle Point 8 refers to the Amended Exterior Boundary. The amendment was made by Pub. L. 105-277, § 354, 112 Stat. 2681-303 (1998).

2. Angle Points 228 and 229 were located with deference given to the 1986 Congressional Maps. The 1986 maps clearly show the Exterior Boundary of the NSA extending farther north than the 1987 USFS Maps (Sheet 16). The 1986 map location follows the line between public and private ownership as it existed at the creation of the NSA. This location remains the line between public and private ownership. Utilizing the 1987 location would create a split zoned tract of USFS land.

3. Angle Points 549 through 555 were located at the intersection with the easterly edge of the driven roadway prism, consistent with the Hood River County Planning Department Decision for the Appleton Conditional Use Permit # 91-310, as concurred with by the Columbia River Gorge Commission in a letter of August 2, 1991.

4. Angle Points 682 through 685 were located with deference given to the 1986 Congressional Maps. The 1986 maps clearly depict the Exterior Boundary of the NSA following Larch Mountain Road to an unnamed ravine, downstream along the ravine and then subdivision of sec. lines. The 1987 USFS Map (Sheet 4) does not clearly depict these locations and appears to be random in its location of the NSA line. Utilizing the 1986 map location is consistent with line location throughout the boundary.

Reviser's note: The spelling errors in the above material occurred in the copy filed by the Columbia River Gorge Commission and appear in the Register pursuant to the requirements of RCW 34.08.040.

Reviser's note: The brackets and enclosed material in the text of the above section occurred in the copy filed by the agency and appear in the Register pursuant to the requirements of RCW 34.08.040.

Reviser's note: The typographical errors in the above material occurred in the copy filed by the Columbia River Gorge Commission and appear in the Register pursuant to the requirements of RCW 34.08.040.

NEW SECTION

350-10-030B. Appendix B

APPENDIX B TO COMMISSION RULE 350-10
 LEGAL BOUNDARY DESCRIPTIONS FOR THE
 COLUMBIA RIVER GORGE NATIONAL SCENIC AREA
 SPECIAL MANAGEMENT AREAS

Columbia River Gorge National Scenic Area
 Burdoin Mountain Special Management Area Legal Bound-
 ary Description

All corner points and lines of the Public Land Survey System (PLSS) referenced in this description are according to the latest official survey notes and plats, and state authority survey plats in effect as of December 1, 2016, unless otherwise specified. Islands of the Columbia River, defined as Special Management Areas in the Act creating the Columbia River Gorge National Scenic Area (CRGNSA), are not described in this description. This description notes where it is identical with and where it leaves the Exterior Boundary and Urban Area (UA) boundaries of the CRGNSA. Exterior Boundary Angle Points are shown in parentheses (AP) and Urban Area Boundary Angle Points are shown in braces {AP}. The hierarchy of the "rules of construction" is observed herein - natural monuments control over artificial monuments, which control over bearings and distances, which control over coordinates. This description will be junior to all senior rights when overlaps may occur. This description shall be considered, along with the final legislation map, as whole and complete per the original legislation creating this scenic area and together they both shall govern all boundaries of this area, and guide future "on-the-ground" surveys. Where the boundary is described as a topographic feature, the actual location of the feature will control the approximate course identifying that part of said boundary. Courses for parallel offsets are measured from the apparent road or trail center lines of the traveled way to determine the boundary and are intended to be used to locate the boundary in the future in the event that the road migrates or becomes indistinguishable; the courses follow the general configuration of the feature and not every turn or bend. The latitudes and longitudes reported for certain corner points and angle points in this description are North American Datum of 1983 (NAD83) (2011) (Epoch2011.00) values where survey-grade Global Positioning System (GPS) data was available, otherwise were determined by Geographical Information Systems (GIS) mapping data with a relative accuracy of ± 40 ft. horizontally, unless otherwise noted.

This description encompasses land that is identified as

The Burdoin Mountain Special Management Area, established in the COLUMBIA RIVER GORGE NATIONAL SCENIC AREA ACT OF 1986, Pub. L. No. 99-663, § 4(b), 100 Stat. 4274, 4276 (1986), located in portions of:

Township 3 North, Range 11 East,

Township 3 North, Range 12 East,

Township 4 North, Range 11 East, and

Township 4 North, Range 12 East, of the Willamette Meridian, in Klickitat County, Washington.

T. 03 N., R. 11 E.

- AP 1 (AP 207) **Beginning** at the N1/16 cor. of sec. 28, identical with AP 207 of the Exterior Legal Boundary Description; Latitude 45°43'15.2" N. Longitude 121°26'05.9" W. thence on the E. and W. center line of the NE1/4 of said sec., on said Exterior Boundary, East, approximately 2,643 ft. to
- AP 2 (AP 208) the N1/16 cor. between secs. 27 and 28; thence on the E. and W. center line of the NW1/4 of said sec. 27, East, approximately 2,631 ft. to
- AP 3 (AP 209) the N1/16 cor. of said sec.; thence on the N. and S. center line of said sec., North, approximately 1,320 ft. to
- AP 4 (AP 210) the 1/4 cor. of secs. 22 and 27; thence on the line between said secs., East, approximately 2,628 ft. to
- AP 5 (AP 211) the cor. of secs. 22, 23, 26, and 27; thence on the line between said secs. 22 and 23, North, approximately 5,280 ft. to
- AP 6 (AP 212) the cor. of secs. 14, 15, 22, and 23; thence on the line between said secs. 15 and 22, N. 89°49' W., approximately 2,631 ft. to
- AP 7 (AP 213) the 1/4 cor. of said secs.; thence on the N. and S. center line of said sec. 15, North, approximately 2,640 ft. to
- AP 8 (AP 214) the C1/4 cor. of said sec. 15; thence on the E. and W. center line of said sec., S. 89°54'30" E., approximately 2,633 ft. to
- AP 9 (AP 215) the 1/4 cor. of said secs. 14 and 15; thence on the E. and W. center line of said sec. 14, N. 89°44' E., approximately 5,276 ft. to
- AP 10 (AP 216) the 1/4 cor. of secs. 13 and 14; thence on the line between said secs., North, approximately 2,640 ft. to
- AP 11 (AP 217) the cor. of secs. 11, 12, 13, and 14; thence on the line between said secs. 11 and 12, North, approximately 1,320 ft. to
- AP 12 (AP 218) the S1/16 cor. between said secs. 11 and 12; thence on the E. and W. center line of the SE1/4 of said sec. 11, S. 89°47'15" W., approximately 2,639 ft. to
- AP 13 (AP 219) the S1/16 cor. of said sec. 11; thence on the N. and S. center line of said sec., North, approximately 1,320 ft. to

- AP 14 (AP 220) the C1/4 cor. of said sec. 11; thence on the E. and W. center line of said sec., S. 89°51'30" W., approximately 2,641 ft. to
- AP 15 (AP 221) the 1/4 cor. of secs. 10 and 11; thence on the E. and W. center line of said sec. 10, N. 89°56' W., approximately 275 ft. to
- AP 16 (AP 222) at intersection with the center line of Bates County Road; thence on said center line, northwesterly, approximately 3,255 ft. to
- AP 17 (AP 223) at intersection with the N. and S. center line of said sec. 10; thence on said center line, North, approximately 1,045 ft. to
- AP 18 (AP 224) the 1/4 cor. of secs. 3 and 10; thence on the N. and S. center line of said sec. 3, North a distance of 1,000 ft. to
- AP 19 (AP 225) thence East, approximately 1,330 ft. to
- AP 20 (AP 226) at intersection with the N. and S. center line of the E1/2 of said sec. 3; thence on said center line, North, approximately 4,360 ft. to
- AP 21 (AP 227) the E1/16 cor. between said sec. 3 and sec. 34, T. 4 N., R. 11 E.; thence on the N. and S. center line of the SE1/4 of said sec. 34, North, approximately 2,160 ft. to (see Footnote 1)
- T. 04 N., R. 11 E.**
- AP 22 (AP 228) the NW cor. of Parcel 13, as described in Corrected Warranty Deed, Auditor's File No. (AFN) 1086793, records of Klickitat County, Washington; thence on the northerly line of said parcel, easterly, approximately 1,315 ft. to
- AP 23 (AP 229) the NE cor. of said Parcel 13, on the line between secs. 34 and 35; thence on the line between said secs., South, approximately 2,160 ft. to
- AP 24 (AP 230) the cor. of secs. 34 and 35, T. 04 N., R. 11 E., and secs. 2 and 3, T. 03 N., R. 11 E.; thence on the line between said secs. 2 and 35, East, approximately 1,320 ft. to
- AP 25 (AP 231) the W1/16 cor. between said secs.; thence S. 26°28' E., approximately 3,165 ft. to
- T. 03 N., R. 11 E.**
- AP 26 (AP 232) at intersection with the N. and S. center line of said sec. 2; thence on said N. and S. center line as shown on Survey, AFN 1100614, records of Klickitat County, Washington, S. 00°37'41" W. a distance of 1,175 ft. to
- AP 27 (AP 233) the S1/16 cor. of said sec. 2; thence on the E. and W. center line of the SE1/4 of said sec., as shown on said survey, S. 89°24'10" E. a distance of 2,648.36 ft. to
- AP 28 (AP 234) the S1/16 cor. between secs. 1 and 2; thence on the line between said secs., as shown on said survey, N. 00°55'04 E. a distance of 666.50 ft. to
- AP 29 (AP 235) the N-S1/64 cor. between said secs.; thence on the E. and W. center line of the NW1/4 SW1/4 of said sec. 1, East, approximately 660 ft. to
- AP 30 (AP 236) the NW-SW1/64 cor. of said sec.; thence on the N. and S. center line of the NW1/4 SW1/4 of said sec. North, approximately 660 ft. to
- AP 31 (AP 237) the W-W1/64 cor. of said sec.; thence on the E. and W. center line of said sec., East, approximately 660 ft. to
- AP 32 (AP 238) the W1/16 cor. of said sec.; thence on the N. and S. center line of the NW1/4 of said sec., North, approximately 2,640 ft. to
- AP 33 (AP 239) the W1/16 cor. between said sec. 1 and sec. 36, T. 04 N., R. 11 E.; thence on the N. and S. center line of the SW1/4 of said sec. 36, North, approximately 650 ft. to
- T. 04 N., R. 11 E.**
- AP 34 (AP 240) at intersection with the 2,200-ft. contour line, National Geodetic Vertical Datum (NGVD) 1929; thence along said contour line, northeasterly, approximately 9,920 ft. to
- T. 04 N., R. 12 E.**
- AP 35 (AP 241) at intersection with a line from which the N. and S. center line of the SW1/4 of sec. 30 bears westerly a distance of 740 ft. when measured perpendicular therefrom; thence on said line, parallel with said N. and S. center line, North, approximately 1,520 ft. to

- AP 36 (AP 242) at intersection with the E. and W. center line of said sec. 30; thence on said center line, East, approximately 3,210 ft. to
- AP 37 (AP 243) the 1/4 cor. of secs. 29 and 30; thence on the line between said secs., South, approximately 2,640 ft. to
- AP 38 (AP 244) the cor. of secs. 29, 30, 31, and 32; thence on the line between said secs. 31 and 32, South, approximately 2,400 ft. to
- AP 39 (AP 245) at intersection with the center line of the Bonneville Power Administration (BPA) North Bonneville-Midway No. 1 Transmission Line; thence on said center line, S. 74°08' W., approximately 5,430 ft. to
- AP 40 (AP 246) at intersection with the line between sec. 36, T. 04 N., R. 11 E., and sec. 31, T. 04 N., R. 12 E.; thence on the line between said secs., South, approximately 1,600 ft. to
- AP 41A (AP 247A) the cor. of sec. 36, T. 04 N., R. 11 E. and sec. 31, T. 04 N., R. 12 E.; thence on the line between said sec. 31, and sec. 1, T. 03 N., R. 11 E., S. 89°35'40" E. a distance of 196.36 ft. to
- AP 41B (AP 247B) the NE cor. of said sec. 1; thence on the line between Rs. 11 and 12 E., southerly, approximately 5,551 ft. to
- T. 03 N., R. 12 E.**
- AP 42 (AP 248) the cor. of secs. 1 and 12, T. 03 N., R. 11 E., and secs. 6 and 7, T. 03 N., R. 12 E.; thence on the line between said secs. 12 and 7, South, approximately 2,640 ft. to
- AP 43 (AP 249) the 1/4 cor. of said secs.; thence on the E. and W. center line of said sec. 7, East, approximately 2,630 ft. to
- AP 44 (AP 250) the C1/4 cor. of said sec. 7; thence leaving the aforementioned Exterior Boundary, on the N. and S. center line of said sec., South, approximately 2,640 ft. to
- AP 45 the 1/4 cor. of said sec. 7 and sec. 18; thence on the N. and S. center line of said sec. 18, South, approximately 5,280 ft. to
- AP 46 the 1/4 cor. of said sec. 18 and sec. 19; thence on the N. and S. center line of said sec. 19, South, approximately 2,640 ft. to
- AP 47 the C1/4 cor. of said sec.; thence on the E. and W. center line of said sec., S. 89°59' E., approximately 2,629 ft. to
- AP 48 the 1/4 cor. of said sec. 19 and sec. 20; thence on the line between said secs., South, approximately 2,640 ft. to
- AP 49 the cor. of secs. 19, 20, 29, and 30; thence on the line between said secs. 29 and 30, South, approximately 4,255 ft. to
- AP 50 at intersection with the center line of Old Highway 8 County Road; thence S. 26° E., approximately 1,700 ft. to
- AP 51 at intersection with the right bank of the Columbia River at Bonneville Normal Pool Elevation 72 ft., National Geodetic Vertical Datum of 1929 (NGVD 1929) (BNPE) (See Footnote 2); thence along said right bank at BNPE, westerly, approximately 24,350 ft. to
- T. 03 N., R. 11 E.**
- AP 52 {AP 45} identical with AP 45 of the White Salmon - Bingen UA Legal Boundary Description; thence on said UA Boundary, N. 01°07'34" E., approximately 1,206 ft. to
- AP 53 {AP 44} the center E-E1/64 cor. of sec. 33; thence on the N. and S. center line of the SE1/4 NE1/4 of said sec., N. 01°11'20" E. a distance of 1,321.01 ft. to
- AP 54 {AP 43} the center E-NE1/64 cor. of said sec.; thence on the E. and W. center line of the NE1/4 of said sec., N. 88°34'53" W. a distance of 1,933.17 ft. to
- AP 55 {AP 42} the N1/16 cor. of said sec.; thence leaving said UA Boundary, on the N. and S. center line of said sec., N. 01°12'04" E. a distance of 1,321.02 ft. to
- AP 56 the 1/4 cor. of said sec. 33 and sec. 28; thence on the N. and S. center line of said sec. 28, N. 00°21'27" W. a distance of 3,959.55 ft. to
- AP 1 the **Point of Beginning**

the Area being 10,744 Acres, more or less.

SOURCE MAPS AND DOCUMENTS:

1. The following maps referenced in the Columbia River Gorge National Scenic Area Act:

- a. Boundary Map, Columbia River Gorge National Scenic Area, NSA-001 sheets 1 and 2 (September 1986);
- b. Special Management Areas, Columbia River Gorge National Scenic Area, SMA-002 sheets 1 through 17 (September 1986);
- c. Urban Areas, Columbia River Gorge National Scenic Area, UA-004 sheets 1 through 11 (September 1986).

These maps were reviewed for consistency with the USFS Maps (see 2. below) for this description.

2. In January 1987, the United States Forest Service developed maps, sheets 1 through 29 (USFS Maps) based

upon the Congressional Maps. The Commission and U.S. Forest Service used the USFS Maps as the primary National Scenic Area maps until adopting this legal description. The USFS Maps are generally the basis for this description.

- a. USFS Map 15
- b. USFS Map 16
- c. USFS Map 18
- d. USFS Map 19

3. Reference documents, including relevant recorded surveys, plats, deeds, and decisions are, with this reference, made a part of this description. Copies of all source maps and reference documents are available at the Columbia River Gorge Commission and U.S. Forest Service, National Scenic Area offices.

FOOTNOTES:

1. AP 22 and AP 23 were located with deference given to the 1986 Congressional Maps. The 1986 maps clearly show the Exterior Boundary of the NSA extending farther north than the 1987 USFS Maps (Sheet 16). The 1986 map location follows the line between public and private ownership as it existed at the creation of the NSA. This location remains the line between public and private ownership. Utilizing the 1987 location would create a split zoned tract of USFS land.

2. This description intends to use the Bonneville Normal Pool Elevation in place at the time of the adoption of the National Scenic Area Act. At that time the Bonneville Normal Pool Elevation was 72 ft. Changes to this elevation through dam operations or otherwise do not change the location of the urban area boundary.

Columbia River Gorge National Scenic Area
Gates of the Columbia River, Beacon Rock Special Management Area
Legal Boundary Description

All corner points and lines of the Public Land Survey System (PLSS) referenced in this description are according to the latest official survey notes and plats, and state authority survey plats in effect as of December 1, 2016, unless otherwise specified. Islands of the Columbia River, defined as Special Management Areas in the Act creating the Columbia River Gorge National Scenic Area (CRGNSA), are not described in this description. This description notes where it is identical with and where it leaves the Exterior Boundary and Urban Area (UA) boundaries of the CRGNSA. Exterior Boundary Angle Points are shown in parentheses (AP) and Urban Area Boundary Angle Points are shown in braces {AP}. The hierarchy of the "rules of construction" is observed herein - natural monuments control over artificial monuments, which control over bearings and distances, which control over coordinates. This description will be junior to all senior rights when overlaps may occur. This description shall be considered, along with the final legislation map, as whole and complete per the original legislation creating this scenic area and together they both shall govern all boundaries of this area, and guide future "on-the-ground" surveys. Where the boundary is described as a topographic feature, the actual location of the feature will control the approximate course identifying that part of said boundary. Courses for parallel offsets are measured from the apparent road or trail center lines of the traveled way to determine the

boundary and are intended to be used to locate the boundary in the future in the event that the road migrates or becomes indistinguishable; the courses follow the general configuration of the feature and not every turn or bend. The latitudes and longitudes reported for certain corner points and angle points in this description are North American Datum of 1983 (NAD83) (2011) (Epoch2011.00) values where survey-grade Global Positioning System (GPS) data was available, otherwise were determined by Geographical Information Systems (GIS) mapping data with a relative accuracy of ± 40 ft. horizontally, unless otherwise noted.

This description encompasses land that is identified as

Gates of the Columbia River, Beacon Rock Special Management Area, established in the COLUMBIA RIVER GORGE NATIONAL SCENIC AREA ACT OF 1986, Pub. L. No. 99-663, § 4(b), 100 Stat. 4274, 4276 (1986), located in portions of:

- Township 1 North, Range 5 East,
- Township 1 North, Range 6 East,
- Township 2 North, Range 5 East,
- Township 2 North, Range 6 East,
- Township 2 North, Range 7 East,
- Township 3 North, Range 6 East, and

Township 3 North, Range 7 East, of the Willamette Meridian, in Skamania County, Washington.

T. 01 N., R. 05 E., Skamania County

- AP 1 **Beginning** at the point of intersection of the right bank of the Columbia River at Ordinary High Water Mark (OHWM); with a line parallel with and 1,100 ft. easterly of the line between secs. 11 and 12, when measured perpendicular therefrom; Latitude 45°35'24.0" N. Longitude 122°08'30.9" W. thence on said line, North, approximately 395 ft. to
- AP 2 at intersection with the center line of the Burlington Northern - Santa Fe Railroad right-of-way; thence on said center line, northeasterly, approximately 2,970 ft. to
- AP 3 a point from which the intersection of the center line of an unnamed primitive road with the center line of Washington State Route 14 bears North, approximately 550 ft.; thence North, approximately 550 ft. to
- AP 4 at said intersection; thence continuing North, approximately 400 ft. to
- AP 5 at intersection with the E. and W. center line of the S1/2 of sec. 1; thence on said center line, westerly, approximately 2,360 ft. to

- AP 6 at intersection with the center line of the Bonneville Power Administration (BPA) PH. 1 - North Camas No.1 Transmission Line;
thence on said center line, southwesterly, approximately 7,980 ft. to
- AP 7 at intersection with the N. and S. center line of the SE1/4 of sec. 3;
thence on said center line, northerly, approximately 1,195 ft. to
- AP 8 the SE1/16 cor. of said sec. 3;
thence on the E. and W. center line of said SE1/4, westerly, approximately 1,320 ft. to
- AP 9 the C-S1/16 cor. of said sec.;
thence on the N. and S. center line of said sec., N. 01°19'07" E., approximately 1,200 ft. to
- AP 10 (AP 43) identical with AP 43 of the Exterior Legal Boundary Description;
thence identical with said Exterior Boundary, N. 40°48' E., approximately 505 ft. to
- AP 11 (AP 44) at intersection with the thread of Canyon Creek;
thence along said thread, northeasterly, approximately 3,765 ft. to
- AP 12 (AP 45) at intersection with the line between sec. 2, T. 01 N., R. 05 E. and sec. 35, T. 02 N., R. 05 E.;
thence on said line, East, approximately 3,650 ft. to
- AP 13 (AP 46) the E1/16 cor. of said secs. 2 and 35;
thence on the N. and S. center line of the SE1/4 of said sec. 35, North, approximately 1,320 ft. to
T. 02 N., R. 05 E.
- AP 14 (AP 47) the SE1/16 cor. of said sec. 35;
thence on the E. and W. center line of said SE1/4, East, approximately 1,328 ft. to
- AP 15 (AP 48) the S1/16 cor. of secs. 35 and 36;
thence on the line between said secs., North, approximately 1,875 ft. to
- AP 16 (AP 49) at intersection with the thread of the aforementioned Canyon Creek;
thence along said thread, northeasterly, approximately 3,950 ft. to
- AP 17 (AP 50) at intersection with the line between secs. 25 and 36;
thence on said line, East, approximately 2,260 ft. to
- AP 18 (AP 51A) the cor. of secs. 25 and 36, T. 2 N., R. 5 E., on the west line of sec. 31, T. 2 N., R. 6 E.;
thence on the line between said secs. 25 and 31, N. 00°59' W. a distance of 68.64 ft. to
- AP 19 (AP 51B) the cor. of secs. 30 and 31, T. 2 N., R. 6 E., on the east line of said sec. 25;
thence on the line between said secs. 25 and 30, N. 00°30' W., approximately 2,020 ft. to
T. 02 N., R. 06 E.
- AP 20 (AP 52) at intersection with the center line of the BPA North Bonneville - Troutdale No. 1 Transmission Line;
thence on said center line, northeasterly, approximately 5,870 ft. to
- AP 21 (AP 53) at intersection with the line between secs. 29 and 30;
thence on said line, N. 00°32' E., approximately 985 ft. to
- AP 22 (AP 54) the cor. of secs. 19, 20, 29, and 30;
thence on the line between said secs. 19 and 20, North, approximately 5,280 ft. to
- AP 23 (AP 55) the cor. of secs. 17, 18, 19, and 20;
thence on the line between said secs. 17 and 20, East, approximately 5,310 ft. to
- AP 24 (AP 56) the cor. of secs. 16, 17, 20, and 21;
thence on the line between said secs. 16 and 17, North, approximately 5,280 ft. to
- AP 25 (AP 57) the cor. of secs. 8, 9, 16, and 17;
thence on the line between said secs. 8 and 9, North, approximately 2,670 ft. to
- AP 26 (AP 58) at intersection with the center line of the BPA McNary - Ross No. 1 Transmission Line;
thence on said line, northeasterly, approximately 22,660 ft. to
T. 03 N., R. 06 E.
- AP 27 (AP 59) at intersection with the line between sec. 36, T. 03 N., R. 06 E., and sec. 31, T. 03 N., R. 07 E.;
thence on said line, North, approximately 7,405 ft. to
- AP 28 (AP 60) not used
- AP 29 (AP 61) at intersection with the crest of a ridge line;
thence along said ridge line, northeasterly, approximately 3,000 ft. to
T. 03 N., R. 07 E.
- AP 30 (AP 62) the summit of a minor peak;
thence descending along the crest of a ridge line, easterly, approximately 3,900 ft. to

- AP 31 (AP 63) at a four-way intersection of unnamed primitive roads; thence ascending along said ridge line, easterly, 2,030 ft. to
- AP 32 (AP 64) at intersection with the center line of the BPA McNary - Ross No. 1 Transmission Line; thence on said center line, easterly, approximately 11,295 ft. to
- AP 33 (AP 65) at intersection with the N. and S. center line of sec. 27; thence leaving the aforementioned Exterior Boundary, on said center line, South, approximately 3,020 ft. to
- AP 34 the 1/4 cor. of said sec. 27 and sec. 34; thence on the line between said secs., West, approximately of 1,205 ft. to
- AP 35 at intersection with the center line of an unnamed primitive road; thence South, approximately 5,280 ft. to
- AP 36 at intersection with the line between sec. 34, and sec. 3, T. 2 N., R. 7 E.; thence on the line between said secs., West, approximately 500 ft. to
- AP 37 the cor. of said sec. 3, and sec. 4; thence on the line between said secs. 4 and 34, West, approximately 300 ft. to
- AP 38 the cor. of said sec. 34, and sec. 33; thence on the line between said secs. 4 and 33, West, approximately 2,430 ft. to
- AP 39 the N1/4 cor. of said sec. 4;
T. 02 N., R. 07 E.
thence on the N. and S. center line of said sec., South, approximately 2,640 ft. to
- AP 40 the C1/4 cor. of said sec.; thence on the E. and W. center line of said sec., West, approximately 2,640 ft. to
- AP 41 the 1/4 cor. of said sec. 4, and sec. 5; thence on the line between said secs., South, approximately 2,640 ft. to
- AP 42 the cor. of said secs. 4 and 5, and secs. 8 and 9; thence on the line between said secs. 8 and 9, South, approximately 5,280 ft. to
- AP 43 the SE cor. of said sec. 8; thence southerly, approximately 3,620 ft. to
- AP 44 {AP 20} at intersection of the center line of a natural gas pipe line easement with the north line of the B. B. Bishop Donation Land Claim (DLC) No. 39, identical with AP 20 of the North Bonneville Urban Area (UA) Legal Boundary Description; thence on the north line of said DLC, on said UA Boundary and North Bonneville city limits line, S. 86°20'39" W., approximately 666 ft. to
- AP 45 {AP 19} the NW cor. of said DLC; thence on the westerly boundary of said D.L.C, S. 02°12'16" W., approximately 1,347 ft. to
- AP 46 {AP 18} at intersection with the northerly boundary of the G.W. Johnson DLC No. 38; thence on said northerly boundary, S. 84°22'12" W., approximately 550 ft. to
- AP 47 {AP 17} at intersection with the northerly right-of-way line of BPA Bonneville-Vancouver transmission line easement; thence leaving said northerly DLC line and said city limits line, on said northerly right-of-way line, N. 57°28' W., approximately 1,050 ft. to
- AP 48 {AP 16} the most northerly point thereof; thence continuing on said northerly right-of-way line, S. 57°56' W., approximately 1,450 ft. to
- AP 49 {AP 15} at intersection with the aforementioned northerly line of the Johnson DLC and said city limits line; thence leaving said northerly right-of-way line, on said northerly DLC line and said city limits line, S. 84°22'12" W., approximately 350 ft. to
- AP 50 {AP 14} the NW cor. of said Johnson DLC; thence on the westerly boundary thereof, S. 16°46'08" E., approximately 160 ft. to
- AP 51 {AP 13} at intersection with the aforementioned northerly right-of-way line; thence leaving said northerly DLC line and city limits line, on said northerly right-of-way line, S. 57°56' W., approximately 4,490 ft. to
- AP 52 {AP 12} at intersection with the E. and W. center line of sec. 19 and said city limits line; thence on said center line, N. 89°59' W., approximately 505 ft. to

- AP 53 the C1/4 cor. of said sec. 19;
- {AP 11} Latitude: 45°38'36.6" N., Longitude: 121°59'31.6" W.;
- thence on the N. and S. center line of said sec., S. 0°29' E., approximately 1,890 ft. to
- AP 54 at intersection with the southeasterly right-
- {AP 10} of-way line of the Burlington Northern - Santa Fe Railroad right-of-way;
- thence leaving said city limits line, S. 43°21' E., approximately 1,045 ft. to
- AP 55 the NW cor. of the plat of Relocated North
- {AP 9} Bonneville, identical with the line between secs. 19 and 30;
- thence on the southwesterly boundary thereof, S. 29°58'55" W. a distance of 119.59 ft. to
- AP 56 thence continuing on said southwesterly
- {AP 8} boundary, S. 18°27'10" E. a distance of 1,452.91 ft. to
- AP 57 thence continuing on said southwesterly
- {AP 7} boundary and southeasterly extension thereof, crossing Hamilton Creek, S. 67°00'00" E., approximately 760 ft. to
- AP 58 at intersection with the left bank of Hamil-
- {AP 6} ton Creek at OHWM;
- thence along said left bank at OHWM, southwesterly, approximately 3,030 ft. to
- AP 59 at intersection with the right bank of the
- {AP 5} Columbia River at OHWM;
- thence leaving said city limits line, along said right bank at OHWM, southeasterly, a distance of 1,500 ft. to
- AP 60 thence leaving the aforementioned UA
- {AP 4B} Boundary and said right bank at OHWM, southeasterly, approximately 740 ft. to
- AP 61 the most easterly extremity of Ives Island at
- OHWM;
- thence along the southerly shore of said island at OHWM, southwesterly, approximately 3,000 ft. to
- AP 62 the southwesterly extremity of Ives Island at
- OHWM;
- thence leaving Ives Island, southwesterly, approximately 800 ft. to
- AP 63 the southeasterly extremity of Pierce Island
- at OHWM;
- T. 02 N., R. 06 E.**
- thence along the southerly shore of said island at OHWM, southwesterly, approximately 2,820 ft. to
- AP 64 an interior southwesterly shore line cor. of
- said island at OHWM;
- thence crossing an inlet of said southerly shore, N. 50° W., approximately 545 ft. to
- AP 65 at intersection with said southerly shore at
- OHWM;
- thence continuing along the southerly shore of said island at OHWM, southwesterly, approximately 1,910 ft. to
- AP 66 the most southwesterly extremity of said
- island at OHWM;
- thence leaving said island, West, approximately 540 ft. to
- AP 67 at intersection with the right bank of the
- Columbia River at OHWM;
- thence along said right bank at OHWM, southwesterly, approximately 3,560 ft. to
- AP 68 from which the intersection of the center
- line of the BPA Bonneville Ph. 1 North Camas No. 1 transmission line with the center line of Woodward Road bears North, approximately 2,900 ft.;
- thence North, approximately 2,900 ft. to
- AP 69 at said intersection;
- thence on said centerline of said transmission line, N. 66°25' E., approximately 2,400 ft. to
- AP 70 at intersection with the line between secs. 25
- and 26;
- thence on said line, North, a distance of 1,000 ft. to
- AP 71 thence West, approximately 400 ft. to
- AP 72 at intersection with the center line of Kuffler
- Road;
- thence North, approximately 500 ft. to
- AP 73 at intersection with the E. and W. center line
- of said sec. 26;
- thence on said center line, West, approximately 400 ft. to
- AP 74 the NE cor. of that tract of land described in
- Deed Record Y Page 530, records of Skamania County, Washington;
- thence on the easterly line of said tract and southerly extension thereof, South a distance of 300 ft. to
- AP 75 thence West, approximately 500 ft. to
- AP 76 at intersection with the N. and S. center line
- of the SE1/4 of said sec.;
- thence on said center line, North, approximately 300 ft. to

AP 77 the E1/16 cor. of said sec.;
thence on the E. and W. center line of said sec., approximately 3,960 ft. to

AP 78 the 1/4 cor. of secs. 26 and 27;
thence on the E. and W. center line of said sec. 27, N. 89°08'44" W. a distance of 5228.09 ft. to

AP 79 the 1/4 cor. of secs. 27 and 28;
thence on the E. and W. center line of said sec. 28, West, approximately 5,271 ft. to

AP 80 the 1/4 cor. of secs. 28 and 29;
thence on the line between said secs., S. 02°24'28" W. a distance of 2,631.84 ft. to

AP 81 the cor. of secs. 28, 29, 32, and 33;
thence on the line between said secs. 29 and 32, N. 88°48'42" W., approximately 1,321.28 ft. to

AP 82 the E1/16 cor. of said secs.;
thence on the N. and S. center line of the NE1/4 of said sec. 32, S. 02°37'43" W., approximately 2,630.44 ft. to

AP 83 the E1/16 cor. of said sec.;
thence on the N. and S. center line of the SE1/4 of said sec., S. 01°11'10" W., approximately 2,620.72 ft. to

AP 84 the E1/16 cor. of said sec. 32 and sec. 5, T. 1 N., R. 6 E.;

T. 01 N., R. 06 E.
thence on the E. and W. center line of the NE1/4 of said sec. 5, South, approximately 700 ft. to

AP 85 at intersection with the center line of the Burlington Northern - Santa Fe Railroad right-of-way;

T. 02 N., R. 06 E.
thence on said center line, easterly, approximately 9,350 ft. to

AP 86 at intersection with the center line of Skamania Landing Road;
thence on said road center line, southeasterly, approximately 1,435 ft. to

AP 87 at intersection with the northerly extension of the westerly line of Lot 2, Hazard Short Plat No. 1, recorded in Book 3 of Short Plats, Page 20, records of Skamania County, Washington;
thence on said extension, S. 17°32'40" E., approximately 280 ft. to

AP 88 the northwesterly cor. of said Lot 2;
thence on the westerly line thereof, S. 17°32'40" E., approximately 220 ft. to

AP 89 at intersection with the right bank of the Columbia River at OHWM;
thence along said right bank, westerly, approximately 27,000 ft. to

T. 01 N., R. 06 E.

T. 01 N., R. 05 E.

AP 1 the **Point of Beginning**

the Area being 24,742 Acres, more or less.

SOURCE MAPS AND DOCUMENTS:

1. The following maps referenced in the Columbia River Gorge National Scenic Area Act:

a. Boundary Map, Columbia River Gorge National Scenic Area, NSA-001 sheets 1 and 2 (September 1986);

b. Special Management Areas, Columbia River Gorge National Scenic Area, SMA-002 sheets 1 through 17 (September 1986);

c. Urban Areas, Columbia River Gorge National Scenic Area, UA-004 sheets 1 through 11 (September 1986).

These maps were reviewed for consistency with the USFS Maps (see 2. below) for this description.

2. In January 1987, the United States Forest Service developed maps, sheets 1 through 29 (USFS Maps) based upon the Congressional Maps. The Commission and U.S. Forest Service used the USFS Maps as the primary National Scenic Area maps until adopting this legal description. The USFS Maps are generally the basis for this description.

a. USFS Map 3

b. USFS Map 4

c. USFS Map 5

d. USFS Map 6

e. USFS Map 7

3. Reference documents, including relevant recorded surveys, plats, deeds, and decisions are, with this reference, made a part of this description. Copies of all source maps and reference documents are available at the Columbia River Gorge Commission and U.S. Forest Service, National Scenic Area offices.

Columbia River Gorge National Scenic Area
Gates of the Columbia River, Cape Horn Special Management Area
Legal Boundary Description

All corner points and lines of the Public Land Survey System (PLSS) referenced in this description are according to the latest official survey notes and plats, and state authority survey plats in effect as of December 1, 2016, unless otherwise specified. Islands of the Columbia River, defined as Special Management Areas in the Act creating the Columbia River Gorge National Scenic Area (CRGNSA), are not described in this description. This description notes where it is identical with and where it leaves the Exterior Boundary of the CRGNSA. Exterior Boundary Angle Points are shown in parentheses (AP). The hierarchy of the "rules of construc-

tion" is observed herein - natural monuments control over artificial monuments, which control over bearings and distances, which control over coordinates. This description will be junior to all senior rights when overlaps may occur. This description shall be considered, along with the final legislation map, as whole and complete per the original legislation creating this scenic area and together they both shall govern all boundaries of this area, and guide future "on-the-ground" surveys. Where the boundary is described as a topographic feature, the actual location of the feature will control the approximate course identifying that part of said boundary. Courses for parallel offsets are measured from the apparent road or trail center lines of the traveled way to determine the boundary and are intended to be used to locate the boundary in the future in the event that the road migrates or becomes indistinguishable; the courses follow the general configuration of the feature and not every turn or bend. The latitudes and longitudes reported for certain corner points and angle points in this description are North American Datum of 1983 (NAD83) (2011) (Epoch2011.00) values where survey-grade Global Positioning System (GPS) data was available, otherwise were determined by Geographical Information Systems (GIS) mapping data with a relative accuracy of ± 40 ft. horizontally, unless otherwise noted.

This description encompasses land that is identified as

Gates of the Columbia River, Cape Horn Special Management Area, established in the COLUMBIA RIVER GORGE NATIONAL SCENIC AREA ACT OF 1986, Pub. L. No. 99-663, § 4(b), 100 Stat. 4274, 4276 (1986), located in portions of:

Township 1 North, Range 4 East, of the Willamette Meridian, in Clark County, Washington,

Township 1 North, Range 5 East, of the Willamette Meridian, in Skamania County, Washington.

T. 01 N., R. 04 E., Clark County

- AP 1 **Beginning** at the point of intersection of the right bank of the Columbia River at Ordinary High Water Mark (OHWM) with the thread of Lawton Creek;
Latitude 45°33'18.0" N. Longitude 122°16'01.3" W.
thence along said thread, northerly, approximately 4,615 ft. to
- AP 2 at intersection with the thread of Walton Creek;
thence leaving said thread, N. 51° E., approximately 215 ft. to
- AP 3 at intersection with the crest of a ridge line;
thence ascending along said ridge line, northerly, approximately 835 ft. to
- AP 4 at intersection with the 400-ft. contour line, National Geodetic Vertical Datum (NGVD) 1929;
thence leaving said crest, N. 19°18' E. a distance of 430 ft. to
- AP 5 thence N. 35°06' E., approximately 380 ft. to

AP 6 at intersection with the E. and W. center line of sec. 13;
thence on said center line, East, approximately 2,835 ft. to

AP 7 the 1/4 cor. of said sec. 13, and sec. 18, T. 1 N. R. 5 E.;

T. 01 N., R. 05 E., Skamania County

thence on the line between said secs., South, approximately 660 ft. to

AP 8 the N-S1/64 cor. between said secs.;
thence on the E. and W. center line of the N1/2 SW1/4 of said sec. 18, East., approximately 2,640 ft. to

AP 9 the C-N-S1/64 cor. of said sec.;
thence on the N. and S. center line of said sec., North, approximately 1,980 ft. to

AP 10 the C-N1/16 cor. of said sec.;
thence N. 22°35' E., approximately 535 ft. to

AP 11 at the confluence of the threads of Lawton Creek and an unnamed ravine;
thence along the thread of said unnamed ravine, northeasterly, approximately 4,695 ft. to

AP 12 at intersection with the E. and W. center line of sec. 8;
thence along said center line, East, approximately 2,600 ft. to

AP 13 at intersection with the center line of Belle Center Road;
thence on said center line, northeasterly, approximately 475 ft. to

AP 14 at intersection with the center line of Mt. Pleasant Road, identical with AP 29 of the Exterior Legal Boundary Description;
(AP 29) thence on said center line, on said Exterior Boundary, easterly, approximately 1,930 ft. to

AP 15 at intersection with the center line of Strunk Road;
(AP 30) thence on the center line of said Strunk Road, easterly, approximately 2,925 ft. to

AP 16 at intersection with the center line of Rim Drive private road;
(AP 31) thence on the center line of said Rim Drive, northerly, a distance of 400 ft. to

AP 17 thence East, approximately 800 ft. to
(AP 32)

AP 18 (AP 33) at intersection with the crest of a ridge line; thence along said ridge line the following general courses:
N. 34°37' E., approximately 945 ft. to
AP 19 (AP 34) N. 56°50' E., approximately of 810 ft. to
AP 20 (AP 35) N. 36°35' E., approximately 1,110 ft. to
AP 21 (AP 36) at intersection with the line between secs. 9 and 10;
thence on said line, North, approximately 95 ft. to
AP 22 (AP 37) the cor. of secs. 3, 4, 9, and 10;
thence on the line between said secs. 3 and 4, North, approximately 590 ft. to
AP 23 (AP 38) at intersection with the center line of Mt. Pleasant Road;
thence on said center line, northeasterly, approximately 1,250 ft. to
AP 24 (AP 39A) at intersection with the center line of Canyon Creek Road;
thence on said center line, easterly, approximately 520 ft. to
AP 25 (AP 39B) at intersection with the N. and S. center line of the SW1/4 of said sec. 3;
thence leaving the aforementioned Exterior Boundary, on said center line, South, approximately 1,300 ft. to
AP 26 at intersection with the center line of Washington State Route 14;
thence on said center line, easterly, approximately 3,310 ft. to
AP 27 at intersection with the center line of the SE1/4 NE1/4 of said sec. 10;
thence on said N. and S. center line, South, approximately 460 ft. to
AP 28 at intersection with the center line of Riverside Drive;
thence on said center line, southerly and easterly, approximately 1,055 ft. to
AP 29 at intersection with the line between secs. 10 and 11;
thence on said line, S. 01°12'36" W., approximately 1,025 ft. to

AP 31 at intersection with the right bank of the Columbia River at OHWM;
thence along said right bank at intersection with OHWM, westerly, approximately 29,990 ft. to

T. 01 N., R. 04 E., Clark County

AP 1 **the Point of Beginning**

the Area being 3,473 Acres, more or less.

SOURCE MAPS AND DOCUMENTS:

1. The following maps referenced in the Columbia River Gorge National Scenic Area Act:

a. Boundary Map, Columbia River Gorge National Scenic Area, NSA-001 sheets 1 and 2 (September 1986);

b. Special Management Areas, Columbia River Gorge National Scenic Area, SMA-002 sheets 1 through 17 (September 1986);

c. Urban Areas, Columbia River Gorge National Scenic Area, UA-004 sheets 1 through 11 (September 1986).

These maps were reviewed for consistency with the USFS Maps (see 2. below) for this description.

2. In January 1987, the United States Forest Service developed maps, sheets 1 through 29 (USFS Maps) based upon the Congressional Maps. The Commission and U.S. Forest Service used the USFS Maps as the primary National Scenic Area maps until adopting this legal description. The USFS Maps are generally the basis for this description.

a. USFS Map 2

b. USFS Map 3

3. Reference documents, including relevant recorded surveys, plats, deeds, and decisions are, with this reference, made a part of this description. Copies of all source maps and reference documents are available at the Columbia River Gorge Commission and U.S. Forest Service, National Scenic Area offices.

Columbia River Gorge National Scenic Area
Gates of the Columbia River, Oregon Falls Special Management Area

Legal Boundary Description

All corner points and lines of the Public Land Survey System (PLSS) referenced in this description are according to the latest official survey notes and plats, and state authority survey plats in effect as of December 1, 2016, unless otherwise specified. Islands of the Columbia River, defined as Special Management Areas in the Act creating the Columbia River Gorge National Scenic Area (CRGNSA), are not described in this description. This description notes where it is identical with and where it leaves the Exterior Boundary and Urban Area (UA) boundaries of the CRGNSA. Exterior Boundary Angle Points are shown in parentheses (AP) and Urban Area Boundary Angle Points are shown in braces {AP}. The hierarchy of the "rules of construction" is observed herein - natural monuments control over artificial monuments, which control over bearings and distances, which control over coordinates. This description will be junior to all senior rights when overlaps may occur. This description shall be considered, along with the final legislation map, as whole and complete per the original legislation

creating this scenic area and together they both shall govern all boundaries of this area, and guide future "on-the-ground" surveys. Where the boundary is described as a topographic feature, the actual location of the feature will control the approximate course identifying that part of said boundary. Courses for parallel offsets are measured from the apparent road or trail center lines of the traveled way to determine the boundary and are intended to be used to locate the boundary in the future in the event that the road migrates or becomes indistinguishable; the courses follow the general configuration of the feature and not every turn or bend. The latitudes and longitudes reported for certain corner points and angle points in this description are North American Datum of 1983 (NAD83) (2011) (Epoch2011.00) values where survey-grade Global Positioning System (GPS) data was available, otherwise were determined by Geographical Information Systems (GIS) mapping data with a relative accuracy of ± 40 ft. horizontally, unless otherwise noted.

This description encompasses land that is identified as Gates of the Columbia River, Oregon Falls Special Management Area, established in the COLUMBIA RIVER GORGE NATIONAL SCENIC AREA ACT OF 1986, Pub. L. No. 99-663, § 4(b), 100 Stat. 4274, 4276 (1986), located in portions of:

- Township 1 North, Range 7 East,
- Township 1 North, Range 8 East,
- Township 2 North, Range 7 East,
- Township 2 North, Range 8 East,
- Township 2 North, Range 9 East,
- Township 2 North, Range 10 East,
- Township 3 North, Range 8 East,
- Township 3 North, Range 9 East, and
- Township 3 North, Range 10 East, of the Willamette Meridian, in Hood River County, Oregon,
- Township 1 North, Range 4 East,
- Township 1 North, Range 5 East,
- Township 1 North, Range 6 East,
- Township 1 North, Range 7 East, and
- Township 2 North, Range 7 East, of the Willamette Meridian, in Multnomah County, Oregon.

T. 03 N., R. 10 E., Hood River County

- AP 1 **Beginning** at the point of intersection of the left bank of the Columbia River at Bonneville Normal Pool Elevation 72 ft., National Geodetic Vertical Datum of 1929 (NGVD 1929) (BNPE) (See Footnote 1) with the line between lots 3 and 4 of sec. 28; Latitude 45°42'30.6" N. Longitude 121°34'50.2" W. thence on said line, South, approximately 285 ft. to
- AP 2 the W1/16 cor. between secs. 28 and 33; thence on the N. and S. center line of the NW1/4 of said sec. 33, South a distance of 1,100 ft. to
- AP 3 thence southwesterly, approximately 1,400 ft. to

- AP 4 at intersection of the line between said sec. 33 and sec. 32 with the crest of a ridge line; thence ascending along said ridge line, southwesterly, approximately 3,100 ft. to
- AP 5 at intersection with the N. and S. center line of said sec. 32; thence on said center line, South, approximately 1,500 ft. to
- AP 6 (AP 594B) the 1/4 cor. of said sec. 32 and sec. 5, T. 2 N., R. 10 E., identical with AP 594B of the Exterior Legal Boundary Description; **T. 02 N., R. 10 E.** thence on the line between said secs., on said Exterior Boundary, West, approximately 2,640 ft. to
- AP 7 (AP 595) the cor. of secs. 5 and 6, T. 02 N., R. 10 E., and secs. 31 and 32, T. 03 N., R. 10 E.; thence on the line between said secs. 5 and 6, as shown on Survey of Columbia Gorge National Scenic Area Boundary, C.S. 99099, records of Hood River County, Oregon, S. 01°39'55" W. a distance of 1,334.12 ft. to
- AP 8 (AP 596) the N1/16 cor. between said secs., a 5/8-in. iron rod with plastic cap inscribed "County Surveyor", as shown on said survey; thence on the E. and W. center line of the NE1/4 of said sec. 6, N. 89°35'34" W. a distance of 1,681.96 ft. to
- AP 9 (AP 597) at intersection with the crest of a ridge line, as shown on said survey; thence along said ridge line, southwesterly, approximately 5,055 ft. to
- AP 10 (AP 598) at intersection with the line between said sec. 6 and sec. 1, T. 02 N., R. 09 E.; thence continuing along said ridge line, as shown on said survey, southwesterly, approximately 8,160 ft. to **T. 02 N., R. 09 E.**
- AP 11 (AP 599) at intersection with line between secs. 12 and 13; thence on the line between said secs., N. 89°43' W., approximately 260 ft. to
- AP 12 (AP 600) the cor. of secs. 11, 12, 13, and 14; thence on the line between said secs. 11 and 14, S. 89°51' W., approximately 5,247 ft. to
- AP 13 (AP 601) the cor. of secs. 10, 11, 14, and 15; thence on the line between said secs. 10 and 15, S. 89°48' W., approximately 5,258 ft. to

- AP 14 (AP 602) the cor. of secs. 9, 10, 15, and 16; thence on the line between said secs. 9 and 16, S. 89°48' W., approximately 100 ft. to
- AP 15 (AP 603) at intersection with the 3,600-ft. contour line, National Geodetic Vertical Datum (NGVD) 1929; thence along said contour line, westerly, approximately 22,700 ft. to
- AP 16 (AP 604) at intersection with the line between Rs. 08 and 09 E.; thence continuing along said contour line, westerly and northerly, approximately 1,365 ft. to
- T. 02 N., R. 08 E.**
- AP 17 (AP 605) at intersection with the line between said Rs. 08 and 09 E.; thence continuing along said contour line, northerly, westerly, and southerly, approximately 10,010 ft. to
- T. 02 N., R. 09 E.**
- AP 18 (AP 606) at intersection with the line between said Rs. 08 and 09 E.; thence continuing along said contour line, westerly, approximately 16,895 ft. to
- T. 02 N., R. 08 E.**
- AP 19 (AP 607) at intersection with the crest of Mick Eaton Ridge line; thence along said ridge line the following general courses:
N. 38°49' W., approximately 695 ft. to
N. 26°53' W., approximately 510 ft. to
- AP 20 (AP 608) N. 33°00' W., approximately 730 ft. to
- AP 21 (AP 609) N. 00°51' W., approximately 345 ft. to
- AP 22 (AP 610) N. 21°30' W., approximately 405 ft. to
- AP 23 (AP 611) N. 38°17' W., approximately 910 ft. to
- AP 24 (AP 612) N. 48°16' W., approximately 460 ft. to
- AP 25 (AP 613) N. 68°10' W., approximately 395 ft. to
- AP 26 (AP 614) the summit of a minor peak;
- AP 27 (AP 615) thence descending along the crest of a ridge line, S. 87°39' W., approximately 835 ft. to a saddle in said ridge line;
- AP 28 (AP 616) thence ascending along said ridge line, N. 85°43' W., approximately 430 ft. to
- AP 29 (AP 617) the summit of a minor peak; thence descending the crest of the divide line between Falls Creek and Camp Creek along the following general courses:
S. 02°44' W., approximately 615 ft. to
S. 32°17' W., approximately 940 ft. to
- AP 30 (AP 618) S. 52°08' W., approximately 865 ft. to
- AP 31 (AP 619) S. 70°25' W., approximately 645 ft. to
- AP 32 (AP 620) S. 63°06' W., approximately 1,110 ft. to
- AP 33 (AP 621) S. 77°51' W., approximately 225 ft. to
- AP 34 (AP 622) at intersection with the center line of the Herman Creek Trail;
- AP 35 (AP 623) thence S. 85°22' W., approximately 3,475 ft. to
- AP 36 (AP 624) at intersection with the crest of a ridge line; thence ascending, S. 17°44' W. a distance of 775 ft. to
- AP 37 (AP 625) thence ascending, S. 19°51' W., approximately 835 ft. to
- AP 38 (AP 626) at intersection with the center line of the Pacific Crest National Scenic Trail; thence along said center line, southwesterly, approximately 3,890 ft. to
- AP 39 (AP 627) at intersection with the 3,600-ft. contour line, NGVD 1929; thence along said contour line, southwesterly, approximately 18,400 ft. to
- AP 40 (AP 628) at intersection with the thread of Ruckel Creek; thence continuing along said contour line, southwesterly, 1,125 ft. to
- AP 41 (AP 629) at intersection with the crest of a ridge line; thence descending along said ridge line the following general courses:
S. 72°40' W., approximately 730 ft. to
S. 70°50' W., approximately 1,440 ft. to
- AP 42 (AP 630) S. 78°32' W., approximately 1,805 ft. to
- AP 43 (AP 631) **T. 02 N., R. 07 E.**
- AP 44 (AP 632) S. 65°15' W., approximately 215 ft. to
- AP 45 (AP 633) N. 80°47' W., approximately 380 ft. to
- AP 46 (AP 634) S. 87°21' W., approximately 675 ft. to

- AP 47 (AP 635) thence leaving said ridge line, descending, S. 80°34' W. a distance of 435 ft. to
- AP 48 (AP 636) thence descending, S. 55°02' W., approximately 905 ft. to
- AP 49 (AP 637) at intersection with the 1,600-ft. contour line, NGVD 1929; thence descending, S. 33°13' W., approximately 550 ft. to
- AP 50 (AP 638) at intersection with the 1,200-ft. contour line, NGVD 1929; thence along said contour line, easterly, approximately 405 ft. to
- AP 51 (AP 639) at intersection with the thread of an unnamed ravine; thence along said thread, southwesterly, approximately 565 ft. to
- AP 52 (AP 640) at intersection with the 800-ft. contour line, NGVD 1929; thence along said contour line, southerly, approximately 13,810 ft. to
- AP 53 (AP 641) at intersection with the line between Rs. 07 and 08 E.; thence continuing along said contour line, southeasterly, approximately 1,050 ft. to
T. 02 N., R. 08 E.
- AP 54 (AP 642) at intersection with the S. line of T. 02 N., R. 08 E.; thence continuing along said contour line, southerly, approximately 1,270 ft. to
T. 02 N., R. 07 E.
- AP 55 (AP 643) at intersection with the line between Tps. 02 and 01 N., as depicted on Amended Protraction Diagram Unit 7 Index, September 23, 1994, records of BLM; thence continuing along said contour line, southerly, approximately 2,350 ft. to
- AP 56 (AP 644) from which the intersection of the thread of Eagle Creek with the center line of the 4-1/2-Mile Bridge bears northwesterly a distance of 540 ft.; thence across Eagle Creek, S. 17°08' W., approximately 200 ft. to
- AP 57 (AP 645) at intersection with the 800-ft. contour line, NGVD 1929; thence along said contour line, northwesterly, approximately 3,050 ft. to
T. 01 N., R. 07 E.
- AP 58 (AP 646) at intersection with the line between Tps. 01 and 02 N.; thence continuing along said contour line, northwesterly, approximately 18,500 ft. to
T. 02 N., R. 07 E.
- AP 59 (AP 647) at intersection with the crest of a ridge line; thence ascending said ridge line along the following general courses; S. 66°36' W., approximately 670 ft. to S. 37°32' W., approximately 830 ft. to
- AP 60 (AP 648) S. 30°52' W., approximately 635 ft. to
- AP 61 (AP 649) S. 56°24' W., approximately 200 ft. to
- AP 62 (AP 650) S. 00°03' E., approximately 440 ft. to
- AP 63 (AP 651) S. 27°58' W., approximately 195 ft. to
- AP 64 (AP 652) S. 66°26' W., approximately 410 ft. to
- AP 65 (AP 653) S. 74°29' W., approximately 645 ft. to
- AP 66 (AP 654) S. 68°48' W., approximately 550 ft. to
- AP 67 (AP 655) at intersection with the line between Hood River County and Multnomah County, identical with the line extending "due south of the SE cor. of the northeast quarter of sec. 22," as described in O.R.S. 201.140, amended 1967;
- AP 68 (AP 656) **T. 02 N., R. 07 E., Multnomah County**
thence continuing along said ridge line, S. 70°19' W., approximately 830 ft. to
- AP 69 (AP 657) at intersection with the center line of the Tanner Butte Trail; thence along said center line, southerly, approximately 2,410 ft. to
- AP 70 (AP 658) at intersection with the crest of a ridge line; thence descending along said ridge line the following general courses:
S. 84°59' W., approximately 1,845 ft. to S. 77°37' W., approximately 1,195 ft. to
- AP 71 (AP 659) N. 75°54' W., approximately 750 ft. to
- AP 72 (AP 660)

- AP 73 (AP 661) N. 67°09' W., approximately 1,190 ft. to
- AP 74 (AP 662) at intersection with the center line of Forest Road 777;
thence on said center line, southerly, approximately 4,700 ft. to
- AP 75 (AP 663) at intersection with the line between Tps. 01 and 02 N.;
thence continuing on said center line, southerly, approximately 5,275 ft. to
- T. 01 N., R. 07 E.**
- AP 76 (AP 664) at intersection with the thread of an unnamed ravine, adjacent to the Tanner Creek Trailhead;
thence along said thread, westerly, approximately 620 ft. to
- AP 77 (AP 665) at intersection with the thread of Tanner Creek;
thence ascending on the following courses:
S. 72°47' W. a distance of 1,410 ft. to
- AP 78 (AP 666) S. 78°47' W a distance of 1,960 ft. to
- AP 79 (AP 667) S. 04°11' W. a distance of 1,150 ft. to
- AP 80 (AP 668) S. 39°18' W. a distance of 850 ft. to
- AP 81 (AP 669) the intersection of the 3,200-ft. contour line, NGVD 1929 with the center line of the Bonneville Power Administration (BPA) Wautoma - Ostrander No. 1 Transmission Line;
thence on said contour line, westerly and southerly, approximately 13,585 ft. to
- AP 82 (AP 670) at intersection with the easterly extension of the line between secs. 12 and 13, T. 01 N., R. 06 E.;
thence on said extension, N. 89°49' W., approximately 3,835 ft. to
- AP 83 (AP 671) the cor. of said secs. 12 and 13
thence on the line between said secs., N. 89°49' W., approximately 5,293 ft. to
- T. 01 N., R. 06 E.**
- AP 84 (AP 672) the cor. of secs. 11, 12, 13, and 14;
thence on the line between said secs. 13 and 14, S. 00°01' E., approximately 5,280 ft. to
- AP 85 (AP 673) the cor. of secs. 13, 14, 23, and 24;
thence on the line between said secs. 14 and 23, S. 89°56' W., approximately 2,653 ft. to
- AP 86 (AP 674) the 1/4 cor. of said secs.;
thence on the N. and S. center line of said sec. 23, S. 00°01'30" E., approximately 3,960 ft. to
- AP 87 (AP 675) the S1/16 cor. of said sec.;
thence on the E. and W. center line of the SW1/4 of said sec., S. 89°56' W., approximately 2,666 ft. to
- AP 88 (AP 676) the S1/16 cor. of secs. 22 and 23;
thence on the E. and W. center line of the SE1/4 of said sec. 22, N. 89°42'30" W., approximately 2,647 ft. to
- AP 89 (AP 677) the S1/16 cor. of said sec.;
thence on the N. and S. center line of said sec., S. 00°02'30" E., approximately 1,320 ft. to
- AP 90 (AP 678) the 1/4 cor. of secs. 22 and 27;
thence on the N. and S. center line of said sec. 27, S. 00°02'30" E., approximately 2,640 ft. to
- AP 91 (AP 679) the C1/4 cor. of said sec.;
thence S. 64°22' W., approximately 2,990 ft. to
- AP 92 (AP 680) the intersection of the line between secs. 27 and 28 with the crest of a ridge line;
thence ascending said ridge line, southwesterly, approximately 5,415 ft. to
- AP 93 (AP 681) at intersection with the center line of East Larch Mountain Road;
thence on said center line, westerly and northerly, approximately 6,355 ft. to
- AP 94 (AP 682) at intersection with the thread of an unnamed ravine (see Footnote 2);
thence along said thread, westerly, approximately 4,185 ft. to
- AP 95 (AP 683) at intersection with the N. and S. center line of sec. 30;
thence on said center line, N. 00°02'15" W., approximately 1,115 ft. to
- AP 96 (AP 684) the C1/4 cor. of said sec.;
thence on the E. and W. center line of said sec., N. 89°27' W., approximately 2,652 ft. to
- AP 97 (AP 685) the 1/4 cor. of said sec. 30, and sec. 25, T. 01 N., R. 05 E.;
thence on the line between said secs., North, approximately 2,643 ft. to
- AP 98 (AP 686) the cor. of secs. 19 and 30, T. 01 N., R. 06 E., and secs. 24 and 25, T. 01 N., R. 05 E.;
thence on the line between said secs. 19 and 24, North, approximately 2,640 ft. to
- AP 99 (AP 687) the 1/4 cor. of said secs. 19 and 24;
thence on the E. and W. center line of said sec. 24, N. 89°54'30" W., approximately 2,662 ft. to
- T. 01 N., R. 05 E.**

- AP 100 the C1/4 cor. of said sec.;
(AP 688) thence on the N. and S. center line of said sec., South, approximately 1,320 ft. to
- AP 101 the S1/16 cor. of said sec.;
(AP 689) thence on the E. and W. center line of the SW1/4 of said sec., S. 89°59'45" W., approximately 1,330 ft. to
- AP 102 the SW1/16 cor. of said sec.;
(AP 690) thence on the N. and S. center line of the SW1/4 of said sec., South, approximately 1,320 ft. to
- AP 103 the W1/16 cor. of secs. 24 and 25;
(AP 691) thence on the line between said secs. S. 89°54' W., approximately 1,330 ft. to
- AP 104 the cor. of secs. 23, 24, 25, and 26;
(AP 692) thence on the line between said secs. 25 and 26, South, approximately 5,280 ft. to
- AP 105 the cor. of secs. 25, 26, 35, and 36;
(AP 693) thence on the line between said secs. 26 and 35, West, approximately 2,644 ft. to
- AP 106 the 1/4 cor. of said secs.;
(AP 694) thence on the N. and S. center line of said sec. 35, South, approximately 2,640 ft. to
- AP 107 the C1/4 cor. of said sec.;
(AP 695) thence on the E. and W. center line of said sec., West, approximately 2,642 ft. to
- AP 108 the 1/4 cor. of secs. 34 and 35;
(AP 696) thence on the E. and W. center line of said sec. 34, S. 89°50'30" W., approximately 5,302 ft. to
- AP 109 the 1/4 cor. of secs. 33 and 34;
(AP 697) thence on the E. and W. center line of said sec. 33, West, approximately 5,260 ft. to
- AP 110 the 1/4 cor. of secs. 32 and 33;
(AP 698) thence on the E. and W. center line of said sec. 32, S. 89°38'30" W., approximately 5,294 ft. to
- AP 111 the 1/4 cor. of secs. 31 and 32;
(AP 699A) thence on the E. and W. center line of said sec. 31, S. 89°55'30" W., approximately 450 ft. to
- AP 112 at intersection with the center line of Larch Mountain Road;
(AP 699B) thence leaving the aforementioned Exterior Boundary, on said center line, northerly and westerly, approximately 2,325 ft. to
- AP 113 at intersection with the N. and S. center line of the NE1/4 cor. of said sec.;
thence on said center line, North, approximately 1,400 ft. to
- AP 114 at intersection with the line between sec. 30 and said sec. 31;
thence on said line, N. 89°51' W., approximately 3,977 ft. to
- AP 115 the cor. of said secs. 30 and 31, and secs. 25 and 36, T. 1 N., R. 4 E.;
T. 01 N., R. 04 E.
thence on the line between said secs. 25 and 36, West, approximately 100 ft. to
- AP 116 at intersection with the center line of the Historic Columbia River Highway;
thence on said center line, westerly, approximately 4,125 ft. to
- AP 117 at intersection with the center line of the Menucha Retreat Center private access road;
thence on said center line, N. 03°57' E., approximately 895 ft. to
- AP 118 at intersection with the southerly line of that tract of land described in Book 1415 Page 135, records of Multnomah County, Oregon;
thence on said line and westerly extension thereof, westerly, approximately 2,450 ft. to
- AP 119 at intersection with the southerly extension of the westerly line of Parcel 3, Partition Plat 1997-208, records of Multnomah County, Oregon;
thence on said extension and westerly line, N. 04°53'00" E., approximately 1,270 ft. to
- AP 120 the westerly NW cor. of said Parcel;
thence continuing on said Parcel line, N. 89°28'08" E. a distance of 7.6 ft. to
- AP 121 the interior cor. of said Parcel;
thence continuing on said Parcel line and northerly extension thereof, N. 04°53'00" E., approximately 1,100 ft. to
- AP 122 at intersection with the left bank of the Columbia River at Mean Low Water (MLW), the waterward limit of the sand or mud beach or foreshore as depicted in the United States Geological Survey, Washougal, Wash. - Oreg. map, dated 1961, Photorevised 1970 and 1975;
thence along said left bank at MLW, easterly, approximately 6,050 ft. to
- AP 123 at intersection with the line of 122°15' W. longitude as depicted on said map;
thence on said line of longitude, South, approximately 150 ft. to

- AP 124 at intersection with the left bank of the Columbia River at Ordinary High Water Mark (OHWM) as depicted in the United States Geological Survey, Bridal Veil, Ore. - Wash. map, Provisional Edition 1986; thence along said left bank at OHWM, easterly, approximately 22,000 ft. to
T. 01 N., R. 05 E.
- AP 125 at intersection with the northwesterly extension of the line between Lots 6 and 7, First Addition to Bridal Veil, records of Multnomah County, Oregon; thence along said extension and lot line, S. 36°40'12" E., approximately 580 ft. to
- AP 126 at intersection with the northwesterly right-of-way line of the Historic Columbia River Highway; thence on said right-of-way line, northeasterly, approximately 1,055 ft. to
- AP 127 at intersection with the northwesterly extension of the southwesterly line of that tract of land described in Document 2015-030618, records of Multnomah County, Oregon; thence on said extension and southwesterly line, S. 41°29'08" E., approximately 210 ft. to
- AP 128 the southwesterly cor. of said tract, an interior cor. of Shepperd's Dell State Park, as shown on C.S. 48720, records of Multnomah County, Oregon; thence on the northwesterly line of said park the following courses:
N. 48°30'52" E. a distance of 306.74 ft. to,
- AP 129 S. 41°52'28" E. a distance of 84.85 ft. to
- AP 130 N. 49°08'13" E. a distance of 99.96 ft. to
- AP 131 S. 44°44'40" E. a distance of 153.82 ft. to
- AP 132 N. 55°58'59" E. a distance of 121.03 ft. to
- AP 133 N. 46°53'03" E. a distance of 64.52 ft. to
- AP 134 N. 57°55'56" E. a distance of 218.96 ft. to
- AP 135 S. 87°42'02" E. a distance of 53.31 ft. to
- AP 136 S. 74°47'43" E. a distance of 64.82 ft. to
- AP 137 S. 61°16'14" E. a distance of 43.46 ft. to
- AP 138 S. 64°37'08" E. a distance of 50.41 ft. to
- AP 139 at intersection with a line 20 ft. westerly from, and parallel with, the thread of Coopey Creek, when measured perpendicular thereto; thence along said line, northwesterly, approximately 610 ft. to
- AP 140 at intersection with the line between secs. 14 and 15; thence N. 00°16'29" W., approximately 1,365 ft. to
- AP 141 at intersection with the left bank of the Columbia River at OHWM; thence along said left bank at OHWM, easterly, approximately 34,560 ft. to
T. 01 N., R. 06 E.
- AP 142 from which the cor. of secs. 2 and 3, and secs. 34 and 35, T. 2 N., R. 6. E. bears northeasterly a distance of 1,280 ft.; thence leaving said left bank, S. 41°30' E., approximately 1,545 ft. to
- AP 143 at intersection with the southeasterly right-of-way line of the Columbia River Highway; thence on said right-of-way line, northeasterly, approximately 1,785 ft. to
- AP 144 from which the line between said secs. 2 and 35 bears northerly a distance of 265 ft., when measured perpendicular thereto; thence parallel with said sec. line, S. 89°02'05" E., approximately 855 ft. to
- AP 145 at intersection with the westerly line of that tract of land described in Document No. 2002-026477, and shown in Partition Plat No. 2006-11, records of Multnomah County, Oregon; thence on the westerly line thereof, S. 00°56'38" W., approximately 365 ft. to
- AP 146 the SW cor. of said tract as shown on said plat; thence on the southerly line thereof, S. 89°06'19" E. a distance of 692.18 ft. to
- AP 147 the SE cor. of said tract at intersection with the N. and S. center line of said sec. 2, as shown on said plat; thence on said center line, N. 00°43'02" E., approximately 507 ft. to
- AP 148 at intersection with the southeasterly line of that tract of land described in Book 1,013 Page 446, records of Multnomah County, Oregon; thence on said southeasterly line, northeasterly, approximately 155 ft. to
- AP 149 at intersection with the line between said secs. 2 and 35; thence on said line, easterly, approximately 2,590 ft. to

- AP 150 the cor. of secs. 1 and 2, T. 1 N., R. 6 E., and secs. 35 and 36, T. 2 N., R. 6 E.; thence on the line between said secs. 1 and 36, easterly, approximately 5,325 ft. to
- AP 151 the cor. of said sec. 36, and sec. 31, T. 2 N., R. 7 E.; thence on the line between said secs., northerly, approximately 3,820 ft. to
- AP 152 at intersection with the left bank of the Columbia River at OHWM;
T. 02 N., R. 07 E.
thence along said left bank at OHWM, easterly, approximately 12,200 ft. to
- AP 153 {AP 3B} at intersection with a line extending West from the center line of the Union Pacific Railroad at Engineers Station 2091+64.3 Point of Spiral, identical with AP 3B of the North Bonneville Urban Area (UA) Legal Boundary Description; thence on said UA Boundary, East, approximately 165 ft. to
- AP 154 {AP 3A} at intersection with said center line; thence on said center line, northeasterly, approximately 2,224 ft. to
- AP 155 {AP 2} at intersection with the line between secs. 21 and 28; thence on said line, N. 89°20' E., approximately 2,910 ft. to
- AP 156 {AP 1} the cor. of secs. 21, 22, 27, and 28; thence on the line between said secs. 21 and 22, N. 0°16' W., approximately 1,340 ft. to
- AP 157 {AP 55} at intersection with a line 40 ft. southerly, when measured perpendicular thereto, from the westbound center line of Interstate 84; thence parallel, and 40 ft. southerly from, said center line, N. 69°06' E., approximately 1,020 ft. to
- AP 158 {AP 54} at intersection with the right-of-way line of Interstate 84 where the east and westbound lanes separate on the westerly side of Tooth Rock Tunnel; thence N. 47°38' E., approximately 634 ft. to
- AP 159 {AP 53} at intersection with the left bank of the Columbia River at BNPE thence along said left bank at BNPE, leaving said North Bonneville UAB, northeasterly, approximately 12,350 ft. to
T. 02 N., R. 07 E., Hood River County
- AP 160 {AP 26} at intersection with the E. and W. center line of the NW1/4 of sec. 13, identical with the Cascade Locks UA Boundary and Cascade Locks Urban Growth Boundary (UGB); thence on said center line, identical with said boundaries, N. 89°00' E., approximately 1,230 ft. to
- AP 161 {AP 25} the NW1/16 cor. of said sec.; thence on the N. and S. center line of said NW1/4, S. 00°10'32" E. a distance of 654.21 ft. to
- AP 162 {AP 24} the northwesterly cor. of that tract of land described in Deed Book 72 Page 26, records of Hood River County, Oregon, as shown in C.S. 2006082, records of Hood River County, Oregon; thence leaving said UGB, on the E. and W. center line of the SE1/4 of said NW1/4, N. 89°36'59" E. a distance of 655.65 ft. to
- AP 163 {AP 23} the northeasterly cor. of said tract, as shown in said C.S.; thence on the N. and S. center line of said SE1/4 NW1/4, identical with the westerly line of that tract of land described in Warranty Deed 701515, records of Hood River County, Oregon, N. 00°08'37" W. a distance of 455.05 ft. to
- AP 164 {AP 22} the northwesterly cor. of said tract; thence on the northerly line thereof, N. 89°32' 14" E. a distance of 435.55 ft. to
- AP 165 {AP 21} the southwesterly cor. of that tract of land described in Warranty Deed 661324, as shown in C.S. No. 2006082, records of Hood River County, Oregon; thence on the westerly line thereof, N. 00°08'18" W. a distance of 199.98 ft. to
- AP 166 {AP 20} the northwesterly cor. of said tract, as shown in said C.S.; thence on the northerly line thereof, N. 89°32'14" E. a distance of 220.26 ft. to
- AP 167 {AP 19} the N1/16 cor. of said sec., as shown in said C.S., and rejoining said UGB; thence on the N. and S. center line of said sec. and said boundaries, N. 00°08'26" W. a distance of 1,313.2 ft. to
- AP 168 {AP 18} the 1/4 cor. of sec. 12 and said sec. 13, as shown in C.S. No. 96015, records of Hood River County, Oregon; thence on the line between said secs., N. 88°22' E. a distance of 2,618.7 ft. to

- AP 169 {AP 17} the cor. of said secs. 12 and 13, and secs. 7 and 18, T. 02 N., R. 08 E.;
- T. 02 N., R. 08 E.**
- thence on the line between said secs. 7 and 12, N. 01°06' 04" W. a distance of 1,320.60 ft. to
- AP 170 {AP 16} the S1/16 cor. of said secs.;
- thence on the line between two unnumbered lots (NW1/4 SW1/4 and SW1/4 SW1/4) of said sec. 7, N. 88°11' E., approximately 1,320 ft. to
- AP 171 {AP 15} the cor. of said unnumbered lots and lots 1 and 2 of said sec. 7;
- thence on the line between said unnumbered lot (NW1/4 SW1/4) and said lot 1, N. 00°12' E., approximately 1,320 ft. to
- AP 172 {AP 14} the northerly cor. of said lots;
- thence on the E. and W. center line of said sec., N. 89°01' E., approximately 2,640 ft. to
- AP 173 {AP 13} the center E1/16 cor. of said sec.;
- thence on the N. and S. center line of the NE1/4 of said sec., N. 00°27' W., approximately 1,320 ft. to
- AP 174 {AP 12} the NE1/16 cor. of said sec.;
- thence on the E. and W. center line of said NE1/4, leaving said UGB, S. 89°40' E., approximately 1,320 ft. to
- AP 175 {AP 11} the N1/16 cor. of said sec. 7, and sec. 8;
- thence on the line between said secs., northerly, approximately 20 ft. to
- AP 176 {AP 10} at intersection with the southeasterly line of the BPA Bonneville-The Dalles Transmission Line easement;
- thence on said southeasterly line, N. 57°09' E., approximately 2,483 ft. to
- AP 177 {AP 9} at intersection with the line between secs. 5 and 8, rejoining said UGB;
- thence on said line and said boundaries, N. 89°36'59" E., approximately 510 ft. to
- AP 178 {AP 8} the 1/4 cor. of said secs., as shown in C.S. No. 93070, records of Hood River County, Oregon;
- thence on the N. and S. center line of said sec. 5, leaving said UGB, N. 00°00'48" E. a distance of 329.46 ft. to
- AP 179 {AP 7} the NW cor. of the S1/2 SW1/4 SW1/4 SE1/4 of said sec., established in said C.S.;
- thence on the E. and W. center line of the SW1/4 SW1/4 SE1/4 of said sec., N. 89°36'14" E. a distance of 654.19 ft. to
- AP 180 {AP 6} the NE cor. of said S1/2 SW1/4 SW1/4 SE1/4, as shown in said C.S.;
- thence on the N. and S. center line of the SW1/4 SE1/4 of said sec., S. 00°01'21" E. a distance of 329.21 ft. to
- ft
- AP 181 {AP 5} the SE cor. of the W1/2 SW1/4 SE1/4 of said sec., as shown in said C.S., rejoining said UGB;
- thence on the line between said secs. 5 and 8, easterly, approximately 654.4 ft. to
- AP 182 {AP 4} the E1/16 cor. of said secs.;
- thence on the N. and S. center line of the SE1/4 of said sec. 5, leaving said UGB, N. 00°03'30" W., approximately 1,080 ft. to
- AP 183 {AP 3} at intersection with the southerly line of the BPA Bonneville-The Dalles Transmission Line easement;
- thence on said easement line, N. 58°40' E., approximately 1,530 ft. to
- AP 184 {AP 2} at intersection with the line between secs. 4 and 5,
- thence on said line, rejoining said UGB, N. 01°25'36" E., approximately 3,315 ft. to
- AP 185 {AP 1B} at intersection with the northerly extremity of Government Rock Road at BNPE, identical with the left bank of the Columbia River at BNPE, from which the cor. of said secs. 4 and 5, and secs. 32 and 33, T. 03 N., R. 08 E., as shown in C.S. 99018, records of Hood River County, Oregon, bears N. 01°25'36" E., approximately 27.03 ft.;
- thence leaving aforementioned UA Boundary and UGB, along said left bank at BNPE, easterly, 73,550 ft. to
- T. 03 N., R. 08 E.**
- T. 03 N., R. 09 E.**
- T. 03 N., R. 10 E.**
- AP 1 the **Point of Beginning**
- the Area being 48,025 Acres, more or less.

SOURCE MAPS AND DOCUMENTS:

1. The following maps referenced in the Columbia River Gorge National Scenic Area Act:

a. Boundary Map, Columbia River Gorge National Scenic Area, NSA-001 sheets 1 and 2 (September 1986);

b. Special Management Areas, Columbia River Gorge National Scenic Area, SMA-002 sheets 1 through 17 (September 1986);

c. Urban Areas, Columbia River Gorge National Scenic Area, UA-004 sheets 1 through 11 (September 1986).

These maps were reviewed for consistency with the USFS Maps (see 2. below) for this description.

2. In January 1987, the United States Forest Service developed maps, sheets 1 through 29 (USFS Maps) based upon the Congressional Maps. The Commission and U.S. Forest Service used the USFS Maps as the primary National Scenic Area maps until adopting this legal description. The USFS Maps are generally the basis for this description.

- a. USFS Map 2
- b. USFS Map 3
- c. USFS Map 4
- d. USFS Map 6
- e. USFS Map 7
- f. USFS Map 8
- g. USFS Map 10
- h. USFS Map 12

3. Reference documents, including relevant recorded surveys, plats, deeds, and decisions are, with this reference, made a part of this description. Copies of all source maps and reference documents are available at the Columbia River Gorge Commission and U.S. Forest Service, National Scenic Area offices.

FOOTNOTES:

1. This description intends to use the Bonneville Normal Pool Elevation in place at the time of the adoption of the National Scenic Area Act. At that time the Bonneville Normal Pool Elevation was 72 ft. Changes to this elevation through dam operations or otherwise do not change the location of the urban area boundary.

2. AP 94 to AP 97 were located with deference given to the 1986 Congressional Maps. The 1986 maps clearly depict the Exterior Boundary of the NSA following Larch Mountain Road to an unnamed ravine, downstream along the ravine and then subdivision of sec. lines. The 1987 USFS Map (Sheet 4) does not clearly depict these locations and appears to be random in its location of the NSA line. Utilizing the 1986 map location is consistent with line location throughout the boundary.

Columbia River Gorge National Scenic Area
Gates of the Columbia River, Sandy River Delta Special
Management Area
Legal Boundary Description

All corner points and lines of the Public Land Survey System (PLSS) referenced in this description are according to the latest official survey notes and plats, and state authority survey plats in effect as of December 1, 2016, unless otherwise specified. Islands of the Columbia River, defined as Special Management Areas in the Act creating the Columbia River Gorge National Scenic Area (CRGNSA), are not described in this description. This description notes where it is identical with and where it leaves the Exterior Boundary of the CRGNSA. Exterior Boundary Angle Points are shown in parentheses (AP). The hierarchy of the "rules of construction" is observed herein - natural monuments control over artificial monuments, which control over bearings and distances, which control over coordinates. This description will be junior to all senior rights when overlaps may occur. This description shall be considered, along with the final legislation map, as whole and complete per the original legislation creating this scenic area and together they both shall govern all boundaries of this area, and guide future "on-the-ground"

surveys. Where the boundary is described as a topographic feature, the actual location of the feature will control the approximate course identifying that part of said boundary. Courses for parallel offsets are measured from the apparent road or trail center lines of the traveled way to determine the boundary and are intended to be used to locate the boundary in the future in the event that the road migrates or becomes indistinguishable; the courses follow the general configuration of the feature and not every turn or bend. The latitudes and longitudes reported for certain corner points and angle points in this description are North American Datum of 1983 (NAD83) (2011) (Epoch2011.00) values where survey-grade Global Positioning System (GPS) data was available, otherwise were determined by Geographical Information Systems (GIS) mapping data with a relative accuracy of ± 40 ft. horizontally, unless otherwise noted.

This description encompasses land that is identified as Gates of the Columbia River, Sandy River Delta Special Management Area, established in the COLUMBIA RIVER GORGE NATIONAL SCENIC AREA ACT OF 1986, Pub. L. No. 99-663, § 4(b), 100 Stat. 4274, 4276 (1986), located in portions of:

- Township 1 North, Range 3 East, and
- Township 1 North, Range 4 East, of the Willamette Meridian, in Multnomah County, Oregon.

T. 01 N., R. 04 E.

- AP 1 **Beginning** at the point of intersection of the left bank of the Columbia River at Mean Low Water (MLW), the waterward limit of the sand or mud beach or foreshore as depicted in the United States Geological Survey, Camas, Wash. - Oreg. and Washougal, Wash. - Oreg., 1961, photorevised 1970 and 1975, with the line between lots 1 and 2 of sec. 27; Latitude 45°32'31.7" N. Longitude 122°17'45.4" W. thence on said line, South, approximately 1,200 ft. to
- AP 2 the north line of the tract of land described in Instrument No. 2005-218219, records of Multnomah County, Oregon, and the easterly extension thereof; thence on said line, N. 88°39'40" E., approximately 1,317 ft. to
- AP 3 at intersection with the line between secs. 26 and 27; thence on said line, South, approximately 800 ft. to
- AP 4 at intersection with the center line of Chamberlain Road; thence on said center line, westerly and southerly, approximately 9,340 ft. to

- AP 5 at intersection with the line between secs. 28 and 33;
thence on said line, West, approximately 1,600 ft. to
- AP 6 the cor. of secs. 28, 29, 32, and 33;
thence on the line between said secs. 29 and 32, West, approximately 5,287 ft. to
- AP 7 the cor. of secs. 29, 30, 31, and 32;
thence on the line between said secs. 29 and 30, North, approximately 1,320 ft. to
- AP 8 the S1/16 cor. between said secs.;
thence on the E. and W. center line of the S1/2 of said sec. 30, N. 89°57'15" W., approximately, 5,283 ft. to
- AP 9 the S1/16 cor. between said sec. 30 and sec. 25, T. 01 N., R. 03 E.;

T. 01 N., R. 03 E.

thence on the E. and W. center line of the SE1/4 of said sec. 25, West, approximately 850 ft. to

- AP 10 at intersection with the left bank of the
(AP 716) Sandy River at Ordinary High Water Mark (OHWM), identical with AP 716 of the Exterior Legal Boundary Description; thence along said left bank at OHWM and the northerly extension thereof, along said Exterior Boundary, northerly, approximately 17,510 ft. to
- AP 11 at intersection with the left bank of the
(AP 717) Columbia River at MLW;
thence along said left bank at MLW, easterly, approximately 1,000 ft. to
- AP 12 at intersection with a line perpendicular to
(AP 718) the Oregon-Washington State Line at River Mile 0 of the Sandy River;
thence leaving said Exterior Boundary, continuing on said left bank at intersection with MLW, easterly, approximately 34,000 ft. to
- AP 1 **the Point of Beginning**

the Area being 4,083 Acres, more or less.

SOURCE MAPS AND DOCUMENTS:

1. The following maps referenced in the Columbia River Gorge National Scenic Area Act:

- a. Boundary Map, Columbia River Gorge National Scenic Area, NSA-001 sheets 1 and 2 (September 1986);
- b. Special Management Areas, Columbia River Gorge National Scenic Area, SMA-002 sheets 1 through 17 (September 1986);
- c. Urban Areas, Columbia River Gorge National Scenic Area, UA-004 sheets 1 through 11 (September 1986).

These maps were reviewed for consistency with the USFS Maps (see 2. below) for this description.

2. In January 1987, the United States Forest Service developed maps, sheets 1 through 29 (USFS Maps) based upon the Congressional Maps. The Commission and U.S. Forest Service used the USFS Maps as the primary National Scenic Area maps until adopting this legal description. The USFS Maps are generally the basis for this description.

- a. USFS Map 1
- b. USFS Map 2

3. Reference documents, including relevant recorded surveys, plats, deeds, and decisions are, with this reference, made a part of this description. Copies of all source maps and reference documents are available at the Columbia River Gorge Commission and U.S. Forest Service, National Scenic Area offices.

Columbia River Gorge National Scenic Area
Rowena Special Management Area Legal Boundary Description

All corner points and lines of the Public Land Survey System (PLSS) referenced in this description are according to the latest official survey notes and plats, and state authority survey plats in effect as of December 1, 2016, unless otherwise specified. Islands of the Columbia River, defined as Special Management Areas in the Act creating the Columbia River Gorge National Scenic Area (CRGNSA), are not described in this description. This description notes where it is identical with and where it leaves the Exterior Boundary of the CRGNSA. Exterior Boundary Angle Points are shown in parentheses (AP). The hierarchy of the "rules of construction" is observed herein - natural monuments control over artificial monuments, which control over bearings and distances, which control over coordinates. This description will be junior to all senior rights when overlaps may occur. This description shall be considered, along with the final legislation map, as whole and complete per the original legislation creating this scenic area and together they both shall govern all boundaries of this area, and guide future "on-the-ground" surveys. Where the boundary is described as a topographic feature, the actual location of the feature will control the approximate course identifying that part of said boundary. Courses for parallel offsets are measured from the apparent road or trail center lines of the traveled way to determine the boundary and are intended to be used to locate the boundary in the future in the event that the road migrates or becomes indistinguishable; the courses follow the general configuration of the feature and not every turn or bend. The latitudes and longitudes reported for certain corner points and angle points in this description are North American Datum of 1983 (NAD83) (2011) (Epoch2011.00) values where survey-grade Global Positioning System (GPS) data was available, otherwise were determined by Geographical Information Systems (GIS) mapping data with a relative accuracy of ± 40 ft. horizontally, unless otherwise noted.

This description encompasses land that is identified as The Rowena Special Management Area, established in the COLUMBIA RIVER GORGE NATIONAL SCENIC AREA ACT OF 1986, Pub. L. No. 99-663, § 4(b), 100 Stat. 4274, 4276 (1986), located in portions of:

- Township 2 North, Range 12 East,
Township 2 North, Range 13 East, and

Township 3 North, Range 12 East, of the Willamette Meridian, in Wasco County, Oregon.

T. 02 N., R. 12 E.

- AP 1 (AP 489) **Beginning** at the 1/4 cor. of secs. 13 and 14, identical with AP 489 of the Exterior Legal Boundary Description; Latitude 45°39'24.3" N. Longitude 121°16'25.1" W. thence on the line between said secs., on said Exterior Boundary, North, approximately 2,640 ft. to
- AP 2 (AP 490) the cor. of secs. 11, 12, 13, and 14; thence on the line between said secs. 11 and 14, N. 89°46' W., approximately 5,244 ft. to
- AP 3 (AP 491) the cor. of secs. 10, 11, 14, and 15; thence on the line between said secs. 10 and 15, N 89°30' W., approximately 5,264 ft. to
- AP 4 (AP 492) the cor. of secs. 9, 10, 15, and 16; thence leaving said Exterior Boundary, on the line between said secs. 9 and 10, North, approximately 5,280 ft. to
- AP 5 the cor. of secs. 3, 4, 9, and 10; thence on the line between said secs. 4 and 9, West, approximately 5,280 ft. to
- AP 6 the cor. of secs. 4, 5, 8, and 9; thence on the line between said secs. 5 and 8, West, approximately 3,960 ft. to
- AP 7 the W1/16 cor. between said secs.; thence on the N. and S. center line of the SW1/4 of said sec. 5, North, approximately 2,640 ft. to
- AP 8 the W1/16 cor. of said sec.; thence on the E. and W. center line of said sec., West, approximately 1,320 ft. to
- AP 9 the 1/4 cor. of secs. 5 and sec. 6; thence on the line between said secs., North, approximately 2,640 ft. to
- AP 10 the cor. of said secs. 5 and 6 and secs. 31 and 32, T. 3 N., R. 12 E.; thence on the line between said secs. 6 and 31, West, approximately 2,555 ft. to
- AP 11 at intersection with the east line of the Richard Marshal Donation Land Claim (DLC) No. 39; thence on said DLC line and northerly extension thereof, North, approximately 2,645 ft. to

T. 03 N., R. 12 E.,

- AP 12 at intersection with the left bank of the Columbia River at Bonneville Normal Pool Elevation 72 ft., National Geodetic Vertical Datum of 1929 (NGVD 1929) (BNPE) (See Footnote 1); thence along said left bank at BNPE, and southeasterly extension thereof, crossing the mouth of Salisbury Slough, easterly, approximately 26,000 ft. to
- T. 02 N., R. 12 E.,**
- AP 13 at intersection with the line between Lots 9 and 10, Map of Rowena, Slide No. A-005, records of Wasco County, Oregon; thence on the line between said lots and continuing on the line between lots 5, 6, 7, and 8; and lots 11, 12, and 13; South, approximately, 1,730 ft. to
- AP 14 at intersection with the southerly right-of-way line of Interstate 84; thence on said right-of-way line, northwesterly, approximately 2,130 ft. to
- AP 15 at intersection with the N. and S. center line of the NW1/4 of sec. 11; thence on said line, South, approximately 1,265 ft. to
- AP 16 the NW1/16 cor. of said sec.; thence on the E. and W. center line of said NW1/4, East, approximately 470 ft. to
- AP 17 at intersection with the west line of the George R. Snipes DLC, No. 37; thence on said west line, South, approximately 195 ft. to
- AP 18 the SW cor. of said DLC, identical with the SW cor. of Lot 6, said Map of Rowena; thence on the south line of said DLC, identical with the south line of said Lot, East, approximately 1,320 ft. to
- AP 19 the SE cor. of said Lot 6; thence on the east line thereof, N. 0°35'08" E., approximately 130 ft. to
- AP 20 the SW cor. of that tract of land described in Statutory Warranty Deed 2013-000006, records of Wasco County; thence on the south line of said tract and easterly extension thereof, as shown on C.S. Book 7, Page 47, records of Wasco County, Oregon, S. 89°31'37" E. a distance of 834.65 ft. to

- AP 21 at intersection with the line between Lots 13 and 14, said Map of Rowena, identical with the N. and S. center line of the NE1/4 of sec. 11;
thence on said line, S. 00°35'08" W., approximately 70 ft. to
- AP 22 the SW cor. of said Lot 14;
thence on the southerly line and southeasterly extension thereof, S. 69°50'17" E. a distance of 1,145.87 ft. to
- AP 23 at intersection with the westerly line of Lot 25, said Map of Rowena;
thence on said westerly line, S. 20°09'43" W. a distance of 99.95 ft. to
- AP 24 the SW cor. of said Lot 25;
thence on the southerly line thereof, S. 66°45'14" E. a distance of 289.53 ft. to
- AP 25 at intersection with the line between secs. 11 and 12;
thence on said line, South, a distance of 582.38 ft. to
- AP 26 the 1/4 cor. of said secs.;
thence on the south line of that tract of land described in Deed Book 134 Page 560, records of Wasco County, Oregon, East, approximately 660 ft. to
- AP 27 the westerly NW cor. of Parcel 3, Partition Plat 92-0031, records of Wasco County, Oregon,
thence South, approximately 900 ft. to
- AP 28 the SW cor. of said Parcel 3;
thence on the south line thereof, East, approximately 604.12 ft. to
- AP 29 the SE cor. of said Parcel 3, identical with the west line of that tract of land described in Statutory Warranty Deed 2015-003649, records of Wasco County, Oregon;
thence on said west line, South, approximately 445 ft. to
- AP 30 the SW cor. of said tract;
thence S. 72°00'00" E. a distance of 479.84 ft. to
- AP 31 an interior cor. in the west line of Adjusted Parcel 2, Property Line Adjustment Plat 2013-0003, records of Wasco County, Oregon;
thence on said west line, South, a distance of 110.10 ft. to
- AP 32 the SW cor. of said Parcel 2;
thence on the south line of said Parcel 2 and easterly extension thereof, S. 89°52'13" E., approximately 2,870 ft. to
- AP 33 at intersection with the line between Lots 73 and 74, said Map of Rowena, from which the South cor. of said Lots bears South 1,035.54 ft.;
thence on said line, North, approximately 86 ft. to
- AP 34 at intersection with the westerly extension of the south line of the Josiah Marsh DLC No. 42;
thence on said westerly extension, East, approximately of 660 ft. to
- AP 35 the westerly SW cor. of said DLC;
T. 02 N., R. 13 E.,
thence on the south line thereof, East, approximately 3,960 ft. to
- AP 36 at intersection with the line between Lots 60 and 63;
thence on said line and the line between Lots 61 and 62, said Map of Rowena, North, approximately 830 ft. to
- AP 37 at intersection with the left bank of the Columbia River at BNPE;
thence along said left bank at BNPE, easterly, approximately 3,950 ft. to
- AP 38 at intersection with the east line of the aforementioned Marsh DLC;
thence South, approximately 800 ft. to
- AP 39 the SE cor. of said DLC;
thence S. 24°50' W. a distance of 1,805 ft. to
- AP 40 thence S. 05°03' E., approximately 955 ft. to
- AP 41 at intersection with the E. and W. center line of sec. 17;
thence on said center line, West, approximately 1,565 ft. to
- AP 42 the 1/4 cor. of sec. 17 and sec. 18;
thence on the E. and W. center line of said sec. 18, West, approximately 5,280 ft. to
- AP 43 the 1/4 cor. of said sec. 18 and sec. 13, T. 02 N., R. 12 E.;
thence on the E. and W. center line of said sec. 13, West, approximately 4,205 ft. to
T. 02 N., R. 12 E.,
at intersection with the thread of an unnamed ravine, identical with AP 488 of the Exterior Legal Boundary Description;
thence continuing on said E. and W. center line, on said Exterior Boundary, West, approximately 1,075 ft. to
the Point of Beginning
- AP 44 (AP 488)
- AP 1 (AP 489)

also including that portion of Lots 41, 43, 45, 48, 49, and Lots 52, 53, 56, 57, 58, and 61, T. 02 N., R. 13 E., said Map of Rowena, lying northerly of the northerly right-of-way line of the Union Pacific Railroad and above BNPE on the left bank of the Columbia River.

the Area being 4,848 Acres, more or less.

SOURCE MAPS AND DOCUMENTS:

1. The following maps referenced in the Columbia River Gorge National Scenic Area Act:

- a. Boundary Map, Columbia River Gorge National Scenic Area, NSA-001 sheets 1 and 2 (September 1986);
- b. Special Management Areas, Columbia River Gorge National Scenic Area, SMA-002 sheets 1 through 17 (September 1986);
- c. Urban Areas, Columbia River Gorge National Scenic Area, UA-004 sheets 1 through 11 (September 1986).

These maps were reviewed for consistency with the USFS Maps (see 2. below) for this description.

2. In January 1987, the United States Forest Service developed maps, sheets 1 through 29 (USFS Maps) based upon the Congressional Maps. The Commission and U.S. Forest Service used the USFS Maps as the primary National Scenic Area maps until adopting this legal description. The USFS Maps are generally the basis for this description.

- a. USFS Map 18
- b. USFS Map 21

3. Reference documents, including relevant recorded surveys, plats, deeds, and decisions are, with this reference, made a part of this description. Copies of all source maps and reference documents are available at the Columbia River Gorge Commission and U.S. Forest Service, National Scenic Area offices.

FOOTNOTE:

1. This description intends to use the Bonneville Normal Pool Elevation in place at the time of the adoption of the National Scenic Area Act. At that time the Bonneville Normal Pool Elevation was 72 ft. Changes to this elevation through dam operations or otherwise do not change the location of the urban area boundary.

Columbia River Gorge National Scenic Area
Wind Mountain Special Management Area Legal Boundary
Description

All corner points and lines of the Public Land Survey System (PLSS) referenced in this description are according to the latest official survey notes and plats, and state authority survey plats in effect as of December 1, 2016, unless otherwise specified. Islands of the Columbia River, defined as Special Management Areas in the Act creating the Columbia River Gorge National Scenic Area (CRGNSA), are not described in this description. This description notes where it is identical with and where it leaves the Exterior Boundary and Urban Area (UA) boundaries of the CRGNSA. Exterior Boundary Angle Points are shown in parentheses (AP) and Urban Area boundary Angle Points are shown in braces

{AP}. The hierarchy of the "rules of construction" is observed herein - natural monuments control over artificial monuments, which control over bearings and distances, which control over coordinates. This description will be junior to all senior rights when overlaps may occur. This description shall be considered, along with the final legislation map, as whole and complete per the original legislation creating this scenic area and together they both shall govern all boundaries of this area, and guide future "on-the-ground" surveys. Where the boundary is described as a topographic feature, the actual location of the feature will control the approximate course identifying that part of said boundary. Courses for parallel offsets are measured from the apparent road or trail center lines of the traveled way to determine the boundary and are intended to be used to locate the boundary in the future in the event that the road migrates or becomes indistinguishable; the courses follow the general configuration of the feature and not every turn or bend. The latitudes and longitudes reported for certain corner points and angle points in this description are North American Datum of 1983 (NAD83) (2011) (Epoch2011.00) values where survey-grade Global Positioning System (GPS) data was available, otherwise were determined by Geographical Information Systems (GIS) mapping data with a relative accuracy of ± 40 ft. horizontally, unless otherwise noted.

This description encompasses land that is identified as

The Wind Mountain Special Management Area, established in the COLUMBIA RIVER GORGE NATIONAL SCENIC AREA ACT OF 1986, Pub. L. No. 99-663, § 4(b), 100 Stat. 4274, 4276 (1986), located in portions of:
Township 3 North, Range 8 East,
Township 3 North, Range 9 East,
Township 4 North, Range 8 East,
Township 4 North, Range 9 East, and
Township 4 North, Range 10 East, of the Willamette Meridian, in Skamania County, Washington.

T. 03 N., R. 08 E.

- AP 1 (AP 81B) and {AP 2} **Beginning** at the intersection of the line between secs. 8 and 17 with the 560-ft contour line, National Geodetic Vertical Datum (NGVD) 1929, identical with AP 81B of the Exterior Legal Boundary Description and AP 2 of the Carson Urban Area (UA) Legal Boundary Description; Latitude 45°45'17.5" N. Longitude 121°49'39.3" W. thence leaving said UA Boundary, on the line between said secs. 8 and 17, on said Exterior Boundary, S. 88°24' E., approximately 469 ft. to
- AP 2 (AP 82A) the S1/4 cor. of said sec. 8; thence continuing on the line between said secs. 8 and 17, S. 87°02' E., approximately 2,928 ft. to
- AP 3 (AP 82B) the SE cor. of said sec. 8; thence on the east line of said sec. 8, northerly, approximately 4,871 ft. to

- AP 4 (AP 83) the cor. of secs. 5 and 8; thence on the east line of said sec. 5, N. 00°14' W., approximately 600 ft. to
- AP 5 (AP 84) at intersection with the crest of a ridge line; thence ascending along said ridge line, easterly, approximately 1,700 ft. to
- AP 6 (AP 85) the summit of a minor peak; thence continuing along said ridge line, easterly, approximately 1,735 ft. to
- AP 7 (AP 86) the summit of a minor peak; thence continuing along said ridge line, easterly, approximately 1,080 ft. to
- AP 8 (AP 87) the summit of a minor peak; thence S. 42°38' E., approximately 750 ft. to
- AP 9 (AP 88) at intersection with the center line of N.F. Road 6808; thence on said center line, easterly, approximately 3,000 ft. to
- AP 10 (AP 89) at intersection with the center line of N.F. Road 016; thence ascending N. 52°45' E., approximately 830 ft. to
- AP 11 (AP 90) at intersection with the crest of a ridge line; thence descending along ridge line, easterly, approximately 1,380 ft. to
- AP 12 (AP 91) a saddle in said ridge line; thence ascending along said ridge line, easterly, 1,435 ft. to
- AP 13 (AP 92) the summit of a minor peak; thence descending along the crest of a ridge line, easterly, approximately 1,070 ft. to
- AP 14 (AP 93) a saddle in said ridge line; thence ascending along said ridge line, easterly, approximately 610 ft. to
- AP 15 (AP 94) the summit of a minor peak; thence descending along the crest of a ridge line, easterly, approximately 1,000 ft. to
- AP 16 (AP 95) a saddle in said ridge line; thence ascending along said ridge line, easterly, approximately 1,110 ft. to
- AP 17 (AP 96) the summit of a minor peak; thence descending along the crest of a ridge line, northeasterly, approximately 930 ft. to
- AP 18 (AP 97) a saddle in said ridge line; thence ascending along said ridge line, northeasterly, approximately 730 ft. to
- AP 19 (AP 98) the summit of a minor peak; thence descending along the crest of a ridge line, easterly, approximately 590 ft. to
- AP 20 (AP 99) a saddle in said ridge line; thence N. 12°24' E., approximately 740 ft. to
- AP 21 (AP 100) at intersection with the center line of an unnamed primitive road; thence N. 18°49' E., approximately 510 ft. to
- AP 22 (AP 101) at intersection with the center line of an unnamed primitive road; thence ascending N. 38°36' E., approximately 725 ft. to
- AP 23 (AP 102) at intersection with the crest of a ridge line; thence ascending along said ridge line, northeasterly, approximately 2,550 ft. to
- AP 24 (AP 103) the summit of a minor peak; thence descending along the crest of a ridge line, northeasterly, approximately 1,650 ft. to
- T. 04 N., R. 08 E.**
- AP 25 (AP 104) at intersection with N.F. Road 6808, identical with Triangle Pass; thence ascending along said ridge line, easterly, approximately 1,475 ft. to
- T. 04 N., R. 09 E.**
- AP 26 (AP 105) the summit of a minor peak; thence along the crest of a ridge line, easterly, approximately 3,090 ft. to
- AP 27 (AP 106) the summit of a minor peak; thence descend along the crest of a ridge line, southeasterly, approximately 1,375 ft. to
- AP 28 (AP 107) at intersection with the north line of sec. 6, T. 03 N., R. 09 E.; thence on the north line of said sec. 6, East, approximately 610 ft. to
- AP 29 (AP 108) the cor. of secs. 5 and 6; thence on the north line of said sec. 5, East, approximately 1,313 ft. to
- AP 30 (AP 109) the W1/6 cor. on the north line of said sec. 5; thence on the N. and S. center line of the W1/2 of said sec. 5, S. 00°01' E., approximately 5,275 ft. to
- T. 03 N., R. 09 E.**
- AP 31 (AP 110) the W1/6 cor. between secs. 5 and 8; thence on the line between said secs., West, approximately 1,320 ft. to
- AP 32 (AP 111) the cor. of secs. 5, 6, 7, and 8; thence on the line between said secs. 7 and 8, S. 00°01' E., approximately 5,280 ft. to

- AP 33 the cor. of secs. 7, 8, 17, and 18;
(AP 112) thence on the line between said secs. 8 and 17, N. 89°43' E., approximately, 775 ft. to
- AP 34 at intersection with the crest of a ridge line;
(AP 113) thence ascending along said ridge line, southeasterly, approximately 440 ft. to
- AP 35 the summit of Augspurgen Mountain;
(AP 114) thence along the crest of a ridge easterly and southeasterly, approximately 14,160 ft. to
- AP 36 the summit of Cook Hill;
(AP 115) thence descend along the crest of a ridge line, northeasterly, approximately 1,665 ft. to
- AP 37 at intersection of the center line of an
(AP 116) unnamed primitive road with the thread of an unnamed ravine to the southeast; thence leaving the aforementioned Exterior Boundary, along said thread, southeasterly, approximately 5,380 ft. to
- AP 38 at intersection with the center line of Cook -
Underwood Road;
thence along said center line, southerly, approximately 5,920 ft. to
- AP 39 at intersection with the line between secs. 27
and 34;
thence on said line, N. 88°38'53" W. a distance of 2,300 ft. to
- AP 40 thence South, approximately 1,200 ft. to
- AP 41 at intersection with the right bank of the
Columbia River at Bonneville Normal Pool
Elevation 72 ft., National Geodetic Vertical
Datum of 1929 (NGVD 1929) (BNPE) (See
Footnote 1);
thence along said right bank at BNPE, west-
erly, approximately 29,500 ft. to
- T. 03 N., R. 08 E.**
- AP 42 at intersection with the line between AP
{AP 13B} 13A and AP 14 of the Home Valley UA
Legal Boundary Description, or the south-
erly extension thereof;
thence on said line, on said UA Boundary,
N. 05° E., approximately 335 ft. to
- AP 43 the south most point of the center line of
{AP 13A} Viewpoint Road;
thence easterly, approximately 1,060 ft. to
- AP 44 at intersection of the line between the
{AP 12} NW1/4NE1/4 and lot 3, sec. 35, with the
400-ft. contour line, NGVD 1929;
thence along said contour line, northerly,
approximately 2,060 ft. to
- AP 45 at intersection with the center line of Rike
{AP 11} Road;
thence on said center line, northerly,
approximately 510 ft. to
- AP 46A at intersection with the center line of Wind
{AP 10} Mt. Road;
thence along said center line, northeasterly,
approximately 510 ft. to
- AP 46B at intersection with the NW cor. of that tract
{AP 9} of land described in Doc. No. 2015-160037,
records of Skamania Co., WA;
thence leaving said UA Boundary, continu-
ing on said center line, northerly, approxi-
mately 1,350 ft. to
- AP 47 at intersection with the center lines of Home
Valley Cut-off Road and an unnamed pri-
vate roadway;
thence on the center line of said unnamed
roadway, northerly, approximately 180 ft. to
- AP 48 at intersection with the N. and S center line
of sec. 26;
thence on said line, northerly, approxi-
mately 2,600 ft. to
- AP 49 the 1/4 cor. of sec. 23 and said sec. 26;
thence on the N. and S. center line of said
sec. 23, northerly, a distance of 4,500 ft. to
- AP 50 thence West, approximately 2,000 ft. to
- AP 51 at intersection with the center line of the
natural gas pipeline easement;
thence along said center line, southwesterly,
approximately 7,980 ft. to
- AP 52 at intersection with the right bank of the
{AP 7} Wind River at Ordinary High Water Mark
(OHWM), identical with AP 7 of the Carson
UA Boundary;
thence along said right bank at OHWM,
along said UA Boundary, northerly, approx-
imately 2,330 ft. to
- AP 53 at intersection with the E. and W. center line
{AP 6} of sec. 21;
thence on said center line, westerly, approx-
imately 545 ft. to
- AP 54 at intersection with the 400-ft. contour line,
{AP 5} NGVD 1929;
thence along said contour, northwesterly,
approximately 9,815 ft. to
- AP 55 at intersection with the crest of a ridge line;
{AP 4} thence along said ridge line, southwesterly,
approximately 510 ft. to

AP 56 at intersection with the 560-ft. contour line
{AP 3} BN 1929;
thence along said contour line, northwest-
erly, approximately, 2,110 ft. to

AP 1 the **Point of Beginning**
(AP 81B)
and
{AP 2}

the Area being 17,319 Acres, more or less.

SOURCE MAPS AND DOCUMENTS:

1. The following maps referenced in the Columbia River Gorge National Scenic Area Act:

- a. Boundary Map, Columbia River Gorge National Scenic Area, NSA-001 sheets 1 and 2 (September 1986);
- b. Special Management Areas, Columbia River Gorge National Scenic Area, SMA-002 sheets 1 through 17 (September 1986);
- c. Urban Areas, Columbia River Gorge National Scenic Area, UA-004 sheets 1 through 11 (September 1986).

These maps were reviewed for consistency with the USFS Maps (see 2. below) for this description.

2. In January 1987, the United States Forest Service developed maps, sheets 1 through 29 (USFS Maps) based upon the Congressional Maps. The Commission and U.S. Forest Service used the USFS Maps as the primary National Scenic Area maps until adopting this legal description. The USFS Maps are generally the basis for this description.

- a. USFS Map 8
- b. USFS Map 9
- c. USFS Map 10
- d. USFS Map 11

3. Reference documents, including relevant recorded surveys, plats, deeds, and decisions are, with this reference, made a part of this description. Copies of all source maps and reference documents are available at the Columbia River Gorge Commission and U.S. Forest Service, National Scenic Area offices.

FOOTNOTE:

1. This description intends to use the Bonneville Normal Pool Elevation in place at the time of the adoption of the National Scenic Area Act. At that time the Bonneville Normal Pool Elevation was 72 ft. Changes to this elevation through dam operations or otherwise do not change the location of the urban area boundary.

Reviser's note: The typographical errors in the above material occurred in the copy filed by the Columbia River Gorge Commission and appear in the Register pursuant to the requirements of RCW 34.08.040.

AMENDATORY SECTION

350-10-030C Appendix C

APPENDIX C TO COMMISSION RULE 350-10
LEGAL BOUNDARY DESCRIPTIONS FOR THE
COLUMBIA RIVER GORGE NATIONAL SCENIC AREA
URBAN AREAS

Columbia River Gorge National Scenic Area
Carson Urban Area Legal Boundary Description

All corner points and lines of the Public Land Survey System (PLSS) referenced in this description are according to the latest official survey notes and plats, and state authority survey plats in effect as of December 1, 2016, unless otherwise specified. This description notes where it is identical with and where it leaves the Exterior and Special Management Area (SMA) Boundaries of the Columbia River Gorge National Scenic Area (CRGNSA). Exterior Boundary Angle Points are shown in parentheses (AP) and Special Management Area Boundary Angle Points are shown in brackets [AP]. The hierarchy of the "rules of construction" is observed herein - natural monuments control over artificial monuments, which control over bearings and distances, which control over coordinates. This description will be junior to all senior rights when overlaps may occur. This description shall be considered, along with the final legislation map, as whole and complete per the original legislation creating this urban area and together they both shall govern all boundaries of this area, and guide future "on-the-ground" surveys. Where the boundary is described as a topographic feature, the actual location of the feature will control the approximate course identifying that part of said boundary. Courses for parallel offsets are measured from the apparent road or trail centerlines of the traveled way to determine the boundary and are intended to be used to locate the boundary in the future in the event that the road migrates or becomes indistinguishable; the courses follow the general configuration of the feature and not every turn or bend. The latitudes and longitudes reported for certain corner points and angle points in this description are North American Datum of 1983 (NAD83) (2011) (Epoch2011.00) values where survey-grade Global Positioning System (GPS) data was available, otherwise were determined by Geographical Information Systems (GIS) mapping data with a relative accuracy of ± 40 ft. horizontally, unless otherwise noted.

This description encompasses land that is identified as

The Carson Urban Area, established in the COLUMBIA RIVER GORGE NATIONAL SCENIC AREA ACT OF 1986, Pub. L. No. 99-663, § 4(e), 100 Stat. 4274, 4277 (1986), located in portions of:

Township 3 North, Range 8 East, of the Willamette Meridian, Skamania County, Washington.

T. 03 N., R. 08 E.

- AP 1
[AP 81A] **Beginning** at the corner of sections 7, 8, 17, and 18, identical with AP 81A of the Columbia River Gorge National Scenic Area Exterior Legal Boundary Description; Latitude: 45°45'17.6" N., Longitude: 121°50'8.7" W.;
thence on the line between said sections 8 and 17, on and identical with said Exterior Boundary, S. 88°29'10" E., approximately 2,120 ft. to

AP 2
[AP-81B]
[AP 1] at intersection with the 560-ft. ~~foot~~ contour line, (National Geodetic Vertical Datum of 1929 (NGVD 1929 N.G.V.D. 29)), identical with AP 81B of said Exterior Legal Boundary Description and AP-1 of the Wind Mountain Special Management Area (SMA) Legal Boundary Description; thence leaving said Exterior Boundary along said 560-ft. ~~foot~~ contour line, on said SMA Boundary, southeasterly, approximately 2,110 ft. to

AP 3
[AP 56] at intersection with the crest of a ridge running downhill to the northeast; thence leaving said 560-ft. ~~foot~~ contour line descending along the line of steepest downhill gradient, northeasterly, approximately 510 ft. to

AP 4
[AP 55] at intersection with the 400-ft. ~~foot~~ contour line (N.G.V.D. 29 NGVD 1929); thence along said 400-ft. ~~foot~~ contour line, southeasterly, approximately 9,815 ft. (See Footnote 3) to

AP 5
[AP 54] at intersection with the E. and W. center line of section 21; thence on said E. and W. center line, easterly, approximately 545 ft. (See Footnote 3) to

AP 6
[AP 53] at intersection with the Ordinary High Water Mark (OHWM) on the right bank of the Wind River; thence along said OHWM downstream, southerly, approximately 2,330 ft. to

AP 7
[AP 52] at intersection with the center line of the natural gas pipeline crossing the Wind River; thence leaving said SMA Boundary, and said OHWM crossing the Wind River, southeasterly, approximately 595 ft. to

AP 8 at intersection with the line between sections 22 and 27 and the center line of a Wind River boat launch access road (not Indian Cabin Road); thence southerly, approximately 600 ft. to

AP 9 at intersection with the line between sections 27 and 28 and center line of the Bonneville Power Administration (~~B.P.A.~~ BPA) Bonneville-Coulee transmission line easement; thence on said center line, S. 61°30'30" W., approximately 1,395 ft. to

AP 10 on said center line; thence continuing on said center line, N. 88°27'45" W., approximately 750 ft. to

AP 11 at intersection with the northerly extension of the east line of that tract of land described in Book 162, Page 979, records of Skamania County, Washington; thence leaving said center line on said extension and east line, S. 00°01'11" W., approximately 1,000 ft. to

AP 12 at intersection with the easterly extension of the south line of that tract of land described in Auditor's File No. 2006-161403, records of Skamania County, Washington; thence on said extension and south line, N. 89°50'14" W., approximately 500 ft. to

AP 13 at intersection with the center line of the ~~B.P.A.~~ BPA Carson Tap ~~B.P.A.~~ BPA transmission line easement; thence on said center line, S. 00°09'50" W., approximately 519.2 ft. to

AP 14 thence continuing on said center line, N. 89°44'30" W., approximately 2,886.7 ft. to

AP 15 thence continuing on said center line, N. 80°12'30" W., approximately 1,116 ft. to

AP 16 thence continuing on said center line, N. 37°54'10" W., approximately 392.9 ft. to

AP 17 at intersection with the center line of the Wind River Road; thence on said center line, southwesterly, approximately 1,505 ft. to

AP 18 at intersection with the N. and S. center line of section 29; thence on said N. and S. center line, N. 00°59'45" E., approximately 2,035 ft. to

AP 19 at intersection with the crest of a ridge line; thence leaving said N. and S. center line ascending along the line of steepest uphill gradient, northwesterly, approximately 960 ft. to

- AP 20 at intersection with the 800-~~ft. foot~~ contour line (~~N.G.V.D. 29~~ NGVD 1929); thence along said 800-~~ft. foot~~ contour line, northerly, approximately 7,715 ft. to
- AP 21 at intersection with the line between ~~secs.tions~~ 19 and 20; thence on said line between ~~secs.tions~~ 19 and 20, N. 01°30'19" E., approximately 275 ft. to
- AP 22 the cor~~ner~~ of ~~secs.tions~~ 17, 18, 19, and 20; thence on the line between ~~secs.tions~~ 17 and 18, N. 01°29'54" E. a distance of 2,616.63 ft. to
- AP 23 the 1/4 cor~~ner~~ of ~~secs.tions~~ 17 and 18; thence continuing on the line between ~~secs.tions~~ 17 and 18, N. 00°57'51" E. a distance of 2,643.38 ft. to
- AP 1
AP 81A) the cor~~ner~~ of ~~secs.tions~~ 7, 8, 17, and 18 and **Point of Beginning**; identical with the aforementioned Exterior Legal Boundary Description.

the Area being 1,880 Acres, more or less.

SOURCE MAPS AND DOCUMENTS:

1. 1986 Columbia River Gorge National Scenic Area Act Urban Boundary Maps, UA-004, September 1986, (Congressional or Act Maps):

- a. Sheet 2
- b. Sheet 3

2. In January 1987, the U.S. Forest Service developed maps based on the congressional maps (USFS Maps). The Commission and U.S. Forest Service used the USFS Maps as the primary National Scenic Area maps until adopting this legal description. The USFS Maps are generally the basis for this description.

- a. USFS Map 8
- b. USFS Map 9

3. Copies of all source maps and documents are available at the Columbia River Gorge Commission and U.S. Forest Service, National Scenic Area offices.

FOOTNOTES:

1. The primary references for this description are the USFS 1987 Map Set, Sheets 8 and 9, and the 1986 Act Map Set UA-004, Sheets 2 and 3.

2. No significant differences are noted between the two reference maps. A significant portion of the Act Map was obliterated by a sticky note.

3. The southern end of the AP 4 to AP 5 call, running along the 400 contour and the AP 5 to AP 6 call, is substantially consistent with the May 16, 1994 planning map initiated by Gorge Commission staff as a SMA/UA Boundary Determination. The Commission staff determination shows undimensioned straight line segments which appears intended to mimic the USFS Carson UA Map. Upon further review, including the Carson Act Map, the intent appears to use the 400 contour. This description follows the contour to and then on the east and west center line of sec~~tion~~ 21.

Columbia River Gorge National Scenic Area
Cascade Locks Urban Area Legal Boundary Description

All corner points and lines of the Public Land Survey System (PLSS) referenced in this description are according to the latest official survey notes and plats, and state authority survey plats in effect as of December 1, 2016, unless otherwise specified. This description notes where it is identical with and where it leaves Special Management Area (SMA) Boundaries of the Columbia River Gorge National Scenic Area (CRGNSA). Special Management Area Boundary Angle Points are shown in brackets [AP]. The hierarchy of the "rules of construction" is observed herein - natural monuments control over artificial monuments, which control over bearings and distances, which control over coordinates. This description will be junior to all senior rights when overlaps may occur. This description shall be considered, along with the final legislation map, as whole and complete per the original legislation creating this urban area and together they both shall govern all boundaries of this area, and guide future "on-the-ground" surveys. Where the boundary is described as a topographic feature, the actual location of the feature will control the approximate course identifying that part of said boundary. Courses for parallel offsets are measured from the apparent road or trail centerlines of the traveled way to determine the boundary and are intended to be used to locate the boundary in the future in the event that the road migrates or becomes indistinguishable; the courses follow the general configuration of the feature and not every turn or bend. The latitudes and longitudes reported for certain corner points and angle points in this description are North American Datum of 1983 (NAD83) (2011) (Epoch2011.00) values where survey-grade Global Positioning System (GPS) data was available, otherwise were determined by Geographical Information Systems (GIS) mapping data with a relative accuracy of ± 40 ft. feet horizontally, unless otherwise noted.

This description encompasses land that is identified as

The Cascade Locks Urban Area, established in the COLUMBIA RIVER GORGE NATIONAL SCENIC AREA ACT OF 1986, Pub. L. No. 99-663, § 4(e), 100 Stat. 4274, 4277 (1986), located in portions of:

Township 2 North, Range 7 East,

Township 2 North, Range 8 East, and

Township 3 North, Range 8 East, of the Willamette Meridian, Hood River County, Oregon.

T. 02 N., R. 08 E.

AP 1A **Beginning** at the cor~~ner~~ of ~~secs.tions~~ 4 and 5, T. 02 N., R. 08 E. and ~~secs.tions~~ 32 and 33, T. 03 N., R. 08 E., re-established by Professional Land Surveyor (~~P.L.S.~~) No. 2209 in 1992; monumented with an aluminum post and 3-1/2" aluminum cap, as shown in County Survey (~~C.S. CS~~) No. 93070, records of Hood River County, Oregon; Latitude 45°41'27.5" N. Longitude 121°50'24.4" W.

- thence on the line between ~~said~~ ~~secs.~~ ~~tions~~ 4 and 5, identical with United States Forest Service (USFS) Map 8, Act Map 3, and the Cascade Locks Urban Growth Boundary (~~C.L.~~ CL UGB), S. 00°40' W. S. 01°25'36" W., approximately ~~3,350~~ 27.03 ft. to
- AP 1B
[AP 185] at intersection with the northerly extremity of Government Rock Road at Bonneville Normal Pool Elevation 72 ft., National Geodetic Vertical Datum of 1929 (BNPE) (See Footnote 1), identical with the left bank of the Columbia River at BNPE, identical with AP 185 of the Gates of the Columbia River, Oregon Falls Special Management Area (SMA);
thence leaving said left bank at BNPE, on said SMA Boundary, continuing on said sec. line, S. 01°25'36" W., approximately 3.315 ft. to
- AP 2
[AP 184] at intersection with the southerly line of the Bonneville Power Administration (BPA) Bonneville-The Dalles Transmission Line easement,
thence on said easement line, leaving the ~~C.L.~~ CL UGB, S. 58°40' W., approximately 1,530 ft. to
- AP 3
[AP 183] at intersection with the N. and S. center line of the SE1/4 of said ~~sec.~~ tion 5 (See Footnote 2);
thence on said N. and S. center line, S. 00°03'30" E., approximately 1,080 ft. to
- AP 4
[AP 182] the E1/16 ~~cor.~~ ner of ~~secs.~~ tions 5 and 8;
thence on the line between ~~secs.~~ tions 5 and 8, S. 89°34'58" W. a distance of 654.4 ft. to
- AP 5
[AP 181] the SE ~~cor.~~ ner of the W1/2 SW1/4 SE1/4 of ~~sec.~~ tion 5, established by PLS 2209 in 1992, as shown in ~~C.S.~~ CS No. 93070, records of Hood River County, Oregon; monumented with an aluminum post and 3-1/4" aluminum cap;
thence on the N. and S. center line of the SW1/4 SE1/4 of ~~sec.~~ tion 5, N. 00°01'21" W. a distance of 329.21 ft. to
- AP 6
[AP 180] the NE ~~cor.~~ ner of the S1/2 SW1/4 SW1/4 SE1/4 of ~~sec.~~ tion 5, established in said ~~C.S.~~ CS No. 93070; monumented with an aluminum post and 3-1/4" aluminum cap;
thence on the E. and W. center line of the SW1/4 SW1/4 SE1/4 of ~~sec.~~ tion 5, S. 89°36'14" W. a distance of 654.19 ft. to
- AP 7
[AP 179] the NW ~~cor.~~ ner of said S1/2 SW1/4 SW1/4 SE1/4 of ~~sec.~~ tion 5, established in said ~~C.S.~~ CS No. 93070; monumented with an aluminum post and 3-1/4" aluminum cap;
thence on the N. and S. center line of ~~sec.~~ tion 5, S. 00°00'14" W. a distance of 329.46 ft. to
- AP 8
[AP 178] the 1/4 ~~cor.~~ ner of ~~secs.~~ tions 5 and 8, perpetuated by United States Department of Agriculture (~~U.S.D.A.~~) in 1987, as shown in said ~~C.S.~~ CS No. 93070; monumented with an iron post and 3-1/4" brass cap;
thence on the line between ~~secs.~~ tions 5 and 8, S. 89°36'59" W., approximately 510 ft. to
- AP 9
[AP 177] at intersection with the southeasterly line of the BPA Bonneville-The Dalles Transmission Line easement, identical with USFS Map 8 and Act Map 3;
thence on said southeasterly easement line, identical with USFS Map 8, S. 57°09' W., approximately 2483 ft. to
- AP 10
[AP 176] at intersection with the line between ~~secs.~~ tions 7 and 8 (See Footnote 2);
thence on the line between ~~secs.~~ tions 7 and 8, southerly, approximately 20 ft. to
- AP 11
[AP 175] the N1/16 ~~cor.~~ ner of ~~secs.~~ tions 7 and 8
thence on the E. and W. center line of the NE1/4 of ~~sec.~~ tion 7, joining the ~~C.L.~~ CL UGB, N. 89°40' W., approximately 1,320 ft. to
- AP 12
[AP 174] the NE1/16 ~~cor.~~ ner of ~~sec.~~ tion 7;
thence on the N. and S. center line of the NE1/4 of ~~sec.~~ tion 7, S. 00°27' E., approximately 1,320 ft. to
- AP 13
[AP 173] the center E1/16 ~~cor.~~ ner of ~~sec.~~ tion 7;
thence on the E. and W. center line of ~~sec.~~ tion 7, S. 89°01' W., approximately 2,640 ft. to
- AP 14
[AP 172] the northerly ~~cor.~~ ner of lot 1 and an unnumbered lot (NW1/4 SW1/4) of ~~sec.~~ tion 7;
thence on the line between said lots, S. 00°12' W., approximately 1,320 ft. to
- AP 15
[AP 171] the ~~cor.~~ ner of lots 1, 2, an unnumbered lot (NW1/4 SW1/4), and an unnumbered lot (SW1/4 SW1/4) of ~~sec.~~ tion 7;
thence on the line between said unnumbered lots, S. 88°11' W., approximately 1,320 ft. to
- AP 16
[AP 170] the S1/16 ~~cor.~~ ner of ~~sec.~~ tion 7, T. 02 N., R. 08 E. and ~~sec.~~ tion 12, T. 02 N., R. 07 E.;
thence on the line between said ~~secs.~~ tions 7 and 12, S. 01°06'04" E. a distance of 1,320.60 ft. to

T. 02 N., R. 07 E.

- AP 17
[AP 169] the corner of sections 7 and 18, T. 02 N., R. 08 E., and sections 12 and 13, T. 02 N., R. 07 E.;
thence on the line between sections 12 and 13, S. 88°22' W. a distance of 2,618.7 ft. to
- AP 18
[AP 168] the 1/4 corner of sections 12 and 13, as shown in ~~C.S.~~ CS No. 96015, records of Hood River County, Oregon; monumented with an iron post and brass cap;
thence on the N. and S. center line of section 13 (~~See Footnote 2~~), S. 00°08'26" E. a distance of 1,313.2 ft. to
- AP 19
[AP 167] the N1/16 corner of section 13, as shown in ~~C.S.~~ CS No. 2006-082, records of Hood River County, Oregon; monumented with an iron post and 3-in. brass cap;
thence on the E. and W. center line of the NE1/4 of section 13 (~~See Footnote 3~~), S. 89°32'14" W. a distance of 220.26 ft. to
- AP 20
[AP 166] the northwesterly corner of that property described in Warranty Deed No. 661324, and shown in ~~C.S.~~ CS No. 98030, records of Hood River County, Oregon; monumented with a 5/8" iron rod with plastic cap;
thence on the westerly line of said property, S. 00°08'18" E. a distance of 199.98 ft. to
- AP 21
[AP 165] the southwesterly corner of said property, as shown in ~~C.S.~~ CS No. 98030, records of Hood River County, Oregon; monumented with a 5/8" iron rod with plastic cap;
thence on the northerly line of that property described in Warranty Deed No. 701515, records of Hood River County, Oregon, S. 89°32'14" W. a distance of 435.55 ft. to
- AP 22
[AP 164] the northwesterly corner of said property, as shown in ~~C.S.~~ CS No. 98030, records of Hood River County, Oregon; monumented with a 5/8" iron rod with plastic cap;
thence on the N. and S. center line of the SE1/4 NW1/4 of section 13, identical with the westerly line of said property, S. 00°08'37" E. a distance of 455.05 ft. to
- AP 23
[AP 163] the southwesterly corner of said property, as shown in the aforementioned ~~C.S.~~ CS No. 2006-082; monumented with a 5/8" iron rod with yellow plastic cap;
thence on the E. and W. center line of the SE1/4 NW1/4 of section 13, S. 89°36'59" W. a distance of 655.65 ft. to
- AP 24
[AP 162] the northwesterly corner of the property described in Warranty Deed Book 72 Page 26, records of Hood River County, Oregon, as shown in said ~~C.S.~~ CS 2006-082; monumented with a 5/8" iron rod with yellow plastic cap;
thence on the N. and S. center line of the NW1/4 of section 13, N. 00°10'32" W. a distance of 654.21 ft. to
- AP 25
[AP 161] the NW1/16 corner of section 13, as shown in said ~~C.S.~~ CS No. 2006-082; monumented with an iron post and 3" brass cap;
thence on the E. and W. center line of the NW1/4 of section 13, S. 89°00' W., approximately 1,230 ft. to
- AP 26
[AP 160] at intersection with the left bank of the Columbia River at ~~Bonneville Normal Pool Elevation (B.N.P.E.), elevation 72 ft., National Geodetic Vertical Datum of 1929 (N.G.V.D. 29) BNPE;~~
thence leaving the aforementioned SMA Boundary along the left bank at ~~B.N.P.E. BNPE~~, northeasterly, approximately 2,750 ft. to
- AP 27 at intersection with the southwesterly line of that property conveyed to the Port of Cascade Locks described in Deed Book 52 Page 551, as shown in ~~C.S.~~ CS No. 2008-065, records of Hood River County, Oregon; thence on a line across the water, N. 45°45' W., approximately 340 ft. to
- AP 28 at intersection with the southwesterly most extremity of Thunder Island at ~~B.N.P.E. BNPE;~~
thence along the northwesterly shore of Thunder Island at ~~B.N.P.E. BNPE~~, northeasterly, approximately 1,420 ft. to
- AP 29 from which the northwesterly corner of Thunder Island bears northeasterly, approximately 720 ft.;
thence on a line across the water, westerly from a small island and group of rock outcroppings, N. 45° W., approximately 435 ft. to
- AP 30 at intersection with the meander line of lot 4, from which the north most northwesterly meander corner of lot 4 bears N. 46°00' E., approximately 367 ft.;
thence on said meander line, N. 46°00' E. approximately 367 ft. to

- AP 31 said north most northwesterly meander corner of lot 4; thence on a line across the water, S. 45° E., approximately 390 ft. to
- AP 32 at intersection with the northwesterly shore of Thunder Island, at ~~B.N.P.E.~~ BNPE; thence along said northwesterly shore at ~~B.N.P.E.~~ BNPE, northeasterly, approximately 340 ft. to
- AP 33 at the northwesterly corner of Thunder Island at ~~B.N.P.E.~~ BNPE; thence along the northerly shore of Thunder Island at ~~B.N.P.E.~~ BNPE, S. 84° E., approximately 85 ft. to
- AP 34 the northeasterly corner of Thunder Island at ~~B.N.P.E.~~ BNPE; thence on a line across the water, N. 60° E., approximately 960 ft. to
- AP 35 at intersection with the northerly most extremity of the eastern peninsula of the Port of Cascade Locks Marina, at ~~B.N.P.E.~~ BNPE; thence along the left bank of the Columbia River at ~~B.N.P.E.~~ BNPE, easterly, approximately 7,100 ft. to
T. 02 N., R. 08 E.
- AP 36 at intersection with the northerly extension of the line between lots 2 and 3 of section 6, T. 02 N., R. 08 E.; thence on a line across the water, N. 53° E., approximately 1,890 ft. to
- AP 37 the northwesterly most extremity of the northerly spit in lot 1, section 6, at ~~B.N.P.E.~~ BNPE; thence along the northerly shore of the spit and peninsula, at ~~B.N.P.E.~~ BNPE; in sections 6 and 5, northeasterly, approximately 3,200 ft. to
- AP 38 the northerly most extremity of said peninsula at ~~B.N.P.E.~~ BNPE; thence on a line across the water, N. 45° E., approximately 1,080 ft. to
- AP 39 at intersection with the north most northwesterly corner of the peninsula in lot 1, section 5, at ~~B.N.P.E.~~ BNPE; thence along the northerly shore of said peninsula at ~~B.N.P.E.~~ BNPE, easterly, a distance of 275 ft. to
- AP 40 the north most northeasterly corner of said peninsula; thence on a line across the water, N. 62° E., approximately 440 ft. to

- AP 41 at intersection with the westerly shore of Quarry Island, at ~~B.N.P.E.~~ BNPE; thence along the westerly and northerly shores of Quarry Island, including the spit at the northwesterly point, at ~~B.N.P.E.~~ BNPE northwesterly and easterly approximately 3,420 ft. to

T. 03 N., R. 08 E.

- AP 42 at intersection with the line between sections 32, T. 03 N., R. 08 E. and section 5, T. 02 N., R. 08 E., as shown in ~~C.S.~~ CS No. 99018, records of Hood River County, Oregon; thence on said line between sections 32 and 5, S. 89°35' E. approximately 20 ft. to

AP 1 the **Point of Beginning**

the Area being 1,581 Acres, more or less.

SOURCE MAPS AND DOCUMENTS:

1. 1986 Columbia River Gorge National Scenic Area Act Urban Boundary Maps, UA-004 (Congressional or Act Maps)
 - a. Sheet 1
 - b. Sheet 3
2. In January 1987, the U.S. Forest Service developed maps based on the congressional maps (USFS Maps). The Commission and U.S. Forest Service used the USFS Maps as the primary National Scenic Area maps until adopting this legal description. The USFS Maps are generally the basis for this description. The USFS maps appear to have very few differences from the earlier Act Maps.
 - a. USFS Map 7
 - b. USFS Map 8
3. Memorandum from Jonathan Doherty, Columbia River Gorge Commission, to Gorge Commissioners, dated November 10, 1997, to Gorge Commissioners, records of Columbia River Gorge Commission, White Salmon, Washington, about "Review of Urban Area Mapping Discrepancies." These mapping discrepancies were addressed in later agreements.
4. "Final Order of the Columbia River Gorge Commission (Modified) Minor Urban Area Boundary Revision - City of Cascade Locks UA-98-01," dated April 16, 2001.
5. Copies of all source maps and documents are available at the Columbia River Gorge Commission and U.S. Forest Service, National Scenic Area offices.

FOOTNOTES:

1. This description intends to use the Bonneville Normal Pool Elevation in place at the time of the adoption of the National Scenic Area Act. At that time the Bonneville Normal Pool Elevation was 72 ft. Changes to this elevation through dam operations or otherwise do not change the location of the urban area boundary. ~~AP 3 to AP 9, held the "Final Order of the Columbia River Gorge Commission (Modified) Minor Urban Area Boundary Revision - City of Cascade Locks UA-98-01," dated April 16, 2001, records of Columbia River Gorge Commission, White Salmon, Washington.~~

2. AP 3 to AP 9 and AP 10 to AP 25; held the "Final Order of the Columbia River Gorge Commission (Modified) Minor Urban Area Boundary Revision - City of Cascade Locks UA-98-01," dated April 16, 2001, records of Columbia River Gorge Commission, White Salmon, Washington.

Columbia River Gorge National Scenic Area
Dallesport Urban Area Legal Boundary Description

All corner points and lines of the Public Land Survey System (PLSS) referenced in this description are according to the latest official survey notes and plats, and state authority survey plats in effect as of December 1, 2016, unless otherwise specified. The hierarchy of the "rules of construction" is observed herein - natural monuments control over artificial monuments, which control over bearings and distances, which control over coordinates. This description will be junior to all senior rights when overlaps may occur. This description shall be considered, along with the final legislation map, as whole and complete per the original legislation creating this urban area and together they both shall govern all boundaries of this area, and guide future "on-the-ground" surveys. Where the boundary is described as a topographic feature, the actual location of the feature will control the approximate course identifying that part of said boundary. Courses for parallel offsets are measured from the apparent road or trail centerlines of the traveled way to determine the boundary and are intended to be used to locate the boundary in the future in the event that the road migrates or becomes indistinguishable; the courses follow the general configuration of the feature and not every turn or bend. The latitudes and longitudes reported for certain corner points and angle points in this description are North American Datum of 1983 (NAD83) (2011) (Epoch2011.00) values where survey-grade Global Positioning System (GPS) data was available, otherwise were determined by Geographical Information Systems (GIS) mapping data with a relative accuracy of ± 40 ft. horizontally, unless otherwise noted.

This description encompasses land that is identified as

The Dallesport Urban Area, established in the COLUMBIA RIVER GORGE NATIONAL SCENIC AREA ACT OF 1986, Pub. L. No. 99-663, § 4(e), 100 Stat. 4274, 4277 (1986), located in portions of:

Township 2 North, Range 13 East, of the Willamette Meridian, Klickitat, County Washington

T. 02 N., R. 13 E.

AP 1 **Beginning** at the corner of sections 13, 14, 23, and 24, monumented with an iron post with a brass cap on top in a mound of stones perpetuated by the U.S. Army Corps of Engineers;
Latitude: 45°39'03.0" N., Longitude: 121°08'07.5" W.;
thence on the line between sections 23 and 24, S. 01°00'14" W., approximately 265 ft. to

AP 2 at intersection with the center line of Washington State Route 14;
thence on said center line, easterly, approximately 2,957 ft. to

AP 3 at intersection with center line of Horse Thief Lake State Park access road;
thence on said access road center line, southeasterly, approximately 1,329 ft. (See Footnote 1) to

AP 4 at intersection with a line 1,100 ft. westerly of when measured perpendicular thereto from the line between T. 02 N., Rs. 13 and 14 E.;
thence on a line parallel with and 1,100 ft. distant westerly from said line, southerly, approximately 8,641 ft. to

AP 5 at intersection with the Washington-Oregon state line;
thence on said state line more specifically described by the following courses:
S. 48°47' W., approximately 250 ft. to

AP 6 thence S. 21°46' E., approximately 1,950 ft. to

AP 7 thence S. 59°42' W., approximately 1,545 ft. to

AP 8 thence S. 46°19' W. a distance of 2,925 ft. to

AP 9 thence leaving said state line, N. 51°55' W. a distance of 889 ft. (See Footnote 2) to

AP 10 thence S. 89°47' W., approximately 1,540 ft. to

AP 11 at intersection with aforementioned state line;
thence on said state line, S. 46°27' W., approximately 445 ft. to

AP 12 at intersection with the center line of U.S. Highway 197;
thence on said center line, northwesterly, approximately 790 ft. to

AP 13 at intersection with the right bank of the Columbia River at Bonneville ~~Pool~~ Normal Pool Elevation (~~B.N.P.E.~~), 72 ft., National Geodetic Vertical Datum of 1929 (~~N.G.V.D.-29~~) (BNPE) (See Footnote 3);
thence along said right bank at ~~B.N.P.E.~~ BNPE, southwesterly, approximately 990 ft. to

AP 14 said point being South of the intersection of the west right-of-way line of aforementioned U.S. Highway 197 and the center line of Dallesport County Road;
thence South, approximately 1,815 ft. to

- AP 15 at intersection with said west right-of-way line of U.S. Highway 197 and center line of Dallesport County Road; thence on said center line, westerly, approximately 8,345 ft. to
- AP 16 at intersection with the center line of Old Ferry County Road; thence on said center line of Old Ferry County Road, southwesterly, approximately 1,620 ft. to
- AP 17 at intersection with the line between sections 33 and 34; thence on the line between said sections 33 and 34, southerly, approximately 545 ft. to
- AP 18 at intersection with the aforementioned right bank of the Columbia River at ~~B.N.P.E.~~ BNPE; thence along said right bank at ~~B.N.P.E.~~ BNPE, northwesterly a distance of 1,817 ft. to
- AP 19 thence leaving said right bank N. 30° E., approximately 710 ft. to
- AP 20 at intersection with the center line of the Burlington Northern Santa Fe Railroad right-of-way at a point 1,241 ft. northwesterly on said center line from the intersection with the center line of aforementioned Old Ferry County Road; thence on said railroad center line, northerly, approximately 14,965 ft. to
- AP 21 at intersection with the center line of the Bonneville Power Administration (~~B.P.A.~~ BPA) The Dalles - Goldendale transmission line easement; thence on said center line, northeasterly, approximately 645 ft. to
- AP 22 thence leaving said center line, N. 08°50'55" W. a distance of 2,235.12 ft., as shown on Amendment to Short Plat No. SP-97-35, recorded at Auditor's File No. (~~A.F.N.~~ AFN) 1024369, records of Klickitat County, Washington, (See Footnote 4) to
- AP 23 at intersection with the center line of a private farm access road and monumented with a 5/8" x 30" iron rod with 2-1/2" aluminum cap set in said Amendment to Short Plat No. SP-97-35 See Footnote 5); thence on said center line more specifically described by the following courses: N. 16°04'54" E. a distance of 99.66 ft. to
- AP 24 thence N. 01°46'25" E. a distance of 105.56 ft. to
- AP 25 thence N. 27°36'50" W. a distance of 55.45 ft. to
- AP 26 thence N. 12°23'07" W. a distance of 106.19 ft. to
- AP 27 thence N. 15°43'12" W. a distance of 79.56 ft. to
- AP 28 thence N. 06°25'57" E. a distance of 89.91 ft. to
- AP 29 thence N. 04°33'26" W. a distance of 92.07 ft. to
- AP 30 thence N. 13°35'39" W. a distance of 85.32 ft. to
- AP 31 thence N. 00°50'25" W. a distance of 111.96 ft. to
- AP 32 at intersection with the south most corner of Lot 1, Boundary Line Adjustment BLA 2012-04, recorded at ~~A.F.N.~~ AFN 1101083, records of Klickitat County, Washington, and monumented with a 5/8" x 30" iron rod (See Footnote 6); thence on the line between Lots 1 and 2, said BLA 2012-04, more specifically described by the following courses: N. 55°55'00" E. a distance of 200.12 ft. to
- AP 33 at intersection with the southwesterly right-of-way line of Elm Street monumented with a 5/8" x 30" iron rod; thence on said right-of-way line, N. 34°05'00" W. a distance of 60.00 ft. to
- AP 34 at intersection with the northwesterly right-of-way line of Mt. Hood Street identical with the line between said Lot 1 and Lot 2, BLA 2012-04 monumented with a 5/8" x 30" iron rod; thence on the line between said Lots 1 and 2 more specifically described by the following courses: N. 38°46'27" W. a distance of 89.77 ft. to
- AP 35 a 5/8" x 24" iron rod; thence N. 85°00'28" W. a distance of 44.94 ft. to
- AP 36 a 5/8" x 24" iron rod; thence N. 04°59'31" E. a distance of 333.47 ft. to
- AP 37 at intersection with the E. and W. center line of section 16 and monumented with a 5/8" x 24" iron rod; thence on said E. and W. center line, S. 88°44'04" E., approximately 997 ft. to

- AP 38 at intersection with an existing fence (See Footnote 7); thence on said fence, N. 07°23'17" E., approximately 733.73 ft. to
- AP 39 at intersection with an angle point in said fence and monumented with a 5/8" x 30" iron rod with yellow plastic cap inscribed "B BESEDA PLS 35092" as shown in survey recorded at ~~A.F.N.~~ AFN 1115674, records of Klickitat County, Washington; thence leaving said fence, S. 43°14'51" E. a distance of 2,135.26 ft. to
- AP 40 a 5/8" x 30" iron rod with yellow plastic cap inscribed "B BESEDA PLS 35092" as set in said ~~A.F.N.~~ AFN 1115674; thence S. 76°35'58" E. a distance of 1,112.42 ft. to
- AP 41 at intersection with the center line of the Schreiner Farms paved access road; thence on said center line, southerly, approximately 1,630 ft. to
- AP 42 at intersection with the line between ~~secs. tions~~ 16 and 21; thence on the line between ~~secs. tions~~ 16 and 21, S. 88°48'27" E., approximately 710 ft. to
- AP 43 the ~~corner~~ of ~~secs. tions~~ 15, 16, 21, and 22 perpetuated with a 5/8" x 30" iron rod with 1-1/2" aluminum cap inscribed "PLS 15673" (See Footnote 8); thence on the line between ~~secs. tions~~ 15 and 22, S. 88°54'24" E. a distance of 2,664.97 ft. to
- AP 44 the 1/4 ~~corner~~ of ~~secs. tions~~ 15 and 22 perpetuated with an axle in a mound of stones; thence continuing on the line between ~~secs. tions~~ 15 and 22, N. 88°54'27" E. a distance of 2,663.58 ft. to
- AP 45 the ~~corner~~ of ~~secs. tions~~ 14, 15, 22, and 23 perpetuated with a nail set in the top of a notched stone (See Footnote 9); thence on the line between ~~secs. tions~~ 14 and 23, S. 88°48'37" E. a distance of 2,645.39 ft. to
- AP 46 the 1/4 ~~corner~~ of ~~secs. tions~~ 14 and 23 and monumented with a stone notched "1/4"; thence continuing on the line between ~~secs. tions~~ 14 and 23, S. 88°21'34" E., approximately 11 ft. to
- AP 47 at intersection with an existing fence; thence on said fence, northeasterly, approximately 1,825 ft. to

- AP 48 at intersection with the E. and W. center line of the southeast 1/4 of ~~sec. tion~~ 14; thence on said E. and W. center line, easterly, approximately 1,430 ft. to
- AP 49 at intersection with the line between ~~secs. tions~~ 13 and 14; thence on the line between ~~secs. tions~~ 13 and 14, southerly, approximately 1,322 ft. to
- AP 1 the **Point of Beginning**.

the Area being 6,427 Acres, more or less.

SOURCE MAPS AND DOCUMENTS:

1. 1986 Columbia River Gorge National Scenic Area Act Urban Boundary Maps, UA-004, September 1986, (Congressional or Act Maps):

- a. Sheet 8
- b. Sheet 9

2. In January 1987, the U.S. Forest Service developed maps based on the congressional maps (USFS Maps). The Commission and U.S. Forest Service used the USFS Maps as the primary National Scenic Area maps until adopting this legal description. The USFS Maps are generally the basis for this description.

- a. USFS Map 20
- b. USFS Map 21
- c. USFS Map 22
- d. USFS Map 23

3. Copies of all source maps and documents are available at the Columbia River Gorge Commission and U.S. Forest Service, National Scenic Area offices.

FOOTNOTES:

1. This dimension off of the east line of section 24 used in the AP 3 to AP 4 call is scaled from USFS CRGNSA Urban Area Map 23.

± 2. For the course in the UA line to AP 9, it is not clear why Congress elected to deviate from continuing to run along the State line. Both the USFS and Act Maps clearly show that the line in this area does not follow the State line.

3. This description intends to use the Bonneville Normal Pool Elevation in place at the time of the adoption of the National Scenic Area Act. At that time the Bonneville Normal Pool Elevation was 72 ft. Changes to this elevation through dam operations or otherwise do not change the location of the urban area boundary.

± 4. The call from AP 22 to AP 23 is per the resolution shown on Amendment to Short Plat No. SP-97-35, recorded July 6, 2001 at AF No. 1024369, records of Klickitat County, and runs to an existing farm road. D. Peoples appears to have the correct location of AP 22. The quad maps used in 1985 reflected 1973 aerial photography and would have reflected the road location Peoples monumented. Review of the Gorge Commission files on Urban Area decision revealed a 1997 survey by Land Development Consultants, Inc. (Robert Oquist, PLS) for Dale Jones. This survey was not recorded with Klickitat County. It locates the UA line through the same area as Amendment to Short Plat No. SP-97-35. This survey locates the line by using a bluff and bisecting a house.

It also references a November 9, 1992 Gorge Commission determination.

3.5. AP 23 to AP 32 are as depicted on the plat of Columbia Vineyards Subdivision, recorded June 19, 2007 at AF No.1070858, records of Klickitat County. Line courses L1 through L10 on this plat reflect the field surveyed location of the original farm road but could only verify this by field survey.

4.6. AP 32 to AP 36 follow the Urban Area Boundary line, as shown on Boundary Line Adjustment BLA 2012-04, as recorded January 8, 2013, at ~~A.F.N.~~ AFN 1101083, records of Klickitat County, Washington. The line location is consistent with C.R.G.C. No. COA-K-11-02, Final Order and Opinion. The surveyed line and final order reflect an agreed to location for the Urban Area line through the then Arndt Living Trust property.

~~5. The Bonneville Dam Normal Pool is listed as elevation 72 ft. on the N.S.A. Boundary Quad maps.~~

~~6. This dimension off of the east line of section 24 used in the AP 3 to AP 4 call is scaled from USFS CRGNSA Urban Area Map 23.~~

7. The calls and monuments in AP 38 to AP 41 are per the survey for John Grim & Associates, recorded at ~~A.F.N.~~ AFN 1115674, records of Klickitat County, Washington.

8. The calls and monuments in AP 43 to AP 45 are per the survey for Webster Orchards, recorded at ~~A.F.N.~~ AFN 1112592, records of Klickitat County, Washington.

9. The call and monuments in AP 45 to AP 47 are per the Binding Site Plan for the Port of Klickitat, recorded at ~~A.F.N.~~ AFN 1107846, records of Klickitat County, Washington.

Columbia River Gorge National Scenic Area
Home Valley Urban Area Legal Boundary Description

All corner points and lines of the Public Land Survey System (PLSS) referenced in this description are according to the latest official survey notes and plats, and state authority survey plats in effect as of December 1, 2016, unless otherwise specified. This description notes where it is identical with and where it leaves Special Management Area (SMA) Boundaries of the Columbia River Gorge National Scenic Area (CRGNSA). Special Management Area Boundary Angle Points are shown in brackets [AP]. The hierarchy of the "rules of construction" is observed herein - natural monuments control over artificial monuments, which control over bearings and distances, which control over coordinates. This description will be junior to all senior rights when overlaps may occur. This description shall be considered, along with the final legislation map, as whole and complete per the original legislation creating this urban area and together they both shall govern all boundaries of this area, and guide future "on-the-ground" surveys. Where the boundary is described as a topographic feature, the actual location of the feature will control the approximate course identifying that part of said boundary. Courses for parallel offsets are measured from the apparent road or trail centerlines of the traveled way to determine the boundary and are intended to be used to locate the boundary in the future in the event that the road migrates or becomes indistinguishable; the courses follow the general configuration of the feature and not every turn or bend. The latitudes and longitudes reported for certain corner points and

angle points in this description are North American Datum of 1983 (NAD83) (2011) (Epoch2011.00) values where survey-grade Global Positioning System (GPS) data was available, otherwise were determined by Geographical Information Systems (GIS) mapping data with a relative accuracy of ± 40 ft. horizontally, unless otherwise noted.

This description encompasses land that is identified as The Home Valley Urban Area, established in the COLUMBIA RIVER GORGE NATIONAL SCENIC AREA ACT OF 1986, Pub. L. No. 99-663, 4(e), 100 Stat. 4274, 4277 (1986), located in portions of:

Township 3 North, Range 8 East, of the Willamette Meridian, Skamania County, Washington

T. 03 N., R. 08 E.

- AP 1 **Beginning** at the intersection of the center line of Washington State Route 14 and the right bank of the Columbia River at Bonneville Normal Pool Elevation (~~B.N.P.E.~~) elevation 72 ft., National Geodetic Vertical Datum of 1929 (N.G.V.D. 29 NGVD 1929) (BNPE) (See Footnote 1); Latitude: 45°42'56.8" N., Longitude: 121°47'28.8" W. thence at said ~~B.N.P.E.~~ BNPE easterly and northerly, approximately 2,500 ft. to
- AP 2 the terminus of said ~~B.N.P.E.~~ BNPE at left bank of the Wind River, identical with beginning of the Ordinary High Water Mark (~~O.H.W.M.~~ OHWM); thence along said ~~O.H.W.M.~~ OHWM northerly a distance of 1,117 ft. to
- AP 3 on said left bank (See Footnote 2); thence leaving said left bank, S. 70°E., approximately 635 ft. to
- AP 4 at intersection with the center lines of Berge and Indian Cabin Roads; thence on the center line of Berge Road, easterly, approximately 1,615 ft. to
- AP 5 a point on said center line being at the northmost point in a curve deflecting said center line from a northeast to southeast direction; thence leaving said center line, N. 73° E., approximately 410 ft. to
- AP 6 at intersection with the 480-~~ft.~~ foot contour line (~~N.G.V.D. 29~~ NGVD 1929); thence southeasterly, approximately 1,405 ft. to
- AP 7 at intersection with the east line of the Robins Donation Land Claim (~~D.L.C.~~) No. 38, at a point being northerly on said line, a distance of 100 ft. from the center line of Home Valley Cut-off Road; thence on said east line, S. 01°02' W., approximately 1,655 ft. to

- AP 8 at the northwest corner of that tract of land described in Document No. 2015-160037, records of Skamania County, Washington; thence leaving said east line on the north line of said tract of land and extension thereof, easterly, approximately 2,685 ft. to
- AP 9 at intersection with the center line of Wind Mt. Road, identical with AP 46B of the Wind Mountain Special Management Area (SMA) Legal Boundary Description; thence on said center line, on said SMA Boundary southwesterly approximately 510 ft. to
- [AP 46B]
- AP 10 at intersection with the center line of Rike Road intersecting the south side of said Wind Mt. Road; thence on the center line of said Rike Road, southeasterly, approximately 510 ft. to
- [AP 46A]
- AP 11 at intersection with the 400-ft. ~~foot~~ contour line (N.G.V.D. 29 NGVD 1929); thence along said 400-ft. ~~foot~~ contour line, southerly, approximately 2,060 ft. to
- [AP 45]
- AP 12 at intersection with the line between the NW1/4 of the NE1/4 and Lot 3, section 35; thence leaving said 400-ft. ~~foot~~ contour, westerly, approximately 1,060 ft. to
- [AP 44]
- AP 13A the southmost point of the center line of Viewpoint Road;
- [AP 43]
- AP 13B thence S. 05° W., approximately 335 ft. to
- [AP 42]
- AP 14 at intersection with the southerly right-of-way line of the Burlington Northern/Santa Fe Railroad right-of-way; thence on said southerly right-of-way line, northwesterly, approximately 3,585 ft. to
- AP 15 at intersection with northwest corner of the U.S.A. Home Valley Park property; thence on the northerly and westerly lines of said property, westerly and southerly a distance of 1,310 ft. to
- AP 16 a point on said west line; thence leaving said west line, East a distance of 106 ft. to
- AP 17 thence N. 12°13' E. a distance of 90 ft. (See Footnote 3) to
- AP 18 thence S. 86°10' E. a distance of 94 ft. to
- AP 19 thence S. 49°23' E. a distance of 444 ft. to
- AP 20 thence N. 27°02' E. a distance of 522 ft. to
- AP 21 thence N. 79°55' E. a distance of 108 ft. to
- AP 22 thence S. 00°15' E. a distance of 525 ft. to
- AP 23 thence S. 37°41' E. a distance of 143 ft. to
- AP 24 thence S. 24°51' W. a distance of 184 ft. to
- AP 25 thence S. 01°30' E. approximately 239 ft. to
- AP 26 at intersection with aforementioned ~~B.N.P.E.~~ BNPE; thence along aforementioned right bank of the Columbia River at said ~~B.N.P.E.~~ BNPE, southwesterly, approximately 153 ft. to
- AP 27 at the easterly side of a small bay; thence crossing the mouth of said small bay, northwesterly, approximately 345 ft. to
- AP 28 at the south most point on the westerly side of said small bay at said ~~B.N.P.E.~~ BNPE; thence along aforementioned right bank of the Columbia River at said ~~B.N.P.E.~~ BNPE, westerly, approximately 6,260 ft. to
- AP 1 at intersection with said center line of State Route 14 and **Point of Beginning.**

the Area being 551 Acres, more or less.

SOURCE MAPS AND DOCUMENTS:

1. 1986 Columbia River Gorge National Scenic Area Act Urban Boundary Maps, UA-004, September 1986, (Congressional or Act Maps):

a. Sheet 3

2. In January 1987, the U.S. Forest Service developed maps based on the congressional maps (USFS Maps). The Commission and U.S. Forest Service used the USFS Maps as the primary National Scenic Area maps until adopting this legal description. The USFS Maps are generally the basis for this description.

a. USFS Map 8

3. Copies of all source maps and documents are available at the Columbia River Gorge Commission and U.S. Forest Service, National Scenic Area offices.

FOOTNOTES:

1. This description intends to use the Bonneville Normal Pool Elevation in place at the time of the adoption of the National Scenic Area Act. At that time the Bonneville Normal Pool Elevation was 72 ft. Changes to this elevation through dam operations or otherwise do not change the location of the urban area boundary. The Normal Pool Elevation of the Bonneville Dam is 72 ft. (N.G.V.D. 29) as shown on the USFS 1987 Map Set, Sheet 8.

2. AP 3 to AP 5 are substantially consistent with the June 2, 1993 planning map initiated by Commission staff as a Boundary Determination. The Act map shows more of a point at Angle Point 3 which this description mimics. The Commission staff determination shows an east and west line segment of 150 ft.

3. From AP 17 to AP 27 the UAB was scaled from the USFS 1986 Map, Sheet 8, and 1987 Act Map UA-004, Sheet 3. The maps are very similar and the UA line cannot be correlated to known lines or features. The calls from Angle

Points 17 to 27 are random. Site investigation may yield a reason for this line location.

~~3. AP 3 to AP 5 are substantially consistent with the June 2, 1993 planning map initiated by Commission staff as a Boundary Determination. The Aet map shows more of a point at Angle Point 3 which this description mimies. The Commission staff determination shows an east and west line segment of 150 ft.~~

Columbia River Gorge National Scenic Area
Hood River Urban Area Legal Boundary Description

All corner points and lines of the Public Land Survey System (PLSS) referenced in this description are according to the latest official survey notes and plats, and state authority survey plats in effect as of December 1, 2016, unless otherwise specified. This description notes where it is identical with and where it leaves the Exterior Boundary of the Columbia River Gorge National Scenic Area (CRGNSA). Exterior Boundary Angle Points are shown in parentheses (AP). The hierarchy of the "rules of construction" is observed herein - natural monuments control over artificial monuments, which control over bearings and distances, which control over coordinates. This description will be junior to all senior rights when overlaps may occur. This description shall be considered, along with the final legislation map, as whole and complete per the original legislation creating this urban area and together they both shall govern all boundaries of this area, and guide future "on-the-ground" surveys. Where the boundary is described as a topographic feature, the actual location of the feature will control the approximate course identifying that part of said boundary. Courses for parallel offsets are measured from the apparent road or trail centerlines of the traveled way to determine the boundary and are intended to be used to locate the boundary in the future in the event that the road migrates or becomes indistinguishable; the courses follow the general configuration of the feature and not every turn or bend. The latitudes and longitudes reported for certain corner points and angle points in this description are North American Datum of 1983 (NAD83) (2011) (Epoch2011.00) values where survey-grade Global Positioning System (GPS) data was available, otherwise were determined by Geographical Information Systems (GIS) mapping data with a relative accuracy of ± 40 feet horizontally, unless otherwise noted.

This description encompasses land that is identified as

The Hood River Urban Area, established in the COLUMBIA RIVER GORGE NATIONAL SCENIC AREA ACT OF 1986, Pub. L. No. 99-663, § 4(e), 100 Stat. 4274, 4277 (1986), located in portions of:

- Township 2 North, Range 10 East,
- Township 3 North, Range 10 East, and
- Township 3 North, Range 11 East, of the Willamette Meridian, Hood River County, Oregon.

T. 03 N., R. 11 E.

- AP 1 **Beginning** at intersection of the easterly line of the Nathan L. Benson Donation Land Claim (~~D.L.C.~~ DLC) No. 37 with the left bank of the Columbia River at Bonneville Normal Pool Elevation (~~B.N.P.E.~~), elevation 72 ft., National Geodetic Vertical Datum 1929 (~~N.G.V.D.~~ 29) (BNPE) (See Footnote 1); Latitude: 45°36'39.6" N., Longitude: 121°07'37.2" E.
thence on said easterly line (See Footnote 1 & 2), S. 01°11' E., approximately 500 ft. to
- AP 2 at intersection with the southerly right-of-way line of the Union Pacific Railroad; thence on said southerly right-of-way line, S. 82°18' E., approximately 750 ft. to
- AP 3 at intersection with the line between lots 1 and 2, ~~section~~ section 30; thence on the line between lots 1 and 2, identical with the Hood River Urban Growth Boundary (H.R. UGB) (See Footnote 2), S. 01°10' E., approximately 467 ft. to
- AP 4 the southerly ~~corner~~ corner of said lots 1 and 2; thence on the line between ~~secs.~~ sections 30 and 31, westerly, a distance of 1,063.65 ft. to
- AP 5 the northwest ~~corner~~ corner of that property described in Warranty Deed No. 862185, and shown in County Survey (~~C.S.~~ CS) No. 89106, records of Hood River County, Oregon; thence leaving the line between ~~secs.~~ sections 30 and 31, on the westerly line of said property, S. 01°27' W., approximately 196 ft. to
- AP 6 at intersection with the northeasterly right-of-way line of the Historic Columbia River Highway; thence on said right-of-way line, northwesterly, approximately 710 ft. to
- AP 7 the southeast ~~corner~~ corner of that property described in Warranty Deed Book 46 Page 300, records of Hood River County, Oregon; thence on the southwesterly line of said property, N. 71°29' W., approximately 208 ft. to
- AP 8 the southerly most southwest ~~corner~~ corner of said property, on the northeasterly right-of-way line of the aforementioned Historic Highway; thence on said right-of-way line, northwesterly, approximately 100 ft. to

- AP 9 the northerly most southwest corner of said property;
thence on the west line thereof, northerly, approximately 10 ft. to
- AP 10 the northerly most corner of said property, at intersection with the line between sections 30 and 31; from which the point of intersection of said section line with the southeasterly right-of-way line of the aforementioned Historic Highway bears N. 89°47'00" W., on said section line, a distance of 158.03 ft., as shown in ~~C.S.~~ CS No. 83025, records of Hood River County, Oregon;
thence N. 26°55' W. a distance of 220.7 ft. to
- AP 11 a 1/2" iron rod as shown in said ~~C.S.~~ CS No. 83025, at intersection with the northeasterly right-of-way of said Historic Highway;
thence on a line radial to the right-of-way curve, southwesterly a distance of 60 ft. to
- AP 12 at intersection with the southerly right-of-way line of said Historic Highway;
thence on said southerly right-of-way line, continuing through the intersection with the Mount Hood Highway 35, westerly, approximately 850 ft. to
T. 03 N., R. 10 E.
- AP 13 at intersection with the easterly terminus of the southerly right-of-way line of realigned United States Highway 30, as shown in Highway Drawings 3B-15-8 and 9B-2-19, records of Oregon Department of Transportation;
thence on said southerly right-of-way line, identical with USFS Map 28, across the Hood River, westerly, approximately 600 ft. to
- AP 14 at intersection with the westerly right-of-way line of the Mount Hood Railroad;
thence on said right-of-way line, southerly, approximately 1,660 ft. to
- AP 15 at intersection with the E. and W. center line of the NE1/4 of section 36;
thence on said center line, S. 89°31'09" W., approximately 1,290 ft. to
- AP 16 the northwesterly corner of that property shown in ~~C.S.~~ CS No. 892769, records of Hood River County, Oregon;
thence on the westerly line and southerly extension thereof, as shown in ~~C.S.~~ CS No. 1995-111, records of Hood River County, Oregon, S. 27°08'08" W., approximately 676 ft. to
- AP 17 at intersection with the N. and S. center line of section 36 at the center line terminus of Pine Street;
thence on said N. and S. center line of section 36, southerly, approximately 1,000 ft. to
- AP 18 at 300 ft. southerly of the C1/4 of section 36;
thence along the top of a ridge overlooking the Hood River, S. 28°52' E., approximately 690 ft. to
- AP 19 the northeast corner of that property described in Deed No. 800749, records of Hood River County, Oregon, said corner being 300 ft. easterly from the N. and S. center line of section 36, when measured perpendicular thereto;
thence on the westerly line of said property, S. 00°01' E., approximately 1,730 ft. to
T. 02 N., R. 10 E.
- AP 20
(AP 588) at intersection with the line between Tps. 02 and 03 N., identical with AP 588 of the Exterior Legal Boundary Description;
thence on said township line, ~~identical with the on said e Exterior b Boundary of the Columbia River Gorge National Scenic Area (CRGNSA) (See Footnote 3 4),~~ N. 89°27'48" W., approximately 4,660 ft. to
- AP 21
(AP 589) at intersection with the southerly (right) bank of Indian Creek at ~~o Ordinary h High w Water Mark~~ (See Footnote 4 5);
thence along said southerly (right) bank, westerly, approximately 3,800 ft. to
- AP 22
(AP 590) at intersection with the easterly right-of-way line of Indian Creek Road;
thence continuing along said southerly (right) bank, S. 48°37' W., approximately 800 ft. to
- AP 23
(AP 591) at intersection with the line between sections 2 and 3;
thence leaving said southerly (right) bank on said section line (See Footnote 5 6), N. 00°24' W., approximately 1,720 ft. to
- AP 24
(AP 592) the corner of sections 2 and 3, T. 02 N., R. 10 E., and sections 34 and 35, T. 03 N., R. 10 E., ~~leaving the exterior boundary of the CRGNSA~~;
thence leaving said Exterior Boundary, on the line between sections 34 and 35, N. 00°53' W., approximately 2,628 ft. to
T. 03 N., R. 10 E.

- AP 25 the 1/4 corner of sections 34 and 35; thence on the E. and W. center line of section 34, S. 88°57'42" W., approximately 2,638 ft. to
- AP 26 the center 1/4 of said section 34; thence southerly, approximately 20 ft. to
- AP 27 at intersection with the easterly extension of the southerly right-of-way line of Post Canyon Road; thence on said southerly right-of-way line and extension thereof, N. 89°43' W., approximately 1,325 ft. to
- AP 28 at intersection with the N. and S. center line of the NW1/4 of section 34; thence on said center line, N. 00°35'10" E., approximately 1,960 ft. to
- AP 29 at intersection with the southerly line of the Davenport Lane easement, as described in Deed Volume G Page 30, and shown in ~~C.S.~~ CS No. 2003-019, records of Hood River County, Oregon; thence on said southerly line (See Footnote 6 ~~7~~), N. 89°06'53" W. a distance of 1,327.78 ft. to
- AP 30 at intersection with the line between sections 33 and 34; thence on said line N. 00°34'52" W. a distance of 660.00 ft. to
- AP 31 the corner of sections 27, 28, 33, and 34 as shown in ~~C.S.~~ CS No. 2009-004, records of Hood River County, Oregon, monumented with an iron post with 3" brass cap (See Footnote 8); thence on the line between sections 27 and 28, N. 00°06'02" W., approximately 280 ft. to
- AP 32 at intersection with the northerly right-of-way line of Interstate 84, identical with the southerly right-of-way line of Frontage Road, as relinquished in 1976 by O.D.O.T. to Hood River County, as described in Document No. 76-0682 and shown in ~~said C.S.~~ said CS No. 2009-004, records of Hood River County, Oregon (See Footnote 7); thence on said right-of-way line, S. 72°49'50" W. a distance of 321.85 ft. to
- AP 33 thence N. 86°23'19" W. a distance of 170.63 ft. to
- AP 34 at intersection with the southerly corner of Lots 8 and 9, Clifton Park Subdivision; thence S. 72°49'50" W., approximately 340 ft. to
- AP 35 the southwesterly corner of Lot 11, Clifton Park Subdivision; thence on the westerly line of said Lot 11 and northerly extension thereof, N. 17°10'10" W., approximately 750 ft. to
- AP 36 at intersection with the left bank of the Columbia River at ~~BNPE Bonneville Normal Pool Elevation (B.N.P.E.) 72 ft. (N.G.V.D.);~~ thence along said left bank at ~~B.N.P.E.~~ BNPE, easterly, approximately 5,240 ft. to
- AP 37 at intersection with the westerly face of a peninsula in the S1/2 of section 27, at ~~B.N.P.E.~~ BNPE (See Footnote 8 ~~9~~); thence across the base of said peninsula, N. 63°44' E., approximately 750 ft. to
- AP 38 at intersection with the easterly face of said peninsula and the left bank of the Columbia River at ~~B.N.P.E.~~ BNPE; thence along said left bank at ~~B.N.P.E.~~ BNPE, easterly, approximately 5,100 ft. to
- AP 39 at the northerly most extremity of a small peninsula at ~~B.N.P.E.~~ BNPE, in the SW1/4 NE1/4 of section 26, at ~~B.N.P.E.~~ BNPE; thence on a line, N. 47° E., approximately 1,240 ft. to from which the north most point of the peninsula known as "The Hook", at ~~B.N.P.E.~~ BNPE, bears East a distance of 200 ft. and South a distance of 30 ft.; thence N. 90° E., approximately 250 ft. to
- AP 40 at intersection with a line parallel with and 30 ft. from the northeasterly face of the "The Hook" at ~~B.N.P.E.~~ BNPE, when measured perpendicular thereto; thence on said line, S. 64° E., approximately 1,010 ft. to
- AP 41 at intersection with the westerly extension of a line between the northerly most extremity of the small peninsula, at ~~B.N.P.E.~~ BNPE, which bears easterly, approximately 300 ft., from the base of "The Hook"; and the northerly most extremity of the westerly jetty, at ~~B.N.P.E.~~ BNPE, which bears easterly, approximately 2,100 ft., from said base of "The Hook"; thence along said line and the westerly and easterly extensions thereof, N. 87° E., approximately 3,000 ft. to
- AP 42 at intersection with a meander line of lot 2, identical with the 1982 H.R.UGB; thence on said meander line S. 63°45' E., approximately 585 ft. to

- AP 43 a record meander corner of lot 2, westerly of the Hood River; thence on said meander line S. 49°45' E. a distance of 1,815 ft. to
- AP 44 the record meander corner on the line between Rs. 10 and 11 E.; thence on said range line, northerly, approximately 670 ft. to
- AP 45 **T. 03 N., R. 11 E.**
- AP 46 the northerly most corner of the Shore Lands Line, as described in Hood River County Annexation Ordinance No. 1159, dated May 6, 1963, Deed Volume 73 Page 124, records of Hood River County, Oregon; thence on the northerly line of said Shore Lands Line more specifically described by the following courses:
S. 68°30' E. a distance of 770.0 ft. to
- AP 47 S. 28°16' E. a distance of 148.1 ft. to
- AP 48 S. 53°32' E. a distance of 593.53 ft. to
- AP 49 S. 45°52' E. a distance of 180.0 ft. to
- AP 50 S. 24°04' E. a distance of 314.47 ft. to
- AP 51 S. 51°13' E. a distance of 382.0 ft. to
- AP 52 the northeasterly corner of said Shore Lands Line; thence on the easterly line of the Nathan L. Benson ~~D.L.C.~~ DLC No. 37 and northerly extension thereof, S. 01°11' E., approximately 266 ft. to

AP 1 the **Point of Beginning**

the Area being 2,422 Acres, more or less.

SOURCE MAPS AND DOCUMENTS:

1. 1986 Columbia River Gorge National Scenic Area Act Urban Boundary Maps UA-004, September 1986, (Congressional or Act Maps):

a. Sheet 4 - Hood River (Act Map 4); the Urban Area Boundary is not drawn on this map.

b. Sheet 5 - Hood River (Act Map 5) - is a land use map that was the basis for the 1987 USFS Maps. The Gorge Commission and U.S. Forest Service did not have a copy of Sheet 5; a map that appears to be a copy of Sheet 5 was found in a 2016 search of the Hood River County Surveyor's Office. The 1986 Hood River Urban Growth Boundary is drawn on this map, however the Urban Area Boundary is not.

2. In January 1987, the U.S. Forest Service developed maps based on the congressional maps (USFS Maps). The Commission and U.S. Forest Service used the USFS Maps as the primary National Scenic Area maps until adopting this legal description. Because Act Map 4 did not show the Hood River Urban Area Boundary, and Sheet 5 was missing, the USFS Maps are the basis for this description, particularly USFS Map 28. Certain cartographic interpretations differ from USFS Map to USFS Map.

a. CRGNSA Boundary Map, September 1986, NSA-001, Sheets 1 and 2; Urban Area Boundaries (U.A.B.s) are drawn at a small scale.

b. USFS Map 12.

c. USFS Map 15.

d. USFS Maps 12 and 15 have unexplainable differences with USFS Map 28.

e. Map 28, CRGNSA, September 1986, UA-004, Hood River Urban Area, Sheet 5, Produced January 1987, is a "Land Use Map" which was used as the primary basis for this description. The title block states, "The information on these maps was taken from the official maps referred to in Section 4 of P.L. 99-663... A map entitled 'Land Use Map, Hood River, Oregon' was used as the base for this map." However, no boundary lines are found on said Act Map.

3. Memorandum from Jonathan Doherty, Columbia River Gorge Commission, to Gorge Commissioners, dated November 10, 1997, to Gorge Commissioners, records of Columbia River Gorge Commission, White Salmon, Washington, about "Review of Urban Area Mapping Discrepancies." These mapping discrepancies are noted in this description at each area.

4. Copies of all source maps and documents are available at the Columbia River Gorge Commission and U.S. Forest Service, National Scenic Area offices.

5. Research indicates the general intent was to coincide with Oregon Urban Growth Boundaries from that era, with NSA Urban Area Boundaries except where this approach conflicted with other NSA objectives, such as in large areas in the main stem of the Columbia River. This description has incorporated the "legs" of the 1982 Hood River "Urban Growth Boundary (H.R. UGB) legal description, Goal 14 - Urbanization" in many places, which coincide with USFS Map 28.

FOOTNOTES:

1. This description intends to use the Bonneville Normal Pool Elevation in place at the time of the adoption of the National Scenic Area Act. At that time the Bonneville Normal Pool Elevation was 72 ft. Changes to this elevation through dam operations or otherwise do not change the location of the urban area boundary.

2. AP 1 to AP 3, held USFS Map 28; not coincident with the City of Hood River Urban Growth Boundary (H.R. UGB).

3. AP 3 to AP 14, held USFS Map 28; AP 3 to AP 13, held Eastside Amendment to the Urban Growth Boundary, as shown in Ordinance No. 1578, records of City of Hood River, Oregon; also Emergency Ordinance No. 155, records of Hood River County, Oregon.

4. AP 20 to AP 21, held the exterior boundary of the National Scenic Area, on the line between Tps. 02 and 03 N., coincident with the center line of Eliot Drive and Brookside Drive; not coincident with the H.R. UGB, which is on the southerly right-of-way line of Eliot Drive, outside the NSA.

5. AP 21 to AP 23, held the 1982 H.R. UGB description calls to the "south bank of Indian Creek" which is an unusual call for a non-navigable stream. Clark on Surveying and Boundaries, 4th Edition, 1976 (in use when the NSA was created), Page 843 states, "Where a stream is given as an abutting boundary, the general rule is that title of the abutting

landowners runs into the stream unless it is clear from the title descriptions that title runs to one of the banks... Where the bank is the boundary, it may be either the high water mark or the low water mark." ~~Here, ordinary high water mark is held, along the southerly bank. The OHWM on the southerly (right) bank of Indian Creek is held as the definitive boundary line.~~

§ 6. AP 23 to AP 25, held 1982 H.R. UGB, as elsewhere in this description, Leg 6 description along section line; USFS Map 28 and USFS Map 12 show the H.R. UGB along the easterly right-of-way lines of Hutson Road and Belmont Drive.

¶ 7. AP 29 to AP 31, held 1982 H.R UGB Leg 6 and USFS Map 28, consistent with calls elsewhere in this description; contrary to the 1/4/93 Boundary Determination which was based upon USFS Map 12, records of Columbia River Gorge Commission, White Salmon, Washington.

7.8. AP 31 to AP 34, held boundary line determination as shown in ~~C.S.~~ CS No. 2009-004, records of Hood River County, Oregon; and supported by Forest Service Land Surveyor Don Karsch in his letter dated Dec. 8, 2005, records of Columbia River Gorge Commission, White Salmon, Washington. This boundary determination modified Legs 7 and 8 of the 1982 H.R UGB.

8.9. AP 37 to AP 43, held USFS Map 28 and USFS Map 12, not 1982 H.R. UGB which departs significantly from the USFS mapping along the waterfront.

Columbia River Gorge National Scenic Area
Lyle Urban Area Legal Boundary Description

All corner points and lines of the Public Land Survey System (PLSS) referenced in this description are according to the latest official survey notes and plats, and state authority survey plats in effect as of December 1, 2016, unless otherwise specified. The hierarchy of the "rules of construction" is observed herein - natural monuments control over artificial monuments, which control over bearings and distances, which control over coordinates. This description will be junior to all senior rights when overlaps may occur. This description shall be considered, along with the final legislation map, as whole and complete per the original legislation creating this urban area and together they both shall govern all boundaries of this area, and guide future "on-the-ground" surveys. Where the boundary is described as a topographic feature, the actual location of the feature will control the approximate course identifying that part of said boundary. Courses for parallel offsets are measured from the apparent road or trail centerlines of the traveled way to determine the boundary and are intended to be used to locate the boundary in the future in the event that the road migrates or becomes indistinguishable; the courses follow the general configuration of the feature and not every turn or bend. The latitudes and longitudes reported for certain corner points and angle points in this description are North American Datum of 1983 (NAD83) (2011) (Epoch2011.00) values where survey-grade Global Positioning System (GPS) data was available, otherwise were determined by Geographical Information Systems (GIS) mapping data with a relative accuracy of ± 40 ft. horizontally, unless otherwise noted.

This description encompasses land that is identified as

The Lyle Urban Area, established in the COLUMBIA RIVER GORGE NATIONAL SCENIC AREA ACT OF 1986, Pub. L. No. 99-663, § 4(e), 100 Stat. 4274, 4277 (1986), located in portions of:

Township 2 North, Range 12 East, ~~and of the Willamette Meridian, Klickitat County, Washington~~

Township 3 North, Range 12 East, of the Willamette Meridian, Klickitat County, Washington.

T. 03 N., R. 12 E., Klickitat County

- AP 1 **Beginning** at the intersection of the thread of the Klickitat River and the right bank of the Columbia River at Bonneville Normal Pool Elevation (~~B.N.P.E.~~) elevation 72 ft., National Geodetic Vertical Datum of 1929 (~~N.G.V.D. 29~~ NGVD 1929) (~~BNPE~~) (See Footnote 1);
Latitude: 45°41'46.0" N., Longitude: 121°17'31.3" W.;
thence upstream along said thread, northerly a distance of 905 ft. to
 - AP 2 thence leaving said thread, S. 81°16' E., approximately 283 ft. See Footnote 2) to
 - AP 3 at intersection with the centerline of the abandoned Burlington Northern Santa Fe railroad Lyle-Goldendale spur track; thence N. 66°29' E., approximately 200 ft. to
 - AP 4 at intersection with the center line of Washington State Route 142; thence N. 80°30' E., approximately 1,225 ft. to
 - AP 5 at intersection with the 400-ft. ~~foot~~ contour line (~~N.G.V.D. 29~~ NGVD 1929); thence along said 400-ft. ~~foot~~ contour line (See Footnote 3), southeasterly, approximately 2,840 ft. to
- T. 02 N., R. 12 E.**
- AP 6 at intersection with an unnamed drainage ravine and monumented with a 5/8" x 30" iron rod with yellow plastic cap inscribed "B BESEDA PLS 35092", as shown in survey recorded at Auditor's File No. (~~A.F.N.~~ AFN) 1107552, records of Klickitat County, Washington; thence S. 24°27'14" W. a distance of 357.97 ft. to
 - AP 7 at intersection with the head of a second drainage ravine and monumented with a 5/8" x 30" iron rod with yellow plastic cap inscribed "B BESEDA PLS 35092", as shown in said survey recorded at ~~A.F.N.~~ AFN 1107552;

- thence along ~~drainage ravine~~ bottom, south-westerly, approximately 415 ft. to
- AP 8 at intersection with a third ~~drainage ravine~~ and monumented with a 5/8" x 30" iron rod with yellow plastic cap inscribed "B BESEDA PLS 35092", as shown in said survey recorded at ~~A.F.N.~~ AFN 1107552; thence along the combined ~~drainage ravine~~ bottom, southerly, approximately 610 ft. to
- AP 9 at intersection with the northerly right-of-way line of Washington State Route 14; thence on said northerly right-of-way line, easterly, approximately 915 ft. to
- AP 10 a point opposite Washington State Route 14 Center Line Station 27+77.80 Point of Tangent (P.T.); thence at a right angle through said Station 27+77.80 P.T., southwesterly, approximately 170 ft. to
- AP 11 the intersection with the aforementioned right bank of the Columbia River at ~~B.N.P.E.~~ BNPE; thence along said right bank at ~~B.N.P.E.~~ BNPE, westerly, approximately 6,945 ft. to
- AP 1 the **Point of Beginning**.

the Area being 239 Acres, more or less.

SOURCE MAPS AND DOCUMENTS:

1. 1986 Columbia River Gorge National Scenic Area Act Urban Boundary Maps, UA-004, September 1986, (Congressional or Act Maps):

a. Sheet 7

2. In January 1987, the U.S. Forest Service developed maps based on the congressional maps (USFS Maps). The Commission and U.S. Forest Service used the USFS Maps as the primary National Scenic Area maps until adopting this legal description. The USFS Maps are generally the basis for this description.

a. USFS Map 18

3. Copies of all source maps and documents are available at the Columbia River Gorge Commission and U.S. Forest Service, National Scenic Area offices.

FOOTNOTES:

1. This description intends to use the Bonneville Normal Pool Elevation in place at the time of the adoption of the National Scenic Area Act. At that time the Bonneville Normal Pool Elevation was 72 ft. Changes to this elevation through dam operations or otherwise do not change the location of the urban area boundary. The Bonneville Dam Normal Pool Elevation is listed as elevation 72 ft. on the USFS Map 18.

3 2. At AP 2 to AP 5, the Act Map clearly shows more angle points than the USFS mapping. The USFS Map was followed in the description as best as possible through these apparently random locations. The actual physical difference between the maps is very minor.

4 3. The easterly end of the 400-ft. contour call in AP 5 and AP 6 to AP 9 are fully shown and monumented in the survey for the Friends of Columbia Gorge Land Trust, as recorded at ~~A.F.N.~~ AFN 1107552, records of Klickitat County, Washington.

Columbia River Gorge National Scenic Area
Mosier Urban Area Legal Boundary Description

All corner points and lines of the Public Land Survey System (PLSS) referenced in this description are according to the latest official survey notes and plats in effect as of December 1, 2016, and state authority survey plats unless otherwise specified. This description notes where it is identical with and where it leaves the Exterior Boundary of the Columbia River Gorge National Scenic Area (CRGNSA). Exterior Boundary Angle Points are shown in parentheses (AP). The hierarchy of the "rules of construction" is observed herein - natural monuments control over artificial monuments, which control over bearings and distances, which control over coordinates. This description will be junior to all senior rights when overlaps may occur. This description shall be considered, along with the final legislation map, as whole and complete per the original legislation creating this urban area and together they both shall govern all boundaries of this area, and guide future "on-the-ground" surveys. Where the boundary is described as a topographic feature, the actual location of the feature will control the approximate course identifying that part of said boundary. Courses for parallel offsets are measured from the apparent road or trail centerlines of the traveled way to determine the boundary and are intended to be used to locate the boundary in the future in the event that the road migrates or becomes indistinguishable; the courses follow the general configuration of the feature and not every turn or bend. The latitudes and longitudes reported for certain corner points and angle points in this description are North American Datum of 1983 (NAD83) (2011) (Epoch2011.00) values where survey-grade Global Positioning System (GPS) data was available, otherwise were determined by Geographical Information Systems (GIS) mapping data with a relative accuracy of ± 40 ft. ~~feet~~ horizontally, unless otherwise noted.

This description encompasses land that is identified as

The Mosier Urban Area, established in the COLUMBIA RIVER GORGE NATIONAL SCENIC AREA ACT OF 1986, Pub. L. No. 99-663, § 4(e), 100 Stat. 4274, 4277 (1986), located in portions of:

Township 2 North, Range 11 East, of the Willamette Meridian, Wasco County, Oregon.

T. 02 N., R. 11 E.

- AP 1 **Beginning** at the intersection of the northerly extension of the westerly most line of the J. A. Mosier Donation Land Claim (~~D.L.C.~~ DLC) No. 37 and the left bank of the Columbia River at Bonneville Normal Pool Elevation (~~B.N.P.E.~~ BNPE), elevation 72 ft., National Geodetic Vertical Datum 1929 (~~N.G.V.D. 29~~ NGVD 1929) (BNPE) (See Footnote 1), at;

Latitude: 45°41'13.2" N., Longitude: 121°25'12.0" ~~WE.~~;

thence on said northerly extension, the ~~D.L.C. DLC~~ line, and southerly extension thereof, S. 00°27' E., approximately 850 ~~ft. feet~~ to

AP 2 at intersection with the 200-ft. contour line (~~N.G.V.D. 1929~~ NGVD 1929); thence along said 200-ft. contour line, southeasterly, approximately 1,400 ~~ft. feet~~ to

AP 3 at intersection with the center line of the Historic Columbia River Highway, formerly Rock Creek County Road; thence on the center line of said highway and Hood River County Road, southwest-erly, approximately 1,040 ft. to

AP 4 at intersection with the 280-ft. contour line (~~N.G.V.D. NGVD~~ NGVD 1929); thence on a line, S. 9°40' W., approximately 390 ft. to

AP 5 the 1/4 cor~~ner~~ of sec~~s~~.tions 2 and 11, perpetuated by Professional Land Surveyor (~~P.L.S. PLS~~) No. 1815 in 1996, as shown in County Survey (~~C.S. CS~~) No. 9-190, records of Wasco County, Oregon; monumented with an iron post with a 2-1/2" brass cap; thence on the line between sec~~s~~.tions 2 and 11, N. 87°42'47" E. a distance of 2,640.24 ~~ft. feet~~ to

AP 6 the cor~~ner~~ of secs. 1, 2, 11, and 12, perpetuated by the United States Army Corps of Engineers (~~U.S.A.C.E. USACE~~) in 1936 from original evidence; monumented with an iron post with 3" brass cap; thence on the line between sec~~s~~.tions 1 and 12, S. 88°22'52" E. a distance of 2,642.35 ft. to

AP 7A the 1/4 cor~~ner~~ of sec~~s~~.tions 1 and 12, perpetuated by ~~P.L.S. PLS~~ No. 856 in 1970, as shown in Land Corner Record Sheet (L.C.) 0012, records of Wasco County, Oregon; monumented with an iron post with 3" brass cap; thence on the line between sec~~s~~.tions 1 and 12, S. 88°22' E., approximately a distance of 1,012.7 ~~863~~ ft. to

AP 7B
(AP 499) at AP 499 of the Exterior Legal Boundary Description; thence continuing on said sec. line, on said Exterior Boundary, S. 88°22' E., approxi-mately, 150 ft. to

AP 8 at intersection with the thread of Mosier Creek (~~See Footnote 2~~), identical with the exterior boundary of the Columbia River Gorge National Scenic Area; thence leaving said Exterior Boundary, downstream along the thread of Mosier Creek, as shown in 1916 County Survey (~~C.S. CS~~) No. C-4-3, records of Wasco County, Oregon (~~See Footnote 1~~), north-westerly, approximately 905 ft. to

AP 9 at intersection with the southerly extension of the easterly line of the aforementioned J.A. Mosier ~~D.L.C. DLC~~ No. 37; thence on said southerly extension, N. 01°09' W., approximately 230 ~~ft. feet~~ to

AP 10 the southeast cor~~ner~~ of said Mosier ~~D.L.C. DLC~~, perpetuated by the ~~U.S.A.C.E. USACE~~ in 1936, as shown in L.C. 0006, records of Wasco County, Oregon; monu-mented with an iron post with 3" brass cap; thence on the easterly line of said Mosier ~~D.L.C. DLC~~ and northerly extension thereof, N. 01°09' W., approximately 3,425 ft. to

AP 11 at intersection with the left bank of the Columbia River at ~~B.N.P.E. BNPE~~; thence along said left bank, westerly, approximately 5,780 ft. to

AP 1 the **Point of Beginning**

the Area being 391 Acres, more or less.

SOURCE MAPS AND DOCUMENTS:

1. 1986 Columbia River Gorge National Scenic Area Act Urban Boundary Maps, September 1986 (Congressional or Act Maps).

- a. NSA-001
- b. UA-004, Sheet 6

2. In January 1987, the U.S. Forest Service developed maps based on the congressional maps (USFS Maps). The Commission and U.S. Forest Service used the USFS Maps as the primary National Scenic Area maps until adopting this legal description. The USFS Maps are generally the basis for this description.

- a. USFS Map 15

3. Memorandum from Jonathan Doherty, Columbia River Gorge Commission, to Gorge Commissioners, dated November 10, 1997, to Gorge Commissioners, records of Columbia River Gorge Commission, White Salmon, Wash-ington, about "Review of Urban Area Mapping Discrepan-cies."

4. Copies of all source maps and documents are available at the Columbia River Gorge Commission and U.S. Forest Service, National Scenic Area offices.

FOOTNOTES:

1. This description intends to use the Bonneville Normal Pool Elevation in place at the time of the adoption of the

National Scenic Area Act. At that time the Bonneville Normal Pool Elevation was 72 ft. Changes to this elevation through dam operations or otherwise do not change the location of the urban area boundary.

± 2. AP 8 to AP 9, held the thread of Mosier Creek. Believing the intent of Congress was to follow existing municipal boundary lines, the Mosier city limits line, dated in multiple drawings back to 1916, is clearly depicted as following along the thread of Mosier Creek. Holding the thread of Mosier Creek eliminates conflict with dwellings in the vicinity. This departs slightly from USFS Map 15 which depicts a straight line before intersecting with the southerly extension of the Mosier Donation Land Claim.

Columbia River Gorge National Scenic Area

North Bonneville Urban Area Legal Boundary Description

All corner points and lines of the Public Land Survey System (PLSS) referenced in this description are according to the latest official survey notes and plats, and state authority survey plats in effect as of December 1, 2016, unless otherwise specified. This description notes where it is identical with and where it leaves Special Management Area (SMA) Boundaries of the Columbia River Gorge National Scenic Area (CRGNSA). Special Management Area Boundary Angle Points are shown in brackets [AP]. The hierarchy of the "rules of construction" is observed herein - natural monuments control over artificial monuments, which control over bearings and distances, which control over coordinates. This description will be junior to all senior rights when overlaps may occur. This description shall be considered, along with the final legislation map, as whole and complete per the original legislation creating this urban area and together they both shall govern all boundaries of this area, and guide future "on-the-ground" surveys. Where the boundary is described as a topographic feature, the actual location of the feature will control the approximate course identifying that part of said boundary. Courses for parallel offsets are measured from the apparent road or trail centerlines of the traveled way to determine the boundary and are intended to be used to locate the boundary in the future in the event that the road migrates or becomes indistinguishable; the courses follow the general configuration of the feature and not every turn or bend. The latitudes and longitudes reported for certain corner points and angle points in this description are North American Datum of 1983 (NAD83) (2011) (Epoch2011.00) values where survey-grade Global Positioning System (GPS) data was available, otherwise were determined by Geographical Information Systems (GIS) mapping data with a relative accuracy of ± 40 ft. ~~feet~~ horizontally, unless otherwise noted.

This description encompasses land that is identified as

The North Bonneville Urban Area, established in the COLUMBIA RIVER GORGE NATIONAL SCENIC AREA ACT OF 1986, Pub. L. No. 99-663, § 4(e), 100 Stat. 4274, 4277 (1986), located in portions of:

Township 2 North, Range 7 East, of the Willamette Meridian, Skamania County, Washington,

Township 2 North, Range 7 East, of the Willamette Meridian, Multnomah County, Oregon.

T. 02 N., R. 07 E., Multnomah County, Oregon

AP 1
[AP 156] **Beginning** at the corner of sections 21, 22, 27, and 28, T. 02 N., R. 07 E., identical with AP 156 of the Gates of the Columbia River, Oregon Falls Special Management Area (SMA) Legal Boundary Description. Latitude: 45°37'58.3" N., Longitude: 121°56'34.4" W.;
thence on the line between sections 21 and 28, on said SMA Boundary, S. 89°20' W., approximately 2,910 ft. to

AP 2
[AP 155] at intersection with the center line of the Union Pacific Railroad right-of-way; thence on said center line, southwesterly, approximately 2,224 ft. to

AP 3A
[AP 154] at Engineers Station 2091+64.3 Point of Spiral; thence ~~crossing the Columbia River~~, N. 90° W., approximately ~~2,060~~ 200 ft. to

AP 3B
[AP 153] at intersection with the left bank of the Columbia River at Ordinary High Water Mark (OHWM);
thence leaving said SMA Boundary, continuing N. 90° W., approximately 1,860 ft. to

T. 02 N., R. 07 E., Skamania County, Washington

AP 4A at intersection with the right bank of the Columbia River at Ordinary High Water Mark (~~O.H.W.M.~~ OHWM); thence along the meanders of said ~~O.H.W.M.~~ OHWM, southwesterly, approximately ~~5010~~ 6,510 ft. to

AP 4B
[AP 60] identical with AP 60 of the Gates of the Columbia River, Beacon Rock Special Management Area (SMA) Legal Boundary Description;
thence continuing along said right bank at OHWM, along said SMA Boundary a distance of 1,500 feet to

AP 5
[AP 59] at intersection with the left bank of Hamilton Creek; thence along the meanders of said left bank, northeasterly, approximately 3,030 ft. to

AP 6
[AP 58] at intersection with the southeasterly extension of the south most southwesterly line of the plat of Relocated North Bonneville See Footnote 1);
thence on said southeasterly extension, crossing Hamilton Creek and continuing on

- AP 7
[AP 57] said southwesterly line, N. 67°00'00" W., approximately 760 ft. to
thence continuing on said southwesterly boundary, N. 18°27'10" W. a distance of 1,452.91 ft. to
- AP 8
[AP 56] thence continuing on said southwesterly boundary, N. 29°58'55" E. a distance of 119.59 ft. to
- AP 9
[AP 55] at the northwest corner of said Relocated North Bonneville, identical with the line between sections 19 and 30;
thence N. 43°21' W., approximately 1,045 ft. to
- AP 10
[AP 54] at intersection with the N. and S. center line of section 19 and the southeasterly right-of-way line of the Burlington Northern - Santa Fe Railroad;
thence on said center line, N. 0°29' W., approximately 1,890 ft. to
- AP 11
[AP 53] the center 1/4 corner of said section 19 at; Latitude: 45°38'36.6" N., Longitude: 121°59'31.6" W.;
thence on the E. and W. center line of said section 19, S. 89°59' E., approximately 505 ft. to
- AP 12
[AP 52] at intersection with the northerly right-of-way line of the Bonneville Power Administration (~~B.P.A.~~ BPA) Bonneville-Vancouver transmission line easement;
thence on said northerly line, N. 57°56' E., approximately 4,490 ft. to
- AP 13
[AP 51] at intersection with the westerly boundary of the G.W. Johnson Donation Land Claim (~~D.L.C.~~ DLC) No. 38 and city limits line of North Bonneville (See Footnote 2);
thence on said westerly boundary, identical with said city limits line, N. 16°46'08" W., approximately 160 ft. to
- AP 14
[AP 50] the northwest corner of said Johnson ~~D.L.C.~~ DLC;
thence on the northerly boundary thereof, N. 84°22'12" E., approximately 350 ft. to
- AP 15
[AP 49] at intersection with aforementioned northerly right-of-way line of the ~~B.P.A.~~ BPA Bonneville-Vancouver transmission line easement;
thence leaving said city limits line on said northerly line, N. 57°56' E., approximately 1,450 ft. to
- AP 16
[AP 48] at north most point thereof;
thence continuing on said northerly line, S. 57°28' E., approximately 1,050 ft. to
- AP 17
[AP 47] at intersection with the aforementioned northerly boundary of the Johnson ~~D.L.C.~~ DLC and city limits line;
thence on said northerly boundary, and identical with said city limits line, N. 84°22'12" E., approximately 550 ft. to
- AP 18
[AP 46] at intersection with the westerly boundary of the B.B. Bishop ~~D.L.C.~~ DLC No. 39;
thence on said westerly boundary, N. 02°12'16" E., approximately 1,347 ft. to
- AP 19
[AP 45] the northwest corner of said Bishop ~~D.L.C.~~ DLC;
thence on the north boundary thereof, N. 86°20'39" E., approximately 666 ft. to
- AP 20
[AP 44] at intersection with the center line of a natural gas pipe line easement;
thence leaving the aforementioned SMA Boundary, on said center line, N. 45°18'27" E., approximately 499 ft. to
- AP 21 being 430.00 ft. feet North of the northerly boundary of the aforementioned B.B. Bishop ~~D.L.C.~~ DLC No. 39 when measured perpendicular thereto;
thence on a line 430.00 ft. feet North of and parallel with said northerly boundary, S. 89°54'48" E., approximately 1,047 ft. to
- AP 22 at intersection with the thread of Greenleaf Creek (See Footnote 3);
thence downstream along the meanders of said thread, southwesterly, approximately 950 ft. to
- AP 23 at intersection with aforementioned northerly boundary of the Bishop ~~D.L.C.~~ DLC;
thence on said northerly boundary, S. 89°54'48" E., approximately 610 ft. to
- AP 24 at intersection with the center line of the Bonneville-Coulee ~~B.P.A.~~ BPA No. 1 transmission line easement;
thence on said center line, S. 32°28' W., approximately 755 ft. to
- AP 25 at intersection with the center line of East Cascade Drive, also known as Moffett-Hot Springs Road;
thence on said center line, southerly, approximately 1,310 ft. to
- AP 26 at intersection with the line between sections 16 and 21;
thence on said line, S. 87°55'01" E., approximately 930 ft. to

- AP 27 at intersection with the northerly boundary of the U.S. Army Corps of Engineers Bonneville Project Take Line, as shown on survey by Hagedorn, Inc., recorded at Book 1, Page 168, survey records of Skamania County, Washington, monumented with aluminum post and 4" aluminum cap (See Footnotes 4 and 5);
thence leaving aforementioned city limits line on said boundary more specifically described by the following courses:
N. 33°30'32" E. a distance of 633.68 ft. to
- AP 28 an aluminum post with 4" aluminum cap;
thence S. 72°59'28" E. a distance of 1,000.04 ft. to
- AP 29 an aluminum post with 4" aluminum cap;
thence N. 52°00'32" E. a distance of 675.03 ft. to
- AP 30 an aluminum post with 4" aluminum cap;
thence N. 84°00'32" E. a distance of 740.03 ft. to
- AP 31 an aluminum post with 4" aluminum cap;
thence S. 88°59'28" E. a distance of 340.01 ft. to
- AP 32 an aluminum post with 4" aluminum cap;
at intersection with the line between sections 15 and 16;
thence S. 79°29'28" E. a distance of 2,000.08 ft. to
- AP 33 an aluminum post with 4" aluminum cap;
thence S. 86°59'28" E., approximately 1,599.51 ft. to
- AP 34 an aluminum post with 4" aluminum cap;
at intersection with the city limits line of North Bonneville (See Footnote 6);
thence on said city limits line more specifically described by the following courses:
northerly, approximately 1,000 ft. to
- AP 35 a northwest corner of said city limits line;
thence continuing on said city limits line, East a distance of 223 ft. to
- AP 36 the northeast corner of that tract of land described in Book 51, Page 352, records of Skamania County, Washington;
thence N. 90° E., approximately 700 ft. to
- AP 37 thence continuing on said city limits line, N. 35°15' W. a distance of 50 ft. to
- AP 38 thence East a distance of 565 ft. to
- AP 39 thence S. 78°30' E. a distance of 159 ft. to (See Footnote 5)
- AP 40 thence N. 78°12' E. a distance of 50 ft. to
- AP 41 at intersection with the west line of section 14 and the southerly right-of-way line of Wauna Lake Road;
thence continuing on said city limits line, identical with said southerly right-of-way line, easterly and southerly, approximately 560 ft. to
- AP 42 thence leaving said right-of-way line, continuing on said city limits line, N. 84°36' E. a distance of 276 ft. to
- AP 43 thence S. 59°59' E. a distance of 158 ft. to
- AP 44 thence N. 90° E. a distance of 35 ft. to
- AP 45 at intersection with the easterly boundary of the D.F. Bradford ~~D.L.C.~~ DLC No. 37;
thence continuing on said city limits line, identical with the easterly boundary of said Bradford ~~D.L.C.~~ DLC, S. 43° E. a distance of 14 ft. to
- AP 46 thence leaving said easterly boundary, continuing on said city limits line, N. 00° E., approximately 353 ft. to
- AP 47 thence N. 90° E. a distance of 341 ft. to
- AP 48 at intersection with the westerly line of lot 2, in section 14, from which the northerly right-of-way line of State Route 14 bears S. 00° E., approximately 353 ft.;
thence on said westerly line of lot 2, S. 00° E., approximately 444 ft. to
- AP 49 at intersection with the southerly right-of-way line of Washington State Route 14;
thence continuing on said city limits line, identical with said southerly right-of-way line, S. 74°54' W., approximately 212 ft. to
- AP 50 at intersection with the easterly boundary of the aforementioned Bradford ~~D.L.C.~~ DLC;
thence leaving said city limits line, South, approximately 130 ft. to
- AP 51 at intersection with the right bank of the Columbia River at Bonneville Normal Pool Elevation (~~B.N.P.E.~~) 72 ft., National Geodetic Vertical Datum (~~N.G.V.D.-29~~) (BNPE) (See Footnote 7);
thence along said right bank at ~~B.N.P.E.~~ BNPE, southwesterly, approximately 4,100 ft. to
- AP 52 at intersection with the line between lots 2 and 3, in section 22 at ~~B.N.P.E.~~ BNPE;
thence crossing the Columbia River, S. 30°06' W., approximately 3,770 ft. to

**T. 02 N., R. 07 E., Multnomah County
Oregon**

AP 53
[AP 159] at intersection with the left bank of the Columbia River at ~~B.N.P.E.~~ BNPE, identical with AP 159 of the aforementioned Oregon Falls SMA Legal Boundary Description;

thence on said SMA Boundary, S. 47°38' W., approximately 634 ft. to

AP 54
[AP 158] at intersection with the right-of-way line of Interstate 84 where the east and westbound lanes separate on the westerly side of Tooth Rock Tunnel;

thence parallel with the westbound center line of Interstate 84, S. 69°06' W., approximately 1,020 ft. to

AP 55
[AP 157] at intersection with the line between sections 21 and 22;

thence on the line between sections 21 and 22, S. 00°16' E., approximately 1,340 ft. to the Point of Beginning

AP 1
[AP 156] the Point of Beginning

the Area being 2,580 Acres, more or less.

SOURCE MAPS AND DOCUMENTS:

1. 1986 Columbia River Gorge National Scenic Area Act Urban Boundary Maps, UA-004, September 1986, (Congressional or Act Maps):

a. Sheet 1

2. In January 1987, the U.S. Forest Service developed maps based on the congressional maps (USFS Maps). The Commission and U.S. Forest Service used the USFS Maps as the primary National Scenic Area maps until adopting this legal description. The USFS Maps are generally the basis for this description.

a. USFS Map 7

3. Memorandum from Jonathan Doherty, Columbia River Gorge Commission, to Gorge Commissioners, dated November 10, 1997, to Gorge Commissioners, records of Columbia River Gorge Commission, White Salmon, Washington, about "Review of Urban Area Mapping Discrepancies." These mapping discrepancies were addressed in later agreements.

4. Copies of all source maps and documents are available at the Columbia River Gorge Commission and U.S. Forest Service, National Scenic Area offices.

FOOTNOTES:

1. AP 6 to AP 9 follow the southwesterly boundary of the plat of Relocated North Bonneville. This line is also a portion of the easterly boundary of the Pierce National Wildlife Refuge. Both the 1987 USFS and 1986 Act Maps are vague on the location of the UA line in this area. The line on both maps appears to follow what has been interpreted as a construction haul road, which existed as a part of the construction and relocation of the City of North Bonneville. The shape of the haul road is very similar to the shape of the exterior boundary of the subdivision plat. The haul road no longer exists. Its apparent location would bisect multiple lots within the subdivi-

vision plat. Because there is a common shape of both lines and no resource protection or policy reason to split small division lots, this description interpreted the Urban Area Boundary to run along the exterior boundary of the subdivision plat.

2. AP 13 to AP 15 follow the city limits of the City of North Bonneville. These angle points form a very small triangle on the north side of the ~~B.P.A.~~ BPA transmission line corridor. This land was within the North Bonneville city limits at the time of the Act and was developed. Both the 1987 USFS and 1986 Act Maps do not include this small triangular area. Believing that the intent of Congress was to follow the existing city limits line, this description included this area within the Urban Area description for North Bonneville.

3. AP 22 to AP 24 follow the North Bonneville city limits line. This is consistent with both the 1987 USFS and 1986 Act Maps. However, in this area on the base map utilized for both map sets, the city limits line was incorrectly depicted. This description reflects the correct location of the North Bonneville city limits line as it existed at the time of the Act.

4. For the area between AP 27 and AP 50 both the 1987 USFS and 1986 Act Maps are very vague. The lines drawn on both map sets appear to mimic the shape of the lines described in footnotes 5 and 6. However, the location as shown on both map sets appears to be offset from the actual location of these lines. Neither map set had the property lines or Corp Take lines on them to make them able to be easily followed. Therefore, believing the intent of Congress to be to follow the Take line and city limits line as they existed at the time of the Act, this description was written as discussed in footnotes 5 and 6.

4 5. AP 27 to AP 34 follow the Corps of Engineers Take Line. These courses are as per the survey completed by Hagedorn, Inc., recorded at Book 1, Page 168, survey records of Skamania County.

5 6. AP 34 to AP 50 follow the North Bonneville city limits line as adopted by the City of North Bonneville under Ordinance No. 272, dated December 10, 1974. The description within Ordinance No. 272 runs in the opposite direction to the Urban Area legal description. Every effort was made to make the Urban Area description consistent with the description in the ordinance. Deference should be given to the ordinance as the senior document for surveys along this portion of the Urban Area line. AP 35 to AP 50 do not follow USFS Map 7. Believing that the intent of Congress was to follow the existing city limits line, this description includes this area within the Urban Area description for North Bonneville.

6. For the area between AP 27 and AP 50 both the 1987 USFS and 1986 Act Maps are very vague. The lines drawn on both map sets appear to mimic the shape of the lines described in footnotes 4 and 5 above. However, the location as shown on both map sets appears to be offset from the actual location of these lines. Neither map set had the property lines or Corp Take lines on them to make them able to be easily followed. Therefore, believing the intent of Congress to be to follow the Take line and city limits line as they existed at the time of the Act, this description was written as discussed in footnotes 4 and 5 above.

7. This description intends to use the Bonneville Normal Pool Elevation in place at the time of the adoption of the National Scenic Area Act. At that time the Bonneville Normal Pool Elevation was 72 ft. Changes to this elevation through dam operations or otherwise do not change the location of the urban area boundary. Normal Pool Elevation of the Bonneville Dam is 72 ft. (N.G.V.D. 29) as shown on the National Scenic Area Maps dated September 1986. The current Quad maps show an elevation of 74 feet.

Columbia River Gorge National Scenic Area
Stevenson Urban Area Legal Boundary Description

All corner points and lines of the Public Land Survey System (PLSS) referenced in this description are according to the latest official survey notes and plats, and state authority survey plats in effect as of December 1, 2016, unless otherwise specified. The hierarchy of the "rules of construction" is observed herein - natural monuments control over artificial monuments, which control over bearings and distances, which control over coordinates. This description will be junior to all senior rights when overlaps may occur. This description shall be considered, along with the final legislation map, as whole and complete per the original legislation creating this urban area and together they both shall govern all boundaries of this area, and guide future "on-the-ground" surveys. Where the boundary is described as a topographic feature, the actual location of the feature will control the approximate course identifying that part of said boundary. Courses for parallel offsets are measured from the apparent road or trail center lines of the traveled way to determine the boundary and are intended to be used to locate the boundary in the future in the event that the road migrates or becomes indistinguishable; the courses follow the general configuration of the feature and not every turn or bend. The latitudes and longitudes reported for certain corner points and angle points in this description are North American Datum of 1983 (NAD83) (2011) (Epoch2011.00) values where survey-grade Global Positioning System (GPS) data was available, otherwise were determined by Geographical Information Systems (GIS) mapping data with a relative accuracy of ± 40 ft. horizontally, unless otherwise noted.

This description encompasses land that is identified as

The Stevenson Urban Area, established in the COLUMBIA RIVER GORGE NATIONAL SCENIC AREA ACT OF 1986, Pub. L. No. 99-663, § 4(e), 100 Stat. 4274, 4277 (1986), located in portions of:

Township 2 North, Range 7 East, ~~of the Willamette Meridian, Skamania County, Washington~~

Township 3 North, Range 7 East, ~~and of the Willamette Meridian, Skamania County, Washington~~

Township 3 North, Range 7-1/2 East, of the Willamette Meridian, Skamania County, Washington.

T. 02 N., R. 07 E.

- AP 1 **Beginning** at intersection of the northeasterly line of the Bradford Donation Land Claim (~~D.L.C.~~ DLC) No. 37 and the right bank of the Columbia River at Bonneville Normal Pool Elevation (~~B.N.P.E.~~) elevation 72 ft., National Geodetic Vertical Datum of 1929 (~~N.G.V.D. 29~~) BNPE) (See Footnote 1);
Latitude: 45°40'37.2" N., Longitude: 121°54'18.6" W.;
thence on said northeasterly line, N. 52°47'28" W., approximately 2,630 ft. to
- AP 2 the northerly corner of said Bradford ~~D.L.C.~~ DLC No. 37, identical with the southeast corner of the Iman ~~D.L.C.~~ DLC No. 44 (See Footnote 2);
thence on the west line of said Iman ~~D.L.C.~~ DLC No. 44, N. 0°29'21" E., approximately 1,505 ft. to
- AP 3 at intersection with the northerly line of Lot 2 of the Columbia Gorge Park Subdivision; thence on the northerly line of said Lot 2 and Lot 1, said Columbia Gorge Park Subdivision, N. 65°46'40" W., approximately 1,375 ft. to
- AP 4 at intersection with E. and W. center line of ~~section 2~~;
thence continuing on said northerly line, N. 88°58'40" W., approximately 65 ft. to
- AP 5 at intersection with the southeasterly right-of-way line of the Bonneville Power Administration (~~B.P.A.~~ BPA) Bonneville-Coulee transmission line easement; thence on said southeasterly line, N. 40°32'30" E., approximately 2,135 ft. to
- AP 6 at intersection with aforementioned west line of the Iman ~~D.L.C.~~ DLC No. 44; thence leaving said southeasterly line on said west line, N. 0°29'21" E., approximately 215 ft. to
- AP 7 at intersection with the center line of aforementioned ~~B.P.A.~~ BPA Bonneville-Coulee transmission line easement (See Footnote 3);
thence on said center line, N. 40°32'30" E., approximately 4,920 ft. to
- AP 8 **T. 03 N., R. 07 E.**
at intersection with the center line of Aalvik Road;
thence on said center line northwesterly, approximately 7,525 ft. to

- AP 9 at intersection with the E. and W. center line of ~~sec. tion~~ 26; thence on said E. and W. center line, S. 89°04'59" E., approximately 3,015 ft. to
- AP 10 the 1/4 cor~~ner~~ of ~~secs. tions~~ 25 and 26; thence on the line between said ~~secs. tions~~ 25 and 26, N. 0°34'36" E., approximately 2,639.84 ft. to
- AP 11 the cor~~ner~~ to ~~secs. tions~~ 23, 24, 25, and 26; thence on the line between said ~~secs. tions~~ 23 and 24, N. 01°47'00" E., approximately 558.6 ft. to
- AP 12 at intersection with the center line of the ~~B.P.A.~~ BPA McNary-Ross No. 1 transmission line easement; thence on said center line, N. 65°01'50" E., approximately 4,920 ft. to
- AP 13 thence continuing on said center line, N. 61°43'30" E., approximately 1,040 ft. to
- AP 14 at intersection with the line between R. 7 E. and R. 7-1/2 E.; thence on the line between said R. 7 E. and R. 7-1/2 E. southerly, approximately 7,500 ft. to
- AP 15 at intersection with the center line of the aforementioned ~~B.P.A.~~ BPA Bonneville-Coulee transmission line easement (See Footnote 4); thence on said center line, N. 77°37'00" E., approximately 1,270 ft. to
- T. 03 N., R. 7-1/2 E.
- AP 16 thence continuing on said center line, N. 69°37'30" E., approximately 900 ft. to
- AP 17 at intersection with the thread of Nelson Creek; thence along said thread downstream, southerly, approximately 5,945 ft. to
- AP 18 at intersection with the aforementioned right bank of the Columbia River at ~~B.N.P.E.~~ BNPE; thence along said right bank southwesterly, approximately 18,000 ft. to (See Footnote 6)
- AP 1 at intersection with said northeasterly line of the Bradford ~~D.L.C.~~ DLC No. 37 and **Point of Beginning**.

the Area being 3,153 Acres, more or less.

SOURCE MAPS AND DOCUMENTS:

1. 1986 Columbia River Gorge National Scenic Area Act Urban Boundary Maps, UA-004, September 1986, (Congressional or Act Maps):

- a. Sheet 1
- b. Sheet 3

2. In January 1987, the U.S. Forest Service developed maps based on the congressional maps (USFS Maps). The Commission and U.S. Forest Service used the USFS Maps as the primary National Scenic Area maps until adopting this legal description. The USFS Maps are generally the basis for this description.

- a. USFS Map 7
- b. USFS Map 8

3. "Final Order of the Columbia River Gorge Commission, Minor Urban Area Boundary Revision - City of Stevenson, UA-98-02," dated June 22, 1999.

4. Copies of all source maps and documents are available at the Columbia River Gorge Commission and U.S. Forest Service, National Scenic Area offices.

FOOTNOTES:

1. This description intends to use the Bonneville Normal Pool Elevation in place at the time of the adoption of the National Scenic Area Act. At that time the Bonneville Normal Pool Elevation was 72 ft. Changes to this elevation through dam operations or otherwise do not change the location of the urban area boundary. The normal pool elevation of the Bonneville Dam is 72 ft. (N.G.V.D. 29) as shown on the National Scenic Area Maps dated September 1986. The current Quad maps show an elevation of 74 ft.

2. Both the 1987 USFS and 1986 Act Maps show this line going from AP 2 to AP 6. This area reflects the "Final Order of the Columbia River Gorge Commission, Minor Urban Area Boundary Revision - City of Stevenson, UA-98-02," dated June 22, 1999, records of Columbia River Gorge Commission, White Salmon, Washington. This revision is also shown and depicted on the November 10, 1997 memorandum as Area 2 (Iman Lake Triangle). The revision area is included in this legal description.

3. Between AP 7 and AP 8 both the 1987 USFS and 1986 Act Maps depict the center line of the Bonneville-Coulee (300 ft. wide) transmission line easement with angle breaks. The Bonneville-Coulee line drawings do not show angle breaks nor do any exist in the field. This legal description simply calls the center line of the Bonneville-Coulee right-of-way.

4. Both the 1987 USFS Maps (Sheets 7 and 8) and the 1986 Act Maps (UA-004, Sheets 1 and 3) were analyzed for preparation of this description. There is only one location where the maps differ enough to note. This location is the AP 15 to AP 17 courses. The USFS Map runs to a ~~B.P.A.~~ BPA transmission line easement center line. The Act Map runs a random direction to intersect Nelson Creek. With no logic to the random Act Map course, this description held the USFS Map location.

5. The Urban Area Boundary jumps across the mouth of Rock Creek. It does not enter Rock Cove.

Columbia River Gorge National Scenic Area
The Dalles Urban Area Legal Boundary Description

All corner points and lines of the Public Land Survey System (PLSS) referenced in this description are according to the latest official survey notes and plats, and state authority survey plats in effect as of December 1, 2016, unless otherwise specified. The hierarchy of the "rules of construction" is observed herein - natural monuments control over artificial

monuments, which control over bearings and distances, which control over coordinates. This description will be junior to all senior rights when overlaps may occur. This description shall be considered, along with the final legislation map, as whole and complete per the original legislation creating this urban area and together they both shall govern all boundaries of this area, and guide future "on-the-ground" surveys. Where the boundary is described as a topographic feature, the actual location of the feature will control the approximate course identifying that part of said boundary. Courses for parallel offsets are measured from the apparent road or trail centerlines of the traveled way to determine the boundary and are intended to be used to locate the boundary in the future in the event that the road migrates or becomes indistinguishable; the courses follow the general configuration of the feature and not every turn or bend. The latitudes and longitudes reported for certain corner points and angle points in this description are North American Datum of 1983 (NAD83) (2011) (Epoch2011.00) values where survey-grade Global Positioning System (GPS) data was available, otherwise were determined by Geographical Information Systems (GIS) mapping data with a relative accuracy of ± 40 feet horizontally, unless otherwise noted.

This description encompasses land that is identified as

The Dalles Urban Area, established in the COLUMBIA RIVER GORGE NATIONAL SCENIC AREA ACT OF 1986, Pub. L. No. 99-663, § 4(e), 100 Stat. 4274, 4277 (1986), located in portions of:

Township 1 North, Range 13 East,

Township 2 North, Range 13 East,

Township 1 North, Range 14 East, and

Township 2 North, Range 14 East, of the Willamette Meridian, Wasco County, Oregon.

T. 02 N., R. 14 E., Wasco County

- AP 1 **Beginning** at the record meander corner (See Footnote 1) on the left bank of the Columbia River on the line between sections 36 and 31, T. 02 N., Rs. 13 and 14 E., perpetuated by the United States Army Corps of Engineers (~~U.S.A.C.E.~~ USACE) in 1939 from original evidence; monumented with a brass disk cemented into the top of solid rock, from which the corner of Tps. 01 and 02 N., Rs. 13 and 14 E. bears S. 00°14'42" W., a distance of 2,033.43 ft.; Latitude 45°36'39.6" N. Longitude 121°07'37.2" E.
thence on the line between T. 02 N., Rs. 13 and 14 E., S. 00°14'42" W., approximately 1,070 ft. to
- AP 2 at intersection with the northwesterly right-of-way line of the Union Pacific Railroad (See Footnote 2);
thence on a line, northeasterly, approximately 873 ft. to

- AP 3 at intersection with the southwesterly right-of-way line of Interstate 84 and the line between lots 4 and 5 in said section 31; thence on the line between said lots 4 and 5, identical with the E. and W. center line of the SW1/4 of section 31, S. 89°46'38" E., approximately 2,220 ft. to
- AP 4 the center S1/16 corner of said section 31 as shown on County Survey (~~C.S.~~ CS) No. 5-072, records of Wasco County, Oregon; thence on the N. and S. center line of section 31, N. 0°57'09" E., approximately 61 ft. to
- AP 5 at intersection with the southerly right-of-way line of Lower Eightmile County Road, formerly The Dalles - California Highway; thence on said southerly right-of-way line, easterly, approximately 2,475 ft. to
- AP 6 a 5/8" iron rod as shown in ~~C.S.~~ CS No. 4-087, records of Wasco County, Oregon, at intersection with the line between sections 31 and 32;
thence on said section line, S. 0°18'44" W. a distance of 446.80 ft. to
- AP 7 a 5/8" iron rod as shown in said ~~C.S.~~ CS 4-087, at intersection with the northeasterly boundary line of Bonneville Power Administration (~~B.P.A.~~ BPA) land as described in Deed document No. 66-0507, records of Wasco County, Oregon, from which the corner of sections 5, 6, 31, and 32, Tps. 01 and 02 N., R. 14 E. bears S. 0°18'44" W. a distance of 776.20 ft., perpetuated by the ~~U.S.A.C.E.~~ USACE in 1937; monumented with a stainless steel post with a brass cap on top;
thence on the northeasterly boundary line of said ~~B.P.A.~~ BPA land, S. 72°02'37" E. a distance of 2,417.83 ft. to **T. 01 N., R. 14 E.**
- AP 8 at intersection with the line between sections 5 and 32, Ts. 01 and 02 N., R. 14 E.;
thence on the line between said sections 5 and 32, N. 89°14'04" E. a distance of 353.83 ft. to
- AP 9 the 1/4 corner of sections 5 and 32, Ts. 01 and 02 N., R. 14 E.;
thence on the line between said sections 5 and 32, N. 89°49'59" E., approximately 744 ft. to

- AP 10 from which the northerly ~~corner~~ of unnumbered lot (NE1/4 NE1/4) containing 42.12 acres and unnumbered lot (NW1/4 NE1/4) containing 42.00 acres, said ~~section~~ 5, bears N. 89°49'59" E., approximately 587 ft.; thence, S. 53° E. a distance of 742 ft. to
- AP 11 at intersection with the line between said unnumbered lots, from which the northerly ~~corner~~ bears northerly, approximately 455 ft.; thence on the line between said unnumbered lots, southerly, approximately 928 ft. to
- AP 12 the southerly ~~corner~~ of said unnumbered lots; thence on the southerly line of said lot (NW1/4 NE1/4) and unnumbered lot (NE1/4 NW1/4) containing 41.86 acres, S. 89°39' W. a distance of 2,648 ft., as shown in ~~C.S.~~ CS 0163-2, records of Wasco County, Oregon, to
- AP 13 the southerly ~~corner~~ of unnumbered lot (NW1/4NW1/4) containing 41.74 acres and unnumbered lot (NE1/4 NW1/4) containing 41.86 acres, said ~~section~~ 5; thence on the N. and S. center line of the NW1/4 of ~~section~~ 5, southerly, approximately 1,304 ft. to
- AP 14 the center W 1/16 ~~corner~~ of ~~section~~ 5; thence on the E. and W. center line of ~~section~~ 5, S. 89°39' W. a distance of 1,320.5 ft. to
- AP 15 the 1/4 ~~corner~~ of ~~sections~~ 5 and 6; thence on the line between ~~sections~~ 5 and 6, S. 00°25' E., approximately 2,640 ft. to
- AP 16 the ~~corner~~ of ~~sections~~ 5, 6, 7, and 8, established by Professional Land Surveyor (~~P.L.S.~~ PLS) No. 872 in 1983, as described in Wasco County Land Corner Record Sheet L.C. 0678; monumented with an aluminum post and cap; thence on the line between ~~sections~~ 6 and 7, S. 88°03' W. a distance of 1,494.41 ft., as shown in the survey of ~~B.P.A.~~ BPA Celilo-Mead Transmission Line, Page 1 of 266, dated 2/8/1967, records of ~~B.P.A.~~ BPA, to
- AP 17 at intersection with the easterly line of the ~~B.P.A.~~ BPA Celilo-Mead Transmission Line easement, as shown in said survey; thence leaving ~~B.P.A.~~ BPA land, on easterly line of said easement, S. 19°45' E. a distance of 1,000 ft. to
- AP 18 on said easterly line; thence perpendicular to said easterly line, across the full width of said easement, S. 70°15' W. a distance of 437.5 ft. to
- AP 19 on the westerly line of said easement; thence on said westerly line, N. 19°45' W. a distance of 1,140 ft. to
- AP 20 at intersection with the line between ~~sections~~ 6 and 7, identical with the south line of the aforementioned ~~B.P.A.~~ BPA land; thence on said line, S. 88°03' W., approximately 970 ft. to
- AP 21 the northwest ~~corner~~ of that property described in Deed Document No. 2011-1521, records of Wasco County, Oregon; thence on the northwesterly boundary line of said property, identical with the southerly line of said B.P.A land, southwestward, approximately 1,682 ft. to
- AP 22 at intersection with the easterly right-of-way line of The Dalles - California Highway, US 197; thence on said easterly right-of-way line, northwesterly, approximately 355 ft. to
- AP 23 at intersection with the easterly line of the R.R. Thompson Donation Land Claim (~~D.L.C.~~ DLC) No. 37; thence on said easterly ~~D.L.C.~~ DLC line, N. 00°04'05" W. a distance of 2,371.62 ft. to
- AP 24 the northeast ~~corner~~ of said Thompson ~~D.L.C.~~ DLC, perpetuated by ~~P.L.S.~~ PLS No. 856 in 1983, as shown in Wasco County L.C. 0686; monumented with a 2-inch bronze disk set in a large stone; thence leaving ~~B.P.A.~~ BPA land, on the northerly line of said Thompson ~~D.L.C.~~ DLC, on The Dalles Urban Growth Boundary (~~T.D.~~ TD UGB) from this point forward unless otherwise noted, N. 89°34' W., approximately 3,920 ft. to
T. 01 N., R. 13 E.
- AP 25 at intersection with a line extended northerly, parallel with and 208.7 ft. easterly of, the westerly line of Lot 1, Cherry Park Addition to Wasco County; thence on said line, S. 00°08' W., approximately 90 ft. (See Footnote 3) to
- AP 26 the southeast ~~corner~~ of the Cherry Park Grange Tract described in Deed Book 127 at Page 725, records of Wasco County, Oregon; thence on the southerly line of said tract, N. 89°34' W. a distance of 208.7 ft. to

- AP 27 at intersection with the easterly right-of-way line of Lambert Street; thence on said right-of-way line, S. 00°08' W., approximately 2,543 ft. to
- AP 28 at intersection with the southerly line of the aforementioned Thompson ~~D.L.C.~~ DLC; thence on said southerly line, N. 89°28'53" W., approximately 4,640 ft. to
- AP 29 at intersection with the southerly terminus of the center line of Thompson Street, as platted in Thompson Addition to Wasco County; thence on the southerly extension thereof, S. 00°08' W. a distance of 20 ft. to
- AP 30 at intersection with a line parallel with and 20 ft. southerly of the southerly line of said Thompson ~~D.L.C.~~ DLC, when measured perpendicular thereto; thence on said line, N. 89°28'53" W. a distance of 301.48 ft. to
- AP 31 at intersection with the westerly line of Wasco County Partition Plat 2004-0013; thence on said westerly line, S. 00°10'48" E. a distance of 1,172.60 ft. to
- AP 32 the southeast corner of The Dalles city reservoir land as described in Deed Book 108 at Page 499, records of Wasco County, OR; thence N. 89°56' W. a distance of 1,516.02 ft. to
- AP 33 the southeast corner of the John A. Simms ~~D.L.C.~~ DLC No. 39; thence on the southerly line of said Simms ~~D.L.C.~~ DLC, N. 89°45' W. a distance of 3,003.41 ft. to
- AP 34 the southwest corner of the Plat of Assembly Addition; thence on the westerly line of said Assembly Addition and the northerly extension thereof, N. 00°04' W. a distance of 568.15 ft. to
- AP 35 at intersection with the southerly boundary line of Dry Hollow Elementary School property, as described in Deed Book 139 at Page 605, records of Wasco County, Oregon, from which the southeast corner of the W. D. Bigelow ~~D.L.C.~~ DLC No. 40 bears N. 89°56' E. a distance of 660.00 ft. See Footnote 4; thence on the southerly boundary line of said school land, S. 89°56' W., approximately 390 ft. to
- AP 36 the southwest corner of said school land-
(See Footnote 4); thence on the westerly line of said school land and the northerly extension thereof, leaving ~~T.D.~~ TD UGB, N. 00°39' W., approximately 530 ft. to
- AP 37 the southerly right-of-way line of East Scenic Drive; thence on said southerly right-of-way line westerly, approximately 850 ft. to
- AP 38 at intersection with the northerly extension of the easterly line of Lot 5, Block 2, Orchard Hills Addition to the City of The Dalles; thence on said northerly extension of the easterly line of Lot 5, the easterly line of Lot 5, and further on the southerly extension thereof, S. 19°30' W., approximately 680 ft. to
- AP 39 at intersection with the southerly line of the aforementioned Bigelow ~~D.L.C.~~ DLC; thence on said southerly line, S. 89°59' W., approximately 1,500 ft. to
- AP 40 the southwest corner of the Plat of Hillcrest Addition; thence on the westerly line of Hillcrest Addition, N. 00°10'00" E., approximately 360 ft. to
- AP 41 at intersection with the City of The Dalles city limit line; thence on said city limit line, S. 77°09' W., approximately 965 ft. to
- AP 42 at intersection with the southeasterly extension of the Fort Dalles Military Reservation line; thence on said city limit line N. 66°36' W., approximately 1,140 ft. to
- AP 43 the southeast corner of said Fort Dalles Military Reservation at intersection with the westerly line of the aforementioned Bigelow ~~D.L.C.~~ DLC, from which the southwest corner of said Bigelow ~~D.L.C.~~ DLC bears S. 32°30' W., on said westerly line, a distance of 695.47 ft.; thence on the southerly line of said Fort Dalles Military Reservation, N. 66°36' W., approximately 1,225 ft. to

- AP 44 from which the initial point of Brocks Addition to the City of The Dalles bears S. 66°36' E. a distance of 2.0 ft. (See Footnote 2); thence on the southeasterly line of that property described in Deed Document 1968-0064, records of Wasco County, Oregon, S. 47°27' W. a distance of 228.60 ft. to
- AP 45 the southeasterly corner thereof; thence on the southwesterly line of said property, N. 38°46' W. a distance of 64.00 ft. to
- AP 46 the southwesterly corner thereof; thence on the northwesterly line of said property, N. 42°58' E. a distance of 168.77 ft. to
- AP 47 from which the southerly line of the Fort Dalles Military Reservation bears northerly 20 ft., when measured perpendicular thereto; thence on a line parallel with and 20 ft. southerly, when measured perpendicular from said southerly line, N. 66°22'30" W. a distance of 151.28 ft. to
- AP 48 the interior corner of the property described in Deed Document No. 1979-2215, records of Wasco County, Oregon; thence on the westerly most southeasterly line of said property, S. 23°37'30" W. a distance of 210.00 ft. to
- AP 49 the most southerly corner thereof; thence on the southerly most southwesterly line of said property, N. 66°22'30" W. a distance of 100.00 ft. to
- AP 50 the southwesterly corner thereof; thence on the northwesterly line of said property, N. 23°37'30" E. a distance of 230.00 ft. to
- AP 51 at intersection with the westerly right-of-way line of Radio Way, identical with said southerly line of the Fort Dalles Military Reservation; thence on said southerly line and city limit line, N. 66°36' W., approximately 1,815 ft. to
- AP 52 at intersection with the easterly right-of-way line of Sunset Valley Drive; thence on said right-of-way line, S. 6°00' E., approximately 155 ft. to
- AP 53 at intersection with the northeasterly extension of the southeasterly line of that property described in Wasco County Deed Document No. 78-0471, records of Wasco County, Oregon; thence on said line and continuing on the southeasterly line of that property described in Wasco County Deed Book 119 Page 80, records of Wasco County, Oregon, S. 53°35' W. a distance of 166.38 ft. to
- AP 54 the southwesterly corner of said property described in Deed Book 119 at Page 80; thence on the southwesterly line of said property, N. 36°53' W. a distance of 30.00 ft. to
- AP 55 the southeasterly corner of that property described in Deed Document No. 1980-0450, records of Wasco County, Oregon; thence on the southeasterly line thereof, S. 53°35' W. a distance of 86.0 ft. to
- AP 56 the southwest corner thereof, identical with the northeasterly line of that property described in Deed Book 145 at Page 351, records of Wasco County, Oregon; thence on said line, S. 36°53' E. a distance of 30.00 ft. to
- AP 57 the southeasterly corner thereof; thence on the southeasterly line of said property and continuing on the southeasterly line of that property described in Wasco County Deed Document No. 66-2105, records of Wasco County, Oregon, S. 53°35' W. a distance of 200.00 ft. to
- AP 58 the southwesterly corner thereof; thence on the southwesterly line of said property, N. 36°53' W., approximately 36 ft. to
- AP 59 the southeasterly corner of that property described in Deed Document No. 1982-0040, records of Wasco County, Oregon; thence on the southeasterly line of said property, S. 53°15' W. a distance of 105.0 ft. to
- AP 60 the southwesterly corner thereof; thence on the southwesterly line of said property, N. 36°53' W. a distance of 150.00 ft. to
- AP 61 the southeasterly right-of-way line of Mill Creek Market County Road; thence on said southeasterly right-of-way line, S. 53°24' W., approximately 700 ft. to

- AP 62 the northwesterly corner of that property described in Deed Document No. 79-0849, records of Wasco County, Oregon; thence on the line determined by Gifford Pinchot National Forest Surveyor Don Karsch and Tenneson Engineering Corporation surveyor Ben Beseda, memorialized in a letter dated September 30, 2005 to Brian Litt, File Code 7150, records of Columbia River Gorge Commission, leaving ~~T.D.~~ TD UGB, North, approximately 1,355 ft. to
- AP 63 at intersection with the southerly line of Tract "A" of the Plat of Ericksen's 4th Addition; thence rejoining ~~T.D.~~ TD UGB on said southerly line, S. 88°31' W., approximately 277 ft. to
- AP 64 the southwest corner of said Tract "A"; thence on the westerly line of said Tract "A", N. 00°19' E. a distance of 149.37 ft. to
- AP 65 thence on a property line, N. 29°36'00" W. a distance of 36.50 ft. to
- AP 66 thence on said property line, N. 60°24' E. a distance of 21.00 ft. to
- AP 67 at intersection with the westerly line of said Tract "A"; thence on said westerly line, N. 00°19' E. a distance of 166.00 ft. to
- AP 68 the northwest corner of said Tract "A"; thence on the northerly line of said Tract "A", S. 89°41'00" E. a distance of 683.33 ft. to
- AP 69 a 5/8" iron rod at the northeasterly corner Parcel 1, as shown on Partition Plat 2004-0001, records of Wasco County, Oregon; thence on the easterly line of said partition plat, S. 00°19'00" W. a distance of 118.00 ft. to
- AP 70 a 5/8" iron rod; thence continuing on said easterly line, S. 43°41'00" E. a distance of 70.23 ft. to
- AP 71 at intersection with the westerly line of the aforementioned Fort Dalles Military Reservation, identical with The Dalles city limit line; thence on said Military Reservation line and extension thereof, N. 13°59' E., approximately 2,000 ft. to
- AP 72 the westerly right-of-way line of Cherry Heights Road; thence on said right-of-way line, northerly, approximately 470 ft. to
- AP 73 the center line of Road H, in Fruitland Park Addition; thence continuing on the 1980 ~~T.D.~~ TD UGB, on said center line, N. 60°43' W., approximately 129 ft., to
- AP 74 on said center line; thence N. 17°29' W. a distance of 300 ft. to
- AP 75 on said center line; thence northwesterly a distance of 140 ft. to
- AP 76 on said center line, at intersection with the southwesterly extension of the northwesterly line of Lot 20 of said Fruitland Park Addition; thence continuing on said center line, N. 47°04' W., approximately 600 ft. to
- AP 77 on said center line; thence N. 61°28'14" W., approximately 514 ft. to
- AP 78 at intersection with the southwesterly extension of the westerly most line of Parcel 2, Replat 2005-0035, records of Wasco County, Oregon; said point being S. 24°40'32" W., approximately 20 ft. on said line from the westerly most corner of said Parcel 2; thence on said extension and most westerly line, N. 24°40'32" E., approximately 232 ft. to
- AP 79 at intersection with the southwesterly right-of-way line of Road "L" in the aforementioned Fruitland Park Addition; thence on said southwesterly right-of-way line, northwesterly, approximately 760 ft. to
- AP 80 an angle point on the northeasterly line of Lot 51 of said Fruitland Park Addition; thence on the southwesterly line of Road "L", which becomes West 16th Street, N. 79°34' W. a distance of 406.81 ft., as shown in ~~C.S.~~ CS G-12-11b, records of Wasco County, Oregon to
- AP 81 an angle point on the northeasterly line of Lot 50 of said Fruitland Park Addition; thence on the southwesterly right-of-way line of West 16th Street, N. 47°34'03" W., approximately 2,735 ft. to
T. 02 N., R. 13 E.
- AP 82 at intersection with the northwesterly right-of-way line of Meek Street in said Fruitland Park Addition; thence on said northwesterly right-of-way line, N. 42°27'00" E., approximately 650 ft. to

AP 83 at intersection with the southwesterly right-of-way line of Road "B", known also as West 13th Street; thence on said southwesterly right-of-way line and extension thereof, N. 47°34'00" W., approximately 420 ft. to

AP 84 a 5/8-inch iron rod at intersection with the southeasterly exterior boundary of the Amended Plat of Highland Heights, Phase One; thence on said exterior line, N. 49°54'24" E. a distance of 26.34 ft. to

AP 85 a 1/2-inch iron rod at the easterly most corner of said plat; thence on the northeasterly exterior line of said plat and northwesterly extension thereof, N. 22° W., approximately 2,356 ft. to

AP 86 at intersection with the center line of Pomona Street West; thence on the center line of Pomona Street West, S. 74°36'40" W., approximately 312 ft. to

AP 87 at intersection with the westerly right-of-way line of West 13th Street; thence on said westerly right-of-way line, N. 10°32'36" W., approximately 730 ft. to

AP 88 at intersection with the line between sections 29 and 32, identical with the southeasterly corner of Block "C", Emerson Park Addition; thence on the south most southerly line of Emerson Park Addition, S. 89°58' W. a distance of 100 ft. to

AP 89 the south most southwesterly corner of Emerson Park Addition; thence on the westerly line of Emerson Park Addition, northerly, approximately 2,050 ft. (See Footnote 6) to

AP 90 the northwesterly corner of Lot 34, Block C, Emerson Park Addition; thence on the north most southerly line of Emerson Park Addition, N. 89°58' W. a distance of 290 ft. to

AP 91 the southwesterly corner of Block "G", Emerson Park Addition; thence on the westerly line of said Block "G", N. 00°02' W. a distance of 390.0 ft. to

AP 92 the northwesterly corner of Emerson Park Addition; thence on the northerly line of Emerson Park Addition, S. 89°58' E. a distance of 390.0 ft. to

AP 93 the northeasterly corner of Block "D", Emerson Park Addition, identical with the westerly right-of-way line of West 13th Street; thence on the westerly then northerly right-of-way line of West 13th Street as it becomes Irvine Street West, northerly and easterly, approximately 760 ft. to

AP 94 at intersection with the westerly right-of-way line of West 10th Street, also known as Chenowith Road; thence on said right-of-way, northwesterly, approximately 390 ft. to

AP 95 at intersection with the thread of Chenowith Creek; thence along the thread of Chenowith Creek, easterly, approximately 4,950 ft. to

AP 96 at intersection with the westerly right-of-way line of Interstate Highway I-84; thence on said right-of-way line, N. 19°56'30" E., approximately 1,900 ft. to being 150 ft. westerly from engineers centerline survey station 2157+84.25 PT, when measured perpendicular thereto; thence leaving said right-of-way line and continuing on the extension thereof, N. 19°56'30" E., approximately 1,020 ft. to

AP 98 at intersection with the westerly extension of the southerly most line of the Edward Crate ~~D.L.C.~~ DLC No. 38; thence on said westerly extension and southerly most line, N. 89°27' E., approximately 1,800 ft. to

AP 99 at intersection with the left bank of the Columbia River, at Bonneville Normal Pool Elevation (~~B.N.P.E.~~) 72 ft., National Geodetic Vertical Datum of 1929 (~~N.G.V.D.~~ 29) (BNPE) (See Footnote 7); thence along said left bank at ~~B.N.P.E.~~ BNPE through sections 21, 28, 33 and 34 of T. 02 N., R. 13 E. and T. 01 N., R. 13 E. section 3 of T. 01 N., R. 13 E., southeasterly, approximately 17,600 ft. to

AP 100 at intersection with the northwesterly extension of the U.S. Army Corps of Engineers Permit Harbor Line of the Port of The Dalles, as shown in the ~~U.S.A.C.E.~~ USACE Portland District map of "Bonneville Dam - Lands Vicinity Map of The Dalles City" No. R-0-8-10/c-OW dated December 16, 1941 (See Footnote 7 8);

- thence on said northwesterly extension, S. 74°24'07" E., approximately 360 ft. to
- AP 101 at intersection with the northeasterly extension of the easterly right-of-way line of Union Street, from which the southwesterly corner of Block 2, Plat of Original Dalles City, bears S. 34°35'53" W. a distance of 601.15 ft.;
- thence on said ~~U.S.A.C.E.~~ USACE Harbor Line, S. 74°24'07" E. a distance of 1,043.48 ft. to
- AP 102 thence on said ~~U.S.A.C.E.~~ USACE Harbor Line and southeasterly extension thereof (See Footnote 8 9), S. 29°05'05" E., approximately 810 ft. to
- AP 103 at intersection with a line parallel with and a distance of 50 ft. northwesterly from the Port of The Dalles Marina sea wall, as measured perpendicular thereto;
- thence on said line, northeasterly, approximately 250 ft. to
- AP 104 at intersection with a line parallel with and a distance of 50 ft. northerly from said sea wall, as measured perpendicular thereto;
- thence on said line, easterly, approximately 650 ft. to
- AP 105 from which the northerly most extremity of the Port of The Dalles Marina jetty, at B.N.P.E, bears South a distance of 50 ft.;
- thence on a line, southeasterly, approximately 830 ft. to
- AP 106 the north most extremity of the eastern jetty, at ~~B.N.P.E.~~ BNPE, protecting the existing boat launch ramp;
- thence along the easterly face of said jetty and the left bank of the Columbia River, at ~~B.N.P.E.~~ BNPE through sections 1, 2, and 3, T. 01 N., R. 13 E.,
- T. 02 N., R. 13 E.**
- and section 36, T. 02 N., R. 13 E., easterly, approximately 11,800 ft. to
- AP 107 at intersection with the northerly extension of the line between lots 1 and 2, section 36, T. 02 N., R. 13 E. (See Footnote 9 10);
- thence N. 18° E., approximately 390 ft. to
- AP 108 at intersection with the Oregon-Washington state line;
- thence on said state line, N. 46° E., approximately 1,660 ft. to

- AP 109 at intersection with the northeasterly easement line of the ~~B.P.A.~~ BPA transmission line;
- thence southerly, approximately 615 ft. to

AP 1 the **Point of Beginning**

the Area being 5,536 Acres, more or less.

SOURCE MAPS AND DOCUMENTS:

1. 1986 Columbia River Gorge National Scenic Area Act Urban Boundary Maps, UA-004, September 1986, (Congressional or Act Maps):

a. Sheet 8 - The Dalles UA Boundary has been erased, refers to: "See NSA-001, Sheet Two"

b. Sheet 9 - The Dalles UA Boundary has been erased, refers to: "See NSA-001, Sheet Two"

c. Sheet 10 - Land Use Map The Dalles, Oregon - is a land use map which, by reference, was the basis for the 1987 USFS Maps. Cartographic depictions from Sheet 10 (Act Map 10) were held where occasional differences occurred with USFS Map 29. Act Map 10 also contains a handwritten note stating, "Note: Urban Growth Boundary follows The Dalles UGB" The Commission and U.S. Forest Service believe the words "Urban Growth Boundary" means "Urban Area Boundary." Consistent with this note, the 1980 Zoning Map of The Dalles, see note 3, was examined where applicable. Act Map 10 depicts numerous courses which fit well with roads, ownerships, and the US rectangular system.

2. In January 1987, the U.S. Forest Service developed maps based on the congressional maps (USFS Maps). The Commission and U.S. Forest Service used the USFS Maps as the primary National Scenic Area maps until adopting this legal description. The USFS Maps are generally the basis for this description. USFS Certain cartographic interpretations differ from USFS Map to USFS Map. The footnotes in this description explains significant discrepancies between the congressional and USFS Maps, between the USFS Maps, and resolutions of the discrepancies.

a. CRGNSA Boundary Map, September 1986, NSA-001, Sheet 2, UABs drawn at a small scale.

b. USFS Map 20-

c. USFS Map 21-

d. USFS Map 22-

e. USFS Maps 20 to 22 have several unexplainable differences with USFS Map 29.

f. USFS Map 29. This map is a "Land Use Map" which was referred to when USFS Maps 20 to 22 were ambiguous. The title block states, "The information on these maps was taken from the official maps referred to in Section 4 of P.L. 99-663 A map entitled 'Land Use Map, The Dalles, Oregon' was used as the base for this map." Based on that statement, this description occasionally holds to Act Map 10 where differences between the two maps occur and where Act Map 10 fits known geographic features or property lines. Map 29 also has two notes stating "Urban Growth Boundary" at the depicted Urban Area Boundary lines. These notes, and identical Act Map UA-004, Sheet 10 notes, demonstrate the USFS cartographers' intent to follow the congressional delegation's attempt to depict the city's 1986 urban growth boundaries.

3. Zoning Map of City of The Dalles, Oregon, dated May 28, 1980, was used in this description to clarify a number of ambiguities between various maps.

4. City of The Dalles Urban Growth Boundary Mapping and Legal Description (2006) were both referred to as this description was written. The mapping was a basis for comparison USFS because the CRGNSA Act states that urban areas are "generally depicted" (*see* CRGNSA Act, § 4(e)), and are contained on small-scale drawings.

5. Memorandum from Jonathan Doherty, Columbia River Gorge Commission, to Gorge Commissioners, dated November 10, 1997, to Gorge Commissioners, records of Columbia River Gorge Commission, White Salmon, Washington, about "Review of Urban Area Mapping Discrepancies." These mapping discrepancies are noted in this description at each area.

6. Copies of all source maps and documents are available at the Columbia River Gorge Commission and U.S. Forest Service, National Scenic Area offices.

FOOTNOTES:

1. AP 1 begins at the same point as The Dalles Urban Growth Boundary (~~TD~~ TD UGB).

2. AP 2 to AP 12 held 1980 ~~TD~~ TD UGB and Act Map 10 for reasons stated in the Map Source Narrative, specifically where these courses fit well with roads, public ownerships, and the US rectangular system, unlike the depictions in USFS mapping in these specific locations. Note also that 1997 G.C. Memorandum "Area 6B - I 84 Right-of-Way" was not held because the "drafting error" pertains to USFS Map 29 which, itself, is not drawn correctly in this location.

3. AP 25 to AP 27 held ~~TD~~ TD UGB, minor difference from USFS Map 29.

4. AP 35 to AP 39 held USFS Map 29, in harmony with conclusion reached in 1997 G.C. Memorandum "Area 6C - Dry Hollow Elementary School."

5. AP 44 to AP 51 held 2006 ~~TD~~ TD UGB description, including two long-standing residential home sites, which were shown as one "protrusion" on the 1982 ~~TD~~ TD UGB map.

6. AP 89 to AP 90 held westerly line of 1953 Emerson Park Addition. The 1987 USFS dotted boundary line is drawn some distance westerly of the West 13th Street right-of-way, not depicting this said right-of-way, suggesting it must have been intended to be westerly of the existing homes, so this description held the 1980 ~~TD~~ TD UGB Map which coincides with the subdivision boundary. This is also consistent with the "Urban Growth Boundary" note on USFS Map 29 and the conclusion reached in 1997 G.C. Memorandum "Area 6D - West Thirteenth Street."

7. This description intends to use the Bonneville Normal Pool Elevation in place at the time of the adoption of the National Scenic Area Act. At that time the Bonneville Normal Pool Elevation was 72 ft. Changes to this elevation through dam operations or otherwise do not change the location of the urban area boundary.

7 8. AP 100 to AP 106 held USFS Map 29 and U.S. Army Corps of Engineers Permit Line, see also Urban Area Boundary determination letter from James Johnson, Columbia River Gorge Commission, to John Rayburn, Port of The

Dalles, dated July 17, 1990, records of Columbia River Gorge Commission, White Salmon, Washington.

8 9. AP 102 to AP 107 held conclusion reached in 1997 G.C. Memorandum "Area 6A, Columbia River The Dalles," leaving ~~TD~~ TD UGB, staying consistent with USFS Map 29.

9 10. AP 107 to AP 1 held USFS Map 29 to coincide with state line and to abut the Dallesport Urban Area Boundary.

Columbia River Gorge National Scenic Area

White Salmon and Bingen Urban Area Legal Boundary Description

All corner points and lines of the Public Land Survey System (PLSS) referenced in this description are according to the latest official survey notes and plats, and state authority survey plats in effect as of December 1, 2016, unless otherwise specified. This description notes where it is identical with and where it leaves the Exterior and Special Management Area (SMA) Boundaries of the Columbia River Gorge National Scenic Area (CRGNSA). Exterior Boundary Angle Points are shown in parentheses (AP) and Special Management Area Boundary Angle Points are shown in brackets [AP]. The hierarchy of the "rules of construction" is observed herein - natural monuments control over artificial monuments, which control over bearings and distances, which control over coordinates. This description will be junior to all senior rights when overlaps may occur. This description shall be considered, along with the final legislation map, as whole and complete per the original legislation creating this urban area and together they both shall govern all boundaries of this area, and guide future "on-the-ground" surveys. Where the boundary is described as a topographic feature, the actual location of the feature will control the approximate course identifying that part of said boundary. Courses for parallel offsets are measured from the apparent road or trail centerlines of the traveled way to determine the boundary and are intended to be used to locate the boundary in the future in the event that the road migrates or becomes indistinguishable; the courses follow the general configuration of the feature and not every turn or bend. The latitudes and longitudes reported for certain corner points and angle points in this description are North American Datum of 1983 (NAD83) (2011) (Epoch2011.00) values where survey-grade Global Positioning System (GPS) data was available, otherwise were determined by Geographical Information Systems (GIS) mapping data with a relative accuracy of ± 40 ft. horizontally, unless otherwise noted.

This description encompasses land that is identified as

The White Salmon and Bingen Urban Area, established in the COLUMBIA RIVER GORGE NATIONAL SCENIC AREA ACT OF 1986, Pub. L. No. 99-663, § 4(e), 100 Stat. 4274, 4277 (1986), located in portions of:

Township 3 North, Range 10 East, and of the Willamette Meridian, Klickitat County, Washington

Township 3 North, Range 11 East, of the Willamette Meridian, Klickitat County, Washington.

T. 03 N., R. 10 E.

- AP 1 **Beginning** at the intersection of the right bank of the Columbia River at Bonneville Normal Pool Elevation (~~B.N.P.E.~~, elevation 72 ft., National Geodetic Vertical Datum of 1929 (~~N.G.V.D. 29~~ NGVD 1929) (~~BNPE~~) (See Footnote 1) and the southerly extension of the center line of Washington State Route 141 Alternate; Latitude: 45°43'41.0" N., Longitude: 121°31'15.9" W.; thence on said extended center line, northerly, approximately 135 ft. to
- AP 2 at intersection with the northerly right-of-way line of Washington State Route 14; thence N. 48°49' E., approximately 380 ft. to
- AP 3 at intersection with the 200-~~ft. foot~~ contour line (~~N.G.V.D. 29~~ NGVD 1929); thence along said 200-~~ft. foot~~ contour line, northerly, approximately 990 ft. to
- AP 4 at intersection with the westerly extension of the center line of Eyrie Road; thence ascending on the line of steepest uphill gradient, northeasterly, approximately 85 ft. to
- AP 5 at intersection with the westerly line of Lot 4 of the Hatfield Estates Phase 1 Subdivision, as recorded at Auditor's File No. (~~A.F.N. AFN~~) 1076670, records of Klickitat County, Washington; thence on said westerly lot line, northerly, approximately 110 ft. to
- AP 6 the southern terminus of the Urban Area Boundary line as ~~located~~ shown on Short Plat No. SPL 2004-32, as recorded at ~~A.F.N. AFN~~ 1055724, records of Klickitat County, Washington, and monumented with a 5/8" x 30" iron rod with red plastic cap inscribed "WA PLS 18028" (See Footnote 2); thence on said Urban Area Boundary line, N. 10°40'43" E. a distance of 54.49 ft. to
- AP 7 an angle point on said Urban Area Boundary line, monumented with a 5/8" x 30" iron rod with red plastic cap inscribed "WA PLS 18028"; thence continuing on said Urban Area Boundary line, N 00° W. a distance of 816.27 ft. to
- AP 8 an angle point on said Urban Area Boundary line monumented with a 5/8" x 30" iron rod with red plastic cap inscribed "WA PLS 18028";
- thence continuing on said Urban Area Boundary line, N. 13°41'40" W. a distance of 268.57 ft. to
- AP 9 at intersection with the northern terminus of said Urban Area Boundary line, as ~~located~~ shown on Short Plat No. SPL 2004-32, identical with the northerly line of Lot 1 of aforementioned Short Plat 2004-32 and monumented with a 5/8" x 30" iron rod with red plastic cap inscribed "WA PLS 18028"; thence on said northerly line and westerly extension thereof, N. 89°13'51" W., approximately 30 ft. to
- AP 10 at intersection with the 400-~~ft. foot~~ contour line (~~N.G.V.D. 29~~ NGVD 1929); thence along said 400-~~ft. foot~~ contour line, northerly, approximately 2,370 ft. to
- AP 11 at intersection with the southerly line of Tax Parcel 03-10-1400-0010/00, as shown on Boundary Line Adjustment BLA 2007-12, as recorded at ~~A.F.N. AFN~~ 1072760, records of Klickitat County, Washington (See Footnote 3); thence on said southerly line, N. 89°39'47" E., approximately 80 ft. to
- AP 12 at intersection with the top of prominent slope identical with the southern terminus of the Urban Area Boundary line as ~~located~~ shown on said BLA 2007-12; thence on said top of prominent slope identical with Urban Area Boundary line more specifically described by the following courses:
N. 04°20'52" E. a distance of 170.41 ft. to
- AP 13 thence N. 76°07'36" W. a distance of 214.10 ft. to
- AP 14 thence N. 59°55'04" W. a distance of 104.74 ft. to
- AP 15 thence N. 31°01'16" W. a distance of 105.06 ft. to
- AP 16 thence N. 24°24'20" W. a distance of 30.49 ft. to
- AP 17 thence N. 14°41'39" E. a distance of 242.87 ft. to
- AP 18 thence N. 30°30'08" E. a distance of 51.48 ft. to
- AP 19 thence N. 14°34'05" E. a distance of 367.33 ft. to
- AP 20 thence N. 04°16'28" W. a distance of 100.55 ft. to
- AP 21 thence N. 27°11'36" E. a distance of 267.87 ft. to

- AP 22 thence N. 67°32'17" E. a distance of 165.79 ft. to
- AP 23 thence S. 85°30'02" E. a distance of 121.14 ft. to
- AP 24 thence N. 58°57'14" E. a distance of 156.82 ft. to
- AP 25 thence N. 01°33'31" E. a distance of 123.13 ft. to
- AP 26 at intersection with the northerly line of aforementioned Tax Parcel 03-10-1400-0010/00;
thence on said northerly line, S. 89°34'06" W., approximately 50 ~~ft.~~ feet to
- AP 27 at intersection with the 400-~~ft.~~ ~~foot~~ contour line (~~N.G.V.D. 29~~ NGVD 1929);
thence along said 400-~~ft.~~ ~~foot~~ contour line, northerly, approximately 200 feet to
- AP 28 at intersection with the northerly extension of the west line of Lot 1, SP-91-12, as adjusted in aforementioned BLA 2007-12;
thence ~~East easterly~~, approximately 8,269 ft. to
- AP 29 at intersection ~~with the line between sec. 13, T. 03 N., R. 10 E., and sec. 18, T. 03 N., R. 11 E., identical with AP 198 of the Exterior Legal Boundary Description with an angle point in the Columbia River Gorge National Scenic Area Exterior Boundary and the line between section 13, T. 03 N., R. 10 E., and section 18, T. 03 N., R. 11 E.;~~
~~thence continuing East, on identical with said e~~~~Exterior b~~~~Boundary, a distance of 1,189.0 feet to more specifically described by the following courses:~~
~~N. 90° E. a distance of 1,189.0 ft. to~~
- (AP 198) **T. 03 N., R. 11 E.**
- AP 30 thence across the easterly slope of Cemetery hill, South a distance of 773.0 ft. to
- (AP 199)
- AP 31 thence descending, N. 90° E., approximately 1,430 ft. to
- (AP 200)
- AP 32 at intersection with the N. and S. center line of sec.~~tion~~ 18;
thence on said N. and S. center line, S. 00°29'38" E., approximately 2,055 ft. to
- (AP 201)
- AP 33 the 1/4 cor.~~ner~~ between sec.~~tions~~ 18 and 19 perpetuated with a 5/8" iron rod with aluminum cap driven into a 1" pipe as shown in Short Plat SP 97-16, recorded at ~~A.F.N.~~ AFN 1003866, records of Klickitat County, Washington;
- (AP 202)
- thence leaving ~~said the aforementioned e~~~~Exterior b~~~~Boundary line~~ on the N. and S. center line of said sec.~~tion~~ 19, S. 00°44'45" E., approximately 2,645 ft. to
- AP 34 the center 1/4 cor.~~ner~~ of sec.~~tion~~ 19 perpetuated with a 6" concrete monument in a mound of stones with a 1-1/2" pipe and brass cap on top and a northeast cor.~~ner~~ of the White Salmon city limits;
thence S. 34°46' E., approximately 405 ft. to
- AP 35 at intersection with the 800-~~ft.~~ ~~foot~~ contour line (~~N.G.V.D. 29~~ NGVD 1929);
thence along said 800-~~ft.~~ ~~foot~~ contour line, southeasterly, approximately 3,659 ft. to
- AP 36 at intersection with the line between sec.~~tions~~ 29 and 30;
thence on the line between sec.~~tions~~ 29 and 30, N. 01°37'52" E. or S. 01°37'52" W. to
- AP 37 at intersection with the Urban Area Boundary line, as shown on survey recorded at ~~A.F.N.~~ AFN 1020245, records of Klickitat County, Washington, and monumented with a 5/8" x 30" iron rod with cap inscribed "OR 932 & WA 22098", as shown in said survey See Footnote 5);
thence on said Urban Area Boundary line, S. 56°33'36" E. a distance of 570.80 ft. to
- AP 38 a 5/8" x 30" iron rod with cap inscribed "OR 932 & WA 22098", as shown in said survey;
thence continuing on said Urban Area Boundary line, S. 46°00'13" E. a distance of 397.66 ft. to
- AP 39 a 5/8" x 30" iron rod with cap inscribed "OR 932 & WA 22098", as shown in said survey;
thence continuing on said Urban Area Boundary line, as shown on survey recorded at ~~A.F.N.~~ AFN 1085112, records of Klickitat County, Washington, S. 45°06'55" E. a distance of 5,532.43 ft. (See Footnote 6) to
- AP 40 at intersection with the line between sec.~~tions~~ 28 and 29;
thence leaving said Urban Area Boundary line as shown on ~~A.F.N.~~ AFN 1085112 on the line between sec.~~tions~~ 28 and 29, S. 00°29'43" W., approximately 140 ft. to
- AP 41 the cor.~~ner~~ of sec.~~tions~~ 28, 29, 32, and 33 perpetuated with an iron post in concrete with a brass cap on top set by the U.S. Army Corps of Engineers;
thence S. 63°06' E., approximately 3,002 ft. to

- AP 42 [AP 55] the north 1/16 corner of section 33 monumented with a 5/8" x 30" iron rod, as shown in survey recorded at ~~A.F.N.~~ AFN 176093, records of Klickitat County, Washington, identical with AP 55 of the Burdoin Mountain Special Management Area (SMA)
Legal Boundary Description:
thence on the E. and W. center line of the NE1/4 of section 33, on said SMA Boundary, S. 88°34'53" E. a distance of 1,933.17 ft. to
- AP 43 [AP 54] the center E-NE 1/64 corner of section 33; thence on the N. and S. center line of the SE1/4 of the NE1/4 of section 33, S. 01°11'20" W. a distance of 1,321.01 ft. to
- AP 44 [AP 53] the center E-E 1/64 corner of section 33; thence S. 01°07'34" W., approximately 1,206 ft. to
- AP 45 [AP 52] at intersection with the aforementioned right bank of the Columbia River at ~~B.N.P.E.~~ BNPE;
thence leaving said SMA Boundary, along said right bank at ~~B.N.P.E.~~ BNPE, westerly, approximately 7,419 ft. to
- AP 46 at intersection with the easterly mouth of the Bingen Marina;
thence crossing said mouth of the Bingen Marina, S. 64°39' W., approximately 278 ft. to
- AP 47 at intersection with said right bank at ~~B.N.P.E.~~ BNPE;
thence along said right bank at ~~B.N.P.E.~~ BNPE, westerly, approximately 8,739 ft. to
- AP 48 at intersection with the south side of the mouth of the S.D.S. Lumber Co. Harbor; thence crossing said mouth, N. 08°03' W., approximately 1,893 ft. to
- AP 49 at intersection with the west line of the E.S. Joslyn Donation Land Claim and said right bank at ~~B.N.P.E.~~ BNPE;
thence along said right bank at ~~B.N.P.E.~~ BNPE, westerly, approximately 11,389 ft. to
- AP 1 the **Point of Beginning**.

the Area being 3,325 Acres, more or less.

SOURCE MAPS AND DOCUMENTS:

1. 1986 Columbia River Gorge National Scenic Area Act Urban Boundary Maps, UA-004, September 1986, (Congressional or Act Maps):
 - a. Sheet 4
 - b. Sheet 6
2. In January 1987, the U.S. Forest Service developed maps based on the congressional maps (USFS Maps). The Commission and U.S. Forest Service used the USFS Maps as

the primary National Scenic Area maps until adopting this legal description. The USFS Maps are generally the basis for this description.

- a. USFS Map 12
- b. USFS Map 15

3. Copies of all source maps and documents are available at the Columbia River Gorge Commission and U.S. Forest Service, National Scenic Area offices.

FOOTNOTES:

1. This description intends to use the Bonneville Normal Pool Elevation in place at the time of the adoption of the National Scenic Area Act. At that time the Bonneville Normal Pool Elevation was 72 ft. Changes to this elevation through dam operations or otherwise do not change the location of the urban area boundary. The Bonneville Dam Normal Pool Elevation is listed as elevation 72 ft. on the N.S.A. Boundary Quad Map Sheets 12 and 15.

2. Short Plat No. SPL 2004-32, recorded at AFN Auditor's File #1055724, records of Klickitat County was completed in 2005 by Frank Childs, PLS of Taylor Engineering. Mr. Childs worked with then USFS Scenic Area Surveyor Don Karsch, PLS, to locate the line on this plat. There was correspondence between Mr. Childs, Mr. Karsch and Gorge Commission Senior Planner Brian Litt concerning this short plat. Mr. Childs utilized an overlay of USFS Map 12 which was then rotated, translated and scaled into position by reference to other known common points such as road intersections. Mr. Karsch accepted this location which was subsequently accepted by the Gorge Commission and Klickitat County. Both surveyors acknowledge that the line located in in this fashion is likely to be accurate to within only 10 to 20 ft. Following the initial short plat the property has been developed as Hatfield Estates. Platted lots adjoin the line established in Short Plat 2004-32. Mr. Childs' determination and Mr. Karsch's review did not have the benefit of also being able to review the Act Map. The Act Map appears to follow the 400-ft. contour through the majority of the determination. Utilizing the 400-ft. contour would appear to move the UA line to the east in the 15 to 65-ft. ~~foot~~ range. Because of the determination and subsequent land use actions this description follows the line determined in Short Plat 2004-32.

3. Boundary Line Adjustment, BLA 2007-12 by Klein & Assoc. Inc. for Whitney Miller, recorded September 11, 2007 at ~~AFN A.F.~~ #1072760, records of Klickitat County, shows the UA line and notes it as being the top of a prominent slope. Mr. Klein worked with then USFS Scenic Area Surveyor Don Karsch, PLS to locate the line on this plat. There was correspondence with between Mr. Klein and Mr. Karsch on the UA line location. Mr. Klein imported a digitized GIS line from the USFS map sheet 12. They surmised that the line segments shown on the map represented bluffs or grade breaks. One of Mr. Karsch's notes states "... they were trying to follow breaks of the east side of the White Salmon. Either that or a very poor tracing of the contour line." Their review of the UA line location in this area did not include review of the Act Map. The Act Map in this location appears to follow the contour line. The line established by Mr. Klein was not utilized as a property line in the BLA. There is very little physical difference in these two locations. Either location follows Mr. Karsch's opinion that the intent was to "be able to develop the

flat area, and keep the steep slopes protected." Because BLA 2007-12 followed protocols of the time, this description follows the line shown on BLA 2007-12.

~~4. AP 32 does not coincide with a C.R.G.N.S.A. draft exterior boundary description. It runs to the north and south center line of section 18. The USFS and Act Maps clearly show this intent. Berta Romio, P.L.S. No. of the USFS, and coauthor of the draft N.S.A. Exterior Boundary legal description agreed with this conclusion and would support modifying the NSA Exterior description if/when the FS continues work on the exterior descriptions.~~

54. The locations of AP 36 and AP 37 will be very close. Without benefit of field survey, it is unknown whether the course from AP 36 to AP 37 will be north or south along the section line; therefore, this description shows both bearings without a distance.

5. AP 37, AP 38, and AP 39 conform to the Klein surveys for Vezina, recorded as ~~A.F.N.~~ AFN 1046562 and 1020245.

6. AP 39 connects to the Pioneer Surveying and Engineering survey for S.D.S. Lumber Co., recorded as ~~A.F.N.~~ AFN 1085112. The surveys do not readily explain how they fully connected to each other. Under additional actual field survey, another angle point may be developed within the UA line. The intent of the UA description is to conform to these surveys. These surveys were performed without benefit of the review of the Act Map. Consideration of the Act Map may have resulted in a slightly different location of the Urban Area description; however, these surveys followed the protocols in place at the time they were completed and were held for the UA description. This creates a small jog on the section 28 and 29 line at AP 40 to AP 41, which does not readily appear on either of the USFS or Act Maps.

Columbia River Gorge National Scenic Area
Wishram Urban Area Legal Boundary Description

All corner points and lines of the Public Land Survey System (PLSS) referenced in this description are according to the latest official survey notes and plats, and state authority survey plats in effect as of December 1, 2016, unless otherwise specified. The hierarchy of the "rules of construction" is observed herein - natural monuments control over artificial monuments, which control over bearings and distances, which control over coordinates. This description will be junior to all senior rights when overlaps may occur. This description shall be considered, along with the final legislation map, as whole and complete per the original legislation creating this urban area and together they both shall govern all boundaries of this area, and guide future "on-the-ground" surveys. Where the boundary is described as a topographic feature, the actual location of the feature will control the approximate course identifying that part of said boundary. Courses for parallel offsets are measured from the apparent road or trail centerlines of the traveled way to determine the boundary and are intended to be used to locate the boundary in the future in the event that the road migrates or becomes indistinguishable; the courses follow the general configuration of the feature and not every turn or bend. The latitudes and longitudes reported for certain corner points and angle points in this description are North American Datum of 1983

(NAD83) (2011) (Epoch2011.00) values where survey-grade Global Positioning System (GPS) data was available, otherwise were determined by Geographical Information Systems (GIS) mapping data with a relative accuracy of ± 40 ft. horizontally, unless otherwise noted.

This description encompasses land that is identified as

The Wishram Urban Area, established in the COLUMBIA RIVER GORGE NATIONAL SCENIC AREA ACT OF 1986, Pub. L. No. 99-663, § 4(e), 100 Stat. 4274, 4277 (1986), located in portions of:

Township 2 North, Range 15 East, of the Willamette Meridian, Klickitat County, Washington.

T. 02 N., R. 15 E., Klickitat County

- AP 1 **Beginning** on the line between sections 16 and 17 at the intersection with the right bank of the Columbia River at ~~The Dalles Pool~~ Lake Celilo Normal Pool Elevation (~~T.D.N.P.E.~~) elevation 160 ft., National Geodetic Vertical Datum of 1929 (~~N.G.V.D. 29~~ NGVD 1929) (LCNPE) (See Footnote 1);
Latitude: 45°39'39" NW., Longitude: 120°56'48.8" WN.;
thence on the line between sections 16 and 17, N. 00°19'40" E., approximately 1,710 ft. to
- AP 2 the corner to sections 8, 9, 16, and 17;
thence on the line between sections 8 and 17, westerly, approximately 260 ft. to
- AP 3 at intersection with the center line of Washington State Route 14;
thence on said center line, westerly, approximately 5,675 ft. to
- AP 4 at intersection with the line between sections 17 and 18;
thence on the line between sections 17 and 18, N. 00°23'54" E., approximately 840 ft. to
- AP 5 the corner to sections 7, 8, 17, and 18, said point being perpetuated with an iron post with a brass cap on top set by the U.S. Army Corps of Engineers;
thence on the line between sections 7 and 8, N. 01°08'56" W., approximately 410 ft. to
- AP 6 at intersection with a line offset North of the line between sections 7 and 18 extending E. and W. through the northmost corner of Lot 4 of Short Plat SP 90-05 as recorded October 20, 1990 at Auditor's File ~~No. 220700~~ (~~A.F.N.~~ AFN) 220700 (Vol. 2 of Short Plats, Pg. 60), records of Klickitat County Washington (See Footnote 2);

thence parallel with and approximately 900 ft. northerly, of said line between sections 7 and 18, N. 89°17'16" W., approximately 3,315 ft. to

AP 7 at northmost corner of said Lot 4; thence continuing parallel with said section line, N. 89°17'16" W., approximately 1,300 ft. to

AP 8 at intersection with the northerly extension of the west line of Lot 1 of said Short Plat SP 90-05; thence along said extension, identical with the west line of said Short Plat SP 90-05, and the southerly extension thereof, S. 00°00'00" W. a distance of 1,957 ft. to

AP 9 thence easterly approximately 3,710 ft. to

AP 10 at intersection with an unnamed drainage ravine, identical with the 400-ft. foot contour line (~~N.G.V.D.~~ NGVD 1929) (See Footnote 3); thence downstream along said unnamed drainage ravine, southeasterly, approximately 710 ft. to

AP 11 the point at which the natural drainage ravine becomes a manmade channel, identical with the northwest corner of Lot 3, Short Plat G-18 as recorded May 15, 1975 at ~~A.F.N.~~ AFN 152475, records of Klickitat County Washington (See Footnote 4); thence on the westerly line of said Lot 3, S. 25°20'23" E. a distance of 146.68 ft. to

AP 12 at intersection with the toe of Talus slope as shown on survey for Gloria Flock recorded November 29, 2011 at ~~A.F.N.~~ AFN 1095717 records of Klickitat County Washington; thence leaving said westerly line along said toe of talus slope, S. 17°52'03" E. a distance of 202.54 ft. to

AP 13 at intersection with center of a seasonal drainage ravine; thence continuing along said toe of talus slope, and identical with said seasonal drainage ravine, S. 16°53'09" E. a distance of 86.92 ft. to

AP 14 thence S. 31°07'03" E. a distance of 67.15 ft. to

AP 15 thence leaving said toe of talus slope, continuing identical with said center of seasonal drainage ravine, southeasterly, approximately 175 ft. to

AP 16 at intersection with the E. and W. center line of section 18; thence parallel with the line between sections 17 and 18, S. 00°23'56" W., approximately 1,025 ft. to

AP 17 at intersection with aforementioned right bank of the Columbia River at LCNPE T.D.N.P.E.; thence along said right bank at LCNPE T.D.N.P.E., northeasterly, approximately 6,000 ft. to

AP 1 the **Point of Beginning.**

the Area being 456 Acres, more or less.

SOURCE MAPS AND DOCUMENTS:

1. 1986 Columbia River Gorge National Scenic Area Act Urban Boundary Maps, UA-004, September 1986, (Congressional or Act Maps):

a. Sheet 9

2. In January 1987, the U.S. Forest Service developed maps based on the congressional maps (USFS Maps). The Commission and U.S. Forest Service used the USFS Maps as the primary National Scenic Area maps until adopting this legal description. The USFS Maps are generally the basis for this description.

a. USFS Map 25

3. Copies of all source maps and documents are available at the Columbia River Gorge Commission and U.S. Forest Service, National Scenic Area offices.

FOOTNOTES:

1. This description intends to use the Lake Celilo Normal Pool Elevation in place at the time of the adoption of the National Scenic Area Act. At that time the Lake Celilo Normal Pool Elevation was 160 ft. Changes to this elevation through dam operations or otherwise do not change the location of the urban area boundary. The Dalles Dam Normal Pool elevation is listed as elevation 160 on USFS Map Map 25.

~~2. Short Plat 90-05, recorded October 22, 1990 at Auditor's File No. 220700 (Vol. 2 of Short Plats, Pg. 60), records of Klickitat County.~~

~~3. Short Plat G-18, recorded May 15, 1975 at Auditor's File No. 152475, deed records of Klickitat County.~~

2. AP 6 to AP 9 generally reflect a planning map dated October 6, 1989 and initialed by Gorge Commission staff depicting the Wishram UA line, which includes some dimensioning. This map appears to have been completed to allow completion of Short Plat No. SP-90-05, which was recorded October 22, 1990 (Klickitat Co. AFN 220700). This description is generally consistent with this map. This description calls to the west line of Lots 1 and 2 in this short plat so will match up on the 700 foot distance from the west line of Section 18. This description's call north of the north line of Section 18 is approximately 409 ft., not 400 ft.; using the point of the old county road to locate this section of the UA line is more consistent with the USFS and Act maps than the Commission staff determination. This description's call south from the north line of Section 18 is about 1,560 ft., which is

longer than the 1,500 used by the Commission staff determination. Not knowing how the Commission staff developed this distance, this description uses the more precise dimensioning developed from the USFS and Act maps.

3. AP 10 generally reflects a planning map dated May 22, 1990 and initialed by Gorge Commission staff depicting the Wishram UA line along a portion of the southwest side of Wishram. The map does not include any dimensioning. It does call out the center line of a ravine. This description also calls to the ravine, which is generally consistent with the Commission staff map.

4. AP 11 to AP 14 follow the survey for Gloria Flock completed by Jesse Garner, WA PLS No. 42687, of Pioneer Surveying and Engineering, recorded November 29, 2011 at Auditor's File No. AFN 1095717, deed records of Klickitat County. See also Gorge Commission letter to Gloria Flock dated November 22, 2011.

5. Both the 1986 Congressional Map (CSW-UA-004, Sheet 11) and the 1987 USFS Map (Sheet 25) were studied for preparation of this description. No differences of significance between the two maps were found.

~~6. A planning map dated October 6, 1989 and initialed by Gorge Commission staff depicts the line between the GMA and Wishram UA and includes some dimensioning. This map appears to have been completed to allow completion of Short Plat No. SP 90-05, which was recorded October 22, 1990 (Klickitat Co. Auditor's File #220700). This description is generally consistent with this map. This description calls to the west line of Lots 1 and 2 in this short plat so will match up on the 700 foot distance from the west line of Section 18. This description's call north of the north line of Section 18 is approximately 409 ft., not 400 ft.; using the point of the old county road to locate this section of the UA line is more consistent with the USFS and Act maps than the Commission staff determination. This description's call south from the north line of Section 18 is about 1,560 ft., which is longer than the 1,500 used by the Commission staff determination. Not knowing how the Commission staff developed this distance, this description uses the more precise dimensioning developed from the USFS and Act maps.~~

~~7. A planning map dated May 22, 1990 and initialed by Gorge Commission staff depicts the line between the GMA and UA along a portion of the southwest side of Wishram. The map does not include any dimensioning. It does call out the center line of a drainage. This description also calls to the drainage, which is generally consistent with Commission staff map.~~

Reviser's note: The typographical errors in the above material occurred in the copy filed by the Columbia River Gorge Commission and appear in the Register pursuant to the requirements of RCW 34.08.040.

Reviser's note: The brackets and enclosed material in the text of the above section occurred in the copy filed by the agency and appear in the Register pursuant to the requirements of RCW 34.08.040.

Reviser's note: The spelling error in the above material occurred in the copy filed by the Columbia River Gorge Commission and appears in the Register pursuant to the requirements of RCW 34.08.040.

**WSR 18-19-108
PROPOSED RULES
DEPARTMENT OF**

SOCIAL AND HEALTH SERVICES
(Aging and Long-Term Support Administration)
[Filed September 19, 2018, 11:57 a.m.]

Original Notice.

Preproposal statement of inquiry was filed as WSR 18-05-022.

Title of Rule and Other Identifying Information: The department is proposing to create new sections and amend existing sections within chapter 388-112A WAC, Residential long-term care services training, these sections provide training and certification requirements for long-term care workers in residential settings, along with instructor and curricula standards.

Hearing Location(s): On November 6, 2018, at 10:00 a.m., at Office Building 2, Department of Social and Health Services (DSHS) Headquarters, 1115 Washington, Olympia, WA 98504. Public parking at 11th and Jefferson. A map is available at <https://www.dshs.wa.gov/sesa/rules-and-policies-assistance-unit/driving-directions-office-bldg-2>.

Date of Intended Adoption: Not earlier than November 7, 2018.

Submit Written Comments to: DSHS Rules Coordinator, P.O. Box 45850, Olympia, WA 98504, email DSHSRPAURulesCoordinator@dshs.wa.gov, fax 360-664-6185, by 5:00 p.m., November 6, 2018.

Assistance for Persons with Disabilities: Contact Jeff Kildahl, DSHS rules consultant, phone 360-664-6092, fax 360-664-6185, TTY 711 relay service, email Kildaja@dshs.wa.gov, by October 23, 2018.

Purpose of the Proposal and Its Anticipated Effects, Including Any Changes in Existing Rules: The department is amending chapter 388-112A WAC, Residential long-term care services training. The proposed rules include the following changes: WAC 388-112A-0050, 388-112A-0060, 388-112A-0070 and 388-112A-0090, contain technical corrections on identifying qualifying credential for exemption; WAC 388-112A-0125, clarifies employment and training records that caregivers should provide and employers review prior to hire; WAC 388-112A-0495, corrects language to be consistent with statute requirements in RCW 18.20.270; WAC 388-112A-0590, clarifies when training may be applied to the seventy-hour long-term care worker basic training; WAC 388-112A-0600, renumbers provisions for clarity; WAC 388-112A-0610, 388-112A-0611, and 388-112A-0612, clarify continuing education requirements with regard to deadlines and unique employment situations where workers leave and return to long-term care settings; WAC 388-112A-1020, clarifies training preapproval, and online requirements; and WAC 388-112A-1240, 388-112A-1270 and 388-112A-1285, contain technical corrections to clarify instructor qualifications.

Reasons Supporting Proposal: These changes are necessary to clarify caregiver training, certification requirements, and training program requirements.

Statutory Authority for Adoption: RCW 74.39A.009, 74.39A.070, 74.39A.074, 74.39A.341, 18.20.270, 18.88B.-021, 18.88B.035, 70.128.230, 71A.12.030, 70.97.080.

Statute Being Implemented: RCW 74.39A.074, 18.88B.-021.

Rule is not necessitated by federal law, federal or state court decision.

Name of Proponent: DSHS, governmental.

Name of Agency Personnel Responsible for Drafting: Suemary Trobaugh, 4450 10th Avenue S.E., Lacey, WA 98503, 360-725-2516; Implementation and Enforcement: Christine Morris, 4450 10th Avenue S.E., Lacey, WA 98503, 360-725-2549.

A school district fiscal impact statement is not required under RCW 28A.305.135.

A cost-benefit analysis is required under RCW 34.05.-328. A preliminary cost-benefit analysis may be obtained by contacting Angel Sullivan, P.O. Box 45600, Olympia, WA

98504-5310 [98504-5600], phone 360-725-2495, fax 360-725-2646, TTY 1-800-833-6388, email suliva@dshs.wa.gov.

This rule proposal, or portions of the proposal, is exempt from requirements of the Regulatory Fairness Act because the proposal:

This rule proposal, or portions of the proposal, is exempt under RCW 19.85.025(5) because the department prepared an analysis under RCW 34.05.328.

Explanation of exemptions, if necessary: The proposed amendments do not impose more than minor costs on small businesses so a small business economic impact statement is not required.

September 13, 2018
Katherine I. Vasquez
Rules Coordinator

AMENDATORY SECTION (Amending WSR 17-22-036, filed 10/24/17, effective 11/24/17)

WAC 388-112A-0050 What are the training and certification requirements for volunteers and long-term care workers in adult family homes, adult family home providers, and adult family home applicants? (1) The following chart provides a summary of the training and certification requirements for volunteers and long-term care workers in adult family homes and adult family home providers:

Who	Status	Facility Orientation	Safety/orientation training	Seventy-hour long-term care worker basic training	Specialty training	Continuing education (CE)	Credential such as certification as a home care aide (HCA)
(a) Adult family home resident manager, or long-term care worker in adult family home.	(i) An ARNP, RN, LPN, NA-C, <u>HCA</u> , NA-C student or other professionals listed in WAC 388-112A-0090.	Required per WAC 388-112A-0200(1).	Not required.	Not required.	Required per WAC 388-112A-0400.	Not required of ARNPs, RNs, or LPNs in chapter 388-112A WAC. Required twelve hours per WAC 388-112A-0610 for NA-Cs, <u>HCAs</u> and other professionals listed in WAC 388-112A-0090, such as an individual with special education training with an endorsement granted by the superintendent of public instruction under RCW 28A.300.010.	<u>((Not required)) Must maintain in good standing the certification or credential or other professional role listed in WAC 388-112A-0090.</u>
	(ii) A long-term care worker employed on January 6, 2012 or was previously employed sometime between January 1, 2011 and January 6, 2012 and has completed the basic training requirements in effect on the date of his or her hire. WAC 388-112A-0090.	Required per WAC 388-112A-0200(1).	Not required.	Not required.	Required per WAC 388-112A-0400.	Required twelve hours per WAC 388-112A-0610.	Not required.

Who	Status	Facility Orientation	Safety/orientation training	Seventy-hour long-term care worker basic training	Specialty training	Continuing education (CE)	Credential such as certification as a home care aide (HCA)
	(iii) Employed in an adult family home and does not meet the criteria in subsection (1)(a) or (b) of this section. Meets definition of long-term care worker in WAC 388-112A-0010.	Not required.	Required. Five hours per WAC 388-112A-0200(2) and 388-112A-0220.	Required. Seventy-hours per WAC 388-112A-0300 and 388-112A-0340.	Required per WAC 388-112-0400.	Required. Twelve hours per WAC 388-112A-0610.	<u>Home care aide certification</u> required per WAC 388-112A-0105 within two hundred days of the date of hire as provided in WAC 246-980-050 (unless the department of health issues a provisional certification under WAC 246-980-065).
(b) Adult family home provider.	A person who has an adult family home license and does not meet the criteria in subsection (1)(a)(i), (ii), or (iii) of this section. This requirement applies to an entity representative of a licensed entity. WAC 388-76-1000.	Not required.	Completed prior to licensing.	Completed prior to licensing.	Completed prior to licensing.	Required. Twelve hours per WAC 388-112A-0610.	<u>Home care aide certification</u> completed prior to licensing.
(c) Volunteer staff in adult family home.	An unpaid person.	Required per WAC 388-112A-0200(1).	Not required.	Not required.	Not required.	Not required.	Not required.

(2) The following chart provides a summary of the training and certification requirements for adult family home applicants prior to licensure and adult family home resident managers prior to assuming the duties of the position:

Who	Status	Orientation and safety training	Seventy-hour long-term care worker basic training	Specialty training	Continuing education (CE)	Credential such as certification as a home care aide (HCA)
(a) Adult family home applicant.	(i) An RN, LPN, ARNP, NA-C, <u>HCA</u> , NA-C student and other professionals as listed in WAC 388-112A-0090.	Not required.	Not required.	Required per WAC 388-112A-0400.	Not required of ARNPs, RNs, or LPNs in chapter 388-112A WAC. Required twelve hours per WAC 388-112A-0610 for NA-Cs, <u>HCAs</u> and other professionals listed in WAC 388-112A-0090, such as an individual with special education training with an endorsement granted by the superintendent of public instruction under RCW 28A.300.010. The CE is not required during application process.	((Not required)) Must maintain in good standing the <u>certification or credential or other professional role listed in WAC 388-112A-0090.</u>
	(ii) A long-term care worker employed on January 6, 2012 or was previously employed sometime between January 1, 2011 and January 6, 2012 and has completed the basic training requirements in effect on the date of his or her hire, WAC 388-112A-0090.	Not required.	Not required.	Required per WAC 388-112A-0400.	Required twelve hours per WAC 388-112A-0610. The CE is not required during application process.	Not required.

Who	Status	Orientation and safety training	Seventy-hour long-term care worker basic training	Specialty training	Continuing education (CE)	Credential such as certification as a home care aide (HCA)
	(iii) Seeking a license to operate an adult family home and is not exempt under subsection (2)(a)(i) or (ii) of this section. WAC 388-112A-0030.	Required. Five hours per WAC 388-112A-0220.	Required. Seventy-hours per WAC 388-112A-0300 and 388-112A-0340.	Required per WAC 388-112A-0400.	Required twelve hours per WAC 388-112A-0610. The CE is not required during application process.	<u>Home care aide certification</u> required per WAC 388-112A-0105.
(b) Adult family home resident manager.	Employed or designated by the provider to manage an adult family home and is not exempt under subsection (2)(a)(i) or (ii) of this section. WAC 388-112A-0030.	Required. Five hours per WAC 388-112A-0220.	Required. Seventy-hours per WAC 388-112A-0300 and 388-112A-0340.	Required per WAC 388-112A-0400.	Required. Twelve hours per WAC 388-112A-0610.	<u>Home care aide certification</u> required per WAC 388-112A-0105.

(3) The remainder of this chapter describes the training and certification requirements in more detail.

(4) The following training requirements are not listed in the charts in subsections (1) and (2) of this section but are required under this chapter:

- (a) First aid and CPR under WAC 388-112A-0720;
- (b) Nurse delegation under WAC 388-112A-0500 and 388-112A-0560; and
- (c) Adult family home (AFH) administrator training under WAC 388-112A-0810.

AMENDATORY SECTION (Amending WSR 17-22-036, filed 10/24/17, effective 11/24/17)

WAC 388-112A-0060 What are the training and certification requirements for volunteers and long-term care workers in assisted living facilities and assisted living facility administrators? (1) The following chart provides a summary of the training and certification requirements for volunteers and long-term care workers in assisted living facilities and assisted living administrators or administrator designees:

Who	Status	Facility orientation	Safety/ orientation training	Seventy-hour long-term care worker basic training	Specialty training	Continuing education (CE)	Credential such as certification as a home care aide (HCA)
(a) Long-term care worker in assisted living facility.	(i) An ARNP, RN, LPN, NA-C, HCA , NA-C student or other professionals listed in WAC 388-112A-0090.	Required per WAC 388-112A-0200(1).	Not required.	Not required.	Required per WAC 388-112A-0400.	Not required of ARNPs, RNs, or LPNs in chapter 388-112A WAC. Required. Twelve hours per WAC 388-112A-0610 for NA-Cs, HCAs , and other professionals listed in WAC 388-112A-0090, such as an individual with special education training with an endorsement granted by the superintendent of public instruction under RCW 28A.300.010.	((Not required)) <u>Must maintain in good standing the certification or credential or other professional role listed in WAC 388-112A-0090.</u>
	(ii) A long-term care worker employed on January 6, 2012 or was previously employed sometime between January 1, 2011 and January 6, 2012 and has completed the basic training requirements in effect on the date of his or her hire. WAC 388-112A-0090.	Required per WAC 388-112A-0200(1).	Not required.	Not required.	Required per WAC 388-112A-0400.	Required. Twelve hours per WAC 388-112A-0610.	Not required.

Who	Status	Facility orientation	Safety/ orientation training	Seventy-hour long-term care worker basic training	Specialty training	Continuing education (CE)	Credential such as certification as a home care aide (HCA)
	(iii) Employed in an assisted living facility and does not meet the criteria in subsection (1)(a) or (b) of this section. Meets the definition of long-term care worker in WAC 388-112A-0010.	Not required.	Required. Five hours per WAC 388-112A-0200(2) and 388-112A-0220.	Required. Seventy-hours per WAC 388-112A-0300 and 388-112A-0340.	Required per WAC 388-112A-0400.	Required. Twelve hours per WAC 388-112A-0610.	<u>Home care aide certification</u> required per WAC 388-112A-0105 within two hundred days of the date of hire as provided in WAC 246-980-050 (unless the department of health issues a provisional certification under WAC 246-980-065).
(b) Assisted living facility administrator or administrator designee.	A qualified assisted living facility administrator or administrator designee who does not meet the criteria in subsection (1)(a)(i), (ii), or (iii) of this section.	Not required.	Required. Five hours per WAC 388-112A-0200(2) and 388-112A-0220.	Required. Seventy-hours per WAC 388-112A-0300 and 388-112A-0340.	Required per WAC 388-112A-0400.	Required. Twelve hours per WAC 388-112A-0610.	<u>Home care aide certification</u> required per WAC 388-112A-0105.
(c) Volunteer staff in assisted living facility.	An unpaid person.	Required per WAC 388-112A-0200(1).	Not required.	Not required.	Not required.	Not required.	Not required.

(2) The remainder of this chapter describes the training and certification requirements in more detail.

(3) The following training requirements are not listed in the charts in subsection (1) of this section but are required under this chapter:

- (a) First aid and CPR under WAC 388-112A-0720;
- (b) Nurse delegation under WAC 388-112A-0500 and 388-112A-0560;
- (c) Assisted living facility (ALF) administrator training under WAC 388-78A-2521.

AMENDATORY SECTION (Amending WSR 17-22-036, filed 10/24/17, effective 11/24/17)

WAC 388-112A-0070 What are the training and certification requirements for applicants, administrators or their designees, volunteers, and long-term care workers in enhanced services facilities? (1) The following chart provides a summary of the training and certification requirements for applicants, administrators or their designees, volunteers, and long-term care workers in enhanced services facilities:

Who	Status	Facility orientation	Safety/ orientation training	Seventy-hour long-term care worker basic training	Specialty training	Continuing education (CE)	Quarterly in-service education	Credential such as certification as a home care aide (HCA)
(a) Enhanced services facility (ESF) applicant, administrator or their designee, or long-term care worker in ESF.	(i) An ARNP, RN, LPN, NA-C, <u>HCA</u> , NA-C student or other professionals listed in WAC 388-112A-0090.	Required by WAC 388-112A-0200(1).	Not required.	Not required.	Per WAC 388-107-0650 for applicants required prior to facility licensing and for administrators and long-term care workers prior to providing client services.	Not required of ARNPs, RNs, or LPNs in chapter 388-112A WAC. Required twelve hours per WAC 388-112A-0610 for NA-Cs, <u>HCAs</u> , and other professionals listed in WAC 388-112A-0090, such as individuals with special education training with an	Required of employees per WAC 388-107-0680.	(Not required) <u>Must maintain in good standing the certification or credential or other professional role listed in WAC 388-112A-0090.</u>

Who	Status	Facility orientation	Safety/ orientation training	Seventy-hour long-term care worker basic training	Specialty training	Continuing education (CE)	Quarterly in-service education	<u>Credential such as certification as a home care aide (HCA)</u>
						endorsement granted by the superintendent of public instruction under RCW 28A.300.010. Per WAC 388-107-0670, ten hours must be in subject appropriate for residents served in the facility.		
	(ii) Enhanced services facility (ESF) applicant that does not meet the criteria in subsection (1)(a)(i) of this section.	Not required.	Required. Five hours per WAC 388-112A-0200(2) and 388-112A-0340.	Required. Seventy-hours per WAC 388-112A-0300 and 388-112A-0340.	Per WAC 388-107-0650 for applicants required prior to facility licensing.	Required. Twelve hours per WAC 388-112A-0610. Per WAC 388-107-0660 and 388-107-0670, ten hours must be in subjects appropriate for residents served in the facility.	Required of employees per WAC 388-107-0680.	<u>Home care aide certification</u> required per WAC 388-112A-0105 within two hundred days of the date of hire as provided in WAC 388-107-0630(6)(b).
	(iii) A long-term care worker who was employed on January 6, 2012 or was previously employed sometime between January 1, 2011 and January 6, 2012 and has completed the basic training requirements in effect on his or her hire date. WAC 388-112A-0090.	Required per WAC 388-112A-0200(1).	Not required.	Not required.	Required per WAC 388-112A-0400 and prior to providing client services per WAC 388-107-0650.	Required. Twelve hours per WAC 388-112A-0610. Per WAC 388-107-0660 and 388-107-0670, ten hours must be in subjects appropriate for residents served in the facility.	Required of employees per WAC 388-107-0680.	Not required.
	(iv) Employed in an enhanced services facility and does not meet the criteria in subsection (1)(a)(i), (ii) or (iii) of this section. Meets definition of long-term care worker in WAC 388-112A-0010.	Not required.	Required. Five hours per WAC 388-112A-0200(2) and 388-112A-0220.	Required. Seventy-hours per WAC 388-112A-0300 and 388-112A-0340.	Required per WAC 388-112A-0400 and prior to providing client services per WAC 388-107-0650.	Required. Twelve hours per WAC 388-112A-0610. Per WAC 388-107-0660 and 388-107-0670, ten hours must be in subjects appropriate for residents served in the facility.	Required of employees per WAC 388-107-0680.	<u>Home care aide certification</u> required per WAC 388-112A-0105 within two hundred days of the date of hire as provided in WAC 246-980-050 (unless the department of health issues a provisional certification under WAC 246-980-065).
(b) Volunteer staff in adult family home or assisted living facility.	An unpaid person.	Required per WAC 388-112A-0200(1).	Not required.	Not required.	Not required.	Not required.	Not required.	Not required.

(2) The remainder of this chapter and chapter 388-107 WAC describes the training and certification requirements in more detail.

(3) The following training requirements are not listed in the chart in subsection (1) of this section but are required under this chapter:

- (a) First aid and CPR under WAC 388-112A-0720; and
- (b) Enhanced services facility (ESF) administrator training under WAC 388-112A-0800.

AMENDATORY SECTION (Amending WSR 17-22-036, filed 10/24/17, effective 11/24/17)

WAC 388-112A-0090 Which long-term care workers are exempt from the seventy-hour long-term care worker basic training requirement? The following long-term care workers are exempt from the seventy-hour long-term care worker basic training requirement:

(1) An applicant for an adult family home license on or before January 6, 2012 who met the basic training requirements in effect at the time of application;

(2) A person employed as a long-term care worker on January 6, 2012 who completed the basic training requirements in effect on the date of his or her hire;

(3) A person employed as a long-term care worker on January 6, 2012 who completed within one hundred twenty days of hire the basic training requirements in effect on the date of his or her hire;

(4) A person previously employed as a long-term care worker who completed the basic training requirements in effect on the date of his or her hire and was employed as a long-term care worker at some point between January 1, 2011 and January 6, 2012;

(5) Washington state department of health registered nurse, licensed practical nurses, and advanced registered nurse practitioners licensed under chapter 18.79 RCW;

(6) Washington state department of health nursing assistants certified under chapter 18.88A RCW and persons in an approved training program for certified nursing assistants under chapter 18.88A RCW provided that they complete the training program within one hundred twenty days of the date of hire and the department of health has issued them their nursing assistant certified credential within two hundred days of the date of hire;

(7) A home health aide who was employed by a medicare certified home health agency within the year before the home health aide was hired as a long-term care worker and has met the requirements of 42 C.F.R. Sec. 484.36; ~~((and))~~

(8) An individual with special education training with an endorsement granted by the Washington state superintendent of public instruction as described in RCW 28A.300.010; and

(9) Washington state department of health home care aides (HCAs) certified under chapter 18.88B RCW.

Reviser's note: RCW 34.05.395 requires the use of underlining and deletion marks to indicate amendments to existing rules. The rule published above varies from its predecessor in certain respects not indicated by the use of these markings.

NEW SECTION

WAC 388-112A-0125 When a licensed home is hiring or a long-term care worker is applying to work in a residential setting what documentation of prior training and certification must be reviewed? To reduce enforcement actions described in WAC-388-112A-0095 and 388-71-0980 against employers and long-term care workers, at hiring the following status and training deadlines must be reviewed:

(1) Long-term care workers must disclose, and employers must verify, the highest level of training or certification received.

(a) When the long-term care worker is HCA certified, the long-term care worker shall provide and the employer must verify that the Washington state HCA credential number is current and in good standing.

(i) When the HCA is certified in the current calendar year, review compliance with the continuing education requirement as provided in WAC 388-112A-0610.

(ii) When the HCA has a specialty training requirement, the training must be completed as provided in WAC 388-112A-0495.

(b) When the long-term care workers is exempt from the seventy-hour long-term care worker training and certification requirements due to their status as an exempt worker provided in WAC 388-112A-0090, which includes amongst others RNs, LPNs, NACs, and those exempt due to their work history:

(i) The long-term care worker shall provide documentation of their exemption status. This documentation may include:

(A) Washington state active credential number, which the employer must verify is in good standing; or

(B) Letter from their employer documenting work history during the exemption period and completion of basic training when it was required; or

(C) Employment history records from the Washington state Employment Security Department documenting work history information during the exemption period and documentation of the basic training when it was required; or

(D) Federal tax statements documenting work history information during the exemption period, and documentation of the basic training when it was required.

(ii) The exempt long-term care worker, which includes amongst others NACs and those exempt due to their work history, shall provide for the year they are hired documentation of completion of twelve hours of continuing education, or information on when the continuing education must be completed, that complies with WAC 388-112A-0610.

(iii) When the exempt long-term care worker, which includes amongst others NACs and those exempt due to their work history, has a specialty training requirement, the training must be completed as provided in WAC 388-112A-0495.

(c) Long term care workers that failed to meet basic training or certification deadline requirement as provided in WAC 388-112A-0120 and were terminated from employment may be eligible to have the Washington state department of health (DOH) reset the date of hire if the worker meets the criteria provided in WAC 388-112A-0110.

(i) Long term care workers that are eligible to reset their date of hire as provided in WAC 388-112A-0110 must reap-

ply to DOH, and adhere to their updated training or certification deadline requirements.

(ii) Long term care workers that are not eligible to reset their date of hire as provided in WAC 388-112A-0110 must not be paid to provide personal care assistance until they complete required training and become certified as a long term care worker. If these long-term care workers complete training after their deadline, they can return to work if this is before their two hundred day, or two-hundred sixty day deadline for certification.

(d) Long-term care workers must document their compliance with their continuing education deadlines as provided in 388-112A-0610.

(i) Long-term care workers that worked in the previous year in a long term care setting are held accountable for their CE completion by their employer in this time period and shall provide at new hire documentation of their continuing education compliance during the current calendar year; or

(ii) Long-term care workers that work for multiple employers or move between employers shall at hire provide documentation of CE completion, when required.

(2) When a long-term care worker resigns and is rehired in a long-term care setting in multiple calendar years, the employer must complete a character, competency, or suitability determination to assess if the long-term care worker has a pattern of non-compliance with training or certification requirements. The long-term care worker may not be hired if a pattern of non-compliance with training or certification exists.

AMENDATORY SECTION (Amending WSR 17-22-036, filed 10/24/17, effective 11/24/17)

WAC 388-112A-0495 What are the facility long-term care workers' specialty training deadlines and what is the requirement for supervision until the training is completed? Adult family homes.

(1) If an adult family home serves one or more residents with special needs, long-term care workers must complete and demonstrate competency in specialty training within one hundred twenty days of hire.

(2) During the period to complete the specialty training the long-term care worker must not provide personal care to a resident with special needs without direct supervision until that long-term care worker demonstrates competency in specialty training.

(3) The long-term care worker may have indirect supervision if the long-term care worker is one or more of the following:

(a) The long-term care worker is a nursing assistant certified (NA-C) under chapter 18.88A RCW;

(b) The long-term care worker is a certified home care aide (HCA) under chapter 18.88B RCW;

(c) The long-term care worker is a licensed practical nurse (LPN) under chapter 18.79 RCW;

(d) The long-term care worker is a registered nurse (RN) under chapter 18.79 RCW;

(e) The long-term care worker meets the exemption criteria described in WAC 388-112A-0090.

Assisted living facilities.

(4) If an assisted living facility serves one or more residents with special needs, long-term care workers must complete and demonstrate competency in specialty training within one hundred twenty days of hire. However, if specialty training is not integrated with basic training, the specialty training must be completed within ninety days of completion of basic training.

(5) During the period to complete the specialty training, the long-term care worker must not provide personal care to a resident with special needs without (~~indirect~~) direct supervision until that long-term care worker demonstrates competency in specialty training as provided in RCW 18.20.270.

Enhanced services facilities.

(6) Enhanced services facilities are facilities that serves one or more residents with special needs, and long-term care workers must complete and demonstrate competency in mental health and dementia specialty training prior to providing client services.

(7) Long-term care workers are not required to complete specialty training if the adult family home or assisted living facility has no residents with a special need where the specialty training is required.

Reviser's note: The typographical error in the above section occurred in the copy filed by the agency and appears in the Register pursuant to the requirements of RCW 34.08.040.

AMENDATORY SECTION (Amending WSR 17-22-036, filed 10/24/17, effective 11/24/17)

WAC 388-112A-0590 May nurse delegation core and specialized diabetes training occur in the same year as the seventy-hour long-term care worker basic training?

(1) Nurse delegation core and specialized diabetes training may occur in the same year as basic training if required to be able to perform delegated tasks. The training hours when completed within one hundred twenty days of hire may apply to the population specific component of the seventy-hour long-term care worker basic training.

(2) Long-term care workers in enhanced services facilities are not permitted to perform nurse delegated tasks.

AMENDATORY SECTION (Amending WSR 17-22-036, filed 10/24/17, effective 11/24/17)

WAC 388-112A-0600 What is continuing education and what topics may be covered in continuing education?

(1) Continuing education is annual training designed to promote professional development and increase a caregiver's knowledge, expertise, and skills. DSHS must approve continuing education curricula and instructors.

(2) The same continuing education course must not be repeated for credit unless it is a new or more advanced training on the same topic. However, long-term care workers may repeat up to five credit hours per year on the following topics:

(a) Bloodborne pathogens and infection control;

(b) CPR training;

(c) First-aid training;

(d) Food handling training;

(e) Health insurance portability and accountability act (HIPAA);

(f) Medication assistance;

(g) Disaster preparedness;

(h) Aging sensitivity;

(i) Resident rights as it relates to caregiving issues in chapter 70.129 RCW;

(j) Resident safety;

(k) Abuse and neglect identification and mandatory reporting; and

(l) Topics where the assisted living facility, enhanced services facility, or adult family home can demonstrate a need for retraining.

~~((2))~~ (3) Continuing education must be on a topic relevant to the care setting, care needs of residents, or long-term care worker career development. In addition to the topics listed in subsection (1) of this section, topics or course may include:

(a) Personal care services;

(b) Mental illness;

(c) Dementia;

(d) Developmental disabilities;

(e) Depression;

(f) Communication skills;

(g) Positive resident behavior support;

(h) Developing or improving resident centered activities;

(i) Dealing with wandering or aggressive resident behaviors;

(j) Deescalating challenging behaviors; and

(k) Medical conditions.

~~((3))~~ (4) Nurse delegation core and nurse delegation specialized diabetes training hours when not applied to basic training hours may count towards continuing education.

~~((4))~~ (5) Specialty training, except if completed through a challenge test, may be used to meet continuing education requirements.

~~((5))~~ (6) When hours from a class approved as specialty training are counted toward basic training requirements, the hours must not be counted toward continuing education.

~~((6))~~ (7) Residential care administrator training under WAC 388-112A-0800 may be used to meet the continuing education requirements described in WAC 388-112A-0610 during the year it was completed.

~~((7))~~ (8) Successful completion of a department of health approved home care aide certified alternative bridge program may be applied up to twelve hours of continuing education in the year it was completed.

AMENDATORY SECTION (Amending WSR 17-22-036, filed 10/24/17, effective 11/24/17)

WAC 388-112A-0610 Who in an adult family home is required to complete continuing education training each year, how many hours of continuing education are required, and when must they be completed? The continuing education training requirements that apply to certain individuals working in adult family homes are described below.

(1) **Adult family homes.**

(a) The following long-term care workers must complete twelve hours of continuing education by their birthday each year:

~~(i) Certified home care aides ((must complete twelve hours of continuing education by their birthday each year after obtaining certification as required by the Washington department of health as described in RCW 74.39A.341.~~

~~(b) If exempt from certification as described in));~~

~~(ii) Long-term care workers who are exempt from certification under RCW 18.88B.041, ((long term care workers must complete twelve hours of continuing education by their birthday each year.~~

~~(i) Unless voluntarily certified as a home care aide under chapter 18.88B RCW, the continuing education does not apply to registered nurses and licensed practical nurses licensed under chapter 18.79 RCW.~~

~~(ii) Continuing education requirements under subsection (1)(b) of this section do not apply to)) and WAC 388-112A-0090 (1) through (3) because they worked during the exemption period of January 1, 2011 to January 6, 2012, and they completed all of the basic training requirements in effect on the date they were hired; and~~

~~(iii) Certified nursing assistants, and persons with special education training and an endorsement granted by the Washington state office of superintendent of public instruction, as described in RCW 28A.300.010; and~~

~~(iv) Adult family home applicants, home entity representatives, and resident managers as provided in WACs 388-112A-0050 and 388-76-10146.~~

~~((e) For)) (b) Long-term care workers ((that)), who are certified as a home care aide ((or nursing assistant, if the first renewal period is less than a full year from the initial date of certification, no continuing education will be due for the first renewal period)), must comply with continuing education requirements under chapter 246-980 WAC;~~

~~(c) Long-term care workers, who are exempt from home care aide certification under either subsection (a)(ii) or (a)(iii) of this section, must complete the annual continuing education requirements for each calendar year in which they performed any work as a long-term care worker.~~

~~(d) Long-term care workers, who are exempt from home care aide certification under either subsection (a)(ii) or (a)(iii) of this section and that have not worked in long-term care for a calendar year or longer, are eligible to return to work as a long-term care worker when the continuing education hours required under subsection (c) of this section are completed within the following timeframes:~~

~~(i) On or before their birthday, if their birthday takes place after the date they return to work; or~~

~~(ii) Within forty-five calendar days of the date they returned to work, if their birthday took place on or before the day they returned to work.~~

~~(A) If this forty-five calendar day time period allows workers to complete their continuing education in January or February of the following year, the hours of credit earned will be applied to the year in which they were hired.~~

~~(B) Continuing education requirements for the calendar year after the year they were hired must be completed as required under subsection (1)(a) of this section, even if that~~

means the long-term care worker must complete twenty-four hours of classes (twelve hours for the year they were hired and twelve hours for the next year) within a very short time.

(e) At initial certification, long-term care workers certified as home care aides or nursing assistants (NAC), have the following deadline to complete their first annual continuing education requirements:

(i) When the first renewal date for certification is less than twelve months from the date of initial certification, the long-term care worker is not required to complete the annual continuing education until the second annual renewal date; or

(ii) When the first renewal date for certification is more than twelve months from the date of initial certification, the long-term care worker must complete the annual continuing education by the first certification renewal date.

(f) Continuing education must include one half hour per year on safe food handling in adult family homes as described in RCW 70.128.250 when the long-term worker does not maintain a food handler's permit.

(2) ~~(Assisted living facilities.~~

(a) Certified home care aides must complete twelve hours of continuing education by their birthday each year after obtaining certification as required by the Washington department of health as described in RCW 74.39A.341.

(b) Long-term care workers exempt from certification under RCW 18.88B.041 must complete twelve hours of continuing education by their birthday each year.

(c) For long-term care workers that are certified as a home care aide or nursing assistant, if the first renewal period is less than a full year from the initial date of certification, no continuing education will be due for the first renewal period.

(i) Unless voluntarily certified as a home care aide under chapter 18.88B RCW, the continuing education does not apply to registered nurses and licensed practical nurses licensed under chapter 18.79 RCW.

(ii) Continuing education requirements under subsection (2)(b) of this section apply to certified nursing assistants and persons with special education training and an endorsement granted by the superintendent of public instruction, as described in RCW 28A.300.010.

(iii) Assisted living facility administrators or the administrator designees must complete twelve hours of continuing education by their birthday each year.

(3) ~~Enhanced services facilities.~~

(a) Certified home care aides must complete twelve hours of continuing education by their birthday each year after obtaining certification as required by the Washington department of health as described in RCW 74.39A.341.

(b) Long-term care workers exempt from certification under RCW 18.88B.041 must complete twelve hours of continuing education by their birthday each year for each year they worked.

(c) For long-term care workers that are certified as a home care aide or nursing assistant, if the first renewal period is less than a full year from the initial date of certification, no continuing education will be due for the first renewal period.

(i) Unless voluntarily certified as a home care aide under chapter 18.88B RCW, the continuing education does not apply to registered nurses and licensed practical nurses licensed under chapter 18.79 RCW.

(ii) Continuing education requirements under subsection (3)(b) of this section do apply to certified nursing assistants and persons with special education training and an endorsement granted by the superintendent of public instruction, as described in RCW 28A.300.010.

(iii) Enhanced services facility administrators or the administrator designees must complete twelve hours of continuing education by their birthday each year.

(d) Enhanced services facility certified home care aide staff and nursing assistant certified staff must have ten of their twelve hours of annual continuing education cover relevant education regarding the population served in the enhanced services facility as provided in WAC 388-107-0660.

(e) In addition to the annual continuing education requirements for individual staff, the enhanced services facility must provide three hours of staff education per quarter relevant to the needs of the population served.

(4) A long-term care worker who does not complete continuing education as required in subsections (1) through (3) of this section or RCW 74.39A.341 must not be paid to provide care until they complete the required continuing education.

(5) One hour of completed classroom instruction or other form of training (such as an online course) equals one hour of continuing education. For online courses, the training entity must establish a way for the long-term care worker to ask the instructor questions)) A long-term care worker who does not complete continuing education as required in subsection (1) of this section or RCW 74.39A.341 must not provide care until they complete the required continuing education.

(3) One hour of completed classroom instruction or other form of training (such as an online course) equals one hour of continuing education. For online courses, the training entity must establish a way for the long-term care worker to ask the instructor questions.

NEW SECTION

WAC 388-12A-0611 Who in an assisted living facility is required to complete continuing education training each year, how many hours of continuing education are required, and when must they be completed? The continuing education training requirements that apply to certain individuals working in assisted living facilities are described below.

(1) Assisted living facilities.

(a) The following long-term care workers must complete twelve hours of continuing education by their birthday each year:

(i) Certified home care aides;

(ii) Long-term care workers who are exempt from certification under RCW 18.88B.041, and WAC 388-112A-0090 (1) through (3) because they worked during the exemption period of January 1, 2011 to January 6, 2012, and they completed all of the basic training requirements in effect on the date they were hired;

(iii) Certified nursing assistants, and persons with special education training and an endorsement granted by the Wash-

ington state office of superintendent of public instruction, as described in RCW 28A.300.010; and

(iv) Assisted living facility administrators or the administrator designees must complete twelve hours of continuing education by their birthday each year.

(b) Long-term care workers, who are certified home care aides, must comply with continuing education requirements under chapter 246-980 WAC;

(c) Long-term care workers, who are exempt from home care aide certification under either subsection (a)(ii) or (a)(iii) of this section, must complete the annual continuing education requirements for each calendar year in which they performed any work as a long-term care worker.

(d) Long-term care workers, who are exempt from home care aide certification under either subsection (a)(ii) or (a)(iii) of this section and that have not worked in long-term care for a calendar year or longer, are eligible to return to work as a long-term care worker when the continuing education hours required under subsection (c) of this section are completed within the following timeframes:

(i) On or before their birthday, if their birthday takes place after the date they return to work; or

(ii) Within forty-five calendar days of the date they returned to work, if their birthday took place on or before the day they returned to work.

(A) If this forty-five calendar day time period allows workers to complete their continuing education in January or February of the following year, the hours of credit earned will be applied to the year in which they were hired.

(B) Continuing education requirements for the calendar year after the year they were hired must be completed as required under subsection (1)(a) of this section, even if that means the long-term care worker must complete twenty-four hours of classes (twelve hours for the year they were hired and twelve hours for the next year) within a very short time.

(e) At initial certification, long-term care workers certified as home care aides or nursing assistants (NAC), have the following deadline to complete their first annual continuing education requirements:

(i) When the first renewal date for certification is less than twelve months from the date of initial certification, the long-term care worker is not required to complete the annual continuing education until the second annual renewal date; or

(ii) When the first renewal date for certification is more than twelve months from the date of initial certification, the long-term care worker must complete the annual continuing education by the first certification renewal date.

(2) A long-term care worker who does not complete continuing education as required in subsection (1) of this section or RCW 74.39A.341 must not provide care until they complete the required continuing education.

(3) One hour of completed classroom instruction or other form of training (such as an online course) equals one hour of continuing education. For online courses, the training entity must establish a way for the long-term care worker to ask the instructor questions.

Reviser's note: The section above appears as filed by the agency pursuant to RCW 34.08.040; however, the reference to WAC 388-12A-0611 is probably intended to be WAC 388-112A-0611.

NEW SECTION

WAC 388-112A-0612 Who in an enhanced services facility is required to complete continuing education training each year, how many hours of continuing education are required, and when must they be completed? The continuing education training requirements that apply to certain individuals working in enhanced services facilities are described below.

(1) **Enhanced services facilities.**

(a) The following long-term care workers must complete twelve hours of continuing education by their birthday each year:

(i) Certified home care aides;

(ii) Long-term care workers who are exempt from certification under RCW 18.88B.041, WAC 388-112A-0090 (1) through (3), and WAC 388-71-0839 (1) through (3) because they worked during the exemption period of January 1, 2011 to January 6, 2012, and they completed all of the basic training requirements in effect on the date they were hired;

(iii) Certified nursing assistants, and persons with special education training and an endorsement granted by the Washington state office of superintendent of public instruction, as described in RCW 28A.300.010; and

(iv) Enhanced services facility administrators or the administrator designees must complete twelve hours of continuing education by their birthday each year.

(b) Long-term care workers, who are certified home care aides, must comply with continuing education requirements under chapter 246-980 WAC;

(c) Long-term care workers, who are exempt from home care aide certification under either subsection (a)(ii) or (a)(iii) of this section, must complete the annual continuing education requirements for each calendar year in which they performed any work as a long-term care worker.

(d) Long-term care workers, who are exempt from home care aide certification under either subsection (a)(ii) or (a)(iii) of this section and that have not worked in long-term care for a calendar year or longer, are eligible to return to work as a long-term care worker when the continuing education hours required under subsection (c) of this section are completed within the following timeframes:

(i) On or before their birthday, if their birthday takes place after the date they return to work; or

(ii) Within forty-five calendar days of the date they returned to work, if their birthday took place on or before the day they returned to work.

(A) If this forty-five calendar day time period allows workers to complete their continuing education in January or February of the following year, the hours of credit earned will be applied to the year in which they were hired.

(B) Continuing education requirements for the calendar year after the year they were hired must be completed as required under subsection (1)(a) of this section, even if that means the long-term care worker must complete twenty-four hours of classes (twelve hours for the year they were hired and twelve hours for the next year) within a very short time.

(e) At initial certification, long-term care workers certified as home care aides or nursing assistants (NAC), have the following deadline to complete their first annual continuing education requirements:

(i) When the first renewal date for certification is less than twelve months from the date of initial certification, the long-term care worker is not required to complete the annual continuing education until the second annual renewal date; or

(ii) When the first renewal date for certification is more than twelve months from the date of initial certification, the long-term care worker must complete the annual continuing education by the first certification renewal date.

(f) Enhanced services facility certified home care aide staff and nursing assistant certified staff must have ten of their twelve hours of annual continuing education cover relevant education regarding the population served in the enhanced services facility as provided in WAC 388-107-0660.

(g) In addition to the annual continuing education requirements for individual staff, the enhanced services facility must provide three hours of staff education per quarter relevant to the needs of the population served.

(2) A long-term care worker who does not complete continuing education as required in subsection (1) of this section or RCW 74.39A.341 must not provide care until they complete the required continuing education.

(3) One hour of completed classroom instruction or other form of training (such as an online course) equals one hour of continuing education. For online courses, the training entity must establish a way for the long-term care worker to ask the instructor questions.

AMENDATORY SECTION (Amending WSR 17-22-036, filed 10/24/17, effective 11/24/17)

WAC 388-112A-1020 What must be submitted to DSHS for curriculum approval? (1) If a training entity modifies a department developed curriculum in any manner, the training entity must submit the curriculum to the department for approval.

(2) Training must not be offered before receiving department curriculum and instructor approval.

(3) Online classes when applicable must adhere to the DSHS online class standards in effect at the time of approval. These online standards are posted on the DSHS's website.

(4) For orientation and safety training:

(a) Submit an outline of what will be covered in each training offered, like a table of contents or a class syllabus, that shows where the required introductory topics listed in WAC 388-112A-0210 for orientation and WAC 388-112A-0230 for safety training are covered in the training.

(b) Department required orientation and safety training application forms must be submitted to the department at least forty-five days before the training is expected to be offered.

(c) Training cannot be offered before the department approves the curriculum and instructor.

~~((3))~~ (5) For continuing education:

(a) Continuing education curriculum delivery models must only include instructor led, online instructor led (such as a webinar), or online interactive self-paced learning with access to an instructor.

~~(b) ((Online classes must adhere to the DSHS online class standards in effect at the time of approval. These online standards are posted on the department's web site.~~

~~((e))~~ For continuing education classes, submit on a department developed form a summary of the class that includes the topic, a brief description of what the training will cover, a course outline, the number of training hours, and a description of how the training is relevant to the care setting, care needs of residents, or long-term care worker career development.

~~((d))~~ (c) For online training courses, submit the information requested in ~~((e))~~ (b) of this subsection and a description of how the instructor or training will assess that the students have integrated the information being taught.

~~((e))~~ (d) Department required continuing education training application forms must be submitted at least forty-five days in advance of the training. The department must approve the curriculum and instructor before the training may be offered.

~~((4))~~ (6) **For core basic training:**

(a) If the instructor or training entity uses the DSHS developed revised fundamentals of caregiving learner's guide with enhancements, they must submit the DSHS form with all required information.

(b) If the instructor or training entity does not use a DSHS developed revised fundamentals of caregiving learner's guide with enhancements to teach the seventy-hour long-term care worker basic training, they must submit to DSHS the following for approval:

(i) A completed DSHS curriculum checklist indicating where all of the competencies and learning objectives described in this chapter are located in the long-term care worker materials from the proposed curriculum for that course;

(ii) Any materials long-term care workers will receive, such as a textbook, long-term care worker manual, learning activities, audio-visual materials, handouts, and books;

(iii) The table of contents or curriculum outline, including the allotted time for each section;

(iv) Demonstration skills checklists for the personal care tasks described in WAC 388-112A-0320 (12)(a) and (b) and infection control skills such as hand washing and putting on and taking off gloves;

(v) The teacher's guide or manual that includes for each section of the curriculum:

(A) The goals and objectives;

(B) Method of teaching, including learning activities that incorporate adult learning principles;

(C) Methods used to determine whether each long-term care worker understands the materials covered and can demonstrate all skills;

(D) A list of the sources or references that were used to develop the curriculum and if the primary source or reference is not a published citation, the instructor must provide detail on how the content is evidence based;

(E) Description of how the curriculum was designed to accommodate long-term care workers with either limited English proficiency, learning disabilities, or both; and

(F) Description and proof of how input was obtained from consumer and long-term care worker representatives in the development of the curriculum.

(c) Curriculum submitted for the core competency section of basic training, called core basic training, as described in WAC 388-112A-0320, must include how much time students will have to practice skills and how instructors will evaluate and ensure each long-term care worker can proficiently complete each skill.

(d) Entities that submit curriculum for the population specific component of the seventy-hour long-term care worker basic training must submit their own list of competencies and learning objectives used to develop the population specific basic training curriculum.

~~((5))~~ **(7) For specialty training:**

(a) For specialty training that is not the DSHS developed curriculum or another department approved specialty training curriculum, submit the required specialty training application form and any additional learning objectives added to the competency and learning objectives checklist, the enhancements that have been added, and additional student materials or handouts.

(b) To be approved, an alternative curriculum must at a minimum include:

(i) All the DSHS published learning outcomes and competencies for the course;

(ii) Printed student materials that support the curriculum, a teacher's guide or manual, and learning resource materials such as learning activities, audio-visual materials, handouts, and books;

(iii) The recommended sequence and delivery of the material;

(iv) The teaching methods or approaches that will be used for different sections of the course, including for each lesson:

(A) Learning activities that incorporate adult learning principles and address the learning readiness of the student population;

(B) Practice of skills to increase competency;

(C) Feedback to the student on knowledge and skills;

(D) An emphasis on facilitation by the teacher; and

(E) An integration of knowledge and skills from previous lessons to build skills;

(v) A list of the sources or references, if any, used to develop the curriculum;

(vi) Methods of teaching and student evaluation for students with either limited-English proficiency, learning disabilities, or both;

(vii) A plan for updating material; and

~~((6))~~ **(8)** Substantial changes to a previous approved curriculum must be approved before they are used.

AMENDATORY SECTION (Amending WSR 17-22-036, filed 10/24/17, effective 11/24/17)

WAC 388-112A-1240 What are the minimum qualifications for an instructor for core basic, population specific, on-the-job, residential care administrator, nurse delegation core, and specialized diabetes trainings? An instructor for core basic, population specific, on-the-job, res-

idential care administrator, nurse delegation core, and nurse delegation specialized diabetes trainings must meet the following minimum qualifications:

(1) Twenty-one years of age;

(2) Has not had a professional health care, adult family home, assisted living facility, or social services license or certification revoked in Washington state; and

(3) Meets one or more of the following education or work experience requirements upon initial approval or hire:

(a) Is a registered nurse with work experience within the last five years with the elderly or persons with disabilities requiring long-term care in a community setting;

(b) Has an associate degree or higher degree in the field of health or human services and six months professional or caregiving experience within the last five years in a community based setting or an adult family home, enhanced services facility, assisted living facility, supported living through the developmental disabilities administration (DDA), or home care setting;

(c) Has a high school diploma or equivalent and one year of professional or caregiving experience within the last five years in an adult family home, enhanced services facility, assisted living, supported living through DDA, or home care setting;

(4) Meets one or more of the following teaching experience requirements:

(a) One hundred hours of experience teaching adults in an appropriate setting on topics directly related to basic training or basic training topics that may be offered as continuing education;

(b) Forty hours of teaching basic training while being mentored by an instructor who is approved to teach basic training;

(c) Instructors with adult family homes, enhanced services facilities, and assisted living facilities that do not meet the criteria in (a) or (b) of this subsection, must have and attest to the following experience in their application:

(i) Forty hours of informal teaching experiences unrelated to basic training topics such as guest lecturing, team teaching, and volunteer teaching with parks, local high schools, 4-H groups, English as a second language (ESL) groups, senior organizations, and religious organizations;

(ii) Three adult learning techniques that the instructor will implement in his or her long-term care worker training; and

(iii) Three ways the instructor plans on improving his or her instructional facilitation and the method the instructor will use to measure improvement such as submitting the continuous improvement plan feedback from the DSHS adult education class;

(5) Except for instructors for nurse delegation core and diabetes training, completion of a class on adult education that meets the requirements of WAC 388-112A-1297;

(6) The instructor must be experienced in caregiving practices and ~~((capable of demonstrating))~~ **demonstrates** competency with respect to teaching the course content or units taught;

(7) Instructors who will administer tests must have experience or training in assessment and competency testing;

(8) Community instructors for nurse delegation core and diabetes training must have a current Washington registered nurse (RN) license in good standing without practice restrictions;

(9) Facility instructors must be approved and contracted by the department as a community instructor in order to be approved to teach the following classes:

- (a) Nurse delegation core;
- (b) Nurse delegation diabetes training; or
- (c) DSHS adult education training curriculum.

AMENDATORY SECTION (Amending WSR 17-22-036, filed 10/24/17, effective 11/24/17)

WAC 388-112A-1270 What are the minimum qualifications for community instructors for mental health specialty training? (1) The minimum qualifications for community instructors for mental health specialty training, in addition to the general qualifications in WAC 388-112A-1240 (1) and (2), include:

(a) The instructor must be experienced in mental health caregiving practices and capable of demonstrating competency in the entire course content;

(b) Education:

(i) Bachelor's degree, registered nurse, or mental health specialist, with at least one year of education in seminars, conferences, continuing education, or accredited college classes, in subjects directly related to mental health, including, but not limited to, psychology (one year of education equals twenty-four credits in a semester system, thirty-six credits in a quarter system, or at least eighty hours of seminars, conferences, and continuing education); and

(ii) Successful completion of the mental health specialty training class before the instructor trains others;

(c) Work experience: Two years full-time equivalent direct work experience with people who have a mental illness; and

(d) Teaching experience:

(i) Two hundred hours experience teaching long-term care related subjects;

(ii) Successful completion of an adult education class that meets the requirements of WAC 388-112A-1297;

(iii) Successful completion of the DSHS instructor qualification/demonstration process; and

(iv) The instructor has been approved and contracted by the department as a community instructor;

(e) Instructors who will administer tests must have experience or training in assessment and competency testing; and

(2) Five years of full-time equivalent direct work experience with people who have a mental illness may substitute for either:

(a) The credential described in subsection (1)(b)(i) of this section; or

(b) The one year of education in college classes or eighty hours in seminars, conferences, continuing education described in subsection ~~((1)(b)(ii))~~ (1)(b)(i) of this section.

(3) If your status is an approved instructor for mental health specialty training, you may instruct a new mental health specialty training curriculum after submitting to the department a copy of a certificate of completion for that cur-

riculum and a copy of a certificate of completion of an adult education class that meets the requirements of WAC 388-112A-1297.

AMENDATORY SECTION (Amending WSR 17-22-036, filed 10/24/17, effective 11/24/17)

WAC 388-112A-1285 What are the minimum qualifications for community instructors for dementia specialty training? (1) The minimum qualifications for instructors for dementia specialty, in addition to the general qualifications defined in WAC 388-112A-1240 (1) and (2) include:

(a) The instructor must be experienced in dementia caregiving practices and capable of demonstrating competency in the entire course content;

(b) Education:

(i) Bachelor's degree, registered nurse, or mental health specialist, with at least one year of education in seminars, conferences, continuing education or college classes, in dementia or subjects directly related to dementia, such as, but not limited to, psychology (one year of education equals twenty-four credits in a semester system, thirty-six credits in a quarter system, or at least eighty hours of seminars, conferences, or continuing education); and

(ii) Successful completion of the dementia specialty training, prior to beginning to train others;

(c) Work experience: Two years full-time equivalent direct work experience with people who have dementia;

(d) Teaching experience:

(i) Two hundred hours experience teaching long-term care related subjects;

(ii) Successful completion of an adult education class that meets the requirements of WAC 388-112A-1297;

(iii) Successful completion of the DSHS instructor qualification/demonstration process; and

(iv) The instructor has been approved and contracted by the department as a community instructor;

(e) Instructors who will administer tests must have experience or training in assessment and competency testing.

(2) Five years of full-time equivalent direct work experience with people who have dementia may substitute for either:

(a) The credential (bachelor's degree, registered nurse, or mental health specialist) described in subsection (1)(b)(i) of this section; or

(b) The one year of education in college classes or eighty hours in seminars, conferences, continuing education described in subsection ~~((1)(b)(ii))~~ (1)(b)(i) of this section.

(3) If your status is an approved instructor for dementia specialty training, you may instruct a new dementia specialty training curriculum after submitting to the department a copy of a certificate of completion for that curriculum and a copy of a certificate of completion of an adult education class that meets the requirements of WAC 388-112A-1297.

WSR 18-20-016
PROPOSED RULES
DEPARTMENT OF
SOCIAL AND HEALTH SERVICES
(Aging and Long-Term Support Administration)
[Filed September 21, 2018, 10:10 a.m.]

Original Notice.

Preproposal statement of inquiry was filed as WSR 18-11-069.

Title of Rule and Other Identifying Information: The department is proposing to amend WAC 388-78A-3180 Required enforcement; and create new WAC 388-78A-3181 Remedies—Specific—Civil penalties and 388-78A-3183 Remedies—Civil fine grid.

Hearing Location(s): On November 6, 2018, at 10:00 a.m., at Office Building 2, Department of Social and Health Services (DSHS) Headquarters, 1115 Washington, Olympia, WA 98504. Public parking at 11th and Jefferson. A map is available at <https://www.dshs.wa.gov/sesa/rules-and-policies-assistance-unit/driving-directions-office-bldg-2>.

Date of Intended Adoption: Not earlier than November 7, 2018.

Submit Written Comments to: DSHS Rules Coordinator, P.O. Box 45850, Olympia, WA 98504, email DSHSRPAURulesCoordinator@dshs.wa.gov, fax 360-664-6185, by 5:00 p.m., November 6, 2018.

Assistance for Persons with Disabilities: Contact Jeff Kildahl, DSHS rules consultant, phone 360-664-6092, fax 360-664-6185, TTY 711 relay service, email Kildaja@dshs.wa.gov, by October 23, 2018.

Purpose of the Proposal and Its Anticipated Effects, Including Any Changes in Existing Rules: The department is amending and creating these rules as required by state law and to assure compliance with requirements of HB 2750 (chapter 173, Laws of 2018) passed by the 2018 legislature. HB 2750 requires a "tiered sanction grid that considers the extent of harm from the deficiency and the regularity of the occurrence of the deficiency when imposing civil fines." In addition, it requires that "all receipts from civil penalties imposed under this chapter must be deposited in the assisted living facility temporary management account created in RCW 18.20.430." This will require changes to the existing section and creation of the enforcement sections listed above.

Reasons Supporting Proposal: To meet the legislative requirement established under HB 2750 passed by the 2018 legislature.

Statutory Authority for Adoption: Chapter 18.20 RCW.

Statute Being Implemented: Chapter 173, Laws of 2018.

Rule is not necessitated by federal law, federal or state court decision.

Name of Proponent: DSHS, governmental.

Name of Agency Personnel Responsible for Drafting, Implementation, and Enforcement: Jeanette K. Childress, P.O. Box 45600, Olympia, WA 98504, 360-725-2591.

A school district fiscal impact statement is not required under RCW 28A.305.135.

A cost-benefit analysis is required under RCW 34.05.-328. A preliminary cost-benefit analysis may be obtained by contacting Jeanette K. Childress, P.O. Box 45600, Olympia,

WA 98504, phone 360-725-2591, fax 360-407-1976, email childjk@dshs.wa.gov.

This rule proposal, or portions of the proposal, is exempt from requirements of the Regulatory Fairness Act because the proposal:

Is exempt under RCW 19.85.025(3) as the rule content is explicitly and specifically dictated by statute.

September 13, 2018
Katherine I. Vasquez
Rules Coordinator

AMENDATORY SECTION (Amending WSR 14-05-035, filed 2/12/14, effective 3/15/14)

WAC 388-78A-3180 ((Required enforcement)) Remedies—Imposition of remedies. The department must impose ~~((an appropriate))~~ a remedy ~~((consistent with RCW 18.20.125 and as otherwise authorized by RCW 18.20.185 or 18.20.190 whenever the department finds an assisted living facility has))~~ or remedies listed in WAC 388-78A-3181 when violations of chapter 18.20 RCW, chapter 70.129 RCW, and chapter 74.34 RCW, and this chapter are:

- (1) ~~((A serious problem, a recurring problem, or an uncorrected problem))~~ Repeated;
- (2) ~~((Created a hazard that causes or is likely to cause death or serious harm to one or more residents))~~ Uncorrected;
- (3) ~~((Discriminated or retaliated in any manner against a resident, employee, or any other person because that person or any other person made a complaint or provided information to the department, the attorney general, a law enforcement agency, or the long term care ombuds))~~ Pervasive; or
- (4) ~~((Willfully interfered with the performance of official duties by a long term care ombuds))~~ Present a threat to the health, safety, or welfare of one or more residents.

NEW SECTION

WAC 388-78A-3181 Remedies—Specific—Civil penalties. (1) The department may impose civil penalties of at least one hundred dollars per day per violation.

(2) Fines up to one thousand dollars per day per violation may be issued under RCW 18.20.190 until July 1, 2019, and thereafter as follows:

(a) Beginning July 1, 2019, through June 30, 2020, the civil penalties may not exceed two thousand dollars per day per violation; and

(b) Beginning July 1, 2020, the civil penalties may not exceed three thousand dollars per day per violation.

(3) Fines up to three thousand dollars may be issued under RCW 18.20.185 for willful interference with a representative of the long-term care ombuds.

(4) Fines up to three thousand dollars may be issued under RCW 74.39A.060 for retaliation against a resident, employee, or any other person making a complaint, providing information to, or cooperating with, the ombuds, the department, the attorney's general office, or a law enforcement agency.

(5) Fines up to ten thousand dollars may be issued under RCW 18.20.190 for a current or former licensed provider who is operating an unlicensed home.

(6) When the assisted living facility fails to pay a fine under this chapter when due, the department may, in addition to other remedies, withhold an amount equal to the fine plus interest, if any, from any contract payment due to the provider from the department.

(7) Civil monetary penalties are due twenty-eight days after the assisted living facility or the owner or operator of an unlicensed assisted living facility is served with notice of the penalty unless the assisted living facility requests a hearing in

compliance with chapter 34.05 RCW, RCW 43.20A.215, and this chapter. If the hearing is requested, the penalty becomes due ten days after a final decision affirming the assessed civil penalty. Thirty days after the department serves the assisted living facility with notice of the penalty, interest begins to

(8) All receipts from civil penalties imposed under this chapter must be deposited in the assisted living facility temporary management account created in RCW 18.20.430.

NEW SECTION

WAC 388-78A-3183 Remedies—Civil fine grid. Effective October 26, 2018, the department will consider the guidance in the tiered sanction grid below when imposing civil fine remedies:

No Harm	Minimal or Moderate Harm		Serious Harm		Imminent Danger, Immediate Threat, or Both
Repeat/ Uncorrected	Initial	Repeat/ Uncorrected	Initial	Repeat/ Uncorrected	Any Violation
Civil fine of at least one hundred dollars per violation.	Civil fine up to two hundred and fifty dollars per violation per day.	Civil fine up to five hundred dollars per violation per day.	Civil fine up to seven hundred and fifty dollars per violation per day.	Civil fine up to one thousand dollars per violation per day.	Civil fine of one thousand dollars per violation per day.

Beginning July 1, 2019, the department will consider the guidance in the tiered sanction grid below when imposing civil fine remedies:

No Harm	Minimal or Moderate Harm		Serious Harm		Imminent Danger, Immediate Threat, or Both
Repeat/ Uncorrected	Initial	Repeat/ Uncorrected	Initial	Repeat/ Uncorrected	Any Violation
Civil fine of at least one hundred dollars per violation.	Civil fine up to two hundred and fifty dollars per violation or a daily civil fine of at least one hundred and twenty-five dollars per day.	Civil fine up to five hundred dollars per violation or a daily civil fine of at least two hundred and fifty dollars per day.	Civil fine up to one thousand dollars per violation or a daily civil fine of at least five hundred dollars per day.	Civil fine up to one thousand five hundred dollars per violation or a daily civil fine of at least seven hundred and fifty dollars per day.	Civil fine of two thousand dollars or daily civil fine of at least one thousand dollars per day.

Beginning July 1, 2020, the department will consider the guidance in the tiered sanction grid below when imposing civil find remedies:

No Harm	Minimal or Moderate Harm		Serious Harm		Imminent Danger, Immediate Threat, or Both
Repeat/ Uncorrected	Initial	Repeat/ Uncorrected	Initial	Repeat/ Uncorrected	Any Violation
Civil fine of at least one hundred dollars per violation.	Civil fine up to five hundred dollars per violation or a daily civil fine of at least two hundred and fifty dollars per day.	Civil fine up to one thousand dollars per violation or a daily civil fine of at least five hundred dollars per day.	Civil fine up to two thousand dollars per violation or a daily civil fine of at least one thousand dollars per day.	Civil fine up to three thousand dollars per violation or a daily civil fine of at least one thousand five hundred dollars per day.	Civil fine of three thousand dollars or daily civil fine of at least one thousand dollars per day.

For the purpose of this section, the following definitions of harm apply:

(1) "Minimal" means violations that result in little or no negative outcome or little or no potential harm for a resident.

(2) "Moderate" means violations that result in negative outcome and actual or potential harm for a resident.

(3) "Serious" means violations that either result in one or more negative outcomes and significant actual harm to residents that does not constitute imminent danger, or there is a reasonable predictability of recurring actions, practices, situations, or incidents with potential for causing significant harm to a resident, or both.

(4) "Imminent danger" or "immediate threat" means serious physical harm to or death of a resident has occurred, or there is a serious threat to the resident's life, health, or safety.

Purpose of the Proposal and Its Anticipated Effects, Including Any Changes in Existing Rules: The purpose of the proposal is [to] update the effective year of the tariff only. The tariff rates and language will remain as is.

Reasons Supporting Proposal: RCW 88.16.035 requires that a tariff be set annually.

Statutory Authority for Adoption: Chapter 88.16 RCW.

Statute Being Implemented: RCW 88.16.035.

Rule is not necessitated by federal law, federal or state court decision.

Agency Comments or Recommendations, if any, as to Statutory Language, Implementation, Enforcement, and Fiscal Matters: Current rates for the Puget Sound pilotage district expire December 31, 2018. New rates must be set accordingly. In complying with the legislative intent through the passage of ESB 5096, which freezes the Puget Sound pilotage district tariff for two years, the board is leaving the tariff as is and setting the 2019 date parameters only.

Name of Proponent: Puget Sound pilots, private.

Name of Agency Personnel Responsible for Drafting: Jaimie C. Bever, 2901 Third Avenue, Seattle, WA 98121, 206-515-3887; Implementation and Enforcement: Board of Pilotage Commissioners, 2901 Third Avenue, Seattle, WA 98121, 206-515-3904.

A school district fiscal impact statement is not required under RCW 28A.305.135.

A cost-benefit analysis is not required under RCW 34.05.328. RCW 34.05.328 does not apply to the adoption of these rules. The Washington state board of pilotage commissioners is not a listed agency in RCW 34.05.328 (5)(a)(i).

This rule proposal, or portions of the proposal, is exempt from requirements of the Regulatory Fairness Act because the proposal:

Is exempt under RCW 19.85.025(3) as the rule content is explicitly and specifically dictated by statute.

September 25, 2018
Jaimie Bever
Executive Director

WSR 18-20-033

PROPOSED RULES

BOARD OF

PILOTAGE COMMISSIONERS

[Filed September 25, 2018, 9:55 a.m.]

Original Notice.

Proposal is exempt under RCW 34.05.310(4) or 34.05.330(1).

Title of Rule and Other Identifying Information: WAC 363-116-300 Pilotage rates for the Puget Sound pilotage district.

Hearing Location(s): On November 7, 2018, at 12:00 p.m., at 2901 Third Avenue, 1st Floor, Agate Conference Room, Seattle, WA 98121.

Date of Intended Adoption: November 7, 2018.

Submit Written Comments to: Sheri J. Tonn, Chair, 2901 Third Avenue, Suite 500, email BeverJ@wsdot.wa.gov, fax 206-515-3906, by October 31, 2018.

Assistance for Persons with Disabilities: Contact Jolene Hamel, phone 206-515-3904, fax 206-515-3906, email HamelJ@wsdot.wa.gov, by November 5, 2018.

AMENDATORY SECTION (Amending WSR 17-23-123, filed 11/17/17, effective 1/1/18)

WAC 363-116-300 Pilotage rates for the Puget Sound pilotage district. Effective 0001 hours January 1, (~~2018~~) 2019, through 2400 hours December 31, (~~2018~~) 2019.

CLASSIFICATION	RATE
Ship length overall (LOA)	
Charges:	
Per LOA rate schedule in this section.	
Pilot boat fee:	\$348.00
Per each boarding/deboarding at the Port Angeles pilot station.	
Harbor shift - Live ship (Seattle Port)	LOA Zone I
Harbor shift - Live ship (other than Seattle Port)	LOA Zone I
Harbor shift - Dead ship	Double LOA Zone I
Towing charge - Dead ship:	Double LOA Zone
LOA of tug + LOA of tow + beam of tow	

Any tow exceeding seven hours, two pilots are mandatory. Harbor shifts shall constitute and be limited to those services in moving vessels from dock to dock, from anchorage to dock, from dock to anchorage, or from anchorage to anchorage in the same port after all other applicable tariff charges for pilotage services have been recognized as payable.

Compass Adjustment	\$359.00
Radio Direction Finder Calibration	\$359.00
Launching Vessels	\$540.00
Trial Trips, 6 hours or less (minimum \$1,014.00)	\$169.00 per hour
Trial Trips, over 6 hours (two pilots)	\$338.00 per hour
Shilshole Bay - Salmon Bay	\$211.00
Salmon Bay - Lake Union	\$164.00
Lake Union - Lake Washington (plus LOA zone from Webster Point)	\$211.00
Cancellation Charge	LOA Zone I
Cancellation Charge - Port Angeles:	LOA Zone II

(When a pilot is ordered and vessel proceeds to a port outside the Puget Sound pilotage district without stopping for a pilot or when a pilot order is canceled less than twelve hours prior to the original ETA.)

Waterway and Bridge Charges:

Ships up to 90' beam:

A charge of \$266.00 shall be in addition to bridge charges for any vessel movements both inbound and outbound required to transit south of Spokane Street in Seattle, south of Eleventh Street in any of the Tacoma waterways, in Port Gamble, or in the Snohomish River. Any vessel movements required to transit through bridges shall have an additional charge of \$127.00 per bridge.

Ships 90' beam and/or over:

A charge of \$361.00 shall be in addition to bridge charges for any vessel movements both inbound and outbound required to transit south of Spokane Street in Seattle and south of Eleventh Street in any of the Tacoma waterways. Any vessel movements required to transit through bridges shall have an additional charge of \$251.00 per bridge.

(The above charges shall not apply to transit of vessels from Shilshole Bay to the limits of Lake Washington.)

Two or three pilots required:

In a case where two or three pilots are employed for a single vessel waterway or bridge transit, the second and/or third pilot charge shall include the bridge and waterway charge in addition to the harbor shift rate.

Docking Delay After Anchoring:

Applicable harbor shift rate to apply, plus \$274.00 per hour standby. No charge if delay is 60 minutes or less. If the delay is more than 60 minutes, charge is \$274.00 for every hour or fraction thereof.

Sailing Delay:

No charge if delay is 60 minutes or less. If the delay is more than 60 minutes, charge is \$274.00 for every hour or fraction thereof. The assessment of the standby charge shall not exceed a period of twelve hours in any twenty-four-hour period.

Slowdown:

When a vessel chooses not to maintain its normal speed capabilities for reasons determined by the vessel and not the pilot, and when the difference in arrival time is one hour, or greater, from the predicted arrival time had the vessel maintained its normal speed capabilities, a charge of \$274.00 per hour, and each fraction thereof, will be assessed for the resultant difference in arrival time.

Delayed Arrival - Port Angeles:

When a pilot is ordered for an arriving inbound vessel at Port Angeles and the vessel does not arrive within two hours of its ETA, or its ETA is amended less than six hours prior to the original ETA, a charge of \$274.00 for each hour delay, or fraction thereof, shall be assessed in addition to all other appropriate charges.

When a pilot is ordered for an arriving inbound vessel at Port Angeles and the ETA is delayed to six hours or more beyond the original ETA, a cancellation charge shall be assessed, in addition to all other appropriate charges, if the ETA was not amended at least twelve hours prior to the original ETA.

Tonnage Charges:

0 to 20,000 gross tons:

Additional charge to LOA zone mileage of \$0.0084 a gross ton for all gross tonnage up to 20,000 gross tons.

20,000 to 50,000 gross tons:

Additional charge to LOA zone mileage of \$0.0814 a gross ton for all gross tonnage in excess of 20,000 gross tons up to 50,000 gross tons.

50,000 gross tons and up:

In excess of 50,000 gross tons, the charge shall be \$0.0974 per gross ton.

Notwithstanding the above tonnage charges, there shall be a minimum tonnage charge of \$500.00 applied to:

(1) All LOA Zone I assignments other than assignments of an additional pilot(s) on ship movements involving more than one pilot jointly piloting the vessel; and

(2) All LOA Zone II and greater assignments.

For vessels where a certificate of international gross tonnage is required, the appropriate international gross tonnage shall apply.

Transportation to Vessels on Puget Sound:

March Point or Anacortes	\$195.00
Bangor	190.00
Bellingham	225.00
Bremerton	167.50
Cherry Point	260.00
Dupont	120.00
Edmonds	42.50
Everett	72.50
Ferndale	247.50
Manchester	162.50
Mukilteo	65.00
Olympia	155.00
Point Wells	42.50
Port Gamble	230.00
Port Townsend (Indian Island)	277.50
Seattle	18.75
Tacoma	87.50

(a) Intraharbor transportation for the Port Angeles port area: Transportation between Port Angeles pilot station and Port Angeles harbor docks - \$15.00.

(b) Interport shifts: Transportation paid to and from both points.

(c) Intraharbor shifts: Transportation to be paid both ways. If intraharbor shift is canceled on or before scheduled reporting time, transportation paid one way only.

(d) Cancellation: Transportation both ways unless notice of cancellation is received prior to scheduled reporting time in which case transportation need only be paid one way.

(e) Any new facilities or other seldom used terminals, not covered above, shall be based on mileage x \$2.00 per mile.

Payment Terms and Delinquent Payment Charge:

1 1/2% per month after 30 days from first billing.

Nonuse of Pilots:

Ships taking and discharging pilots without using their services through all Puget Sound and adjacent inland waters

shall pay full pilotage charges on the LOA zone mileage basis from Port Angeles to destination, from place of departure to Port Angeles, or for entire distance between two ports on Puget Sound and adjacent inland waters.

British Columbia Direct Transit Charge:

In the event that a pilot consents to board or disembark a vessel at a British Columbia port, which consent shall not unreasonably be withheld, the following additional charges shall apply in addition to the normal LOA, tonnage and other charges provided in this tariff that apply to the portion of the transit in U.S. waters:

Direct Transit Charge	\$2,107.00
Sailing Delay Charge. Shall be levied for each hour or fraction thereof that the vessel departure is delayed beyond its scheduled departure from a British Columbia port, provided that no charge will be levied for delays of one hour or less and further provided that the charge shall not exceed a period of 12 hours in any 24 hour period.	\$283.00 per hour
Slow Down Charge. Shall be levied for each hour or fraction thereof that a vessel's arrival at a U.S. or BC port is delayed when a vessel chooses not to maintain its normal safe speed capabilities for reasons determined by the vessel and not the pilot, and when the difference in arrival time is one hour, or greater from the arrival time had the vessel maintained its normal safe speed capabilities.	\$283.00 per hour
Cancellation Charge. Shall be levied when a pilot arrives at a vessel for departure from a British Columbia port and the job is canceled. The charge is in addition to the applicable direct transit charge, standby, transportation and expenses.	\$525.00
Transportation Charge Vancouver Area. Vessels departing or arriving at ports in the Vancouver-Victoria-New Westminster Range of British Columbia.	\$514.00
Transportation Charge Outports. Vessels departing or arriving at British Columbia ports other than those in the Vancouver-Victoria-New Westminster Range.	\$649.00

Training Surcharge:

On January 1, 2011, a surcharge of \$15.00 for each pilot trainee then receiving a stipend pursuant to the training program provided in WAC 363-116-078 shall be added to each pilotage assignment.

LOA Rate Schedule:

The following rate schedule is based upon distances furnished by National Oceanic and Atmospheric Administration, computed to the nearest half-mile and includes retirement fund contributions.

LOA	ZONE I	ZONE II	ZONE III	ZONE IV	ZONE V	ZONE VI
(Length Overall)	Intra Harbor	0-30 Miles	31-50 Miles	51-75 Miles	76-100 Miles	101 Miles & Over
UP to 449	263	381	650	968	1,304	1,692
450 - 459	274	388	653	983	1,325	1,700
460 - 469	276	392	665	999	1,343	1,708

LOA (Length Overall)	ZONE I Intra Harbor	ZONE II 0-30 Miles	ZONE III 31-50 Miles	ZONE IV 51-75 Miles	ZONE V 76-100 Miles	ZONE VI 101 Miles & Over
470 - 479	285	404	672	1,020	1,347	1,711
480 - 489	294	410	675	1,038	1,355	1,719
490 - 499	298	416	685	1,057	1,371	1,728
500 - 509	313	423	695	1,068	1,383	1,738
510 - 519	315	431	702	1,085	1,398	1,744
520 - 529	319	447	712	1,090	1,410	1,758
530 - 539	329	452	721	1,102	1,432	1,778
540 - 549	334	458	738	1,114	1,454	1,795
550 - 559	341	474	742	1,130	1,466	1,812
560 - 569	353	493	757	1,141	1,479	1,828
570 - 579	361	496	760	1,146	1,495	1,841
580 - 589	376	505	778	1,154	1,503	1,859
590 - 599	393	516	782	1,160	1,526	1,882
600 - 609	408	532	794	1,164	1,544	1,890
610 - 619	431	537	807	1,169	1,559	1,907
620 - 629	447	543	814	1,183	1,577	1,929
630 - 639	468	552	824	1,186	1,591	1,946
640 - 649	486	566	832	1,188	1,604	1,960
650 - 659	520	575	847	1,197	1,624	1,981
660 - 669	530	582	854	1,205	1,642	1,996
670 - 679	550	597	863	1,226	1,660	2,009
680 - 689	557	607	874	1,237	1,674	2,028
690 - 699	574	616	888	1,258	1,692	2,071
700 - 719	599	637	904	1,275	1,725	2,093
720 - 739	634	653	927	1,292	1,758	2,128
740 - 759	659	685	945	1,304	1,795	2,167
760 - 779	685	707	968	1,325	1,828	2,194
780 - 799	719	738	983	1,343	1,859	2,234
800 - 819	748	760	1,002	1,350	1,890	2,268
820 - 839	771	788	1,025	1,371	1,929	2,293
840 - 859	804	820	1,046	1,387	1,958	2,333
860 - 879	834	847	1,064	1,423	1,996	2,367
880 - 899	863	871	1,085	1,455	2,028	2,402
900 - 919	889	900	1,103	1,494	2,071	2,434
920 - 939	917	927	1,130	1,526	2,091	2,468
940 - 959	950	952	1,147	1,559	2,128	2,498
960 - 979	971	980	1,167	1,591	2,167	2,535
980 - 999	1,003	1,002	1,187	1,624	2,194	2,568
1000 - 1019	1,065	1,067	1,240	1,710	2,299	2,678
1020 - 1039	1,094	1,098	1,279	1,758	2,368	2,757

LOA (Length Overall)	ZONE I Intra Harbor	ZONE II 0-30 Miles	ZONE III 31-50 Miles	ZONE IV 51-75 Miles	ZONE V 76-100 Miles	ZONE VI 101 Miles & Over
1040 - 1059	1,127	1,125	1,316	1,812	2,435	2,838
1060 - 1079	1,161	1,165	1,355	1,866	2,511	2,922
1080 - 1099	1,196	1,197	1,394	1,920	2,585	3,011
1100 - 1119	1,230	1,234	1,437	1,980	2,662	3,102
1120 - 1139	1,268	1,274	1,481	2,037	2,742	3,194
1140 - 1159	1,304	1,310	1,523	2,098	2,825	3,291
1160 - 1179	1,343	1,347	1,571	2,161	2,909	3,388
1180 - 1199	1,384	1,388	1,616	2,226	2,997	3,491
1200 - 1219	1,427	1,430	1,664	2,293	3,087	3,593
1220 - 1239	1,467	1,473	1,713	2,362	3,177	3,701
1240 - 1259	1,511	1,516	1,763	2,432	3,274	3,811
1260 - 1279	1,555	1,561	1,817	2,505	3,373	3,925
1280 - 1299	1,602	1,609	1,872	2,580	3,471	4,044
1300 - 1319	1,651	1,655	1,927	2,657	3,576	4,164
1320 - 1339	1,701	1,705	1,986	2,736	3,682	4,290
1340 - 1359	1,749	1,756	2,045	2,817	3,792	4,419
1360 - 1379	1,803	1,807	2,106	2,903	3,905	4,549
1380 - 1399	1,855	1,861	2,171	2,989	4,022	4,687
1400 - 1419	1,912	1,918	2,233	3,077	4,142	4,826
1420 - 1439	1,968	1,976	2,301	3,171	4,268	4,971
1440 - 1459	2,029	2,035	2,371	3,265	4,395	5,120
1460 - 1479	2,086	2,094	2,440	3,362	4,527	5,270
1480 - 1499	2,150	2,157	2,512	3,462	4,661	5,429
1500 - Over	2,215	2,222	2,587	3,568	4,800	5,591

**WSR 18-20-051
PROPOSED RULES
COLUMBIA RIVER
GORGE COMMISSION**

[Filed September 26, 2018, 3:54 p.m.]

Continuance of WSR 18-18-008.

Title of Rule and Other Identifying Information: Legal descriptions of boundaries for maps of the Columbia River Gorge National Scenic Area Act.

Hearing Location(s): On November 13, 2018, at 9:00 a.m., at the Skamania Lodge, 1131 S.W. Skamania Lodge Way, Stevenson, WA 98648. (1) This is a change to only the hearing location listed in the original notice; (2) the time is the start time for the commission's meeting. The meeting agenda, which will have the hearing time, will be available approximately one week prior to the hearing date.

Date of Intended Adoption: November 13, 2018.

Purpose of the Proposal and Its Anticipated Effects, Including Any Changes in Existing Rules: Change to the location of the hearing.

September 26, 2018
Nancy A. Andring
Rules Coordinator

**WSR 18-20-062
PROPOSED RULES
DEPARTMENT OF
NATURAL RESOURCES**

[Filed September 27, 2018, 10:49 a.m.]

Original Notice.

Preproposal statement of inquiry was filed as WSR 18-11-045.

Title of Rule and Other Identifying Information: Amending current land boundary survey standards, adding new definitions and the use of relative accuracy to chapter 332-130 WAC. The department of natural resources is authorized by RCW 58.24.040(1) to: "Set up standards of accuracy and methods of procedure."

Hearing Location(s): On November 6, 2018, at 2:00 p.m., at the Department of Natural Resources, Natural Resources Building, Room #342, 1111 Washington Street S.E., Olympia, WA.

Date of Intended Adoption: November 13, 2018.

Submit Written Comments to: Patrick J. Beehler, PLS, CFedS, 1111 Washington Street S.E., Olympia, WA 98504-7030, email pat.beehler@dnr.wa.gov, fax 360-902-1778, 360-902-1181, by November 6, 2018.

Purpose of the Proposal and Its Anticipated Effects, Including Any Changes in Existing Rules: The proposed changes and additions update existing language and clarify definitions and procedures in the practice of professional land surveying. The definition of redundant measurements is revised. References to NAD83 are removed in anticipation of NGS establishing NATRF 2022. Definition for intelligent interpretation, relative accuracy and relative precision are added. Language concerning equipment and procedures is modified.

Reasons Supporting Proposal: These proposed changes to chapter 332-130 WAC should have little to no effect on the practice of professional land surveying. The profession has already adopted field and office procedures that comply with most of the proposed changes.

Statutory Authority for Adoption: RCW 58.24.040(1).

Statute Being Implemented: RCW 58.24.040(1).

Rule is not necessitated by federal law, federal or state court decision.

Name of Proponent: Department of natural resources, governmental.

Name of Agency Personnel Responsible for Drafting: Patrick J. Beehler, PLS, 1111 Washington Street S.E., Olympia, WA 98504, 360-902-1181; Implementation: Kristina Horton, PLS, 801 88th Avenue S.E., Tumwater, WA 98501-7019, 360-902-1190; and Enforcement: Board of Registration, PE & LS, 405 Black Lake Boulevard, Olympia, WA 98502, 360-664-1571.

A school district fiscal impact statement is not required under RCW 28A.305.135.

A cost-benefit analysis is not required under RCW 34.05.328. There is little or no additional cost to the professional land surveyor. The profession has already adopted field and office procedures to comply with the proposed changes.

This rule proposal, or portions of the proposal, is exempt from requirements of the Regulatory Fairness Act because the proposal:

Is exempt under RCW 19.85.025(3) as the rules are adopting or incorporating by reference without material change federal statutes or regulations, Washington state statutes, rules of other Washington state agencies, shoreline master programs other than those programs governing shorelines of state-wide significance, or, as referenced by Washington

state law, national consensus codes that generally establish industry standards, if the material adopted or incorporated regulates the same subject matter and conduct as the adopting or incorporating rule; and rule content is explicitly and specifically dictated by statute.

September 21, 2018

Angus W. Brodie

Deputy Supervisor State Uplands

AMENDATORY SECTION (Amending WSR 09-03-084, filed 1/20/09, effective 7/1/09)

WAC 332-130-020 Definitions. The following definitions shall apply to this chapter:

(1) **Local geodetic control surveys:** Surveys for the specific purpose of establishing control points for extending the National Geodetic Survey horizontal and vertical control nets, also known as the National Spatial Reference System (NSRS), but not submitted to the National Geodetic Survey for inclusion in the NSRS.

(2) **GLO and BLM:** The General Land Office and its successor, the Bureau of Land Management.

(3) **Land boundary surveys:** All surveys, whether made by individuals, entities or public bodies of whatever nature, for the specific purpose of establishing, reestablishing, laying out, subdividing, defining, locating and/or monumenting the vertical or horizontal boundary of any easement, right of way, lot, tract, or parcel of real property or which reestablishes or restores General Land Office or Bureau of Land Management survey corners.

(4) **Land corner record:** The record of corner information form as prescribed by the department of natural resources in WAC 332-130-025.

(5) **Land description:** A description of real property or of rights associated with real property.

(6) **Land surveyor:** Any person authorized to practice the profession of land surveying under the provisions of chapter 18.43 RCW.

(7) ~~((Measurement redundancy: To perform sufficient measurements to reduce or isolate blunders and statistically improve measurement accuracy.~~

(8) ~~NAD83: North American Datum of 1983 as designated by chapter 58.20 RCW.~~

~~((9)) **Redundant measurements:** Independent observations of a quantity that are collected under different conditions. Horizontal angles measured to a point from multiple backsights, observing reciprocal zenith angles and backsight distances, "closing the horizon," and GPA positions for a point that are computed using different satellite constellations are examples of redundant measurements.~~

(8) **Parcel:** A part or portion of real property including but not limited to GLO and BLM segregations, easements, rights of way, aliquot parts of sections or tracts.

~~((+0))~~ (9) **Survey Recording Act:** The law as established and designated in chapter 58.09 RCW.

~~((+1))~~ (10) **Washington plane coordinate system:** The system of plane coordinates as established and designated by chapter 58.20 RCW.

(11) **Intelligent interpretation:** A land boundary survey capable of intelligent interpretation will provide, either on the face of the document or by reference to other pertinent surveys of record, information that is sufficient in kind and quality to explain the rationale for the boundary locations shown thereon and to allow for the accurate and unambiguous retracement or re-creation thereof without requiring oral testimony for clarification. Includes, but is not limited to, information required in RCW 58.09.060(1) and WAC 332-130-050.

(12) **Relative accuracy:** The theoretical uncertainty in the horizontal position of any subordinate point or corner with respect to other controlling points or corners, whether set, found, reestablished, or established. Relative accuracy is not related to uncertainties due to differences between measured values and record values or uncertainties in the geodetic position.

(13) **Relative precision:** An expression of linear misclosure, e.g., 1 part in 5000, in a closed traverse. Relative precision is computed after azimuths in a traverse have been adjusted. Relative precision is not a reliable predictor of relative accuracy.

(14) **Controlling point or corner:** Those points, whose horizontal positions are used to compute, establish or reestablish the horizontal positions of other subordinate points or corners. Subordinate points or corners are therefore dependent upon the positions of controlling points or corners.

AMENDATORY SECTION (Amending WSR 90-06-028, filed 3/1/90, effective 4/1/90)

WAC 332-130-030 Land subdivision and corner restoration standards—Recording. The following requirements apply when a land boundary survey is performed. If, in the professional judgment of the surveyor, the procedures of subsections (1) and (2) of this section are not necessary to perform the survey, departures from these requirements shall be explained and/or shown on the survey map produced.

(1) The reestablishment of lost GLO or BLM corners and the subdividing of sections shall be done according to applicable GLO or BLM plats and field notes and in compliance with the rules as set forth in the appropriate GLO or BLM *Manual of Surveying Instructions*, manual supplements and circulars. Federal or state court decisions that influence the interpretation of the rules should be considered. Methods used for such corner reestablishment or section subdivision shall be described on the survey map produced.

(2) All maps, plats, or plans showing a land boundary survey shall show all the corners found, established, reestablished and calculated, including corresponding directions and distances, which were used to survey and which will be necessary to resurvey the parcel shown. Additionally, all such maps, plats, or plans shall show sufficient section subdivision data, or other such controlling parcel data, necessary to support the position of any section subdivisional corner or controlling parcel corner used to reference the parcel surveyed. Where a portion or all of this information is already shown on a record filed or recorded in the county recording office of the county in which the parcel is located, reference may be made to that record in lieu of providing the required data.

(3) Documentation shall be provided for all GLO or BLM corner(s) or point(s) used to control the location of the parcel surveyed. This requirement shall be met by providing on the document produced:

(a) The information required by both the Survey Recording Act and the history and evidence found sections of the Land Corner Record Form; or

(b) The recording data of a document(s) that provides the required information and is filed or recorded in the county recording office of the county in which the parcel is located.

(4) Every corner originally monumented by the GLO or BLM that is physically reestablished shall be monumented in accordance with the Survey Recording Act. If the reestablished corner is not filed or recorded as part of a record of survey, plat or short plat, at least three references shall be established and filed or recorded on a Land Corner Record Form. If the reestablished corner is filed or recorded as part of a record of survey, plat or short plat, then ties to at least two other monuments shown on the record document may serve in lieu of the required references. A valid set of coordinates on the Washington plane coordinate system may serve as one of the references. However, to best ensure an accurate relocation, references in close proximity to the corner are recommended. Monuments placed shall be magnetically locatable and include a cap stamped with the appropriate corner designation as defined in the current BLM *Manual of Surveying Instructions*.

AMENDATORY SECTION (Amending WSR 00-17-063, filed 8/9/00, effective 9/9/00)

WAC 332-130-050 Survey map requirements. The following requirements apply to land boundary survey maps and plans, records of surveys, plats, short plats, boundary line adjustments, and binding site plans required by law to be filed or recorded with the county.

(1) All such documents filed or recorded shall conform to the following:

(a) They shall display a county recording official's information block which shall be located along the bottom or right edge of the document unless there is a local requirement specifying this information in a different format. The county recording official's information block shall contain:

(i) The title block, which shall be on all sheets of maps, plats or plans, and shall identify the business name of the firm and/or land surveyor that performed the survey. For documents not requiring a surveyor's certificate and seal, the title block shall show the name and business address of the preparer and the date prepared. Every sheet of multiple sheets shall have a sheet identification number, such as "sheet 1 of 5";

(ii) The auditor's certificate, where applicable, which shall be on the first sheet of multiple sheets; however, the county recording official shall enter the appropriate volume and page and/or the auditor's file number on each sheet of multiple sheets;

(iii) The surveyor's certificate, where applicable, which shall be on the first sheet of multiple sheets and shall show the name, license number, original signature and seal of the land surveyor who had responsible charge of the survey por-

trayed, and the date the land surveyor approved the map or plat. Every sheet of multiple sheets shall have the seal and signature of the land surveyor and the date signed;

(iv) The following indexing information on the first sheet of multiple sheets:

(A) The section-township-range and quarter-quarter(s) of the section in which the surveyed parcel lies, except that if the parcel lies in a portion of the section officially identified by terminology other than aliquot parts, such as government lot, donation land claim, homestead entry survey, townsite, tract, and Indian or military reservation, then also identify that official subdivisional tract and call out the corresponding approximate quarter-quarter(s) based on projections of the aliquot parts. Where the section is incapable of being described by projected aliquot parts, such as the Port Angeles townsite, or elongated sections with excess tiers of government lots, then it is acceptable to provide only the official GLO designation. A graphic representation of the section divided into quarter-quarters may be used with the quarter-quarter(s) in which the surveyed parcel lies clearly marked;

(B) Additionally, if appropriate, the lot(s) and block(s) and the name and/or number of the filed or recorded subdivision plat or short plat with the related recording data;

(b) They shall contain:

(i) A north arrow;

(ii) The vertical datum when topography or elevations are shown;

(iii) The basis for bearings, angle relationships or azimuths shown. The description of the directional reference system, along with the method and location of obtaining it, shall be clearly given (such as "North by Polaris observation at the SE corner of section 6"; "Grid north from azimuth mark at station Kellogg"; "North by compass using twenty-one degrees variation"; "None"; or "Assumed bearing based on ..."). If the basis of direction differs from record title, that difference should be noted;

(iv) Bearings, angles, or azimuths in degrees, minutes and seconds;

(v) Distances in feet and decimals of feet;

(vi) Curve data showing the controlling elements.

(c) They shall show the scale for all portions of the map, plat, or plan provided that detail not drawn to scale shall be so identified. A graphic scale for the main body of the drawing, shown in feet, shall be included. The scale of the main body of the drawing and any enlargement detail shall be large enough to clearly portray all of the drafting detail, both on the original and reproductions;

(d) The document filed or recorded and all copies required to be submitted with the filed or recorded document shall, for legibility purposes:

(i) Have a uniform contrast suitable for scanning or microfilming(=);

(ii) Be without any form of cross-hatching, shading, or any other highlighting technique that to any degree diminishes the legibility of the drafting detail or text;

(iii) Contain dimensioning and lettering no smaller than 0.08 inches, vertically, and line widths not less than 0.008 inches (equivalent to pen tip 000). This provision does not apply to vicinity maps, land surveyors' seals and certificates.

(e) They shall not have any adhesive material affixed to the surface;

(f) For the intelligent interpretation of the various items shown, including the location of points, lines and areas, they shall:

(i) Reference record survey documents that identify different corner positions;

(ii) Show deed calls that are at variance with the measured distances and directions of the surveyed parcel;

(iii) Identify all corners used to control the survey whether they were calculated from a previous survey of record or found, established, or reestablished;

(iv) Give the physical description of any monuments shown, found, established or reestablished, including type, size, and date visited;

(v) Show the record land description of the parcel or boundary surveyed or a reference to an instrument of record;

(vi) Identify any ambiguities, hiatuses, and/or overlapping boundaries;

(vii) Give the location and identification of any visible physical appurtenances such as fences or structures which may indicate encroachment, lines of possession, or conflict of title.

(2) All signatures and writing shall be made with permanent black ink.

(3) The following criteria shall be adhered to when altering, amending, changing, or correcting survey information on previously filed or recorded maps, plats, or plans:

(a) Such (~~documents~~) maps, plats, or plans filed or recorded shall comply with the applicable local requirements and/or the recording statute under which the original map, plat, or plan was filed or recorded;

(b) Alterations, amendments, changes, or corrections to a previously filed or recorded map, plat, or plan shall only be made by filing or recording a new (~~document~~) map, plat, or plan;

(c) All such (~~documents~~) maps, plats, or plans filed or recorded shall contain the following information:

(i) A title or heading identifying the (~~document~~) map, plat, or plan as an alteration, amendment, change, or correction to a previously filed or recorded map, plat, or plan along with, when applicable, a cross-reference to the volume and page and auditor's file number of the altered (~~document~~) map, plat, or plan;

(ii) Indexing data as required by subsection (1)(a)(iv) of this section;

(iii) A prominent note itemizing the change(s) to the original (~~document~~) map, plat, or plan. Each item shall explicitly state what the change is and where the change is located on the original;

(d) The county recording official shall file, index, and cross-reference all such (~~documents~~) maps, plats, or plans received in a manner sufficient to provide adequate notice of the existence of the new (~~document~~) map, plat, or plan to anyone researching the county records for survey information;

(e) The county recording official shall send to the department of natural resources, as per RCW 58.09.050(3), a legible copy of any (~~document~~) map, plat, or plan filed or recorded which alters, amends, changes, or corrects survey

information on any ((document)) map, plat, or plan that has been previously filed or recorded pursuant to the Survey Recording Act.

(4) Survey maps, plats and plans filed with the county shall be an original that is legibly drawn in black ink on mylar and is suitable for producing legible prints through scanning, microfilming or other standard copying procedures. The following are allowable formats for the original that may be used in lieu of the format stipulated above:

(a) Photo mylar with original signatures((?));

(b) Any standard material as long as the format is compatible with the auditor's recording process and records storage system. Provided, that records of survey filed pursuant to chapter 58.09 RCW are subject to the restrictions stipulated in RCW 58.09.110(5)((?));

(c) An electronic version of the original if the county has the capability to accept a digital signature issued by a licensed certification authority under chapter 19.34 RCW or a certification authority under the rules adopted by the Washington state board of registration for professional engineers and land surveyors, and can import electronic files into an imaging system. The electronic version shall be a standard raster file format acceptable to the county.

(5) The following checklist is the only checklist that may be used to determine the recordability of records of survey filed pursuant to chapter 58.09 RCW. There are other requirements to meet legal standards. This checklist also applies to maps filed pursuant to the other survey map recording statutes, but for these maps there may be additional sources for determining recordability.

CHECKLIST FOR SURVEY MAPS BEING RECORDED

(Adopted in WAC 332-130)

The following checklist applies to land boundary survey maps and plans, records of surveys, plats, short plats, boundary line adjustments, and binding site plans required by law to be filed or recorded with the county. There are other requirements to meet legal standards. Records of survey filed pursuant to chapter 58.09 RCW, that comply with this checklist, shall be recorded; no other checklist is authorized for determining their recordability.

ACCEPTABLE MEDIA:

- For counties required to permanently store the document filed, the only acceptable media are:
 - Black ink on mylar or photo mylar
- For counties exempted from permanently storing the document filed, acceptable media are:
 - Any standards material compatible with county processes; or, an electronic version of the original.
- All signatures must be original and, on hardcopy, made with permanent black ink.
- The media submitted for filing must not have any material on it that is affixed by adhesive.

LEGIBILITY:

- The documents submitted, including paper copies, must have a uniform contrast throughout the document.
- No information, on either the original or the copies, should be obscured or illegible due to cross-hatching, shading, or as a result of poor drafting technique such as lines drawn through text or improper pen size selection (letters or number filled in such that 3's, 6's or 8's are indistinguishable).
- Signatures, date, and seals must be legible on the prints or the party placing the seal must be otherwise identified.
- Text must be 0.08 inches or larger; line widths shall not be less than 0.008 inches (vicinity maps, land surveyor's seals and certificates are excluded).

INDEXING:

- The recording officer's information block must be on the bottom or right edge of the map.
 - A title block (shows the name of the preparer and is on each sheet of multiple sheets).
 - An auditor's certificate (on the first sheet of multiple sheets, although Vol./Pg. and/or AF# must be entered by the recording officer on each sheet).
 - A surveyor's certificate (on the first sheet of multiple sheets; seal, date, and signature on multiple sheets).
- The map filed must provide the following indexing data:
 - S-T-R and the quarter-quarter(s) or approximate quarter-quarter(s) of the section in which the surveyed parcel lies,
 - Optional: A graphic representation of the section divided into quarter-quarters may be used with the quarter-quarter(s) in which the surveyed parcel lies clearly marked;

MISCELLANEOUS

- If the function of the document submitted is to change a previously filed record, it must also have:
 - A title identifying it as a correction, amendment, alteration or change to a previously filed record,
 - A note itemizing the changes.
- For records of survey:
 - The sheet size must be 18" x 24"
 - The margins must be 2" on the left and 1/2" for the others, when viewed in landscape orientation.
 - In addition to the map being filed there must be two prints included in the submittal; except that, in counties using imaging systems fewer prints, as determined by the Auditor, may be allowed.

Reviser's note: The brackets and enclosed material in the text of the above section occurred in the copy filed by the agency and appear in the Register pursuant to the requirements of RCW 34.08.040.

AMENDATORY SECTION (Amending WSR 05-13-104, filed 6/17/05, effective 7/18/05)

WAC 332-130-060 Local geodetic control survey standards. The following standards shall apply to local geodetic control surveys:

The datum for the horizontal control network in Washington shall be (~~(NAD83)~~) as officially adjusted and published by the National Geodetic Survey of the United States Department of Commerce (~~(ø)~~) as established in accordance with chapter 58.20 RCW. The datum tag and coordinate epoch date (~~((if pertinent))~~) shall be reported on all documents prepared, which show local geodetic control (~~((; e.g., NAD83 (1991), NAD83 (CORS) (2002.00), NAD83 (NSRS) (2005.50) and other future [standards]))~~)).

AMENDATORY SECTION (Amending WSR 05-13-104, filed 6/17/05, effective 7/18/05)

WAC 332-130-070 Land boundary survey standards. The following standards shall apply to land boundary surveys:

(1) The accuracy or precision of field work may be determined and reported (~~(by)~~) using either relative accuracy (~~((procedures))~~) standards or field traverse standards, provided that (~~(the final result shall)~~) field work not capable of analysis with field traverse standards must be evaluated using relative accuracy standards and procedures. Final results must meet or exceed the appropriate standards as contained in WAC 332-130-085 or 332-130-090.

(2) The datum when using the Washington Plane Coordinate System shall be (~~(NAD83)~~) as officially adjusted and published by the National Geodetic Survey of the United States Department of Commerce (~~(ø)~~) as established in accordance with chapter 58.20 RCW. The datum tag and the coordinate epoch date (~~((if pertinent))~~) shall be reported on all documents prepared which reference the Washington Plane Coordinate System (~~((; e.g., NAD83 (1991), NAD83 (CORS) (2002.00), NAD83 (NSRS) (2005.50) and other future standards))~~)).

NEW SECTION

WAC 332-130-085 Relative accuracy standards for land boundary surveys. The following standards may be applied to boundary surveys utilizing field traverses and shall be applied when positioning techniques used in a land boundary survey are not amenable to analysis with standards in WAC 332-130-090. Such standards should be considered minimum standards only. Higher levels of accuracy are expected to be utilized in areas with higher property values or in other situations necessitating higher accuracy.

The maximum allowable relative accuracy for positions shown on a boundary survey under this standard is 0.07 feet plus 200 parts per million at the ninety-five percent confidence level, based on the distance shown on the map between the two positions being tested. It is recognized that in certain circumstances, the size or configuration of the surveyed property, or the relief, vegetation, or improvements on the surveyed property, can result in survey measurements that may cause the maximum allowable relative accuracy in the survey

to be exceeded. If the maximum allowable relative accuracy in the survey is exceeded, the surveyor shall report the reasons for exceeding the standard, shall identify those monuments whose positions exceed the standard and the amount by which said monuments exceed the standard.

AMENDATORY SECTION (Amending WSR 04-11-019, filed 5/10/04, effective 6/10/04)

WAC 332-130-100 Equipment and procedures. (1) All land boundary surveys filed or recorded shall contain a statement identifying the type of equipment used, such as (~~(10-second theodolite and calibrated chain, or 10-second)~~) 3-second theodolite and electronic distance measuring unit, total station or GNSS receiver, and procedures used, such as field traverse, scanning, photogrammetric survey, (~~((global positioning system survey))~~) GNSS based relative static or real time kinematic survey, or a combination thereof to accomplish the survey shown;

(2) All measuring instruments and equipment shall be maintained in adjustment according to manufacturer's specifications.

WSR 18-20-078

PROPOSED RULES

OFFICE OF

FINANCIAL MANAGEMENT

[Filed September 28, 2018, 3:25 p.m.]

Original Notice.

Proposal is exempt under RCW 34.05.310(4) or 34.05-330(1).

Title of Rule and Other Identifying Information: WAC 357-31-805 What documentation may an employee seeking shared leave under the veterans' in-state service shared leave pool be required to submit?

Hearing Location(s): On November 8, 2018, at 8:30 a.m., at the Office of Financial Management (OFM), Capitol Court Building, 1110 Capitol Way South, Suite 120, Conference Room 110, Olympia, WA 98501.

Date of Intended Adoption: November 15, 2018.

Submit Written Comments to: Brandy Chinn, OFM, P.O. Box 47500, Olympia, WA 98501, email Brandy.Chinn@ofm.wa.gov, fax 360-586-4694, by November 1, 2018.

Assistance for Persons with Disabilities: Contact OFM, TTY 711 or 1-800-833-6384, by November 1, 2018.

Purpose of the Proposal and Its Anticipated Effects, Including Any Changes in Existing Rules: The purpose of the proposed amendment to WAC 357-31-805 is to correct what documentation an employee seeking shared leave under the veterans' in-state service shared leave pool is required to submit.

Reasons Supporting Proposal: A current member would not have a "DD Form 214" therefore other forms of documentation need to be allowed.

Statutory Authority for Adoption: Chapter 41.04 RCW.

Statute Being Implemented: RCW 41.04.672.

Rule is not necessitated by federal law, federal or state court decision.

Name of Proponent: [OFM], governmental.

Name of Agency Personnel Responsible for Drafting, Implementation, and Enforcement: Brandy Chinn, 128 10th Avenue, Olympia, WA 98501, 360-407-4141.

A school district fiscal impact statement is not required under RCW 28A.305.135.

A cost-benefit analysis is not required under RCW 34.05.328. Rules are related to internal government operations and are not subject to violation by a nongovernmental party. See RCW 34.05.328 (5)(b)(ii) for exemption.

This rule proposal, or portions of the proposal, is exempt from requirements of the Regulatory Fairness Act because the proposal:

Is exempt under RCW 19.85.025(3) as the rules relate only to internal governmental operations that are not subject to violation by a nongovernment party.

September 28, 2018

Roselyn Marcus

Assistant Director of Legal and Legislative Affairs

AMENDATORY SECTION (Amending WSR 17-18-030, filed 8/28/17, effective 10/2/17)

WAC 357-31-805 What documentation may an employee seeking shared leave under the veterans' in-state service shared leave pool be required to submit?

Employees seeking shared leave under the veterans' in-state service shared leave pool must provide a veterans affairs benefits summary letter from the U.S. Department of Veterans Affairs and a copy of "DD Form 214" or a letter from their command indicating the employee is a current member of the uniformed services and verifying that:

(1) The employee ~~(has)~~ is attending medical appointments or treatments for a service connected injury or disability including U.S. Department of Veterans Affairs compensation and pension examinations; or

(2) The employee is a spouse of a veteran who requires assistance while attending medical appointments or treatments for a service connected injury or disability including U.S. Department of Veterans Affairs compensation and pension examinations.

WSR 18-20-079

PROPOSED RULES

OFFICE OF

FINANCIAL MANAGEMENT

[Filed September 28, 2018, 3:29 p.m.]

Original Notice.

Proposal is exempt under RCW 34.05.310(4) or 34.05.-330(1).

Title of Rule and Other Identifying Information: WAC 357-31-325 Must an employer grant leave with pay for other miscellaneous reasons such as to take a state examination?

Hearing Location(s): On November 8, 2018, at 8:30 a.m., at the Office of Financial Management (OFM), Capitol

Court Building, 1110 Capitol Way South, Suite 120, Conference Room 110, Olympia, WA 98501.

Date of Intended Adoption: November 15, 2018.

Submit Written Comments to: Kristie Wilson, OFM, P.O. Box 47500, Olympia, WA 98501, email Kristie.Wilson@ofm.wa.gov, fax 360-586-4694, by November 1, 2018.

Assistance for Persons with Disabilities: Contact OFM, TTY 711 or 1-800-833-6384, by November 1, 2018.

Purpose of the Proposal and Its Anticipated Effects, Including Any Changes in Existing Rules: The purpose of the amendment to WAC 357-31-325(1) is to state that an employee must be granted leave with pay to receive up to three visits for assessment from the employee assistance program (EAP). Based on current practice, an assessment from EAP may take up to three visits with an EAP advisor to determine the employee's needs.

Reasons Supporting Proposal: To clarify that an assessment from EAP may take up to three visits.

Statutory Authority for Adoption: Chapter 41.06 RCW.

Statute Being Implemented: Chapter 41.04 RCW.

Rule is not necessitated by federal law, federal or state court decision.

Name of Proponent: [OFM], governmental.

Name of Agency Personnel Responsible for Drafting, Implementation, and Enforcement: Kristie Wilson, 128 10th Avenue, 360-407-4139.

A school district fiscal impact statement is not required under RCW 28A.305.135.

A cost-benefit analysis is not required under RCW 34.05.328. Rules are related to internal government operations and are not subject to violation by a nongovernmental party. See RCW 34.05.328 (5)(b)(ii) for exemption.

This rule proposal, or portions of the proposal, is exempt from requirements of the Regulatory Fairness Act because the proposal:

Is exempt under RCW 19.85.025(3) as the rules relate only to internal governmental operations that are not subject to violation by a nongovernment party.

September 28, 2018

Roselyn Marcus

Assistant Director of Legal and Legislative Affairs

AMENDATORY SECTION (Amending WSR 14-11-033, filed 5/14/14, effective 6/16/14)

WAC 357-31-325 Must an employer grant leave with pay for other miscellaneous reasons such as to take a state examination? Leave with pay must be granted to an employee:

(1) To allow an employee to receive up to three visits for assessment from the employee assistance program.

(2) When an employee is scheduled to take an examination or participate in an interview for a position with a state employer during scheduled work hours.

(a) Employers may limit the number of occurrences or the total amount of paid leave that will be granted to an employee to participate in an interview or take an examination during scheduled work hours.

(b) Employers may deny an employee's request to participate in an interview or take an examination during scheduled work hours based upon operational necessity.

(3) When an employee is required to appear during working hours for a physical examination to determine physical fitness for military service.

WSR 18-20-099
WITHDRAWAL OF PROPOSED RULES
SUPERINTENDENT OF
PUBLIC INSTRUCTION

(By the Code Reviser's Office)

[Filed October 2, 2018, 9:46 a.m.]

WAC 392-400-225, 392-400-240, 392-400-245, 392-400-250, 392-400-255, 392-400-260, 392-400-265, 392-400-270, 392-400-275, 392-400-280, 392-400-285, 392-400-295, 392-400-300, 392-400-305, 392-400-310, 392-400-315, 392-400-317, 392-400-320 and 392-400-410, proposed by the superintendent of public instruction in WSR 18-07-028, appearing in issue 18-07 of the Washington State Register, which was distributed on April 4, 2018, is withdrawn by the office of the code reviser under RCW 34.05.335(3), since the proposal was not adopted within the one hundred eighty day period allowed by the statute.

Kerry S. Radcliff, Editor
Washington State Register

WSR 18-20-100
WITHDRAWAL OF PROPOSED RULES
DEPARTMENT OF HEALTH

(By the Code Reviser's Office)

[Filed October 2, 2018, 9:48 a.m.]

WAC 246-915-990, proposed by the department of health in WSR 18-07-106, appearing in issue 18-07 of the Washington State Register, which was distributed on April 4, 2018, is withdrawn by the office of the code reviser under RCW 34.05.335(3), since the proposal was not adopted within the one hundred eighty day period allowed by the statute.

Kerry S. Radcliff, Editor
Washington State Register

WSR 18-20-102
PROPOSED RULES
UNIVERSITY OF WASHINGTON

[Filed October 2, 2018, 11:04 a.m.]

Original Notice.

Preproposal statement of inquiry was filed as WSR 16-16-117.

Title of Rule and Other Identifying Information: WAC 478-160-163 Waivers of tuition and fees.

Hearing Location(s): On November 7, 2018, at 10:00 - 11:00 a.m., at the University of Washington (UW) Police Department Conference Room, 3939 15th Avenue N.E., Seattle, WA 98105.

Date of Intended Adoption: December 13, 2018.

Submit Written Comments to: Barbara Lechtanski, UW Rules Coordination Office, Box 351210, Seattle, WA 98195-1210, email rules@uw.edu, by November 7, 2018.

Assistance for Persons with Disabilities: Contact disability services office, phone 206-543-6450, fax 206-685-7264, TTY 206-543-6452, email dso@uw.edu, by October 30, 2018.

Purpose of the Proposal and Its Anticipated Effects, Including Any Changes in Existing Rules: UW is reorganizing the information in our WAC to clarify locations of information on both permissive and mandatory waivers.

Reasons Supporting Proposal: UW is amending this WAC section to keep the university's waivers of tuition and fees information accurate and up-to-date for current and incoming students. This is part of a comprehensive effort to update tuition waiver policy and information across the WAC, UW administrative policy, and web site information.

Statutory Authority for Adoption: Chapter 28B.15 RCW and RCW 28B.20.130.

Statute Being Implemented: RCW 28B.15.014 (1), (2) and (3), 28B.15.100(3), 28B.15.225, 28B.15.540(2), 28B.15.544, 28B.15.555, 28B.15.556, 28B.15.558, 28B.15.615, 28B.15.621 (2) and (8), 28B.15.740, 28B.15.910, 28B.15.915, 28B.20.130, and chapter 28B.70 RCW.

Rule is not necessitated by federal law, federal or state court decision.

Name of Proponent: UW, governmental.

Name of Agency Personnel Responsible for Drafting: Jed Bradley, Senior Policy Analyst for Office of Planning and Budgeting, UW Tower, 12th Floor, Seattle, WA 98195, 206-616-4684; Implementation: Sarah Hall, Associate Vice Provost for Planning and Budgeting, UW Tower, 12th Floor, Seattle, WA 98195, 206-543-4804; and Enforcement: Mark Richards, Provost and Executive Vice President, 301 Gerberding Hall, Seattle, WA 98195, 206-616-9851.

A school district fiscal impact statement is not required under RCW 28A.305.135.

A cost-benefit analysis is not required under RCW 34.05.328. UW does not consider this a significant legislative rule.

This rule proposal, or portions of the proposal, is exempt from requirements of the Regulatory Fairness Act because the proposal:

Is exempt under RCW 19.85.025(3) as the rule content is explicitly and specifically dictated by statute.

October 2, 2018
Barbara Lechtanski
Director of Rules Coordination

AMENDATORY SECTION (Amending WSR 12-07-016, filed 3/12/12, effective 4/12/12)

WAC 478-160-163 Waivers of tuition and fees. (1)
The board of regents is authorized to grant tuition and fee

waivers to students pursuant to RCW 28B.15.910 and the laws identified therein. A number of these statutes authorize, but do not require, the board of regents to grant waivers for different categories of students and provide((s)) for waivers of different fees. For the waivers that are authorized but not required by state law, the board of regents must affirmatively act to implement the legislature's grant of authority under each individual law. ~~((A list of))~~ The permissive waivers that the board has implemented ~~((can be found in the *University of Washington General Catalog*, which is published biennially. The most recent list may be found in the online version of the *General Catalog* at www.washington.edu/students/reg/tuition_exempt_reductions.html))~~ are noted in subsections (5) and (6) of this section. Permissive waivers not listed in subsection (5) or (6) have not been implemented. A full list of permissive waivers adopted by the board of regents and a list of mandatory waivers can be found online on the University of Washington's Office of the University Registrar web site. Mandatory waivers are also listed in university policy.

(2) Even when it has decided to implement a permissive waiver listed in RCW 28B.15.910, the university, for specific reasons and a general need for flexibility in the management of its resources, may choose not to award waivers to all students who may be eligible under the terms of the laws. ~~((Where the university has chosen to impose specific limitations on a permissive waiver listed in RCW 28B.15.910, those limitations are delineated in subsection (5) of this section. If the university has not imposed specific limitations on a permissive waiver listed in RCW 28B.15.910, the waiver is not mentioned in subsection (5) of this section. The university's description of the factors it may consider to adjust a waiver program to meet emergent or changing needs is found in subsection (8) of this section. All permissive waivers are subject to subsection (8) of this section.))~~ The university's description of the factors it may consider to adjust a waiver program to meet emergent or changing needs is found in subsection (7) of this section. All permissive waivers are subject to subsection (7) of this section.

(3) The board of regents also has the authority under RCW 28B.15.915 to grant waivers of all or a portion of operating fees as defined in RCW 28B.15.031. ~~((Waiver programs adopted under RCW 28B.15.915 are described in the *General Catalog*. The most recent list may be found in the online version of the *General Catalog* at www.washington.edu/students/reg/tuition_exempt_reductions.html))~~ Waivers granted under RCW 28B.15.915 are subject to subsection ~~((8))~~ (7) of this section.

(4) No waivers ~~((will not be))~~ contained in this section will be awarded to students participating in self-sustaining courses or programs ~~((because they do not pay "tuition," "operating fees," "services and activities fees," or "technology fees" as defined in RCW 28B.15.020, 28B.15.031, 28B.15.041, or 28B.15.051, respectively.~~

(5) Specific limitations on waivers are as follows:

(a) Waivers authorized by RCW 28B.15.621(2)(a) for eligible veterans and National Guard members, shall be awarded only to:

(i) Undergraduate students pursuing their first bachelor's degree to a maximum of 225 college-level credits, including

~~credits transferred from other institutions of higher education; and~~

~~(ii) Full-time graduate or professional degree students, provided however, that the waiver may be applied only toward a single degree program at the University of Washington, and, provided further, that graduate and professional degree students who received a waiver authorized by RCW 28B.15.621(2)(a) as undergraduates at the University of Washington shall not be eligible for this waiver.~~

~~To qualify an individual as an "eligible veteran or National Guard member," the person seeking the waiver must present proof of domicile in Washington state and a DD form 214 (Report of Separation) indicating their service as an active or reserve member of the United States military or naval forces, or a National Guard member called to active duty, who served in active federal service, under either Title 10 or Title 32 of the United States Code, in a war or conflict fought on foreign soil or in international waters or in another location in support of those serving on foreign soil or in international waters, and if discharged from services, has received an honorable discharge.~~

~~(b) Waivers of nonresident tuition authorized by RCW 28B.15.014 for university faculty and classified or professional staff).~~

(5) Pursuant to its authority to grant permissive waivers under RCW 28B.15.910 and the laws cited in this subsection, the board of regents adopts the waivers of all or a portion of nonresident tuition fees differential contained in the subsections listed below, with the accompanying noted limitations. These limitations are in addition to any limitations set forth in RCW.

(a) RCW 28B.15.014(1);

(b) RCW 28B.15.014(2). Waivers under this subsection shall be restricted to four consecutive quarters from ~~((their))~~ the employee's initial date of employment with the University of Washington. The ~~((recipient of the waiver))~~ employee must be employed ~~((by))~~ on or before the first day of the quarter for which the waiver is awarded ~~((Waivers awarded to immigrant refugees, or the spouses or dependent children of such refugees, shall be restricted to persons who reside in Washington state and to four consecutive quarters from their arrival in Washington state.~~

(c) All waivers authorized by RCW 28B.15.558 shall be subject to such additional limitations as determined by the provost, pursuant to the terms of subsection (8) of this section. In addition, waivers authorized by RCW 28B.15.558 shall be awarded only to the classes of employees described in (i) of this subsection before considering waivers for the employees described in (ii) and (iii) of this subsection:

(i) University of Washington employees who are employed half-time or more, hold qualifying appointments as of the first day of the quarter for which the waivers are requested, are paid monthly, and, for classified staff new to the university, have completed their probationary periods prior to the first day of the quarter; or

(ii) State of Washington permanent employees who are employed half-time or more, are not University of Washington permanent classified employees, are permanent classified or exempt technical college paraprofessional employees, or are permanent faculty members, counselors, librarians or

exempt employees at other state of Washington public higher education institutions; or

(iii) Teachers and other certificated instructional staff employed at public common and vocational schools, holding or seeking a valid endorsement and assignment in a state-identified shortage area.

(6) ~~Waivers mandated by RCW 28B.15.621(4), as amended by section 1, chapter 450, Laws of 2007, for children and spouses or surviving spouses of eligible veterans and National Guard members who became totally disabled, or lost their lives, while engaged in active federal military or naval service, or who are prisoners of war or missing in action, shall be awarded in accordance with, and subject to the limitations set forth in state law.~~

(7) ~~Waivers mandated by RCW 28B.15.380, as amended by section 4, chapter 261, Laws of 2010, for children and surviving spouses of any law enforcement officer (as defined in chapter 41.26 RCW), firefighter (as defined in chapter 41.24 or 41.26 RCW), or Washington state patrol officer, who lost his or her life or became totally disabled in the line of duty while employed by any public law enforcement agency or full time volunteer fire department in this state, shall be awarded in accordance with, and subject to the limitations set forth in, state law.~~

(8)):

(c) RCW 28B.15.014(3). Waivers under this subsection shall be restricted to persons who reside in Washington state;

(d) RCW 28B.15.225; and

(e) RCW 28B.15.544 and chapter 28B.70 RCW.

(6) Pursuant to its authority to grant permissive waivers under RCW 28B.15.910 and the laws cited in this subsection, the board of regents adopts the following waivers contained in the sections listed below, with the accompanying noted limitations. These limitations are in addition to any limitations set forth in RCW.

(a) RCW 28B.15.100(3);

(b) RCW 28B.15.540(2);

(c) RCW 28B.15.555 and 28B.15.556;

(d) RCW 28B.15.558. All waivers authorized by RCW 28B.15.558 shall be subject to such additional limitations as determined by the provost, pursuant to the terms of subsection (7) of this section. These limitations on employee and course eligibility can be found in university policy in Administrative Policy Statement (APS) 22.1. The office of the university registrar also maintains a list of excluded courses and programs. As authorized by RCW 28B.15.558(5) waivers shall be awarded to eligible University of Washington employees before considering waivers for eligible persons who are not employed by the institution;

(e) RCW 28B.15.615;

(f) RCW 28B.15.621(2). The university adopts this waiver only as to:

(i) Undergraduate students pursuing their first bachelor's degree to a maximum of 225 college-level credits, including credits transferred from other institutions of higher education; and

(ii) Full-time graduate or professional degree students, provided however, that the waiver may be applied only toward a single degree program at the University of Washington, and, provided further, that graduate and professional

degree students who received a waiver authorized by RCW 28B.15.621(2) as undergraduates at the University of Washington shall not be eligible for this waiver.

To qualify an individual as an "eligible veteran or National Guard member," the person seeking the waiver must present proof of domicile in Washington state and either a DD Form 214 (report of separation) or other documentation indicating they meet the criteria in RCW 28B.15.621(8).

(g) RCW 28B.15.740(1); and

(h) RCW 28B.15.740(2).

(7) The university may modify its restrictions or requirements pursuant to changes in state or federal law, changes in programmatic requirements, or in response to financial or other considerations, which may include, but are not limited to, the need to adopt fiscally responsible budgets, the management of the overall levels and mix of enrollments, management initiatives to modify enrollment demand for specific programs and management decisions to eliminate or modify academic programs. The university may choose not to exercise the full funding authority granted under RCW 28B.15.910 and may limit the total funding available under RCW 28B.15.915.

WSR 18-20-104
PROPOSED RULES
DEPARTMENT OF
LABOR AND INDUSTRIES

[Filed October 2, 2018, 11:06 a.m.]

Original Notice.

Preproposal statement of inquiry was filed as WSR 16-15-078.

Title of Rule and Other Identifying Information: eRules Phase 9: Chapter 296-62 WAC, General occupational health standards.

Hearing Location(s): On November 19, 2018, at 1:30 p.m., at the Department of Labor and Industries (L&I), 7273 Linderson Way S.W., Room S119, Tumwater, WA 98501.

Date of Intended Adoption: December 18, 2018.

Submit Written Comments to: Tari Enos, P.O. Box 44620, Olympia, WA 98504, email tari.enos@lni.wa.gov, fax 360-902-5619, by November 26, 2018.

Assistance for Persons with Disabilities: Contact Tari Enos, phone 360-902-5541, fax 360-902-5619, email tari.enos@lni.wa.gov, by November 5, 2018.

Purpose of the Proposal and Its Anticipated Effects, Including Any Changes in Existing Rules: No changes in requirements as a result of this rule making.

- Consistent format for all division of occupational safety and health (DOSH) rules.
- Easy to access rules for smart phone and tablet users.
- Easy navigation in PDF files provided through bookmarks in the rules.
- Easier referencing by replacing bullets and dashes with numbers and letters.
- Enhanced rule update efficiency for customers through electronic postings.

WAC 296-62-020 through 296-62-50010:

- Change bullets to letters or numbers where applicable.
- Change "shall" to "must" where applicable.
- Change "shall be required to" to "must" where applicable.
- Change "shall assure" to "must ensure" where applicable.
- Change "assure" to "ensure" where applicable.
- Remove numbers and quotation marks from all defined words.
- Remove words/phrases such as "means," "as defined" or "is an" from all applicable definitions and replace it with a period, making all definitions complete sentences.
- Change "his" or "her" to any variation of "their," "them" or "they" where applicable.

WAC 296-62-020 Definitions applicable to all sections of this chapter.

- Update outdated reference in definition of "Coal tar pitch volatiles" from WAC 296-62-07515 Table I to WAC 296-841-20025 Table 3.

WAC 296-62-07306 Requirements for areas containing carcinogens listed in WAC 296-62-07302.

- Changed reference in subsection (2)(c) from WAC 296-62-07304(12) to 296-62-07304.
- Remove outdated reference in subsections (2)(f)(vii)(B) and (2)(f)(viii)(B); in WAC 296-62-07310 there is no longer a subsection (4) after previous rule making and therefore that reference needs to be taken out.

WAC 296-62-07310 Signs, information and training.

- Update language in subsection (1)(a) to read: "The employer must post signs at entrances to regulated areas. The signs must bear the legend:"
- Remove subsections (1)(c) and (d), and their outdated language referring to June 1, 2016, that is no longer relevant. Reletter the rest of the subsection.

WAC 296-62-07312 Reports.

- Update outdated reference under the "Carcinogens Standard Report" table from WAC 296-62-07308 to 296-62-07304.

WAC 296-62-07316 Premixed solutions.

- Remove outdated reference in subsection (1)(c); in WAC 296-62-07310 there is no longer a subsection (4) after previous rule making and therefore that reference needs to be taken out.

WAC 296-62-07329 Vinyl chloride.

- Remove subsections (12)(c) and (d) and their outdated language referring to June 1, 2016, that is no longer relevant.
- Remove subsections (13)(b), (c), (d)(i) and (ii) and their outdated language referring to June 1, 2015, that is no longer relevant. Reletter the rest of the subsection.

WAC 296-62-07336 Acrylonitrile.

- Remove subsection (16)(b)(iii) and its outdated language referring to June 1, 2016, that is no longer relevant.

- Remove outdated language referring to June 1, 2015, from subsection (16)(c)(ii) that is no longer relevant. Renumber the subsection.

WAC 296-62-07338 Appendix B—Substance technical guidelines for acrylonitrile.

- Update outdated reference in subsection (2)(a)(viii) from WAC 296-24-59207 to 296-800-300.
- Update outdated reference in subsection (2)(a)(ix) from WAC 296-24-95613 to 296-800-280.
- Remove outdated reference in subsection (6) to WAC 296-24-120; those requirements are now in chapter 296-800 WAC, which is already listed.

WAC 296-62-07339 Appendix C—Medical surveillance guidelines for acrylonitrile.

- In subsection (2)(a), remove the word "contract" and replace it with the bracketed word "contact" that was next to it in the sentence. It appears this update was meant to be made previously, but it didn't occur. Remove the brackets around the word "contact."

WAC 296-62-07342 1,2-Dibromo-3-chloropropane.

- Update outdated reference in subsection (15)(a)(ii)(C) from "chapter 296-62 WAC, Part E" to "chapter 296-842 WAC," which is where respiratory protections are covered.
- Remove subsection (16)(b)(ii) and its outdated language referring to June 1, 2016, that is no longer relevant. Renumber the subsection.
- Remove subsection (16)(c)(iii) and its outdated language referring to June 1, 2015, that is no longer relevant.

WAC 296-62-07373 Communication of EtO hazards.

- Remove subsection (2)(a)(ii) and its outdated language referring to June 1, 2016, that is no longer relevant. Renumber subsection.
- Remove subsections (2)(b)(ii)(A) and (B) and (c) and its outdated language referring to June 1, 2015, that is no longer relevant. Reletter the subsection.

WAC 296-62-07425 Communication of cadmium hazards.

- Remove outdated language referring to June 1, 2016, from subsection (4)(b) that is no longer relevant. Reletter the subsection.
- Remove outdated language referring to June 1, 2015, from subsection (5)(b) that is no longer relevant. Reletter the subsection.
- Update outdated reference in subsection (6)(c)(ix) from "chapter 296-62 WAC, Part E" to "chapter 296-842 WAC," which is where respiratory protections are covered.

WAC 296-62-07460 1,3-Butadiene.

- Update outdated reference in subsection (10) from "WAC 296-62-3112 Hazardous waste operations and emergency responses" to "chapter 296-843 WAC, Hazardous waste operations."
- Remove outdated language from subsection (14)(a) referring to "this section becoming effective in 1997." Reletter the subsection.

- Remove subsection (14)(iii) and its outdated language referring to this subsection being "implemented by February 4, 2000."

WAC 296-62-07470 Methylene chloride.

- Update outdated reference in the "Note" under subsection (6)(d)(ii) from "WAC 296-62-3112" to "chapter 296-843 WAC."
- Update outdated reference in the "Note" under subsection (7)(d)(ii) from "WAC 296-62-07150 through 296-62-07516" to "WAC 296-842-14005."
- Remove language referring to "medical surveillance" in subsection (10)(d)(i) that is outdated and no longer relevant.
- Update outdated reference in subsection (13)(e) from "WAC 296-62-05215" to "296-802-600 transfer and disposal of employee records."
- Update outdated reference in subsection (14)(d) from "WAC 296-62-07515" to "296-307-62610."

WAC 296-62-07473 Appendix A.

- Remove outdated reference to "WAC 296-24-120" in subsection (V) "Housekeeping and Hygiene Facilities" - those requirements are now in chapter 296-800 WAC, which is already listed.
- Update outdated reference in subsection (VI)(H) from "WAC 296-24-956" which was previously repealed to "WAC 296-24-957" where the electrical requirements are located.

WAC 296-62-07519 Thiram.

- Update outdated reference in subsection (1) from "WAC 296-62-07515" to "chapter 296-841 WAC, Airborne contaminants."
- Update outdated references in subsections (3)(c)(vi) and (ix) from "WAC 296-62-071" to "chapter 296-842 WAC, Respirators."

WAC 296-62-07521 Lead.

- Update subsection (5)(i) to "Reserved" and added subsection letter (j) to avoid confusion of how the subsections in (5) were listed.
- Remove language from subsection (8)(b)(viii) referring to June 1, 2015, that is outdated and no longer relevant. Renumber subsection.
- Update outdated reference in subsection (13)(v)(C) from "chapter 296-62 WAC, Part E" to "chapter 296-842 WAC" which is where respiratory protections are covered.
- Remove subsection (14)(b)(v) and its outdated language referring to June 1, 2016, that is no longer relevant.
- Remove language in subsection (17)(b)(xi) referring to June 1, 2016, that is outdated and no longer relevant.

WAC 296-62-07540 Formaldehyde.

- Update outdated reference in subsection (9)(a) from "WAC 296-24-120" to "WAC 296-800-230."

WAC 296-62-07601 Scope and application.

- Remove outdated reference to "WAC 296-62-054" in subsection (4). Those requirements are located in chapter 296-901 WAC, which is already listed.

WAC 296-62-07619 Hygiene facilities and practices.

- Update outdated reference in subsection (2)(a)(i) from "WAC 296-24-12010" to "WAC 296-800-23065."

WAC 296-62-07621 Communication of hazards.

- Remove subsection (2)(a)(ii) and its outdated language referring to June 1, 2016, that is no longer relevant. Reletter subsection.
- Remove subsections (2)(b)(i) and (ii) and their outdated language referring to June 1, 2015, that is no longer relevant.
- Update outdated reference in subsection (4)(b)(iii) from "WAC 296-62-07625" to "WAC 296-62-07627" and also added a reference to WAC 296-62-07629 to cover all requirements regarding "medical removal."

WAC 296-62-07631 Recordkeeping.

- Update outdated references in subsections (3)(a), (4)(a), (d) and (6)(c) from "Part B of this chapter" to "chapter 296-802 WAC" which is where requirements regarding employee medical and exposure records are located.
- Update outdated reference in subsection (3)(c) from "Part B of this chapter" to "WAC 296-802-20010."
- Update outdated reference in subsection (6)(a) from "WAC 296-62-076" to "chapter 296-802 WAC."
- Update outdated reference in subsection (6)(b) from "WAC 296-800-170" to "chapter 296-800 WAC."

WAC 296-62-07637 Appendices.

- Remove sentence referring to "respiratory fit testing in Appendix E of WAC 296-62-076" - that section was previously repealed.

WAC 296-62-07711 Regulated areas.

- Update outdated reference in subsection (7) from "chapter 296-62 WAC, Part M" to "chapter 296-809 WAC" - the requirements of Part M were previously moved.

WAC 296-62-07715 Respiratory protection.

- Update outdated reference in subsection (5)(b) from "WAC 296-62-07160 through 296-62-07162 and 296-62-07201 through 296-62-07248" to "chapter 296-842 WAC, Respirators."

WAC 296-62-07721 Communication of hazards.

- Remove subsection (4)(b)(iii) and its outdated language referring to June 1, 2016, that is no longer relevant.
- Remove subsection (5)(d) and its outdated language referring to June 1, 2015, that is no longer relevant.
- Update outdated reference in subsection (7) from "WAC 296-62-05413" to "WAC 296-901-14014."

WAC 296-62-14533 Cotton dust.

- Remove subsection (10)(b) and its outdated language referring to June 1, 2016, that is no longer relevant. Also, remove letter (a) from subsection (10) for formatting purposes.

WAC 296-62-20021 Communication of hazards.

- Remove subsections (2)(e) and (f) and their outdated language referring to June 1, 2016, that is no longer relevant.
- Remove subsection (3)(b) and its outdated language referring to June 1, 2015, that is no longer relevant. Also,

remove letter (a) from subsection (3) for formatting purposes.

WAC 296-62-50055 Implementation plan.

- Remove subsections (1)(a)-(c) and their outdated language referring to implementing a "written hazardous drugs control program" by January 1, 2014, "training" by July 1, 2014, and "installation of appropriate ventilated cabinets" by January 1, 2015.
- Remove subsection (2) and replace subsection letters with numbers.

Reasons Supporting Proposal: When the agency updated its web site, DOSH rules in HTML were broken and DOSH began forwarding rule users to the office of the code reviser web site, causing more confusion among customers. This rule package will resolve stakeholder issues that have caused confusion for rule users by bringing one clear and consistent format to all of our rules.

Statutory Authority for Adoption: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060.

Statute Being Implemented: Chapter 49.17 RCW.

Rule is not necessitated by federal law, federal or state court decision.

Name of Proponent: L&I, governmental.

Name of Agency Personnel Responsible for Drafting: Chris Miller, Tumwater, Washington, 360-902-5516; Implementation and Enforcement: Anne Soiza, Tumwater, Washington, 360-902-5090.

A school district fiscal impact statement is not required under RCW 28A.305.135.

A cost-benefit analysis is not required under RCW 34.05.328. According to RCW 34.05.328 (5)(b)(iv), no cost-benefit analysis is required for this rule making.

This rule proposal, or portions of the proposal, is exempt from requirements of the Regulatory Fairness Act because the proposal:

- Is exempt under RCW 19.85.025(3) as the rules only correct typographical errors, make address or name changes, or clarify language of a rule without changing its effect.

October 2, 2018
Joel Sacks
Director

AMENDATORY SECTION (Amending WSR 07-03-163, filed 1/24/07, effective 4/1/07)

WAC 296-62-020 Definitions applicable to all sections of this chapter. Unless the context indicates otherwise, words used in this chapter shall have the meaning given in this section.

~~((1) "Adequate" or "effective" means))~~ **Adequate or effective.** Compliance with terms and intent of these standards.

~~((2) "Appendix" means))~~ **Appendix.** References or recommendations to be used as guides in applying the provisions of this chapter.

~~((3) "Approved" means))~~ **Approved.** Approved by the director of the department of labor and industries or his authorized representative, or by an organization that is specif-

ically named in a rule, such as Underwriters' Laboratories (UL), Mine Safety and Health Administration (MSHA), or the National Institute for Occupational Safety and Health (NIOSH).

~~((4) "Authorized person" means))~~ **Authorized person.** A person approved or assigned by the employer to perform a specific type of duty or duties or to be at a specific location or locations at the job site.

~~((5) "Coal tar pitch volatiles")~~ **Coal tar pitch volatiles.** As used in WAC ~~((296-62-07515))~~ 296-841-20025, Table ~~((4))~~ 3, include the fused polycyclic hydrocarbons which volatilize from the distillation residues of coal, petroleum, (excluding asphalt), wood, and other organic matter. Asphalt (CAS 8052-42-4, and CAS 64742-93-4) is not covered under the "coal tar pitch volatiles" standard.

~~((6) "Competent person" means))~~ **Competent person.** One who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective action to eliminate them.

~~((7) "Department" means))~~ **Department.** The department of labor and industries.

~~((8) "Director" means))~~ **Director.** The director of the department of labor and industries, or ~~((his))~~ their designated representative.

~~((9) "Employer" means))~~ **Employer.** Any person, firm, corporation, partnership, business trust, legal representative, or other business entity which engages in any business, industry, profession, or activity in this state and employs one or more employees or who contracts with one or more persons, the essence of which is the personal labor of such person or persons and includes the state, counties, cities, and all municipal corporations, public corporations, political subdivisions of the state, and charitable organizations: Provided, That any persons, partnership, or business entity not having employees, and who is covered by the industrial insurance act shall be considered both an employer and an employee.

~~((10) "Hazard" means))~~ **Hazard.** That condition, potential or inherent, which can cause injury, death, or occupational disease.

~~((11) "Occupational disease" means))~~ **Occupational disease.** Such disease or infection as arises naturally and proximately out of employment.

~~((12) "Qualified" means))~~ **Qualified.** One who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated ability to solve or resolve problems relating to the subject matter, the work, or the project.

~~((13) "Shall" or "must" means))~~ **Shall or must.** Mandatory.

~~((14) "Should" or "may" means))~~ **Should or may.** Recommended.

~~((15) "Suitable" means))~~ **Suitable.** That which fits, or has the qualities or qualifications to meet a given purpose, occasion, condition, function, or circumstance.

~~((16) "Worker," "personnel," "person," "employee,")~~ **Worker, personnel, person, employee, and other terms of like meaning(;;).** Unless the context of the provision con-

taining such term indicates otherwise, mean an employee of an employer who is employed in the business of their employer whether by way of manual labor or otherwise and every person in this state who is engaged in the employment of or who is working under an independent contract the essence of which is their personal labor for an employer whether by manual labor or otherwise.

~~((17) "Work place" means))~~ **Work place.** Any plant, yard, premises, room, or other place where an employee or employees are employed for the performance of labor or service over which the employer has the right of access or control. This includes, but is not limited to, all work places covered by industrial insurance under Title 51 RCW, as now or hereafter amended.

~~((18))~~ Abbreviations used in this chapter:

~~((a) "ANSI" means))~~ **ANSI.** American National Standards Institute.

~~((b) "ASHRE" means))~~ **ASHRE.** American Society of Heating and Refrigeration Engineers.

~~((c) "BTU" means))~~ **BTU.** British thermal unit.

~~((d) "BTUH" means))~~ **BTUH.** British thermal unit per hour.

~~((e) "CFM" means))~~ **CFM.** Cubic feet per minute.

~~((f) "C.F.R." means))~~ **C.F.R.** Code of Federal Register.

~~((g) "CGA" means))~~ **CGA.** Compressed Gas Association.

~~((h) "ID" means))~~ **ID.** Inside diameter.

~~((i) "MCA" means))~~ **MCA.** Manufacturing Chemist Association or Chemical Manufacturer Association (CMA).

~~((j) "NEMA" means))~~ **NEMA.** National Electrical Manufacturing Association.

~~((k) "NFPA" means))~~ **NFPA.** National Fire Protection Association.

~~((l) "OD" means))~~ **OD.** Outside diameter.

~~((m) "WAC" means))~~ **WAC.** Washington Administrative Code.

~~((n) "WISHA" means))~~ **WISHA.** Washington Industrial Safety and Health Act (chapter 80, Laws of 1973).

AMENDATORY SECTION (Amending Order 73-3, filed 5/7/73)

WAC 296-62-040 Unconstitutionality clause. In the event that any section, paragraph, sentence, clause, phrase or work of this chapter is declared unconstitutional or invalid for any reason the remainder of said standard or this chapter ~~((shall))~~ **must** not be affected thereby.

AMENDATORY SECTION (Amending WSR 14-07-086, filed 3/18/14, effective 5/1/14)

WAC 296-62-05520 Retain readily visible DOT labeling. You must~~((~~

~~))~~ retain readily visible DOT labeling as specified in Table 1.

Table 1 Specifications for Retaining DOT Labeling	
If you receive	Retain DOT markings, placards and labels UNTIL:
• Packages of hazardous materials	• Hazardous materials are sufficiently removed - Packaging must be ■ cleaned of residue ■ purged of vapors
• Freight containers • Rail freight cars • Motor vehicles • Transport vehicles	• Hazardous materials are sufficiently removed
• Nonbulk packages that will not be reshipped	• You replace the DOT labeling with labeling that complies with WAC 296-901-140 ((;)) Hazard communication

AMENDATORY SECTION (Amending WSR 02-16-047, filed 8/1/02, effective 10/1/02)

WAC 296-62-060 Control requirements in addition to those specified.

Note: The requirements in this section apply only to agriculture. The requirements for general industry relating to control requirements have been moved to chapter 296-800 WAC, Safety and health core rules.

(1) In those cases where no acceptable standards have been derived for the control of hazardous conditions, every reasonable precaution ~~((shall))~~ **must** be taken to safeguard the health of the worker whether provided herein or not.

(2) Preservation of records.

(a) Scope and application. This section applies to each employer who makes, maintains or has access to employee exposure records or employee medical records.

(b) Definitions.

(i) ~~(())~~ **Employee exposure record~~(())~~.** A record of monitoring or measuring which contains qualitative or quantitative information indicative of employee exposure to toxic materials or harmful physical agents. This includes both individual exposure records and general research or statistical studies based on information collected from exposure records.

(ii) ~~(())~~ **Employee medical record~~(())~~.** A record which contains information concerning the health status of an employee or employees exposed or potentially exposed to toxic materials or harmful physical agents. These records may include, but are not limited to:

(A) The results of medical examinations and tests;

(B) Any opinions or recommendations of a physician or other health professional concerning the health of an employee or employees; and

(C) Any employee medical complaints relating to workplace exposure. Employee medical records include both individual medical records and general research or statistical studies based on information collected from medical records.

(c) Preservation of records. Each employer who makes, maintains, or has access to employee exposure records or employee medical records ~~((shall))~~ **must** preserve these records.

(d) Availability of records. The employer (~~(shall)~~) must make available, upon request, to the director, department of labor and industries, or his designee, all employee exposure records and employee medical records for examination and copying.

(e) Effective date. This standard shall become effective thirty days after filing with the code reviser.

(3) Monitoring of employees. The department (~~(shall)~~) must use industrial hygiene sampling methods and techniques including but not limited to personal monitoring devices and equipment approved by the director or his designee for the purpose of establishing compliance with chapter 296-62 WAC.

(a) The employer (~~(shall)~~) must permit the director or his designee to monitor and evaluate any workplace or employee in accordance with all provisions of this subsection.

(b) The employer (~~(shall)~~) must not prevent or discourage an employee from cooperating with the department by restricting or inhibiting his/her participation in the use of personal monitoring devices and equipment in accordance with all provisions of this subsection.

AMENDATORY SECTION (Amending WSR 14-07-086, filed 3/18/14, effective 5/1/14)

WAC 296-62-07302 Communication of hazards. (1) Hazard communication.

(a) Chemical manufacturers, importers, distributors, and employers (~~(shall)~~) must comply with all requirements of the Hazard Communication Standard (HCS), WAC 296-901-140 for each carcinogen listed in subsection (2) of this section.

(b) In classifying the hazards of carcinogens listed in subsection (2) of this section, at least the hazards listed in subsection (2) of this section are to be addressed.

(c) Employers (~~(shall)~~) must include the carcinogens listed in subsection (2) of this section in the hazard communication program established to comply with the HCS, WAC 296-901-140. Employers (~~(shall)~~) must ensure that each employee has access to labels on containers of the carcinogens listed in subsection (2) of this section and to safety data sheets, and is trained in accordance with the requirements of HCS and subsection (2) of this section.

(2) List of carcinogens:

(a) 4-Nitrobiphenyl: Cancer (CAS 92-93-3).

(b) Alpha-Naphthylamine: Cancer; skin irritation; and acute toxicity effects (CAS 134-32-7).

(c) Methyl chloromethyl ether: Cancer; skin, eye and respiratory effects; acute toxicity effects; and flammability (CAS 107-30-2).

(d) 3,3'-Dichlorobenzidine (and its salts): Cancer and skin sensitization (CAS 91-94-1).

(e) Bis-Chloromethyl ether: Cancer; skin, eye, and respiratory tract effects; acute toxicity effects; and flammability (CAS 542-88-1).

(f) Beta-Naphthylamine: Cancer and acute toxicity effects (CAS 91-59-8).

(g) Benzidine: Cancer and acute toxicity effects (CAS 92-87-5).

(h) 4-Aminodiphenyl: Cancer (CAS 92-67-1).

(i) Ethyleneimine: Cancer; mutagenicity; skin and eye effects; liver effects; kidney effects; acute toxicity effects; and flammability (CAS 151-56-4).

(j) Beta-Propiolactone: Cancer; skin irritation; eye effects; and acute toxicity effects (CAS 57-57-8).

(k) 2-Acetylaminofluorene: Cancer (CAS 53-96-3).

(l) 4-Dimethylaminoazo-benzene: Cancer, skin effects; and respiratory tract irritation (CAS 60-11-7).

(m) N-Nitrosodimethylamine: Cancer; liver effects; and acute toxicity effects (CAS 62-75-9).

AMENDATORY SECTION (Amending WSR 02-12-098, filed 6/5/02, effective 8/1/02)

WAC 296-62-07304 Definitions. The definitions set forth in this section apply throughout WAC 296-62-073 through 296-62-07316.

~~((1) Absolute filter--))~~ **Absolute filter.** Is one capable of retaining 99.97 percent of a mono disperse aerosol of 0.3 micron size particles.

~~((2) Authorized employee--))~~ **Authorized employee.** An employee whose duties require him to be in the regulated area and who has been specifically assigned to those duties by the employer.

~~((3) Clean change room--))~~ **Clean change room.** A room where employees put on clean clothing and/or protective equipment in an environment free of carcinogens listed in WAC 296-62-07302. The clean change room shall be contiguous to and have an entry from a shower room, when the shower room facilities are otherwise required in this section.

~~((4) Closed system--))~~ **Closed system.** An operation involving carcinogens listed in WAC 296-62-07302 where containment prevents the release of carcinogens.

~~((5) Decontamination--))~~ **Decontamination.** The inactivation of a carcinogen listed in WAC 296-62-07302 or its safe disposal.

~~((6) Disposal--))~~ **Disposal.** The safe removal of a carcinogen listed in WAC 296-62-07302 from the work environment.

~~((7) Emergency--))~~ **Emergency.** An unforeseen circumstance or set of circumstances resulting in the release of a carcinogen which may result in exposure to or contact with any carcinogen listed in WAC 296-62-07302.

~~((8) External environment--))~~ **External environment.** Any environment external to regulated and nonregulated areas.

~~((9) Isolated system--))~~ **Isolated system.** A fully enclosed structure other than the vessel of containment of a listed carcinogen which is impervious to the passage of listed carcinogens and which would prevent the entry of carcinogens into regulated areas, nonregulated areas, or the external environment, should leakage or spillage from the vessel of containment occur.

~~((10) Laboratory type hood--))~~ **Laboratory-type hood.** A device enclosed on three sides and the top and bottom, designed and maintained so as to draw air inward at an average linear face velocity of 150 feet per minute with a minimum of 125 feet per minute, designed, constructed and maintained such that an operation involving a listed carcinogen

within the hood does not require the insertion of any portion of any employees' body other than his hands and arms.

~~((11) Nonregulated area--))~~ **Nonregulated area.** Any area under the control of the employer where entry and exit is neither restricted nor controlled.

~~((12) Open vessel system--))~~ **Open-vessel system.** An operation involving listed carcinogens in an open vessel, which is not in an isolated system, a laboratory-type hood, nor in any other system affording equivalent protection against the entry of carcinogens into regulated areas, nonregulated areas, or the external environment.

~~((13) Protective clothing--))~~ **Protective clothing.** Clothing designed to protect an employee against contact with or exposure to listed carcinogens.

~~((14) Regulated area--))~~ **Regulated area.** An area where entry and exit is restricted and controlled.

AMENDATORY SECTION (Amending WSR 14-07-086, filed 3/18/14, effective 5/1/14)

WAC 296-62-07306 Requirements for areas containing carcinogens listed in WAC 296-62-07302. (1) A regulated area ~~((shall))~~ **must** be established by an employer where listed carcinogens are manufactured, processed, used, repackaged, released, handled or stored.

(2) All such areas ~~((shall))~~ **must** be controlled in accordance with the requirements for the following category or categories describing the operation involved:

(a) Isolated systems. Employees working with carcinogens within an isolated system such as a "glove box" ~~((shall))~~ **must** wash their hands and arms upon completion of the assigned task and before engaging in other activities not associated with the isolated system.

(b) Closed system operation. Within regulated areas where carcinogens are stored in sealed containers, or contained in a closed system including piping systems with any sample ports or openings closed while carcinogens are contained within:

(i) Access ~~((shall))~~ **must** be restricted to authorized employees only;

(ii) Employees ~~((shall be required to))~~ **must** wash hands, forearms, face and neck upon each exit from the regulated areas, close to the point of exit and before engaging in other activities.

(c) Open vessel system operations. Open vessel system operations as defined in WAC 296-62-07304~~((12))~~ are prohibited.

(d) Transfer from a closed system. Charging or discharging point operations, or otherwise opening a closed system. In operations involving "laboratory-type hoods," or in locations where a carcinogen is contained in an otherwise "closed system," but is transferred, charged, or discharged into other normally closed containers, the provisions of this section shall apply.

(i) Access ~~((shall))~~ **must** be restricted to authorized employees only;

(ii) Each operation ~~((shall))~~ **must** be provided with continuous local exhaust ventilation so that air movement is always from ordinary work areas to the operation. Exhaust air ~~((shall))~~ **must** not be discharged to regulated areas, nonregu-

lated areas or the external environment unless decontaminated. Clean makeup air ~~((shall))~~ **must** be introduced in sufficient volume to maintain the correct operation of the local exhaust system.

(ii) Employees ~~((shall))~~ **must** be provided with, and required to wear, clean, full body protective clothing (socks, coveralls, or long-sleeved shirt and pants), shoe covers and gloves prior to entering the regulated area.

(iv) Each employee engaged in handling operations involving the following carcinogens must be provided with and required to wear and use a NIOSH-certified self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode, or any supplied air respirator that has a full facepiece and is operated in a pressure-demand or other positive pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus as required in chapter 296-842 WAC. A respirator affording higher levels of protection than this respirator may be substituted.

- ~~((~~ **Methyl Chloromethyl Ether;**
- ~~• bis-Chloromethyl Ether;~~
- ~~• Ethylenimine;~~
- ~~• beta-Propiolactone;~~
- ~~• 4-Amino Diphenyl.))~~

(A) Methyl Chloromethyl Ether;

(B) bis-Chloromethyl Ether;

(C) Ethylenimine;

(D) beta-Propiolactone;

(E) 4-Amino Diphenyl.

(v) Each employee engaged in handling operations involving the following carcinogens must be provided with, and required to wear and use, NIOSH-certified air-purifying, half-mask respirator with particulate filters as required in chapter 296-842 WAC. A respirator affording higher levels of protection than this respirator may be substituted.

- ~~((~~ **4-Nitrobiphenyl;**
- ~~• alpha-Naphthylamine;~~
- ~~• 4-4'Methylene bis(2-Chloroaniline);~~
- ~~• 3-3'Dichlorobenzidine (and its salts);~~
- ~~• beta-Naphthylamine;~~
- ~~• Benzidine;~~
- ~~• 2-acetylamino fluorene;~~
- ~~• 4-imethylaminoazobenzene;~~
- ~~• n-nitrosodimethylamine.))~~

(A) 4-Nitrobiphenyl;

(B) alpha-Naphthylamine;

(C) 4-4'Methylene bis(2-Chloroaniline);

(D) 3-3'Dichlorobenzidine (and its salts);

(E) beta-Naphthylamine;

(F) Benzidine;

(G) 2-acetylamino fluorene;

(H) 4-imethylaminoazobenzene;

(I) n-nitrosodimethylamine.

must be provided with, and required to wear and use, a half-face, filter-type respirator certified for solid or liquid particulates with minimum efficiency rating of 95% as required in chapter 296-842 WAC. A respirator affording higher levels of protection than this respirator may be substituted.

(vi) Prior to each exit from a regulated area, employees ~~((shall be required to))~~ must remove and leave protective clothing and equipment at the point of exit and at the last exit of the day, to place used clothing and equipment in impervious containers at the point of exit for purposes of decontamination or disposal. The contents of such impervious containers ~~((shall))~~ must be identified, as required under WAC 296-62-07302.

(vii) Employees ~~((shall be required to))~~ must wash hands, forearms, face and neck on each exit from the regulated area, close to the point of exit, and before engaging in other activities.

(viii) Employees ~~((shall be required to))~~ must shower after the last exit of the day.

(ix) Drinking fountains are prohibited in the regulated area.

(e) Maintenance and decontamination activities. In clean up of leaks or spills, maintenance or repair operations on contaminated systems or equipment, or any operations involving work in an area where direct contact with carcinogens could result, each authorized employee entering the area ~~((shall))~~ must:

(i) Be provided with and required to wear, clean, impervious garments, including gloves, boots and continuous-air supplied hood in accordance with WAC 296-800-160, and respiratory protective equipment required by this chapter 296-842 WAC;

(ii) Be decontaminated before removing the protective garments and hood;

(iii) ~~((Be required to))~~ Shower upon removing the protective garments and hood.

(f) Laboratory activities. The requirements of this subdivision shall apply to research and quality control activities involving the use of carcinogens listed in WAC 296-62-07302.

(i) Mechanical pipetting aids ~~((shall))~~ must be used for all pipetting procedures.

(ii) Experiments, procedures and equipment which could produce aerosols ~~((shall))~~ must be confined to laboratory-type hoods or glove boxes.

(iii) Surfaces on which carcinogens are handled ~~((shall))~~ must be protected from contamination.

(iv) Contaminated wastes and animal carcasses ~~((shall))~~ must be collected in impervious containers which are closed and decontaminated prior to removal from the work area. Such wastes and carcasses ~~((shall))~~ must be incinerated in such a manner that no carcinogenic products are released.

(v) All other forms of listed carcinogens ~~((shall))~~ must be inactivated prior to disposal.

(vi) Laboratory vacuum systems ~~((shall))~~ must be protected with high efficiency scrubbers or with disposable absolute filters.

(vii) Employees engaged in animal support activities ~~((shall))~~ must be:

(A) Provided with, and required to wear, a complete protective clothing change, clean each day, including coveralls or pants and shirt, foot covers, head covers, gloves, and appropriate respiratory protective equipment or devices; and

(B) Prior to each exit from a regulated area, employees ~~((shall be required to))~~ must remove and leave protective clothing and equipment at the point of exit and at the last exit of the day, to place used clothing and equipment in impervious containers at the point of exit for purposes of decontamination or disposal. The contents of such impervious containers ~~((shall))~~ must be identified as required under WAC 296-62-07310 (2)~~((,-(3) and (4))~~) and (3).

(C) Required to wash hands, forearms, face and neck upon each exit from the regulated area close to the point of exit, and before engaging in other activities; and

(D) Required to shower after the last exit of the day.

(viii) Employees, other than those engaged only in animal support activities, each day ~~((shall))~~ must be:

(A) Provided with and required to wear a clean change of appropriate laboratory clothing, such as a solid front gown, surgical scrub suit, or fully buttoned laboratory coat.

(B) Prior to each exit from a regulated area, employees ~~((shall be required to))~~ must remove and leave protective clothing and equipment at the point of exit and at the last exit of the day, to place used clothing and equipment in impervious containers at the point of exit for purposes of decontamination or disposal. The contents of such impervious containers shall be identified as required under WAC 296-62-07310 (2)~~((,-(3) and (4))~~) and (3).

(C) Required to wash hands, forearms, face and neck upon each exit from the regulated area close to the point of exit, and before engaging in other activities.

(ix) Air pressure in laboratory areas and animal rooms where carcinogens are handled and bioassay studies are performed ~~((shall))~~ must be negative in relation to the pressure in surrounding areas. Exhaust air ~~((shall))~~ must not be discharged to regulated areas, nonregulated areas or the external environment unless decontaminated.

(x) There ~~((shall be no))~~ must not be any connection between regulated areas and any other areas through the ventilation system.

(xi) A current inventory of the carcinogens ~~((shall))~~ must be maintained.

(xii) Ventilated apparatus such as laboratory-type hoods, ~~((shall))~~ must be tested at least ~~((semi-annually))~~ semiannually or immediately after ventilation modification or maintenance operations, by personnel fully qualified to certify correct containment and operation.

AMENDATORY SECTION (Amending WSR 09-15-145, filed 7/21/09, effective 9/1/09)

WAC 296-62-07308 General regulated area requirements. (1) Respirator program. The employer must implement a respiratory protection program as required in chapter 296-62 WAC, Part E (except WAC 296-62-07130 (1) and (5) and 296-62-07131), which covers each employee required by this chapter to use a respirator.

(2) Emergencies. In an emergency, immediate measures including, but not limited to, the requirements of (a), (b), (c), (d) and (e) of this subsection ~~((shall))~~ must be implemented.

(a) The potentially affected area ~~((shall))~~ must be evacuated as soon as the emergency has been determined.

(b) Hazardous conditions created by the emergency ~~((shall))~~ must be eliminated and the potentially affected area ~~((shall))~~ must be decontaminated prior to the resumption of normal operations.

(c) Special medical surveillance by a physician ~~((shall))~~ must be instituted within twenty-four hours for employees present in the potentially affected area at the time of the emergency. A report of the medical surveillance and any treatment ~~((shall))~~ must be included in the incident report, in accordance with WAC 296-62-07312(2).

(d) Where an employee has a known contact with a listed carcinogen, such employee ~~((shall be required to))~~ must shower as soon as possible, unless contraindicated by physical injuries.

(e) An incident report on the emergency ~~((shall))~~ must be reported as provided in WAC 296-62-07312(2).

(3) Hygiene facilities and practices.

(a) Storage or consumption of food, storage or use of containers of beverages, storage or application of cosmetics, smoking, storage of smoking materials, tobacco products or other products for chewing, or the chewing of such products, are prohibited in regulated areas.

(b) Where employees are required by this section to wash, washing facilities ~~((shall))~~ must be provided in accordance with WAC 296-800-230.

(c) Where employees are required by this section to shower, shower facilities ~~((shall))~~ must be provided.

(i) One shower ~~((shall))~~ must be provided for each ten employees of each sex, or numerical fraction thereof, who are required to shower during the same shift.

(ii) Body soap or other appropriate cleansing agents convenient to the showers ~~((shall))~~ must be provided as specified in WAC 296-800-230, of the safety and health core rules.

(iii) Showers ~~((shall))~~ must be provided with hot and cold water feeding a common discharge line.

(iv) Employees who use showers ~~((shall))~~ must be provided with individual clean towels.

(d) Where employees wear protective clothing and equipment, clean change rooms ~~((shall))~~ must be provided and ~~((shall))~~ must be equipped with storage facilities for street clothes and separate storage facilities for the protective clothing for the number of such employees required to change clothes.

(e) Where toilets are in regulated areas, such toilets ~~((shall))~~ must be in a separate room.

(4) Contamination control.

(a) Regulated areas, except for outdoor systems, ~~((shall))~~ must be maintained under pressure negative with respect to nonregulated areas. Local exhaust ventilation may be used to satisfy this requirement. Clean makeup air in equal volume ~~((shall))~~ must replace air removed.

(b) Any equipment, material, or other item taken into or removed from a regulated area ~~((shall))~~ must be done so in a manner that does not cause contamination in nonregulated areas or the external environment.

(c) Decontamination procedures ~~((shall))~~ must be established and implemented to remove carcinogens from the surfaces of materials, equipment and the decontamination facility.

(d) Dry sweeping and dry mopping are prohibited.

AMENDATORY SECTION (Amending WSR 14-07-086, filed 3/18/14, effective 5/1/14)

WAC 296-62-07310 Signs, information and training.

(1) Signs.

(a) The employer ~~((shall))~~ must post signs at entrances to regulated areas ~~((with signs bearing))~~. The signs must bear the legend:

DANGER
(CHEMICAL IDENTIFICATION)
MAY CAUSE CANCER
AUTHORIZED PERSONNEL ONLY

(b) The employer ~~((shall))~~ must post signs at entrances to regulated areas containing operations covered in WAC 296-62-07306 (2)(e). The signs ~~((shall))~~ must bear the legend:

DANGER
(CHEMICAL IDENTIFICATION)
MAY CAUSE CANCER
WEAR AIR-SUPPLIED HOODS, IMPERVIOUS SUITS, AND PROTECTIVE EQUIPMENT IN THIS AREA
AUTHORIZED PERSONNEL ONLY

(c) ~~((Prior to June 1, 2016, employers may use the following legend in lieu of that specified in (a) of this subsection:))~~

CANCER-SUSPECT AGENT
AUTHORIZED PERSONNEL ONLY

(d) ~~((Prior to June 1, 2016, employers may use the following legend in lieu of that specified in (b) of this subsection:))~~

CANCER-SUSPECT AGENT EXPOSED IN THIS AREA
IMPERVIOUS SUIT INCLUDING GLOVES, BOOTS, AND AIR-SUPPLIED HOOD
REQUIRED AT ALL TIMES
AUTHORIZED PERSONNEL ONLY

~~((e))~~ Appropriate signs and instructions ~~((shall))~~ must be posted at the entrance to, and exit from, regulated areas, informing employees of the procedures that must be followed in entering and leaving a regulated area.

(2) Prohibited statements. No statements shall appear on or near any required sign, label, or instruction that contradicts or detracts from the effect of any required warning, information or instruction.

(3) Training and indoctrination.

(a) Each employee prior to being authorized to enter a regulated area, ~~((shall))~~ must receive a training and indoctrination program including, but not necessarily limited to:

(i) The nature of the carcinogenic hazards of listed carcinogens, including local and systemic toxicity;

- (ii) The specific nature of the operation involving carcinogens which could result in exposure;
- (iii) The purpose for and application of the medical surveillance program, including, as appropriate, methods of self-examination;
- (iv) The purpose for and application of decontamination practices and purposes;
- (v) The purpose for and significance of emergency practices and procedures;
- (vi) The employee's specific role in emergency procedures;
- (vii) Specific information to aid the employee in recognition and evaluation of conditions and situations which may result in the release of listed carcinogens;
- (viii) The purpose for and application of specific first-aid procedures and practices;
- (ix) A review of this section at the employee's first training and indoctrination program and annually thereafter.

(b) Specific emergency procedures (~~shall~~) **must** be prescribed, and posted, and employees, (~~shall~~) **must** be familiarized with their terms, and rehearsed in their application.

(c) All materials relating to the program (~~shall~~) **must** be provided upon request to the director.

AMENDATORY SECTION (Amending WSR 02-12-098, filed 6/5/02, effective 8/1/02)

WAC 296-62-07312 Reports. (1) Operations. Not later than October 30, 1974, the information required in (~~WAC 296-62-07312 (1)~~)(a), (b), (c) and (d) of this (~~section~~) **subsection** must be reported in writing to the Department of Labor and Industries, WISHA Services Division, Policy and Technical Services, P.O. Box 44610, Olympia, WA 98504-4610. Any changes in the information must also be reported in writing within 15 calendar days of the change.

- (a) A brief description and in plant location of the area(s) regulated and the address of each regulated area;
- (b) The name(s) and other identifying information as to the presence of listed carcinogens in each regulated area;
- (c) The number of employees in each regulated area, during normal operations including maintenance activities; and
- (d) The manner in which a carcinogen is present in each regulated area; e.g., whether it is manufactured, processed, used, repackaged, released, stored, or otherwise handled.

(2) Incidents. Incidents which result in the release of a listed carcinogen into any area where employees may be potentially exposed (~~shall~~) **must** be reported in accordance with this subsection.

(a) The occurrence of the incident, including any facts obtainable at that time, as well as a report on any medical treatment of affected employees, must be reported within 24 hours to the Department of Labor and Industries, WISHA Services Division, Policy and Technical Services, P.O. Box 44610, Olympia, WA 98504-4610.

(b) A written report must be filed with the Department of Labor and Industries, WISHA Services Division, Policy and Technical Services, P.O. Box 44610, Olympia, WA 98504-4610, within 15 calendar days after the incident occurs, and must include:

- (i) A specification of the amount of material released, the amount of time involved, and an explanation of the procedure used in determining this figure;
- (ii) A description of the area involved, and the extent of known and possible employee exposure and area contamination;
- (iii) A report of any medical treatment of affected employees, and any medical surveillance program implemented; and
- (iv) An analysis of the circumstances of the incident, and measures taken or to be taken, with specific completion dates, to avoid further similar releases.

CARCINOGEN STANDARD REPORT

Company: Prepared By:
 Plant Address: Title:
 Date:

Compound and Other Identifying Information	Description of Inplant Location of Regulated Area*	Number of Employees in Each Regulated Area*		Manner** In Which Compound is Present in Each Regulated Area*
		Area*	Normally Maintenance	

* See WAC (~~296-62-07308~~) 296-62-07304 for definition of "regulated area."

** Indicated whether manufactured, processed, used, repackaged, released, stored, or if otherwise handled (describe).

AMENDATORY SECTION (Amending WSR 12-24-071, filed 12/4/12, effective 1/4/13)

WAC 296-62-07314 Medical surveillance. (1) At no cost to the employee, a program of medical surveillance must be established and implemented for employees considered for assignment to enter regulated areas, and for authorized employees.

(2) Examinations.

(a) Before an employee is assigned to enter a regulated area, a preassignment physical examination by a physician must be provided and must include a personal history of the employee and/or (~~his/her~~) **their** family and occupational background, including genetic and environmental factors.

(i) Taking of employees' medical history and background history must be considered to be a routine part of standard medical practice.

(ii) This provision does not require "genetic testing" of any employee.

(iii) This provision does not require the exclusion of otherwise qualified employees from jobs on the basis of genetic factors.

(b) Authorized employees must be provided periodic physical examination, not less often than annually, following the preassignment examination.

(c) In all physical examinations, the examining physician must be requested to consider whether there exist conditions of increased risk, including reduced immunological competence, pregnancy, cigarette smoking, and those undergoing treatment with steroids or cytotoxic agents.

(3) Records.

(a) Employers of employees examined pursuant to this subdivision must maintain complete and accurate records of all such medical examinations. Records must be maintained for the duration of the employee's employment. The employer ~~((shall))~~ must ensure that medical records are maintained and made available in accordance with chapter 296-802 WAC, Employee medical and exposure records.

(b) Records required by this section must be provided upon request to employees, designated representatives, and the director in accordance with chapter 296-802 WAC.

(c) Any employer who requests a physical examination of an employee or prospective employee as required by this section must obtain from the physician a statement of the employee's suitability for employment in the specific exposure.

AMENDATORY SECTION (Amending WSR 80-17-014, filed 11/13/80)**WAC 296-62-07316 Premixed solutions.** ~~((+))~~

Where 4,4'-Methylene bis (2-chloroaniline) is present only in a single solution at a temperature not exceeding 220°F. the establishment of a regulated area is not required; however ~~((+))~~:

~~((+))~~ (1) Only authorized employees shall be permitted to handle such materials.

~~((+))~~ (2) Each day employees ~~((shall))~~ must be provided with and required to wear a clean change of protective clothing (smocks, coveralls, or long-sleeved shirts and pants), gloves and other protective garments and equipment necessary to prevent contact with the solution in the process used.

~~((+))~~ (3) Employees ~~((shall be required to))~~ must remove and leave protective clothing and equipment when leaving the work area at the end of the work day, or at any time solution is spilled on such clothing or equipment. Used clothing and equipment ~~((shall))~~ must be placed in impervious containers for purposes of decontamination or disposal. The contents of such impervious containers ~~((shall))~~ must be identified, as required under WAC 296-62-07310 (2) ~~((;))~~ and (3) ~~((and (4)))~~.

~~((+))~~ (4) Employees ~~((shall be required to))~~ must wash hands and face after removing such clothing and equipment and before engaging in other activities.

~~((+))~~ (5) Employees assigned to work covered by this section ~~((shall))~~ must be deemed to be working in regulated areas for the purposes of WAC 296-62-07308 (1), (2)(a) and (b), and (3)(c) and (d), 296-62-07310, 296-62-07312 and 296-62-07314.

~~((+))~~ (6) Work areas where solution may be spilled ~~((shall))~~ must be:

~~((+))~~ (a) Covered daily or after any spill with a clean covering; or

~~((+))~~ (b) Clean thoroughly, daily and after any spill.

AMENDATORY SECTION (Amending WSR 14-07-086, filed 3/18/14, effective 5/1/14)

WAC 296-62-07329 Vinyl chloride. (1) Scope and application.

(a) This section includes requirements for the control of employee exposure to vinyl chloride (chloroethene), Chemical Abstracts Service Registry No. 75014.

(b) This section applies to the manufacture, reaction, packaging, repackaging, storage, handling or use of vinyl chloride or polyvinyl chloride, but does not apply to the handling or use of fabricated products made of polyvinyl chloride.

(c) This section applies to the transportation of vinyl chloride or polyvinyl chloride except to the extent that the department of transportation may regulate the hazards covered by this section.

(2) Definitions.

(a) ~~(("Action level" means))~~ **Action level.** A concentration of vinyl chloride of 0.5 ppm averaged over an eight-hour work day.

(b) ~~(("Authorized person" means))~~ **Authorized person.** Any person specifically authorized by the employer whose duties require ~~((him/her))~~ them to enter a regulated area or any person entering such an area as a designated representative of employees for the purpose of exercising an opportunity to observe monitoring and measuring procedures.

(c) ~~(("Director" means))~~ **Director.** The director of department of labor and industries or ~~((his/her))~~ their designated representative.

(d) ~~(("Emergency" means))~~ **Emergency.** A any occurrence such as, but not limited to, equipment failure, or operation of a relief device which is likely to, or does, result in massive release of vinyl chloride.

(e) ~~(("Fabricated product" means))~~ **Fabricated product.** A product made wholly or partly from polyvinyl chloride, and which does not require further processing at temperatures, and for times, sufficient to cause mass melting of the polyvinyl chloride resulting in the release of vinyl chloride.

(f) ~~(("Hazardous operation" means))~~ **Hazardous operation.** Any operation, procedure, or activity where a release of either vinyl chloride liquid or gas might be expected as a consequence of the operation or because of an accident in the operation, which would result in an employee exposure in excess of the permissible exposure limit.

(g) ~~(("Polyvinyl chloride" means))~~ **Polyvinyl chloride.** Polyvinyl chloride homopolymer or copolymer before such is converted to a fabricated product.

(h) ~~(("Vinyl chloride" means))~~ **Vinyl chloride.** Vinyl chloride monomer.

(3) Permissible exposure limit.

(a) No employee may be exposed to vinyl chloride at concentrations greater than 1 ppm averaged over any 8-hour period, and

(b) No employee may be exposed to vinyl chloride at concentrations greater than 5 ppm averaged over any period not exceeding 15 minutes.

(c) No employee may be exposed to vinyl chloride by direct contact with liquid vinyl chloride.

(4) Monitoring.

(a) A program of initial monitoring and measurement ~~((shall))~~ must be undertaken in each establishment to determine if there is any employee exposed, without regard to the use of respirators, in excess of the action level.

(b) Where a determination conducted under subdivision (a) of this subsection shows any employee exposures without regard to the use of respirators, in excess of the action level, a program for determining exposures for each such employee ~~((shall))~~ must be established. Such a program:

(i) ~~((shall))~~ Must be repeated at least monthly where any employee is exposed, without regard to the use of respirators, in excess of the permissible exposure limit.

(ii) ~~((shall))~~ Must be repeated not less than quarterly where any employee is exposed, without regard to the use of respirators, in excess of the action level.

(iii) May be discontinued for any employee only when at least two consecutive monitoring determinations, made not less than five working days apart, show exposures for that employee at or below the action level.

(c) Whenever there has been a production, process or control change which may result in an increase in the release of vinyl chloride, or the employer has any other reason to suspect that any employee may be exposed in excess of the action level, a determination of employee exposure under subdivision (a) of this subsection ~~((shall))~~ must be performed.

(d) The method of monitoring and measurement ~~((shall))~~ must have an accuracy (with a confidence level of 95 percent) of not less than plus or minus fifty percent from 0.25 through 0.5 ppm, plus or minus thirty-five percent from over 0.5 ppm through 1.0 ppm, plus or minus twenty-five percent over 1.0 ppm, (methods meeting these accuracy requirements are available from the director).

(e) Employees or their designated representatives ~~((shall))~~ must be afforded reasonable opportunity to observe the monitoring and measuring required by this subsection.

(5) Regulated area.

(a) A regulated area ~~((shall))~~ must be established where:

(i) Vinyl chloride or polyvinyl chloride is manufactured, reacted, repackaged, stored, handled or used; and

(ii) Vinyl chloride concentrations are in excess of the permissible exposure limit.

(b) Access to regulated areas ~~((shall))~~ must be limited to authorized persons.

(6) Methods of compliance. Employee exposures to vinyl chloride ~~((shall))~~ must be controlled to at or below the permissible exposure limit provided in subsection (3) of this section by engineering, work practice, and personal protective controls as follows:

(a) Feasible engineering and work practice controls ~~((shall))~~ must immediately be used to reduce exposures to at or below the permissible exposure limit.

(b) Wherever feasible engineering and work practice controls which can be instituted immediately are not sufficient to reduce exposures to at or below the permissible exposure limit, they ~~((shall))~~ must nonetheless be used to reduce exposures to the lowest practicable level, and ~~((shall))~~ must be supplemented by respiratory protection in accordance with subsection (7) of this section. A program ~~((shall))~~ must be established and implemented to reduce exposures to at or

below the permissible exposure limit, or to the greatest extent feasible, solely by means of engineering and work practice controls, as soon as feasible.

(c) Written plans for such a program ~~((shall))~~ must be developed and furnished upon request for examination and copying to the director. Such plans ~~((shall))~~ must be updated at least every six months.

(7) Respiratory protection.

(a) General. For employees who use respirators required by this section, the employer must provide each employee an appropriate respirator that complies with the requirements of this section.

(b) Respirator program. The employer must develop, implement, and maintain a respiratory protection program as required in chapter 296-842 WAC, Respirators, which covers each employee required by this chapter to use a respirator. Exception: The requirements in WAC 296-842-13005 that address change out of vapor or gas respirator cartridges or canisters.

(c) Respirator selection. The employer must:

(i) Select and provide to employees appropriate respirators as specified in this section and WAC 296-842-13005 in the respirator rule.

(ii) Provide organic vapor cartridges that have a service life of at least one hour when employees use air-purifying respirators in vinyl chloride concentrations up to 10 parts per million (ppm).

(iii) Make sure the following respirators, when selected, are equipped with a canister with a service life of at least four hours when used in vinyl chloride concentrations up to 25 ppm:

(A) Helmet, hood, or full-facepiece PAPRs; or

(B) Gas masks with a front- or back-mounted canister.

(d) Where air-purifying respirators are used:

(i) Air-purifying canisters or cartridges must be replaced prior to the expiration of their service life or the end of the shift in which they are first used, whichever occurs first, and

(ii) A continuous monitoring and alarm system must be provided when concentrations of vinyl chloride could reasonably exceed the allowable concentrations for the devices in use. Such system ~~((shall))~~ must be used to alert employees when vinyl chloride concentrations exceed the allowable concentrations for the devices in use, and

(iii) Respirators specified for higher concentrations may be used for lower concentration.

(8) Hazardous operations.

(a) Employees engaged in hazardous operations, including entry of vessels to clean polyvinyl chloride residue from vessel walls, ~~((shall))~~ must be provided and required to wear and use;

(i) Respiratory protection in accordance with subsections (3) and (7) of this section; and

(ii) Protective garments to prevent skin contact with liquid vinyl chloride or with polyvinyl chloride residue from vessel walls. The protective garments ~~((shall))~~ must be selected for the operation and its possible exposure conditions.

(b) Protective garments ~~((shall))~~ must be provided clean and dry for each use.

(c) Emergency situations. A written operational plan for emergency situations ((shall)) must be developed for each facility storing, handling, or otherwise using vinyl chloride as a liquid or compressed gas. Appropriate portions of the plan ((shall)) must be implemented in the event of an emergency. The plan ((shall)) must specifically provide that:

(i) Employees engaged in hazardous operations or correcting situations of existing hazardous releases ((shall)) must be equipped as required in (a) and (b) of this subsection;

(ii) Other employees not so equipped ((shall)) must evacuate the area and not return until conditions are controlled by the methods required in subsection (6) of this section and the emergency is abated.

(9) Training. Each employee engaged in vinyl chloride or polyvinyl chloride operations ((shall)) must be provided training in a program relating to the hazards of vinyl chloride and precautions for its safe use.

(a) The program ((shall)) must include:

(i) The nature of the health hazard from chronic exposure to vinyl chloride including specifically the carcinogenic hazard;

(ii) The specific nature of operations which could result in exposure to vinyl chloride in excess of the permissible limit and necessary protective steps;

(iii) The purpose for, proper use, and limitations of respiratory protective devices;

(iv) The fire hazard and acute toxicity of vinyl chloride, and the necessary protective steps;

(v) The purpose for and a description of the monitoring program;

(vi) The purpose for and a description of, the medical surveillance program;

(vii) Emergency procedures:

(A) Specific information to aid the employee in recognition of conditions which may result in the release of vinyl chloride; and

(B) A review of this standard at the employee's first training and indoctrination program, and annually thereafter.

(b) All materials relating to the program ((shall)) must be provided upon request to the director.

(10) Medical surveillance. A program of medical surveillance ((shall)) must be instituted for each employee exposed, without regard to the use of respirators, to vinyl chloride in excess of the action level. The program ((shall)) must provide each such employee with an opportunity for examinations and tests in accordance with this subsection. All medical examinations and procedures ((shall)) must be performed by or under the supervision of a licensed physician and ((shall)) must be provided without cost to the employee.

(a) At the time of initial assignment, or upon institution of medical surveillance;

(i) A general physical examination ((shall)) must be performed with specific attention to detecting enlargement of liver, spleen or kidneys, or dysfunction in these organs, and for abnormalities in skin, connective tissues and the pulmonary system (see Appendix A).

(ii) A medical history ((shall)) must be taken, including the following topics:

(A) Alcohol intake,

(B) Past history of hepatitis,

(C) Work history and past exposure to potential hepatotoxic agents, including drugs and chemicals,

(D) Past history of blood transfusions, and

(E) Past history of hospitalizations.

(iii) A serum specimen ((shall)) must be obtained and determinations made of:

(A) Total bilirubin,

(B) Alkaline phosphatase,

(C) Serum glutamic oxalacetic transaminase (SGOT),

(D) Serum glutamic pyruvic transaminase (SGPT), and

(E) Gamma glutamyl transpeptidase.

(b) Examinations provided in accordance with this subdivision ((shall)) must be performed at least:

(i) Every six months for each employee who has been employed in vinyl chloride or polyvinyl chloride manufacturing for ten years or longer; and

(ii) Annually for all other employees.

(c) Each employee exposed to an emergency ((shall)) must be afforded appropriate medical surveillance.

(d) A statement of each employee's suitability for continued exposure to vinyl chloride including use of protective equipment and respirators, ((shall)) must be obtained from the examining physician promptly after any examination. A copy of the physician's statement ((shall)) must be provided each employee.

(e) If any employee's health would be materially impaired by continued exposure, such employee ((shall)) must be withdrawn from possible contact with vinyl chloride.

(f) Laboratory analyses for all biological specimens included in medical examinations ((shall)) must be performed in laboratories licensed under 42 C.F.R. Part 74.

(g) If the examining physician determines that alternative medical examinations to those required by (a) of this subsection will provide at least equal assurance of detecting medical conditions pertinent to the exposure to vinyl chloride, the employer may accept such alternative examinations as meeting the requirements of (a) of this subsection, if the employer obtains a statement from the examining physician setting forth the alternative examinations and the rationale for substitution. This statement ((shall)) must be available upon request for examination and copying to authorized representatives of the director.

(11) Communication of hazards.

(a) Hazard communication - General.

(b) Chemical manufacturers, importers, distributors and employers ((shall)) must comply with all requirements of the Hazard Communication Standard (HCS), WAC 296-901-140 for vinyl chloride and polyvinyl chloride.

(c) In classifying the hazards of vinyl chloride at least the following hazards are to be addressed: Cancer; central nervous system effects; liver effects; blood effects; and flammability.

(d) Employers ((shall)) must include vinyl chloride in the hazard communication program established to comply with the HCS, WAC 296-901-140. Employers ((shall)) must ensure that each employee has access to labels on containers of vinyl chloride and to safety data sheets, and is trained in accordance with the requirements of HCS and subsection (9) of this section.

(12) Signs.

(a) The employers ~~((shall))~~ must post entrances to regulated areas with legible signs bearing the legend:

DANGER
VINYL CHLORIDE
MAY CAUSE CANCER
AUTHORIZED PERSONNEL ONLY

(b) The employer ~~((shall))~~ must post signs at areas containing hazardous operations or where emergencies currently exist. The signs ~~((shall))~~ must be legible and bear the legend:

DANGER
VINYL CHLORIDE
MAY CAUSE CANCER
WEAR RESPIRATORY PROTECTION AND PROTECTIVE CLOTHING
IN THIS AREA
AUTHORIZED PERSONNEL ONLY

~~((c)) Prior to June 1, 2016, employers may use the following legend in lieu of that specified in (a) of this subsection:~~

CANCER-SUSPECT AGENT IN THIS AREA PROTECTIVE EQUIPMENT REQUIRED AUTHORIZED PERSONNEL ONLY

~~(d) Prior to June 1, 2016, employers may use the following legend in lieu of that specified in (b) of this subsection:~~

CANCER-SUSPECT AGENT IN THIS AREA
PROTECTIVE EQUIPMENT REQUIRED
AUTHORIZED PERSONNEL ONLY))

(13) Labels.

(a) In addition to the other requirements in this section, the employer ~~((shall))~~ must ensure that labels for containers of polyvinyl chloride resin waste from reactors or other waste contaminated with vinyl chloride are legible and include the following information:

CONTAMINATED WITH VINYL CHLORIDE MAY CAUSE CANCER

~~(b) ((Prior to June 1, 2015, employers may include the following information on labels of containers of polyvinyl chloride resin waste from reactors or other waste contaminated with vinyl chloride in lieu of the labeling requirements in (a) of this subsection:~~

CONTAMINATED WITH VINYL CHLORIDE
CANCER-SUSPECT AGENT

~~(c) Prior to June 1, 2015, employers may include the following information for containers of polyvinyl chloride in lieu of the labeling requirements in subsection (11)(b) of this section:~~

POLYVINYL CHLORIDE (OR TRADE NAME) CONTAINS VINYL CHLORIDE VINYL CHLORIDE IS A CANCER-SUSPECT AGENT

~~(d) Containers of vinyl chloride shall be legibly labeled either:~~

~~(i) Prior to June 1, 2015, employers may include either the following information in either subsection (13)(d)(i) or (ii) of this section on containers of vinyl chloride in lieu of the labeling requirements in subsection (11)(b) of this section:~~

VINYL CHLORIDE EXTREMELY FLAMMABLE GAS UNDER PRESSURE CANCER-SUSPECT AGENT

~~(or)~~

~~(ii) In accordance with 49 C.F.R. Parts 170-189, with the additional legend applied near the label or placard:~~

CANCER-SUSPECT AGENT

~~(e))~~ No statement shall appear on or near any required sign, label, or instruction which contradicts or detracts from the effect of any required warning, information, or instruction.

(14) Records.

(a) All records maintained in accordance with this section ~~((shall))~~ must include the name and Social Security number of each employee where relevant.

(b) Records of required monitoring and measuring and medical records ~~((shall))~~ must be provided upon request to employees, designated representatives, and the director in accordance with chapter 296-802 WAC. These records ~~((shall))~~ must be provided upon request to the director. Authorized personnel rosters ~~((shall))~~ must also be provided upon request to the director.

(i) Monitoring and measuring records ~~((shall))~~ must:

(A) State the date of such monitoring and measuring and the concentrations determined and identify the instruments and methods used;

(B) Include any additional information necessary to determine individual employee exposures where such exposures are determined by means other than individual monitoring of employees; and

(C) Be maintained for not less than 30 years.

(ii) Medical records ~~((shall))~~ must be maintained for the duration of the employment of each employee plus 20 years, or 30 years, whichever is longer.

(c) The employer ~~((shall))~~ must comply with any additional requirements set forth in chapter 296-802 WAC.

(d) Employees or their designated representatives ~~((shall))~~ must be provided access to examine and copy records of required monitoring and measuring.

(e) Former employees ~~((shall))~~ must be provided access to examine and copy required monitoring and measuring records reflecting their own exposures.

(f) Upon written request of any employee, a copy of the medical record of that employee ~~((shall))~~ must be furnished to any physician designated by the employee.

(15) Reports.

(a) Not later than 1 month after the establishment of a regulated area, the following information ~~((shall))~~ must be reported to the director. Any changes to such information ~~((shall))~~ must be reported within fifteen days.

(i) The address and location of each establishment which has one or more regulated areas; and

(ii) The number of employees in each regulated area during normal operations, including maintenance.

(b) Emergencies and the facts obtainable at that time, ~~((shall))~~ must be reported within twenty-four hours to the director. Upon request of the director, the employer ~~((shall))~~ must submit additional information in writing relevant to the

nature and extent of employee exposures and measures taken to prevent future emergencies of similar nature.

(c) Within ten working days following any monitoring and measuring which discloses that any employee has been exposed, without regard to the use of respirators, in excess of the permissible exposure limit, each such employee ~~((shall))~~ must be notified in writing of the results of the exposure measurement and the steps being taken to reduce the exposure to within the permissible exposure limit.

(16) Appendix A supplementary medical information.

When required tests under subsection (10)(a) of this section show abnormalities, the tests should be repeated as soon as practicable, preferably within three to four weeks. If tests remain abnormal, consideration should be given to withdrawal of the employee from contact with vinyl chloride, while a more comprehensive examination is made.

Additional tests which may be useful:

(a) For kidney dysfunction: Urine examination for albumin, red blood cells, and exfoliative abnormal cells.

(b) Pulmonary system: Forced vital capacity, forced expiratory volume at one second, and chest roentgenogram (posterior-anterior, 14 x 17 inches).

(c) Additional serum tests: Lactic acid dehydrogenase, lactic acid dehydrogenase isoenzyme, protein determination, and protein electrophoresis.

(d) For a more comprehensive examination on repeated abnormal serum tests: Hepatitis B antigen, and liver scanning.

AMENDATORY SECTION (Amending WSR 14-07-086, filed 3/18/14, effective 5/1/14)

WAC 296-62-07336 Acrylonitrile. (1) Scope and application.

(a) This section applies to all occupational exposure to acrylonitrile (AN), Chemical Abstracts Service Registry No. 000107131, except as provided in (b) and (c) of this subsection.

(b) This section does not apply to exposures which result solely from the processing, use, and handling of the following materials:

(i) ABS resins, SAN resins, nitrile barrier resins, solid nitrile elastomers, and acrylic and modacrylic fibers, when these listed materials are in the form of finished polymers, and products fabricated from such finished polymers;

(ii) Materials made from and/or containing AN for which objective data is reasonably relied upon to demonstrate that the material is not capable of releasing AN in airborne concentrations in excess of 1 ppm as an eight-hour time-weighted average, under the expected conditions of processing, use, and handling which will cause the greatest possible release; and

(iii) Solid materials made from and/or containing AN which will not be heated above 170°F during handling, use, or processing.

(c) An employer relying upon exemption under (1)(b)(ii) ~~((shall))~~ must maintain records of the objective data supporting that exemption, and of the basis of the employer's reliance on the data as provided in subsection (17) of this section.

(2) Definitions, as applicable to this section:

(a) ~~((“Acrylonitrile” or “AN”--))~~ **Acrylonitrile or AN.** Acrylonitrile monomer, chemical formula CH₂=CHCN.

(b) ~~((“Action level”--))~~ **Action level.** A concentration of AN of 1 ppm as an eight-hour time-weighted average.

(c) ~~((“Authorized person”--))~~ **Authorized person.** Any person specifically authorized by the employer whose duties require the person to enter a regulated area, or any person entering such an area as a designated representative of employees for the purpose of exercising the opportunity to observe monitoring procedures under subsection (18) of this section.

(d) ~~((“Decontamination” means))~~ **Decontamination.** Treatment of materials and surfaces by water washdown, ventilation, or other means, to ~~((assure))~~ ensure that the materials will not expose employees to airborne concentrations of AN above 1 ppm as an eight-hour time-weighted average.

(e) ~~((“Director”--))~~ **Director.** The director of labor and industries, or ~~((his))~~ their authorized representative.

(f) ~~((“Emergency”--))~~ **Emergency.** Any occurrence such as, but not limited to, equipment failure, rupture of containers, or failure of control equipment, which is likely to, or does, result in unexpected exposure to AN in excess of the ceiling limit.

(g) ~~((“Liquid AN” means))~~ **Liquid AN.** AN monomer in liquid form, and liquid or semiliquid polymer intermediates, including slurries, suspensions, emulsions, and solutions, produced during the polymerization of AN.

(h) ~~((“Polyacrylonitrile” or “PAN”--))~~ **Polyacrylonitrile or PAN.** Polyacrylonitrile homopolymers or copolymers, except for materials as exempted under subsection (1)(b) of this section.

(3) Permissible exposure limits.

(a) Inhalation.

(i) Time-weighted average limit (TWA). The employer ~~((shall assure))~~ must ensure that no employee is exposed to an airborne concentration of acrylonitrile in excess of two parts acrylonitrile per million parts of air (2 ppm), as an eight-hour time-weighted average.

(ii) Ceiling limit. The employer ~~((shall assure))~~ must ensure that no employee is exposed to an airborne concentration of acrylonitrile in excess of 10 ppm as averaged over any fifteen-minute period during the working day.

(b) Dermal and eye exposure. The employer ~~((shall assure))~~ must ensure that no employee is exposed to skin contact or eye contact with liquid AN or PAN.

(4) Notification of use and emergencies.

(a) Use. Within ten days of the effective date of this standard, or within fifteen days following the introduction of AN into the workplace, every employer ~~((shall))~~ must report, unless he has done so pursuant to the emergency temporary standard, the following information to the director for each such workplace:

(i) The address and location of each workplace in which AN is present;

(ii) A brief description of each process of operation which may result in employee exposure to AN;

(iii) The number of employees engaged in each process or operation who may be exposed to AN and an estimate of the frequency and degree of exposure that occurs; and

(iv) A brief description of the employer's safety and health program as it relates to limitation of employee exposure to AN. Whenever there has been a significant change in the information required by this subsection, the employer ~~((shall))~~ must promptly amend such information previously provided to the director.

(b) Emergencies and remedial action. Emergencies, and the facts obtainable at that time, ~~((shall))~~ must be reported within twenty-four hours of the initial occurrence to the director. Upon request of the director, the employer ~~((shall))~~ must submit additional information in writing relevant to the nature and extent of employee exposures and measures taken to prevent future emergencies of a similar nature.

(5) Exposure monitoring.

(a) General.

(i) Determinations of airborne exposure levels ~~((shall))~~ must be made from air samples that are representative of each employee's exposure to AN over an eight-hour period.

(ii) For the purposes of this section, employee exposure is that which would occur if the employee were not using a respirator.

(b) Initial monitoring. Each employer who has a place of employment in which AN is present ~~((shall))~~ must monitor each such workplace and work operation to accurately determine the airborne concentrations of AN to which employees may be exposed. Such monitoring may be done on a representative basis, provided that the employer can demonstrate that the determinations are representative of employee exposures.

(c) Frequency.

(i) If the monitoring required by this section reveals employee exposure to be below the action level, the employer may discontinue monitoring for that employee. The employer ~~((shall))~~ must continue these quarterly measurements until at least two consecutive measurements taken at least seven days apart, are below the action level, and thereafter the employer may discontinue monitoring for that employee.

(ii) If the monitoring required by this section reveals employee exposure to be at or above the action level but below the permissible exposure limits, the employer ~~((shall))~~ must repeat such monitoring for each such employee at least quarterly.

(iii) If the monitoring required by this section reveals employee exposure to be in excess of the permissible exposure limits, the employer ~~((shall))~~ must repeat these determinations for each such employee at least monthly. The employer ~~((shall))~~ must continue these monthly measurements until at least two consecutive measurements, taken at least seven days apart, are below the permissible exposure limits, and thereafter the employer ~~((shall))~~ must monitor at least quarterly.

(d) Additional monitoring. Whenever there has been a production, process, control or personnel change which may result in new or additional exposure to AN, or whenever the employer has any other reason to suspect a change which may result in new or additional exposures to AN, additional monitoring which complies with this subsection ~~((shall))~~ must be conducted.

(e) Employee notification.

(i) Within five working days after the receipt of monitoring results, the employer ~~((shall))~~ must notify each employee in writing of the results which represent that employee's exposure.

(ii) Whenever the results indicate that the representative employee exposure exceeds the permissible exposure limits, the employer ~~((shall))~~ must include in the written notice a statement that the permissible exposure limits were exceeded and a description of the corrective action being taken to reduce exposure to or below the permissible exposure limits.

(f) Accuracy of measurement. The method of measurement of employee exposures ~~((shall))~~ must be accurate, to a confidence level of ninety-five percent, to within plus or minus twenty-five percent for concentrations of AN at or above the permissible exposure limits, and plus or minus thirty-five percent for concentrations of AN between the action level and the permissible exposure limits.

(g) Weekly survey of operations involving liquid AN. In addition to monitoring of employee exposures to AN as otherwise required by this subsection, the employer ~~((shall))~~ must survey areas of operations involving liquid AN at least weekly to detect points where AN liquid or vapor are being released into the workplace. The survey ~~((shall))~~ must employ an infra-red gas analyzer calibrated for AN, a multi-point gas chromatographic monitor, or comparable system for detection of AN. A listing of levels detected and areas of AN release, as determined from the survey, ~~((shall))~~ must be posted prominently in the workplace, and ~~((shall))~~ must remain posted until the next survey is completed.

(6) Regulated areas.

(a) The employer ~~((shall))~~ must establish regulated areas where AN concentrations are in excess of the permissible exposure limits.

(b) Regulated areas ~~((shall))~~ must be demarcated and segregated from the rest of the workplace, in any manner that minimizes the number of persons who will be exposed to AN.

(c) Access to regulated areas ~~((shall))~~ must be limited to authorized persons or to persons otherwise authorized by the act or regulations issued pursuant thereto.

(d) The employer ~~((shall assure))~~ must ensure that in the regulated area, food or beverages are not present or consumed, smoking products are not present or used, and cosmetics are not applied, (except that these activities may be conducted in the lunchrooms, change rooms and showers required under subsection (13)(a) through (c) of this section.

(7) Methods of compliance.

(a) Engineering and work practice controls.

(i) The employer ~~((shall))~~ must institute engineering or work practice controls to reduce and maintain employee exposures to AN, to or below the permissible exposure limits, except to the extent that the employer establishes that such controls are not feasible.

(ii) Wherever the engineering and work practice controls which can be instituted are not sufficient to reduce employee exposures to or below the permissible exposure limits, the employer ~~((shall))~~ must nonetheless use them to reduce exposures to the lowest levels achievable by these controls and ~~((shall))~~ must supplement them by the use of respiratory pro-

tection which complies with the requirements of subsection (8) of this section.

(b) Compliance program.

(i) The employer ~~((shall))~~ must establish and implement a written program to reduce employee exposures to or below the permissible exposure limits solely by means of engineering and work practice controls, as required by subsection (7)(a) of this section.

(ii) Written plans for these compliance programs ~~((shall))~~ must include at least the following:

(A) A description of each operation or process resulting in employee exposure to AN above the permissible exposure limits;

(B) Engineering plans and other studies used to determine the controls for each process;

(C) A report of the technology considered in meeting the permissible exposure limits;

(D) A detailed schedule for the implementation of engineering or work practice controls; and

(E) Other relevant information.

(iii) The employer ~~((shall))~~ must complete the steps set forth in the compliance program by the dates in the schedule.

(iv) Written plans for such a program ~~((shall))~~ must be submitted upon request to the director, and ~~((shall))~~ must be available at the worksite for examination and copying by the director, or any affected employee or representative.

(v) The plans required by this subsection ~~((shall))~~ must be revised and updated at least every six months to reflect the current status of the program.

(8) Respiratory protection.

(a) General. For employees who use respirators required by this section, the employer must provide each employee an appropriate respirator that complies with the requirements of this subsection. Respirators must be used during:

(i) Periods necessary to install or implement feasible engineering and work-practice controls;

(ii) Work operations, such as maintenance and repair activities or reactor cleaning, for which the employer establishes that engineering and work-practice controls are not feasible;

(iii) Work operations for which feasible engineering and work-practice controls are not yet sufficient to reduce employee exposure to or below the permissible exposure limits;

(iv) In emergencies.

(b) Respirator program.

Employers must develop, implement and maintain a respiratory protection program in accordance with chapter 296-842 WAC, Respirators, which covers each employee required by this chapter to use a respirator.

(c) Respirator selection. The employer must:

(i) Select and provide to employees appropriate respirators by following the requirements in this section and WAC 296-842-13005 in the respirator rule.

(ii) Provide to employees, for escape, any organic vapor, air-purifying respirator or any self-contained breathing apparatus (SCBA) that meets the selection requirements of WAC 296-842-13005 in the respirator rule.

(9) Emergency situations.

(a) Written plans.

(i) A written plan for emergency situations ~~((shall))~~ must be developed for each workplace where AN is present. Appropriate portions of the plan ~~((shall))~~ must be implemented in the event of an emergency.

(ii) The plan ~~((shall))~~ must specifically provide that employees engaged in correcting emergency conditions ~~((shall))~~ must be equipped as required in subsection (8) of this section until the emergency is abated.

(b) Alerting employees.

(i) Where there is the possibility of employee exposure to AN in excess of the ceiling limit due to the occurrence of an emergency, a general alarm ~~((shall))~~ must be installed and maintained to promptly alert employees of such occurrences.

(ii) Employees not engaged in correcting the emergency ~~((shall))~~ must be evacuated from the area and ~~((shall))~~ must not be permitted to return until the emergency is abated.

(10) Protective clothing and equipment.

(a) Provision and use. Where eye or skin contact with liquid AN or PAN may occur, the employer ~~((shall))~~ must provide at no cost to the employee, and ~~((assure))~~ ensure that employees wear, appropriate protective clothing or other equipment in accordance with WAC 296-800-160 to protect any area of the body which may come in contact with liquid AN or PAN.

(b) Cleaning and replacement.

(i) The employer ~~((shall))~~ must clean, launder, maintain, or replace protective clothing and equipment required by this subsection, as needed to maintain their effectiveness. In addition, the employer ~~((shall))~~ must provide clean protective clothing and equipment at least weekly to each affected employee.

(ii) The employer ~~((shall-assure))~~ must ensure that impermeable protective clothing which contacts or is likely to have contacted liquid AN ~~((shall))~~ must be decontaminated before being removed by the employee.

(iii) The employer ~~((shall-assure))~~ must ensure that AN- or PAN-contaminated protective clothing and equipment is placed and stored in closable containers which prevent dispersion of the AN or PAN outside the container.

(iv) The employer ~~((shall-assure))~~ must ensure that an employee whose nonimpermeable clothing becomes wetted with liquid AN ~~((shall))~~ must immediately remove that clothing and proceed to shower. The clothing ~~((shall))~~ must be decontaminated before it is removed from the regulated area.

(v) The employer ~~((shall-assure))~~ must ensure that no employee removes AN- or PAN-contaminated protective equipment or clothing from the change room, except for those employees authorized to do so for the purpose of laundering, maintenance, or disposal.

(vi) The employer ~~((shall))~~ must inform any person who launders or cleans AN- or PAN-contaminated protective clothing or equipment of the potentially harmful effects of exposure to AN.

(vii) The employer ~~((shall-assure))~~ must ensure that containers of contaminated protective clothing and equipment which are to be removed from the workplace for any reason are labeled in accordance with subsection (16)(c)(ii) of this

section, and that such labels remain affixed when such containers leave the employer's workplace.

(11) Housekeeping.

(a) All surfaces ~~((shall))~~ must be maintained free of accumulations of liquid AN and of PAN.

(b) For operations involving liquid AN, the employer ~~((shall))~~ must institute a program for detecting leaks and spills of liquid AN, including regular visual inspections.

(c) Where spills of liquid AN are detected, the employer ~~((shall assure))~~ must ensure that surfaces contacted by the liquid AN are decontaminated. Employees not engaged in decontamination activities ~~((shall))~~ must leave the area of the spill, and shall not be permitted in the area until decontamination is completed.

(d) Liquids. Where AN is present in a liquid form, or as a resultant vapor, all containers or vessels containing AN ~~((shall))~~ must be enclosed to the maximum extent feasible and tightly covered when not in use, with adequate provision made to avoid any resulting potential explosion hazard.

(e) Surfaces.

(i) Dry sweeping and the use of compressed air for the cleaning of floors and other surfaces where AN and PAN are found is prohibited.

(ii) Where vacuuming methods are selected, either portable units or a permanent system may be used.

(A) If a portable unit is selected, the exhaust ~~((shall))~~ must be attached to the general workplace exhaust ventilation system or collected within the vacuum unit, equipped with high efficiency filters or other appropriate means of contaminant removal, so that AN is not reintroduced into the workplace air; and

(B) Portable vacuum units used to collect AN may not be used for other cleaning purposes and ~~((shall))~~ must be labeled as prescribed by subsection (16)(c)(ii) of this section.

(iii) Cleaning of floors and other contaminated surfaces may not be performed by washing down with a hose, unless a fine spray has first been laid down.

(12) Waste disposal. AN and PAN waste, scrap, debris, bags, containers or equipment, ~~((shall))~~ must be disposed of in sealed bags or other closed containers which prevent dispersion of AN outside the container, and labeled as prescribed in subsection (16)(c)(ii) of this section.

(13) Hygiene facilities and practices. Where employees are exposed to airborne concentrations of AN above the permissible exposure limits, or where employees are required to wear protective clothing or equipment pursuant to subsection (11) of this section, or where otherwise found to be appropriate, the facilities required by WAC 296-800-230 ~~((shall))~~ must be provided by the employer for the use of those employees, and the employer ~~((shall assure))~~ must ensure that the employees use the facilities provided. In addition, the following facilities or requirements are mandated.

(a) Change rooms. The employer ~~((shall))~~ must provide clean change rooms in accordance with WAC 296-800-230.

(b) Showers.

(i) The employer ~~((shall))~~ must provide shower facilities in accordance with WAC 296-800-230.

(ii) In addition, the employer ~~((shall))~~ must also ~~((assure))~~ ensure that employees exposed to liquid AN and PAN shower at the end of the work shift.

(ii) The employer ~~((shall assure))~~ must ensure that, in the event of skin or eye exposure to liquid AN, the affected employee ~~((shall))~~ must shower immediately to minimize the danger of skin absorption.

(c) Lunchrooms.

(i) Whenever food or beverages are consumed in the workplace, the employer ~~((shall))~~ must provide lunchroom facilities which have a temperature controlled, positive pressure, filtered air supply, and which are readily accessible to employees exposed to AN above the permissible exposure limits.

(ii) In addition, the employer ~~((shall))~~ must also ~~((assure))~~ ensure that employees exposed to AN above the permissible exposure limits wash their hands and face prior to eating.

(14) Medical surveillance.

(a) General.

(i) The employer ~~((shall))~~ must institute a program of medical surveillance for each employee who is or will be exposed to AN above the action level. The employer ~~((shall))~~ must provide each such employee with an opportunity for medical examinations and tests in accordance with this subsection.

(ii) The employer ~~((shall assure))~~ must ensure that all medical examinations and procedures are performed by or under the supervision of a licensed physician, and ~~((shall))~~ must be provided without cost to the employee.

(b) Initial examinations. At the time of initial assignment, or upon institution of the medical surveillance program, the employer ~~((shall))~~ must provide each affected employee an opportunity for a medical examination, including at least the following elements:

(i) A work history and medical history with special attention to skin, respiratory, and gastrointestinal systems, and those nonspecific symptoms, such as headache, nausea, vomiting, dizziness, weakness, or other central nervous system dysfunctions that may be associated with acute or chronic exposure to AN.

(ii) A physical examination giving particular attention to central nervous system, gastrointestinal system, respiratory system, skin and thyroid.

(iii) A 14" x 17" posteroanterior chest X-ray.

(iv) Further tests of the intestinal tract, including fecal occult blood screening, and proctosigmoidoscopy, for all workers forty years of age or older, and for any other affected employees for whom, in the opinion of the physician, such testing is appropriate.

(c) Periodic examinations.

(i) The employer ~~((shall))~~ must provide examinations specified in this subsection at least annually for all employees specified in subsection (14)(a) of this section.

(ii) If an employee has not had the examinations prescribed in subsection (14)(b) of this section within six months of termination of employment, the employer ~~((shall))~~ must make such examination available to the employee upon such termination.

(d) Additional examinations. If the employee for any reason develops signs or symptoms commonly associated with exposure to AN, the employer ~~((shall))~~ must provide appropriate examination and emergency medical treatment.

(e) Information provided to the physician. The employer ~~((shall))~~ must provide the following information to the examining physician:

- (i) A copy of this standard and its appendices;
- (ii) A description of the affected employee's duties as they relate to the employee's exposure;
- (iii) The employee's representative exposure level;
- (iv) The employee's anticipated or estimated exposure level (for preplacement examinations or in cases of exposure due to an emergency);
- (v) A description of any personal protective equipment used or to be used; and
- (vi) Information from previous medical examinations of the affected employee, which is not otherwise available to the examining physician.

(f) Physician's written opinion.

(i) The employer ~~((shall))~~ must obtain a written opinion from the examining physician which ~~((shall))~~ must include:

(A) The results of the medical examination and test performed;

(B) The physician's opinion as to whether the employee has any detected medical condition which would place the employee at an increased risk of material impairment of the employee's health from exposure to AN;

(C) Any recommended limitations upon the employee's exposure to AN or upon the use of protective clothing and equipment such as respirators; and

(D) A statement that the employee has been informed by the physician of the results of the medical examination and any medical conditions which require further examination or treatment.

(ii) The employer ~~((shall))~~ must instruct the physician not to reveal in the written opinion specific findings or diagnoses unrelated to occupational exposure to AN.

(iii) The employer ~~((shall))~~ must provide a copy of the written opinion to the affected employee.

(15) Employee information and training.

(a) Training program.

(i) The employer ~~((shall))~~ must train each employee exposed to AN above the action level, each employee whose exposures are maintained below the action level by engineering and work practice controls, and each employee subject to potential skin or eye contact with liquid AN in accordance with the requirements of this section. The employer ~~((shall))~~ must institute a training program and ensure employee participation in the training program.

(ii) The training program ~~((shall))~~ must be provided at the time of initial assignment, or upon institution of the training program, and at least annually thereafter, and the employer ~~((shall assure))~~ must ensure that each employee is informed of the following:

(A) The information contained in Appendices A, B and C;

(B) The quantity, location, manner of use, release or storage of AN and the specific nature of operations which could result in exposure to AN, as well as any necessary protective steps;

(C) The purpose, proper use, and limitations of respirators and protective clothing;

(D) The purpose and a description of the medical surveillance program required by subsection (14) of this section;

(E) The emergency procedures developed, as required by subsection (9) of this section; and

(F) The engineering and work practice controls, their function and the employee's relationship thereto; and

(G) A review of this standard.

(b) Access to training materials.

(i) The employer ~~((shall))~~ must make a copy of this standard and its appendices readily available to all affected employees.

(ii) The employer ~~((shall))~~ must provide, upon request, all materials relating to the employee information and training program to the director.

(16) Communication of hazards.

(a) Hazard communication - General.

(i) Chemical manufacturers, importers, distributors and employers ~~((shall))~~ must comply with all requirements of the Hazard Communication Standard (HCS), WAC 296-901-140 for AN and AN-based materials not exempted under subsection (1)(b) of this section.

(ii) In classifying the hazards of AN and AN-based materials at least the following hazards are to be addressed: Cancer; central nervous system effects; liver effects; skin sensitization; skin, respiratory, and eye irritation; acute toxicity effects; and flammability.

(iii) Employers ~~((shall))~~ must include AN and AN-based materials in the hazard communication program established to comply with the HCS, WAC 296-901-140. Employers ~~((shall))~~ must ensure that each employee has access to labels on containers of AN and AN-based materials and to safety data sheets, and is trained in accordance with the requirements of HCS and subsection (15) of this section.

(iv) The employer may use labels or signs required by other statutes, regulations, or ordinances in addition to, or in combination with, signs and labels required by this subsection.

(v) The employer ~~((shall))~~ must ensure that no statement appears on or near any sign or label, required by this subsection, that contradicts or detracts from the required sign or label.

(b) Signs.

(i) The employer ~~((shall))~~ must post signs to clearly indicate all workplaces where AN concentrations exceed the permissible exposure limits. The signs ~~((shall))~~ must bear the following legend:

DANGER
ACRYLONITRILE (AN)
MAY CAUSE CANCER
RESPIRATORY PROTECTION MAY BE REQUIRED IN THIS AREA
AUTHORIZED PERSONNEL ONLY

(ii) The employer ~~((shall))~~ must ensure that signs required by (b) of this subsection are illuminated and cleaned as necessary so that the legend is readily visible.

~~((iii) Prior to June 1, 2016, employers may use the following legend in lieu of that specified in (b)(i) of this subsection:~~

DANGER
ACRYLONITRILE (AN)
CANCER HAZARD
AUTHORIZED PERSONNEL ONLY
RESPIRATORS MAY BE REQUIRED))

(c) Labels.

(i) The employer ~~((shall))~~ must ensure that precautionary labels are in compliance with (a)(i) of this subsection and are affixed to all containers of liquid AN and AN-based materials not exempted under subsection (1)(b) of this section. The employer ~~((shall))~~ must ensure that the labels remain affixed when the materials are sold, distributed or otherwise leave the employer's workplace.

(ii) ~~((Prior to June 1, 2015, employers may include the following information on precautionary labels required by this subsection in lieu of the labeling requirements in (b)(i) of this subsection:~~

DANGER
CONTAINS ACRYLONITRILE (AN)
CANCER HAZARD

~~((iii)))~~ The employer ~~((shall))~~ must ensure that the precautionary labels required by (c) of this subsection are readily visible and legible.

(17) Recordkeeping.

(a) Objective data for exempted operations.

(i) Where the processing, use, and handling of products fabricated from PAN are exempted pursuant to subsection (1)(b) of this section, the employer ~~((shall))~~ must establish and maintain an accurate record of objective data reasonably relied upon in support of the exemption.

(ii) This record ~~((shall))~~ must include the following information:

(A) The relevant condition in subsection (1)(b) upon which exemption is based;

(B) The source of the objective data;

(C) The testing protocol, results of testing, and/or analysis of the material for the release of AN;

(D) A description of the operation exempted and how the data supports the exemption; and

(E) Other data relevant to the operations, materials, and processing covered by the exemption.

(iii) The employer ~~((shall))~~ must maintain this record for the duration of the employer's reliance upon such objective data.

(b) Exposure monitoring.

(i) The employer ~~((shall))~~ must establish and maintain an accurate record of all monitoring required by subsection (5) of this section.

(ii) This record ~~((shall))~~ must include:

(A) The dates, number, duration, and results of each of the samples taken, including a description of the sampling procedure used to determine representative employee exposure;

(B) A description of the sampling and analytical methods used and the data relied upon to establish that the methods used meet the accuracy and precision requirements of subsection (5)(f) of this section;

(C) Type of respiratory protective devices worn, if any; and

(D) Name, Social Security number and job classification of the employee monitored and of all other employees whose exposure the measurement is intended to represent.

(ii) The employer ~~((shall))~~ must maintain this record for at least ~~((40))~~ forty years or the duration of employment plus ~~((20))~~ twenty years, whichever is longer.

(c) Medical surveillance.

(i) The employer ~~((shall))~~ must establish and maintain an accurate record for each employee subject to medical surveillance as required by subsection (14) of this section.

(ii) This record ~~((shall))~~ must include:

(A) A copy of the physicians' written opinions;

(B) Any employee medical complaints related to exposure to AN;

(C) A copy of the information provided to the physician as required by subsection (14)(f) of this section; and

(D) A copy of the employee's medical and work history.

(iii) The employer ~~((shall assure))~~ must ensure that this record be maintained for at least forty years or for the duration of employment plus twenty years, whichever is longer.

(d) Availability.

(i) The employer ~~((shall assure))~~ must ensure that all records required to be maintained by this section be made available upon request to the director for examination and copying.

(ii) Records required by (a) through (c) of this subsection ~~((shall))~~ must be provided upon request to employees, designated representatives, and the assistant director in accordance with chapter 296-802 WAC. Records required by (a) of this subsection ~~((shall))~~ must be provided in the same manner as exposure monitoring records.

(iii) The employer ~~((shall assure))~~ must ensure that employee medical records required to be maintained by this section, be made available, upon request, for examination and copying, to the affected employee or former employee, or to a physician designated by the affected employee, former employee, or designated representative.

(e) Transfer of records.

(i) Whenever the employer ceases to do business, the successor employer ~~((shall))~~ must receive and retain all records required to be maintained by this section.

(ii) The employer ~~((shall))~~ must also comply with any additional requirements involving transfer of records set forth in WAC 296-802-60005.

(18) Observation of monitoring.

(a) Employee observation. The employer ~~((shall))~~ must provide affected employees, or their designated representatives, an opportunity to observe any monitoring of employee exposure to AN conducted pursuant to subsection (5) of this section.

(b) Observation procedures.

(i) Whenever observation of the monitoring of employee exposure to AN requires entry into an area where the use of protective clothing or equipment is required, the employer ~~((shall))~~ must provide the observer with personal protective clothing or equipment required to be worn by employees working in the area, ~~((assure))~~ ensure the use of such clothing and equipment, and require the observer to comply with all other applicable safety and health procedures.

(ii) Without interfering with the monitoring, observers shall be entitled:

(A) To receive an explanation of the measurement procedures;

(B) To observe all steps related to the measurement of airborne concentrations of AN performed at the place of exposure; and

(C) To record the results obtained.

(19) Appendices. The information contained in the appendices is not intended, by itself, to create any additional obligation not otherwise imposed, or to detract from any obligation.

AMENDATORY SECTION (Amending WSR 01-11-038, filed 5/9/01, effective 9/1/01)

WAC 296-62-07338 Appendix B—Substance technical guidelines for acrylonitrile. (1) Physical and chemical data.

(a) Substance identification:

(i) Synonyms: AN; VCN; vinyl cyanide; propenenitrile; cyanoethylene; Acrylon; Carbacryl; Fumigrain; Ventox.

(ii) Formula: CH₂=CHCN.

(iii) Molecular weight: 53.1.

(b) Physical data:

(i) Boiling point (760 mm Hg): 77.3°C (171°F);

(ii) Specific gravity (water = 1): 0.81 (at 20°C or 68°F);

(iii) Vapor density (air = 1 at boiling point of acrylonitrile): 1.83;

(iv) Melting point: -83°C (-117°F);

(v) Vapor pressure (@20°F): 83 mm Hg;

(vi) Solubility in water, percent by weight @20°C (68°F): 7.35;

(vii) Evaporation rate (Butyl Acetate = 1): 4.54; and

(viii) Appearance and odor: Colorless to pale yellow liquid with a pungent odor at concentrations above the permissible exposure level. Any detectable odor of acrylonitrile may indicate overexposure.

(2) Fire, explosion, and reactivity hazard data.

(a) Fire:

(i) Flash point: -1°C (30°F) (closed cup).

(ii) Autoignition temperature: 481°C (898°F).

(iii) Flammable limits air, percent by volume: Lower: 3, Upper: 17.

(iv) Extinguishing media: Alcohol foam, carbon dioxide, and dry chemical.

(v) Special firefighting procedures: Do not use a solid stream of water, since the stream will scatter and spread the fire. Use water to cool containers exposed to a fire.

(vi) Unusual fire and explosion hazards: Acrylonitrile is a flammable liquid. Its vapors can easily form explosive mixtures with air. All ignition sources must be controlled where acrylonitrile is handled, used, or stored in a manner that could create a potential fire or explosion hazard. Acrylonitrile vapors are heavier than air and may travel along the ground and be ignited by open flames or sparks at locations remote from the site at which acrylonitrile is being handled.

(vii) For purposes of compliance with the requirements of WAC 296-800-300, acrylonitrile is classified as a class IB flammable liquid. For example, 7,500 ppm, approximately

one-fourth of the lower flammable limit, would be considered to pose a potential fire and explosion hazard.

(viii) For purposes of compliance with WAC ((~~296-24-59207~~)) 296-800-300, acrylonitrile is classified as a Class B fire hazard.

(ix) For purpose of compliance with WAC ((~~296-24-95613~~)) 296-800-280, locations classified as hazardous due to the presence of acrylonitrile ((~~shall~~)) must be Class I, Group D.

(b) Reactivity:

(i) Conditions contributing to instability: Acrylonitrile will polymerize when hot, and the additional heat liberated by the polymerization may cause containers to explode. Pure AN may self-polymerize, with a rapid build-up of pressure, resulting in an explosion hazard. Inhibitors are added to the commercial product to prevent self-polymerization.

(ii) Incompatibilities: Contact with strong oxidizers (especially bromine) and strong bases may cause fires and explosions. Contact with copper, copper alloys, ammonia, and amines may start serious decomposition.

(iii) Hazardous decomposition products: Toxic gases and vapors (such as hydrogen cyanide, oxides of nitrogen, and carbon monoxide) may be released in a fire involving acrylonitrile and certain polymers made from acrylonitrile.

(iv) Special precautions: Liquid acrylonitrile will attack some forms of plastics, rubbers, and coatings.

(3) Spill, leak, and disposal procedures.

(a) If acrylonitrile is spilled or leaked, the following steps should be taken:

(i) Remove all ignition sources.

(ii) The area should be evacuated at once and reentered only after the area has been thoroughly ventilated and washed down with water.

(iii) If liquid acrylonitrile or polymer intermediate, collect for reclamation or absorb in paper, vermiculite, dry sand, earth, or similar material, or wash down with water into process sewer system.

(b) Persons not wearing protective equipment should be restricted from areas of spills or leaks until clean-up has been completed.

(c) Waste disposal methods: Waste materials ((~~shall~~)) must be disposed of in a manner that is not hazardous to employees or to the general population. Spills of acrylonitrile and flushing of such spills ((~~shall~~)) must be channeled for appropriate treatment or collection for disposal. They ((~~shall~~)) must not be channeled directly into the sanitary sewer system. In selecting the method of waste disposal, applicable local, state, and federal regulations should be consulted.

(4) Monitoring and measurement procedures.

(a) Exposure above the permissible exposure limit:

(i) Eight-hour exposure evaluation: Measurements taken for the purpose of determining employee exposure under this section are best taken so that the average eight-hour exposure may be determined from a single eight-hour sample or two four-hour samples. Air samples should be taken in the employee's breathing zone (air that would most nearly represent that inhaled by the employee).

(ii) Ceiling evaluation: Measurements taken for the purpose of determining employee exposure under this section

must be taken during periods of maximum expected airborne concentrations of acrylonitrile in the employee's breathing zone. A minimum of three measurements should be taken on one work shift. The average of all measurements taken is an estimate of the employee's ceiling exposure.

(iii) Monitoring techniques: The sampling and analysis under this section may be performed by collecting the acrylonitrile vapor on charcoal adsorption tubes or other composition adsorption tubes, with subsequent chemical analysis. Sampling and analysis may also be performed by instruments such as real-time continuous monitoring systems, portable direct-reading instruments, or passive dosimeters. Analysis of resultant samples should be by gas chromatograph.

(iv) Appendix D lists methods of sampling and analysis which have been tested by NIOSH and OSHA for use with acrylonitrile. NIOSH and OSHA have validated modifications of NIOSH Method S-156 (see Appendix D) under laboratory conditions for concentrations below 1 ppm. The employer has the obligation of selecting a monitoring method which meets the accuracy and precision requirements of the standard under his/her unique field conditions. The standard requires that methods of monitoring must be accurate, to a 95-percent confidence level, to ± 35 -percent for concentrations of AN at or above 2 ppm, and to ± 50 -percent for concentrations below 2 ppm. In addition to the methods described in Appendix D, there are numerous other methods available for monitoring for AN in the workplace. Details on these other methods have been submitted by various companies to the rulemaking record, and are available at the OSHA Docket Office.

(b) Since many of the duties relating to employee exposure are dependent on the results of monitoring and measuring procedures, employers (~~shall assure~~) must ensure that the evaluation of employee exposures is performed by a competent industrial hygienist or other technically qualified person.

(5) Protective clothing.

(a) Employees (~~shall~~) must be provided with and required to wear appropriate protective clothing to prevent any possibility of skin contact with liquid AN. Because acrylonitrile is absorbed through the skin, it is important to prevent skin contact with liquid AN. Protective clothing (~~shall~~) must include impermeable coveralls or similar full-body work clothing, gloves, head-coverings, as appropriate to protect areas of the body which may come in contact with liquid AN.

(b) Employers should ascertain that the protective garments are impermeable to acrylonitrile. Nonimpermeable clothing and shoes should not be allowed to become contaminated with liquid AN. If permeable clothing does become contaminated, it should be promptly removed, placed in a regulated area for removal of the AN, and not worn again until the AN is removed. If leather footwear or other leather garments become wet from acrylonitrile, they should be replaced and not worn again, due to the ability of leather to absorb acrylonitrile and hold it against the skin. Since there is no pain associated with the blistering which may result from skin contact with liquid AN, it is essential that the employee be informed of this hazard so that he or she can be protected.

(c) Any protective clothing which has developed leaks or is otherwise found to be defective (~~shall~~) must be repaired or replaced. Clean protective clothing (~~shall~~) must be provided to the employee as necessary to (~~assure~~) ensure its protectiveness. Whenever impervious clothing becomes wet with liquid AN, it (~~shall~~) must be washed down with water before being removed by the employee. Employees are also required to wear splash-proof safety goggles where there is any possibility of acrylonitrile contacting the eyes.

(6) Housekeeping and hygiene facilities. For purposes of complying with WAC (~~296-24-120,~~) 296-800-220 and 296-800-230, the following items should be emphasized:

(a) The workplace should be kept clean, orderly, and in a sanitary condition. The employer is required to institute a leak and spill detection program for operations involving liquid AN in order to detect sources of fugitive AN emissions.

(b) Dry sweeping and the use of compressed air is unsafe for the cleaning of floors and other surfaces where liquid AN may be found.

(c) Adequate washing facilities with hot and cold water are to be provided, and maintained in a sanitary condition. Suitable cleansing agents are also to be provided to (~~assure~~) ensure the effective removal of acrylonitrile from the skin.

(d) Change or dressing rooms with individual clothes storage facilities must be provided to prevent the contamination of street clothes with acrylonitrile. Because of the hazardous nature of acrylonitrile, contaminated protective clothing should be placed in a regulated area designated by the employer for removal of the AN before the clothing is laundered or disposed of.

(7) Miscellaneous precautions.

(a) Store acrylonitrile in tightly-closed containers in a cool, well-ventilated area and take necessary precautions to avoid any explosion hazard.

(b) High exposures to acrylonitrile can occur when transferring the liquid from one container to another.

(c) Nonsparking tools must be used to open and close metal acrylonitrile containers. These containers must be effectively grounded and bonded prior to pouring.

(d) Never store uninhibited acrylonitrile.

(e) Acrylonitrile vapors are not inhibited.

They may form polymers and clog vents of storage tanks.

(f) Use of supplied-air suits or other impervious coverings may be necessary to prevent skin contact with and provide respiratory protection from acrylonitrile where the concentration of acrylonitrile is unknown or is above the ceiling limit. Supplied-air suits should be selected, used, and maintained under the immediate supervision of persons knowledgeable in the limitations and potential life-endangering characteristics of supplied-air suits.

(g) Employers (~~shall~~) must advise employees of all areas and operations where exposure to acrylonitrile could occur.

(8) Common operations. Common operations in which exposure to acrylonitrile is likely to occur include the following: Manufacture of the acrylonitrile monomer; synthesis of acrylic fibers, ABS, SAN, and nitrile barrier plastics and resins, nitrile rubber, surface coatings, specialty chemicals; use as a chemical intermediate; use as a fumigant; and in the cyanoethylation of cotton.

AMENDATORY SECTION (Amending WSR 88-11-021, filed 5/11/88)

WAC 296-62-07339 Appendix C—Medical surveillance guidelines for acrylonitrile. (1) Route of entry.

- (a) Inhalation;
- (b) Skin absorption;
- (c) Ingestion.

(2) Toxicology.

(a) Acrylonitrile vapor is an asphyxiant due to inhibitory action on metabolic enzyme systems. Animals exposed to 75 or 100 ppm for seven hours have shown signs of anoxia; in some animals which died at the higher level, cyanomethemoglobin was found in the blood. Two human fatalities from accidental poisoning have been reported; one was caused by inhalation of an unknown concentration of the vapor, and the other was thought to be caused by skin absorption or inhalation. Most cases of intoxication from industrial exposure have been mild, with rapid onset of eye irritation, headache, sneezing, and nausea. Weakness, lightheadedness, and vomiting may also occur. Exposure to high concentrations may produce profound weakness, asphyxia, and death. The vapor is a severe eye irritant. Prolonged skin (~~contact~~ ~~contact~~) contact with the liquid may result in absorption with systemic effects, and in the formation of large blisters after a latent period of several hours. Although there is usually little or no pain or inflammation, the affected skin resembles a second-degree thermal burn. Solutions spilled on exposed skin, or on areas covered only by a light layer of clothing, evaporate rapidly, leaving no irritation, or, at the most, mild transient redness. Repeated spills on exposed skin may result in dermatitis due to solvent effects.

(b) Results after one year of a planned two-year animal study on the effects of exposure to acrylonitrile have indicated that rats ingesting as little as 35 ppm in their drinking water develop tumors of the central nervous system. The interim results of this study have been supported by a similar study being conducted by the same laboratory, involving exposure of rats by inhalation of acrylonitrile vapor, which has shown similar types of tumors in animals exposed to 80 ppm.

(c) In addition, the preliminary results of an epidemiological study being performed by duPont on a cohort of workers in their Camden, S.C. acrylic fiber plant indicate a statistically significant increase in the incidence of colon and lung cancers among employees exposed to acrylonitrile.

(3) Signs and symptoms of acute overexposure. Asphyxia and death can occur from exposure to high concentrations of acrylonitrile. Symptoms of overexposure include eye irritation, headache, sneezing, nausea and vomiting, weakness, and light-headedness. Prolonged skin contact can cause blisters on the skin with appearance of a second-degree burn, but with little or no pain. Repeated skin contact may produce scaling dermatitis.

(4) Treatment of acute overexposure. Remove employee from exposure. Immediately flush eyes with water and wash skin with soap or mild detergent and water. If AN has been swallowed, and person is conscious, induce vomiting. Give artificial respiration if indicated. More severe cases, such as those associated with loss of consciousness, may be treated by the intravenous administration of sodium nitrite, followed

by sodium thiosulfate, although this is not as effective for acrylonitrile poisoning as for inorganic cyanide poisoning.

(5) Surveillance and preventive considerations.

(a) As noted above, exposure to acrylonitrile has been linked to increased incidence of cancers of the colon and lung in employees of the duPont acrylic fiber plant in Camden, S.C. In addition, the animal testing of acrylonitrile has resulted in the development of cancers of the central nervous system in rats exposed by either inhalation or ingestion. The physician should be aware of the findings of these studies in evaluating the health of employees exposed to acrylonitrile.

(b) Most reported acute effects of occupational exposure to acrylonitrile are due to its ability to cause tissue anoxia and asphyxia. The effects are similar to those caused by hydrogen cyanide. Liquid acrylonitrile can be absorbed through the skin upon prolonged contact. The liquid readily penetrates leather, and will produce burns of the feet if footwear contaminated with acrylonitrile is not removed.

(c) It is important for the physician to become familiar with the operating conditions in which exposure to acrylonitrile may occur. Those employees with skin diseases may not tolerate the wearing of whatever protective clothing may be necessary to protect them from exposure. In addition, those with chronic respiratory disease may not tolerate the wearing of negative-pressure respirators.

(d) Surveillance and screening. Medical histories and laboratory examinations are required for each employee subject to exposure to acrylonitrile above the action level. The employer must screen employees for history of certain medical conditions which might place the employee at increased risk from exposure.

(i) Central nervous system dysfunction. Acute effects of exposure to acrylonitrile generally involve the central nervous system. Symptoms of acrylonitrile exposure include headache, nausea, dizziness, and general weakness. The animal studies cited above suggest possible carcinogenic effects of acrylonitrile on the central nervous system, since rats exposed by either inhalation or ingestion have developed similar CNS tumors.

(ii) Respiratory disease. The duPont data indicate an increased risk of lung cancer among employees exposed to acrylonitrile.

(iii) Gastrointestinal disease. The duPont data indicate an increased risk of cancer of the colon among employees exposed to acrylonitrile. In addition, the animal studies show possible tumor production in the stomachs of the rats in the ingestion study.

(iv) Skin disease. Acrylonitrile can cause skin burns when prolonged skin contact with the liquid occurs. In addition, repeated skin contact with the liquid can cause dermatitis.

(e) General. The purpose of the medical procedures outlined in the standard is to establish a baseline for future health monitoring. Persons unusually susceptible to the effects of anoxia or those with anemia would be expected to be at increased risk. In addition to emphasis on the CNS, respiratory and gastro-intestinal systems, the cardiovascular system, liver, and kidney function should also be stressed.

AMENDATORY SECTION (Amending WSR 88-11-021, filed 5/11/88)

WAC 296-62-07340 Appendix D—Sampling and analytical methods for acrylonitrile. (1) There are many methods available for monitoring employee exposures to acrylonitrile. Most of these involve the use of charcoal tubes and sampling pumps, with analysis by gas chromatograph. The essential differences between the charcoal tube methods include, among others, the use of different desorbing solvents, the use of different lots of charcoal, and the use of different equipment for analysis of the samples.

(2) Besides charcoal, considerable work has been performed on methods using porous polymer sampling tubes and passive dosimeters. In addition, there are several portable gas analyzers and monitoring units available on the open market.

(3) This appendix contains details for the methods which have been tested at OSHA Analytical Laboratory in Salt Lake City, and NIOSH in Cincinnati. Each is a variation on NIOSH Method S-156, which is also included for reference. This does not indicate that these methods are the only ones which will be satisfactory. There also may be workplace situations in which these methods are not adequate, due to such factors as high humidity. Copies of the other methods available to OSHA are available in the rulemaking record, and may be obtained from the OSHA docket office. These include, the Union Carbide, Monsanto, Dow Chemical and Dow Badische methods, as well as NIOSH Method P & CAM 127.

(4) Employers who note problems with sample breakthrough should try larger charcoal tubes. Tubes of larger capacity are available, and are often used for sampling vinyl chloride. In addition, lower flow rates and shorter sampling times should be beneficial in minimizing breakthrough problems.

(5) Whatever method the employer chooses, (~~he must assure himself~~) they must be ensured of the method's accuracy and precision under the unique conditions present in (~~his~~) their workplace.

(6) NIOSH Method S-156 (unmodified)

Analyte: Acrylonitrile.

Matrix: Air.

Procedure: Absorption on charcoal, desorption with methanol, GC.

(a) Principle of the method. Reference (k)(i) of this subsection.

(i) A known volume of air is drawn through a charcoal tube to trap the organic vapors present.

(ii) The charcoal in the tube is transferred to a small, stoppered sample container, and the analyte is desorbed with methanol.

(iii) An aliquot of the desorbed sample is injected into a gas chromatograph.

(iv) The area of the resulting peak is determined and compared with areas obtained for standards.

(b) Range and sensitivity.

(i) This method was validated over the range of 17.5-70.0 mg/cu m at an atmospheric temperature and pressure of 22°C and 760 mm Hg, using a twenty-liter sample. Under the conditions of sample size (20 liters) the probable useful range of this method is 4.5-135 mg/cu m. The method is capable of

measuring much smaller amounts if the desorption efficiency is adequate. Desorption efficiency must be determined over the range used.

(ii) The upper limit of the range of the method is dependent on the adsorptive capacity of the charcoal tube. This capacity varies with the concentrations of acrylonitrile and other substances in the air. The first section of the charcoal tube was found to hold at least 3.97 mg of acrylonitrile when a test atmosphere containing 92.0 mg/cu m of acrylonitrile in air was sampled 0.18 liter per minute for 240 minutes; at that time the concentration of acrylonitrile in the effluent was less than 5 percent of that in the influent. (The charcoal tube consists of two sections of activated charcoal separated by a section of urethane foam. See (f)(ii) of this subsection. If a particular atmosphere is suspected of containing a large amount of contaminant, a smaller sampling volume should be taken.)

(c) Interference.

(i) When the amount of water in the air is so great that condensation actually occurs in the tube, organic vapors will not be trapped efficiently. Preliminary experiments using toluene indicate that high humidity severely decreases the breakthrough volume.

(ii) When interfering compounds are known or suspected to be present in the air, such information, including their suspected identities, should be transmitted with the sample.

(iii) It must be emphasized that any compound which has the same retention time as the analyte at the operating conditions described in this method is an interference. Retention time data on a single column cannot be considered proof of chemical identity.

(iv) If the possibility of interference exists, separation conditions (column packing, temperature, etc.) must be changed to circumvent the problem.

(d) Precision and accuracy.

(i) The coefficient of variation (CV_t) for the total analytical and sampling method in the range of 17.5-70.0 mg/cu m was 0.073. This value corresponds to a 3.3 mg/cu m standard deviation at the (previous) OSHA standard level (20 ppm). Statistical information and details of the validation and experimental test procedures can be found in (k)(ii) of this subsection.

(ii) On the average the concentrations obtained at the 20 ppm level using the overall sampling and analytical method were 6.0 percent lower than the "true" concentrations for a limited number of laboratory experiments. Any difference between the "found" and "true" concentrations may not represent a bias in the sampling and analytical method, but rather a random variation from the experimentally determined "true" concentration. Therefore, no recovery correction should be applied to the final result in (j)(v) of this subsection.

(e) Advantages and disadvantages of the method.

(i) The sampling device is small, portable, and involves no liquids. Interferences are minimal, and most of those which do occur can be eliminated by altering chromatographic conditions. The tubes are analyzed by means of a quick, instrumental method.

(ii) The method can also be used for the simultaneous analysis of two or more substances suspected to be present in

the same sample by simply changing gas chromatographic conditions.

(iii) One disadvantage of the method is that the amount of sample which can be taken is limited by the number of milligrams that the tube will hold before overloading. When the sample value obtained for the backup section of the charcoal tube exceeds 25 percent of that found on the front section, the possibility of sample loss exists.

(iv) Furthermore, the precision of the method is limited by the reproducibility of the pressure drop across the tubes. This drop will affect the flow rate and cause the volume to be imprecise, because the pump is usually calibrated for one tube only.

(f) Apparatus.

(i) A calibrated personal sampling pump whose flow can be determined within ± 5 percent at the recommended flow rate. Reference (k)(iii) of this subsection.

(ii) Charcoal tubes: Glass tubes with both ends flame sealed, 7 cm long with a 6 mm O.D. and a 4 mm I.D., containing 2 sections of 20/40 mesh activated charcoal separated by a 2 mm portion of urethane foam. The activated charcoal is prepared from coconut shells and is fired at 600°C prior to packing. The adsorbing section contains 100 mg of charcoal, the backup section 50 mg. A 3 mm portion of urethane foam is placed between the outlet end of the tube and the backup section. A plug of silicated glass wool is placed in front of the adsorbing section. The pressure drop across the tube must be less than 1 inch of mercury at a flow rate of 1 liter per minute.

(iii) Gas chromatograph equipped with a flame ionization detector.

(iv) Column (4 ft \times 1/4 in stainless steel) packed with 50/80 mesh Poropak, type Q.

(v) An electronic integrator or some other suitable method for measuring peak areas.

(vi) Two-milliliter sample containers with glass stoppers or Teflon-lined caps. If an automatic sample injector is used, the associated vials may be used.

(vii) Microliter syringes: Ten-microliter and other convenient sizes for making standards.

(viii) Pipets: 1.0 ml delivery pipets.

(ix) Volumetric flask: 10 ml or convenient sizes for making standard solutions.

(g) Reagents.

(i) Chromatographic quality methanol.

(ii) Acrylonitrile, reagent grade.

(iii) Hexane, reagent grade.

(iv) Purified nitrogen.

(v) Prepurified hydrogen.

(vi) Filtered compressed air.

(h) Procedure.

(i) Cleaning of equipment. All glassware used for the laboratory analysis should be detergent washed and thoroughly rinsed with tap water and distilled water.

(ii) Calibration of personal pumps. Each personal pump must be calibrated with a representative charcoal tube in the line. This will minimize errors associated with uncertainties in the sample volume collected.

(iii) Collection and shipping of samples.

(A) Immediately before sampling, break the ends of the tube to provide an opening at least one-half the internal diameter of the tube (2mm).

(B) The smaller section of charcoal is used as a backup and should be positioned nearest the sampling pump.

(C) The charcoal tube should be placed in a vertical direction during sampling to minimize channeling through the charcoal.

(D) Air being sampled should not be passed through any hose or tubing before entering the charcoal tube.

(E) A maximum sample size of 20 liters is recommended. Sample at a flow of 0.20 liter per minute or less. The flow rate should be known with an accuracy of at least ± 5 percent.

(F) The temperature and pressure of the atmosphere being sampled should be recorded. If pressure reading is not available, record the elevation.

(G) The charcoal tubes should be capped with the supplied plastic caps immediately after sampling. Under no circumstances should rubber caps be used.

(H) With each batch of ten samples submit one tube from the same lot of tubes which was used for sample collection and which is subjected to exactly the same handling as the samples except that no air is drawn through it. Label this as a blank.

(I) Capped tubes should be packed tightly and padded before they are shipped to minimize tube breakage during shipping.

(J) A sample of the bulk material should be submitted to the laboratory in a glass container with a Teflon-lined cap. This sample should not be transported in the same container as the charcoal tubes.

(iv) Analysis of samples.

(A) Preparation of samples. In preparation for analysis, each charcoal tube is scored with a file in front of the first section of charcoal and broken open. The glass wool is removed and discarded. The charcoal in the first (larger) section is transferred to a 2 ml stoppered sample container. The separating section of foam is removed and discarded; the second section is transferred to another stoppered container. These two sections are analyzed separately.

(B) Desorption of samples. Prior to analysis, 1.0 ml of methanol is pipetted into each sample container. Desorption should be done for 30 minutes. Tests indicate that this is adequate if the sample is agitated occasionally during this period. If an automatic sample injector is used, the sample vials should be capped as soon as the solvent is added to minimize volatilization.

(C) GC conditions. The typical operating conditions for the gas chromatograph are:

(I) 50 ml/min (60 psig) nitrogen carrier gas flow.

(II) 65 ml/min (24 psig) hydrogen gas flow to detector.

(III) 500 ml/min (50 psig) air flow to detector.

(IV) 235°C injector temperature.

(V) 255°C manifold temperature (detector).

(VI) 155°C column temperature.

(D) Injection. The first step in the analysis is the injection of the sample into the gas chromatograph. To eliminate difficulties arising from blowback or distillation within the

syringe needle, one should employ the solvent flush injection technique. The 10-microliter syringe is first flushed with solvent several times to wet the barrel and plunger. Three microliters of solvent are drawn into the syringe to increase the accuracy and reproducibility of the injected sample volume. The needle is removed from the solvent, and the plunger is pulled back about 0.2 microliter to separate the solvent flush from the sample with a pocket of air to be used as a marker. The needle is then immersed in the sample, and a five microliter aliquot is withdrawn, taking into consideration the volume of the needle, since the sample in the needle will be completely injected. After the needle is removed from the sample and prior to injection, the plunger is pulled back 1.2 microliters to minimize evaporation of the sample from the tip of the needle. Observe that the sample occupies 4.9-5.0 microliters in the barrel of the syringe. Duplicate injections of each sample and standard should be made. No more than a 3 percent difference in area is to be expected. An automatic sample injector can be used if it is shown to give reproducibility at least as good as the solvent flush method.

(E) Measurement of area. The area of the sample peak is measured by an electronic integrator or some other suitable form of area measurement, and preliminary results are read from a standard curve prepared as discussed below.

(v) Determination of desorption efficiency.

(A) Importance of determination. The desorption efficiency of a particular compound can vary from one laboratory to another and also from one batch of charcoal to another. Thus, it is necessary to determine at least once the percentage of the specific compound that is removed in the desorption process, provided the same batch of charcoal is used.

(B) Procedure for determining desorption efficiency.

(I) Activated charcoal equivalent to the amount in the first section of the sampling tube (100 mg) is measured into a 2.5 in., 4 mm I.D. glass tube, flame sealed at one end. This charcoal must be from the same batch as that used in obtaining the samples and can be obtained from unused charcoal tubes. The open end is capped with Parafilm. A known amount of hexane solution of acrylonitrile containing 0.239 g/ml is injected directly into the activated charcoal with a microliter syringe, and tube is capped with more Parafilm. When using an automatic sample injector, the sample injector vials, capped with Teflon-faced septa, may be used in place of the glass tube.

(II) The amount injected is equivalent to that present in a twenty-liter air sample at the selected level.

(III) Six tubes at each of three levels (0.5X, 1X, and 2X of the standard) are prepared in this manner and allowed to stand for at least overnight to (~~assure~~) ensure complete adsorption of the analyte onto the charcoal. These tubes are referred to as the sample. A parallel blank tube should be treated in the same manner except that no sample is added to it. The sample and blank tubes are desorbed and analyzed in exactly the same manner as the sampling tube described in (h)(iv) of this subsection

(IV) Two or three standards are prepared by injecting the same volume of compound into 1.0 ml of methanol with the same syringe used in the preparation of the samples. These are analyzed with the samples.

(V) The desorption efficiency (D.E.) equals the average weight in mg recovered from the tube divided by the weight in mg added to the tube, or

$$D.E. = \frac{\text{Average weight recovered (mg)}}{\text{weight added (mg)}}$$

(VI) The desorption efficiency is dependent on the amount of analyte collected on the charcoal. Plot the desorption efficiency versus weight of analyte found. This curve is used in (j)(iv) of this subsection to correct for adsorption losses.

(i) Calibration and standards. It is convenient to express concentration of standards in terms of mg/1.0 ml methanol, because samples are desorbed in this amount of methanol. The density of the analyte is used to convert mg into microliters for easy measurement with a microliter syringe. A series of standards, varying in concentration over the range of interest, is prepared and analyzed under the same GC conditions and during the same time period as the unknown samples. Curves are established by plotting concentration in mg/1.0 ml versus peak area.

Note: Since no internal standard is used in the method, standard solutions must be analyzed at the same time that the sample analysis is done. This will minimize the effect of known day-to-day variations and variations during the same day of the FID response.

(j) Calculations.

(i) Read the weight, in mg, corresponding to each peak area from the standard curve. No volume corrections are needed, because the standard curve is based on mg/1.0 ml methanol and the volume of sample injected is identical to the volume of the standards injected.

(ii) Corrections for the blank must be made for each sample.

$$\text{mg} = \text{mg sample} - \text{mg blank}$$

Where:

mg sample = mg found in front section of sample tube.

mg sample = mg found in front section of blank tube.

Note: A similar procedure is followed for the backup sections.

(iii) Add the weights found in the front and backup sections to get the total weight in the sample.

(iv) Read the desorption efficiency from the curve (reference (h)(v)(B) of this subsection) for the amount found in the front section. Divide the total weight by this desorption efficiency to obtain the corrected mg/sample.

$$\text{Corrected mg/sample} = \frac{\text{Total weight}}{D.E.}$$

(v) The concentration of the analyte in the air sampled can be expressed in mg/cu m.

$$\text{mg/cu m} = \text{Corrected mg (see (j)(iv))} \times \frac{1,000 \text{ (liter/cu m)}}{\text{air volume sampled (liter)}}$$

(vi) Another method of expressing concentration is ppm.

$$\text{ppm} = \text{mg/cu m} \times 24.45/\text{M.W.} \times 760/\text{P} \times \text{T} + 273/298$$

Where:

P = Pressure (mm Hg) of air sampled.

T = Temperature (°C) of air sampled.

24.45 = Molar volume (liter/mole) at 25°C and 760 mm Hg.

M.W. = Molecular weight (g/mole) of analyte.

760 = Standard pressure (mm Hg).

298 = Standard temperature (°K).

(k) References.

(i) White, L. D. et al., "A Convenient Optimized Method for the Analysis of Selected Solvent Vapors in the Industrial Atmosphere," *Amer. Ind. Hyg. Assoc. J.*, 31:225 (1970).

(ii) Documentation of NIOSH Validation Tests, NIOSH Contract No. CDC-99-74-45.

(iii) Final Report, NIOSH Contract HSM-99-71-31, "Personal Sampler Pump for Charcoal Tubes," September 15, 1972.

(7) NIOSH Modification of NIOSH Method S-156. The NIOSH recommended method for low levels for acrylonitrile is a modification of method S-156. It differs in the following respects:

(a) Samples are desorbed using 1 ml of 1 percent acetone in CS₂ rather than methanol.

(b) The analytical column and conditions are:

(i) Column: 20 percent SP-1000 on 80/100 Supelcoport 10 feet × 1/8 inch S.S.

(ii) Conditions:

Injector temperature: 200°C.

Detector temperature: 100°C.

Column temperature: 85°C.

Helium flow: 25 ml/min.

Air flow: 450 ml/min.

Hydrogen flow: 55 ml/min.

(c) A 2 µl injection of the desorbed analyte is used.

(d) A sampling rate of 100 ml/min is recommended.

(8) OSHA Laboratory Modification of NIOSH Method S-156.

(a) Analyte: Acrylonitrile.

(b) Matrix: Air.

(c) Procedure: Adsorption on charcoal, desorption with methanol, GC.

(d) Principle of the method (subsection (1)(a) of this section).

(i) A known volume of air is drawn through a charcoal tube to trap the organic vapors present.

(ii) The charcoal in the tube is transferred to a small, stoppered sample vial, and the analyte is desorbed with methanol.

(iii) An aliquot of the desorbed sample is injected into a gas chromatograph.

(iv) The area of the resulting peak is determined and compared with areas obtained for standards.

(e) Advantages and disadvantages of the method.

(i) The sampling device is small, portable, and involves no liquids. Interferences are minimal, and most of those which do occur can be eliminated by altering chromatographic conditions. The tubes are analyzed by means of a quick, instrumental method.

(ii) This method may not be adequate for the simultaneous analysis of two or more substances.

(iii) The amount of sample which can be taken is limited by the number of milligrams that the tube will hold before overloading. When the sample value obtained for the backup section of the charcoal tube exceeds 25 percent of that found on the front section, the possibility of sample loss exists.

(iv) The precision of the method is limited by the reproducibility of the pressure drop across the tubes. This drop will affect the flow rate and cause the volume to be imprecise, because the pump is usually calibrated for one tube only.

(f) Apparatus.

(i) A calibrated personal sampling pump whose flow can be determined within ±5 percent at the recommended flow rate.

(ii) Charcoal tubes: Glass tube with both ends flame sealed, 7 cm long with a 6 mm O.D. and a 4 mm I.D., containing 2 sections of 20/40 mesh activated charcoal separated by a 2 mm portion of urethane foam. The activated charcoal is prepared from coconut shells and is fired at 600°C prior to packing. The absorbing section contains 100 mg of charcoal, the back-up section 50 mg. A 3 mm portion of urethane foam is placed between the outlet end of the tube and the back-up section. A plug of silicated glass wool is placed in front of the adsorbing section. The pressure drop across the tube must be less than one inch of mercury at a flow rate of 1 liter per minute.

(iii) Gas chromatograph equipped with a nitrogen phosphorus detector.

(iv) Column (10 ft × 1/8 in stainless steel) packed with 100/120 Supelcoport coated with 10 percent SP 1000.

(v) An electronic integrator or some other suitable method for measuring peak area.

(vi) Two-milliliter sample vials with Teflon-lined caps.

(vii) Microliter syringes: 10 microliter, and other convenient sizes for making standards.

(viii) Pipets: 1.0 ml delivery pipets.

(ix) Volumetric flasks: Convenient sizes for making standard solutions.

(g) Reagents.

(i) Chromatographic quality methanol.

(ii) Acrylonitrile, reagent grade.

(iii) Filtered compressed air.

(iv) Purified hydrogen.

(v) Purified helium.

(h) Procedure.

(i) Cleaning of equipment. All glassware used for the laboratory analysis should be properly cleaned and free of organics which could interfere in the analysis.

(ii) Calibration of personal pumps. Each pump must be calibrated with a representative charcoal tube in the line.

(iii) Collection and shipping of samples.

(A) Immediately before sampling, break the ends of the tube to provide an opening at least one-half the internal diameter of the tube (2 mm).

(B) The smaller section of the charcoal is used as the backup and should be placed nearest the sampling pump.

(C) The charcoal should be placed in a vertical position during sampling to minimize channeling through the charcoal.

(D) Air being sampled should not be passed through any hose or tubing before entering the charcoal tube.

(E) A sample size of 20 liters is recommended. Sample at a flow rate of approximately 0.2 liters per minute. The flow rate should be known with an accuracy of at least ± 5 percent.

(F) The temperature and pressure of the atmosphere being sampled should be recorded.

(G) The charcoal tubes should be capped with the supplied plastic caps immediately after sampling. Rubber caps should not be used.

(H) Submit at least one blank tube (a charcoal tube subjected to the same handling procedures, without having any air drawn through it) with each set of samples.

(I) Take necessary shipping and packing precautions to minimize breakage of samples.

(iv) Analysis of samples.

(A) Preparation of samples. In preparation for analysis, each charcoal tube is scored with a file in front of the first section of charcoal and broken open. The glass wool is removed and discarded. The charcoal in the first (larger) section is transferred to a 2 ml vial. The separating section of foam is removed and discarded; the section is transferred to another capped vial. These two sections are analyzed separately.

(B) Desorption of samples. Prior to analysis, 1.0 ml of methanol is pipetted into each sample container. Desorption should be done for 30 minutes in an ultrasonic bath. The sample vials are recapped as soon as the solvent is added.

(C) GC conditions. The typical operating conditions for the gas chromatograph are:

(I) 30 ml/min (60 psig) helium carrier gas flow.

(II) 3.0 ml/min (30 psig) hydrogen gas flow to detector.

(III) 50 ml/min (60 psig) air flow to detector.

(IV) 200°C injector temperature.

(V) 200°C detector temperature.

(VI) 100°C column temperature.

(D) Injection. Solvent flush technique or equivalent.

(E) Measurement of area. The area of the sample peak is measured by an electronic integrator or some other suitable form of area measurement, and preliminary results are read from a standard curve prepared as discussed below.

(v) Determination of desorption efficiency.

(A) Importance of determination. The desorption efficiency of a particular compound can vary from one laboratory to another and also from one batch of charcoal to another. Thus, it is necessary to determine, at least once, the percentage of the specific compound that is removed in the desorption process, provided the same batch of charcoal is used.

(B) Procedure for determining desorption efficiency. The reference portion of the charcoal tube is removed. To the remaining portion, amounts representing 0.5X, 1X, and 2X

(X represents TLV) based on a 20 l air sample are injected onto several tubes at each level. Dilutions of acrylonitrile with methanol are made to allow injection of measurable quantities. These tubes are then allowed to equilibrate at least overnight. Following equilibration they are analyzed following the same procedure as the samples. A curve of the desorption efficiency (amt recovered/amt added) is plotted versus amount of analyte found. This curve is used to correct for adsorption losses.

(i) Calibration and standards. A series of standards, varying in concentration over the range of interest, is prepared and analyzed under the same GC conditions and during the same time period as the unknown samples. Curves are prepared by plotting concentration versus peak area.

Note: Since no internal standard is used in the method, standard solutions must be analyzed at the same time that the sample analysis is done. This will minimize the effect of known day-to-day variations and variations during the same day of the NPD response. Multiple injections are necessary.

(j) Calculations. Read the weight, corresponding to each peak area from the standard curve, correct for the blank, correct for the desorption efficiency, and make necessary air volume corrections.

(k) Reference. NIOSH Method S-156.

AMENDATORY SECTION (Amending WSR 14-07-086, filed 3/18/14, effective 5/1/14)

WAC 296-62-07342 1,2-Dibromo-3-chloropropane.

(1) Scope and application.

(a) This section applies to occupational exposure to 1,2-dibromo-3-chloropropane (DBCP).

(b) This section does not apply to:

(i) Exposure to DBCP which results solely from the application and use of DBCP as a pesticide; or

(ii) The storage, transportation, distribution or sale of DBCP in intact containers sealed in such a manner as to prevent exposure to DBCP vapors or liquids, except for the requirements of subsections (11), (16), and (17) of this section.

(2) Definitions applicable to this section:

(a) (~~("Authorized person"–)~~) **Authorized person.** Any person specifically authorized by the employer and whose duties require the person to be present in areas where DBCP is present; and any person entering this area as a designated representative of employees exercising an opportunity to observe employee exposure monitoring.

(b) (~~("DBCP"–)~~) **DBCP.** 1,2-dibromo-3-chloropropane, Chemical Abstracts Service Registry Number 96-12-8, and includes all forms of DBCP.

(c) (~~("Director"–)~~) **Director.** The director of labor and industries, or his authorized representative.

(d) (~~("Emergency"–)~~) **Emergency.** Any occurrence such as, but not limited to equipment failure, rupture of containers, or failure of control equipment which may, or does, result in unexpected release of DBCP.

(3) Permissible exposure limits.

(a) Inhalation.

(i) Time-weighted average limit (TWA). The employer (~~(shall assure)~~) must ensure that no employee is exposed to an

airborne concentration in excess of one part DBCP per billion part of air (ppb) as an eight-hour time-weighted average.

(ii) Ceiling limit. The employer (~~(shall assure)~~) must ensure that no employee is exposed to an airborne concentration in excess of five parts DBCP per billion parts of air (ppb) as averaged over any fifteen minutes during the working day.

(b) Dermal and eye exposure. The employer (~~(shall assure)~~) must ensure that no employee is exposed to eye or skin contact with DBCP.

(4) Notification of use. Within ten days of the effective date of this section or within ten days following the introduction of DBCP into the workplace, every employer who has a workplace where DBCP is present (~~(shall)~~) must report the following information to the director for each such workplace:

(a) The address and location of each workplace in which DBCP is present;

(b) A brief description of each process or operation which may result in employee exposure to DBCP;

(c) The number of employees engaged in each process or operation who may be exposed to DBCP and an estimate of the frequency and degree of exposure that occurs;

(d) A brief description of the employer's safety and health program as it relates to limitation of employee exposure to DBCP.

(5) Regulated areas. The employer (~~(shall)~~) must establish, within each place of employment, regulated areas wherever DBCP concentrations are in excess of the permissible exposure limit.

(a) The employer (~~(shall)~~) must limit access to regulated areas to authorized persons.

(b) All employees entering or working in a regulated area (~~(shall)~~) must wear respiratory protection in accordance with Table I.

(6) Exposure monitoring.

(a) General. Determinations of airborne exposure levels (~~(shall)~~) must be made from air samples that are representative of each employee's exposure to DBCP over an eight-hour period. (For the purposes of this section, employee exposure is that exposure which would occur if the employee were not using a respirator.)

(b) Initial. Each employer who has a place of employment in which DBCP is present (~~(shall)~~) must monitor each workplace and work operation to accurately determine the airborne concentrations of DBCP to which employees may be exposed.

(c) Frequency.

(i) If the monitoring required by this section reveals employee exposures to be below the permissible exposure limits, the employer (~~(shall)~~) must repeat these determinations at least quarterly.

(ii) If the monitoring required by this section reveals employee exposure to be in excess of the permissible exposure limits, the employer (~~(shall)~~) must repeat these determinations for each such employee at least monthly. The employer (~~(shall)~~) must continue these monthly determinations until at least two consecutive measurements, taken at least seven days apart, are below the permissible exposure limit, thereafter the employer (~~(shall)~~) must monitor at least quarterly.

(d) Additional. Whenever there has been a production process, control or personnel change which may result in any new or additional exposure to DBCP, or whenever the employer has any other reason to suspect a change which may result in new or additional exposure to DBCP, additional monitoring which complies with (~~(subsection (6) shall)~~) this subsection must be conducted.

(e) Employee notification.

(i) Within five working days after the receipt of monitoring results, the employer (~~(shall)~~) must notify each employee in writing of results which represent the employee's exposure.

(ii) Whenever the results indicate that employee exposure exceeds the permissible exposure limit, the employer (~~(shall)~~) must include in the written notice a statement that the permissible exposure limit was exceeded and a description of the corrective action being taken to reduce exposure to or below the permissible exposure limits.

(f) Accuracy of measurement. The method of measurement (~~(shall)~~) must be accurate, to a confidence level of ninety-five percent, to within plus or minus twenty-five percent for concentrations of DBCP at or above the permissible exposure limits.

(7) Methods of compliance.

(a) Priority of compliance methods. The employer (~~(shall)~~) must institute engineering and work practice controls to reduce and maintain employee exposures to DBCP at or below the permissible exposure limit, except to the extent that the employer establishes that such controls are not feasible. Where feasible engineering and work practice controls are not sufficient to reduce employee exposures to within the permissible exposure limit, the employer (~~(shall)~~) must nonetheless use them to reduce exposures to the lowest level achievable by these controls, and (~~(shall)~~) must supplement them by use of respiratory protection.

(b) Compliance program.

(i) The employer (~~(shall)~~) must establish and implement a written program to reduce employee exposure to DBCP to or below the permissible exposure limit solely by means of engineering and work practice controls as required by this section.

(ii) The written program (~~(shall)~~) must include a detailed schedule for development and implementation of the engineering and work practice controls. These plans (~~(shall)~~) must be revised at least every six months to reflect the current status of the program.

(iii) Written plans for these compliance programs (~~(shall)~~) must be submitted upon request to the director, and (~~(shall)~~) must be available at the worksite for examination and copying by the director, and any affected employee or designated representative of employees.

(iv) The employer (~~(shall)~~) must institute and maintain at least the controls described in his most recent written compliance program.

(8) Respiratory protection.

(a) General. For employees who are required to use respirators under this section, the employer must provide each employee an appropriate respirator that complies with the requirements of this subsection. Respirators must be used during:

(i) Period necessary to install or implement feasible engineering and work-practice controls;

(ii) Maintenance and repair activities for which engineering and work-practice controls are not feasible;

(iii) Work operations for which feasible engineering and work-practice controls are not yet sufficient to reduce employee exposure to or below the permissible exposure limit;

(iv) Emergencies.

(b) The employer must establish, implement, and maintain a respiratory protection program as required by chapter 296-842 WAC, Respirators, which covers each employee required by this chapter to use a respirator.

(c) Respirator selection. The employer must:

(i) Select and provide to employees appropriate respirators according to this chapter and WAC 296-842-13005 in the respirator rule.

(ii) Provide employees with one of the following respirator options to use for entry into, or escape from, unknown DBCP concentrations:

(A) A combination respirator that includes a full-facepiece air-line respirator operated in a pressure-demand or other positive-pressure mode or continuous-flow mode and an auxiliary self-contained breathing apparatus (SCBA) operated in a pressure-demand or positive-pressure mode; or

(B) A full-facepiece SCBA operated in a pressure-demand or other positive-pressure mode.

(9) Reserved.

(10) Emergency situations.

(a) Written plans.

(i) A written plan for emergency situations ~~((shall))~~ must be developed for each workplace in which DBCP is present.

(ii) Appropriate portions of the plan ~~((shall))~~ must be implemented in the event of an emergency.

(b) Employees engaged in correcting conditions ~~((shall))~~ must be equipped as required in subsection (11) of this section until the emergency is abated.

(c) Evacuation. Employees not engaged in correcting the emergency ~~((shall))~~ must be removed and restricted from the area and normal operations in the affected area ~~((shall))~~ must not be resumed until the emergency is abated.

(d) Alerting employees. Where there is a possibility of employee exposure to DBCP due to the occurrence of an emergency, a general alarm ~~((shall))~~ must be installed and maintained to promptly alert employees of such occurrences.

(e) Medical surveillance. For any employee exposed to DBCP in an emergency situation, the employer ~~((shall))~~ must provide medical surveillance in accordance with subsection (14) of this section.

(f) Exposure monitoring.

(i) Following an emergency, the employer ~~((shall))~~ must conduct monitoring which complies with subsection (6) of this section.

(ii) In workplaces not normally subject to periodic monitoring, the employer may terminate monitoring when two consecutive measurements indicate exposures below the permissible exposure limit.

(11) Protective clothing and equipment.

(a) Provision and use. Where eye or skin contact with liquid or solid DBCP may occur, employers ~~((shall))~~ must provide at no cost to the employee, and ~~((assure))~~ ensure that

employees wear impermeable protective clothing and equipment in accordance with WAC 296-800-160 to protect the area of the body which may come in contact with DBCP.

(b) Cleaning and replacement.

(i) The employer ~~((shall))~~ must clean, launder, maintain, or replace protective clothing and equipment required by this subsection to maintain their effectiveness. In addition, the employer ~~((shall))~~ must provide clean protective clothing and equipment at least daily to each affected employee.

(ii) Removal and storage.

(A) The employer ~~((shall-assure))~~ must ensure that employees remove DBCP contaminated work clothing only in change rooms provided in accordance with subsection (13) of this section.

(B) The employer ~~((shall-assure))~~ must ensure that employees promptly remove any protective clothing and equipment which becomes contaminated with DBCP-containing liquids and solids. This clothing ~~((shall))~~ must not be worn until the DBCP has been removed from the clothing or equipment.

(C) The employer ~~((shall-assure))~~ must ensure that no employee takes DBCP contaminated protective devices and work clothing out of the change room, except those employees authorized to do so for the purpose of laundering, maintenance, or disposal.

(iii) The employer ~~((shall-assure))~~ must ensure that DBCP-contaminated protective work clothing and equipment is placed and stored in closed containers which prevent dispersion of DBCP outside the container.

(iv) The employer ~~((shall))~~ must inform any person who launders or cleans DBCP-contaminated protective clothing or equipment of the potentially harmful effects of exposure to DBCP.

(v) Containers of DBCP-contaminated protective devices or work clothing which are to be taken out of change rooms or the workplace for cleaning, maintenance or disposal ~~((shall))~~ must bear labels with the following information: CONTAMINATED WITH 1,2-Dibromo-3-chloropropane (DBCP), MAY CAUSE CANCER.

(vi) The employer ~~((shall))~~ must prohibit the removal of DBCP from protective clothing and equipment by blowing or shaking.

(12) Housekeeping.

(a) Surfaces.

(i) All surfaces ~~((shall))~~ must be maintained free of accumulations of DBCP.

(ii) Dry sweeping and the use of air for the cleaning of floors and other surfaces where DBCP dust or liquids are found is prohibited.

(iii) Where vacuuming methods are selected, either portable units or a permanent system may be used.

(A) If a portable unit is selected, the exhaust ~~((shall))~~ must be attached to the general workplace exhaust ventilation system or collected within the vacuum unit, equipped with high efficiency filters or other appropriate means of contaminant removal, so that DBCP is not reintroduced into the workplace air; and

(B) Portable vacuum units used to collect DBCP may not be used for other cleaning purposes and ~~((shall))~~ must be labeled as prescribed by subsection (11)(b)(v) of this section.

(iv) Cleaning of floors and other contaminated surfaces may not be performed by washing down with a hose, unless a fine spray has first been laid down.

(b) Liquids. Where DBCP is present in a liquid form, or as a resultant vapor, all containers or vessels containing DBCP ~~((shall))~~ must be enclosed to the maximum extent feasible and tightly covered when not in use.

(c) Waste disposal. DBCP waste, scrap, debris, bags, containers or equipment, ~~((shall))~~ must be disposed in sealed bags or other closed containers which prevent dispersion of DBCP outside the container.

(13) Hygiene facilities and practices.

(a) Change rooms. The employer ~~((shall))~~ must provide clean change rooms equipped with storage facilities for street clothes and separate storage facilities for protective clothing and equipment whenever employees are required to wear protective clothing and equipment in accordance with subsections (8), (9), and (11) of this section.

(b) Showers.

(i) The employer ~~((shall assure))~~ must ensure that employees working in the regulated area shower at the end of the work shift.

(ii) The employer ~~((shall assure))~~ must ensure that employees whose skin becomes contaminated with DBCP-containing liquids or solids immediately wash or shower to remove any DBCP from the skin.

(iii) The employer ~~((shall))~~ must provide shower facilities in accordance with WAC 296-800-230.

(c) Lunchrooms. The employer ~~((shall))~~ must provide lunchroom facilities which have a temperature controlled, positive pressure, filtered air supply, and which are readily accessible to employees working in regulated areas.

(d) Lavatories.

(i) The employer ~~((shall assure))~~ must ensure that employees working in the regulated area remove protective clothing and wash their hands and face prior to eating.

(ii) The employer ~~((shall))~~ must provide a sufficient number of lavatory facilities which comply with WAC 296-800-230.

(e) Prohibition of activities in regulated areas. The employer ~~((shall assure))~~ must ensure that, in regulated areas, food or beverages are not present or consumed, smoking products and implements are not present or used, and cosmetics are not present or applied.

(14) Medical surveillance.

(a) General. The employer ~~((shall))~~ must institute a program of medical surveillance for each employee who is or will be exposed, without regard to the use of respirators, to DBCP. The employer ~~((shall))~~ must provide each such employee with an opportunity for medical examinations and tests in accordance with this subsection. All medical examinations and procedures shall be performed by or under the supervision of a licensed physician, and ~~((shall))~~ must be provided without cost to the employee.

(b) Frequency and content. At the time of initial assignment, annually thereafter, and whenever exposure to DBCP occurs, the employer ~~((shall))~~ must provide a medical exam-

ination for employees who work in regulated areas, which includes at least the following:

(i) A complete medical and occupational history with emphasis on reproductive history.

(ii) A complete physical examination with emphasis on the genito-urinary tract, testicle size, and body habitus including the following tests:

(A) Sperm count;

(B) Complete urinalysis (U/A);

(C) Complete blood count; and

(D) Thyroid profile.

(iii) A serum specimen ~~((shall))~~ must be obtained and the following determinations made by radioimmunoassay techniques utilizing National Institutes of Health (NIH) specific antigen or one of equivalent sensitivity:

(A) Serum multiphasic analysis (SMA 12);

(B) Serum follicle stimulating hormone (FSH);

(C) Serum luteinizing hormone (LH); and

(D) Serum estrogen (females).

(iv) Any other tests deemed appropriate by the examining physician.

(c) Additional examinations. If the employee for any reason develops signs or symptoms commonly associated with exposure to DBCP, the employer ~~((shall))~~ must provide the employee with a medical examination which ~~((shall))~~ must include those elements considered appropriate by the examining physician.

(d) Information provided to the physician. The employer ~~((shall))~~ must provide the following information to the examining physician:

(i) A copy of this standard and its appendices;

(ii) A description of the affected employee's duties as they relate to the employee's exposure;

(iii) The level of DBCP to which the employee is exposed; and

(iv) A description of any personal protective equipment used or to be used.

(e) Physician's written opinion.

(i) For each examination under this section, the employer ~~((shall))~~ must obtain and provide the employee with a written opinion from the examining physician which ~~((shall))~~ must include:

(A) The results of the medical tests performed;

(B) The physician's opinion as to whether the employee has any detected medical condition which would place the employee at an increased risk of material impairment of health from exposure to DBCP;

(C) Any recommended limitations upon the employee's exposure to DBCP or upon the use of protective clothing and equipment such as respirators; and

(D) A statement that the employee was informed by the physician of the results of the medical examination, and any medical conditions which require further examination or treatment.

(ii) The employer ~~((shall))~~ must instruct the physician not to reveal in the written opinion specific findings or diagnoses unrelated to occupational exposure to DBCP.

(iii) The employer ~~((shall))~~ must provide a copy of the written opinion to the affected employee.

(f) Emergency situations. If the employee is exposed to DBCP in an emergency situation, the employer ~~((shall))~~ must provide the employee with a sperm count test as soon as practicable, or, if the employee is unable to produce a semen specimen, the hormone tests contained in (b) of this subsection. The employer ~~((shall))~~ must provide these same tests three months later.

(15) Employee information and training.

(a) Training program.

(i) Within thirty days of the effective date of this standard, the employer ~~((shall))~~ must institute a training program for all employees who may be exposed to DBCP and ~~((shall assure))~~ must ensure their participation in such training program.

(ii) The employer ~~((shall assure))~~ must ensure that each employee is informed of the following:

(A) The information contained in Appendices A, B and C;

(B) The quantity, location, manner of use, release or storage of DBCP and the specific nature of operations which could result in exposure to DBCP as well as any necessary protective steps;

(C) The purpose, proper use, limitations, and other training requirements covering respiratory protection as required in chapter ~~((296-62))~~ 296-842 WAC ~~((, Part E))~~;

(D) The purpose and description of the medical surveillance program required by subsection (14) of this section; and

(E) A review of this standard.

(b) Access to training materials.

(i) The employer ~~((shall))~~ must make a copy of this standard and its appendices readily available to all affected employees.

(ii) The employer ~~((shall))~~ must provide, upon request, all materials relating to the employee information and training program to the director.

(16) Communication of hazards.

(a) Hazard communication - General.

(i) Chemical manufacturers, importers, distributors and employers ~~((shall))~~ must comply with all requirements of the Hazard Communication Standard (HCS), WAC 296-901-140 for DBCP.

(ii) In classifying the hazards of DBCP at least the following hazards are to be addressed: Cancer; reproductive effects; liver effects; kidney effects; central nervous system effects; skin, eye and respiratory tract irritation; and acute toxicity effects.

(iii) Employers ~~((shall))~~ must include DBCP in the hazard communication program established to comply with the HCS, WAC 296-901-140. Employers ~~((shall))~~ must ensure that each employee has access to labels on containers of DBCP and to safety data sheets, and is trained in accordance with the requirements of HCS and subsection (15) of this section.

(iv) The employer may use labels or signs required by other statutes, regulations, or ordinances in addition to or in combination with, signs and labels required by this subsection.

(v) The employer ~~((shall))~~ must ensure that no statement appears on or near any sign or label required by this subsection

which contradicts or detracts from the required sign or label.

(b) Signs.

~~((+))~~ The employer ~~((shall))~~ must post signs to clearly indicate all regulated areas. These signs ~~((shall))~~ must bear the legend:

DANGER

1,2-Dibromo-3-chloropropane

MAY CAUSE CANCER

WEAR RESPIRATORY PROTECTION IN THIS AREA
AUTHORIZED PERSONNEL ONLY

~~((ii))~~ Prior to June 1, 2016, employers may use the following legend in lieu of that specified in (b) of this subsection:

DANGER

1,2-Dibromo-3-chloropropane

~~((Insert appropriate trade or common names))~~

CANCER HAZARD

AUTHORIZED PERSONNEL ONLY

RESPIRATOR REQUIRED))

(c) Labels.

(i) Where DBCP or products containing DBCP are sold, distributed or otherwise leave the employer's workplace bearing appropriate labels required by EPA under the regulations in 40 C.F.R. Part 162, the labels required by (c) of this subsection need not be affixed.

(ii) The employer ~~((shall))~~ must ensure that the precautionary labels required by (c) of this subsection are readily visible and legible.

~~((iii))~~ Prior to June 1, 2015, employers may include the following information on containers of DBCP or products containing DBCP, DBCP-contaminated protective devices or work clothing or DBCP-contaminated portable vacuums in lieu of the labeling requirements in (11)(b)(v), (12)(a)(iii)(B) and (a)(i) of this subsection:

DANGER

1,2-Dibromo-3-chloropropane

CANCER HAZARD))

(17) Recordkeeping.

(a) Exposure monitoring.

(i) The employer ~~((shall))~~ must establish and maintain an accurate record of all monitoring required by subsection (6) of this section.

(ii) This record ~~((shall))~~ must include:

(A) The dates, number, duration and results of each of the samples taken, including a description of the sampling procedure used to determine representative employee exposure;

(B) A description of the sampling and analytical methods used;

(C) Type of respiratory worn, if any; and

(D) Name, Social Security number, and job classification of the employee monitored and of all other employees whose exposure the measurement is intended to represent.

(iii) The employer ~~((shall))~~ must maintain this record for at least forty years or the duration of employment plus twenty years, whichever is longer.

(b) Medical surveillance.

(i) The employer (~~(shall)~~) must establish and maintain an accurate record for each employee subject to medical surveillance required by subsection (14) of this section.

(ii) This record (~~(shall)~~) must include:

(A) The name and Social Security number of the employee;

(B) A copy of the physician's written opinion;

(C) Any employee medical complaints related to exposure to DBCP;

(D) A copy of the information provided the physician as required by subsection (14)(c) of this section; and

(E) A copy of the employee's medical and work history.

(iii) The employer (~~(shall)~~) must maintain this record for at least forty years or the duration of employment plus twenty years, whichever is longer.

(c) Availability.

(i) The employer (~~(shall assure)~~) must ensure that all records required to be maintained by this section be made available upon request to the director for examination and copying.

(ii) Employee exposure monitoring records and employee medical records required by this subsection (~~(shall)~~) must be provided upon request to employees' designated representatives and the assistant director in accordance with chapter 296-802 WAC.

(d) Transfer of records.

(i) If the employer ceases to do business, the successor employer (~~(shall)~~) must receive and retain all records required to be maintained by this section for the prescribed period.

(ii) The employer (~~(shall)~~) must also comply with any additional requirements involving transfer of records set forth in WAC 296-802-60005.

(18) Observation of monitoring.

(a) Employee observation. The employer (~~(shall)~~) must provide affected employees, or their designated representatives, an opportunity to observe any monitoring of employee exposure to DBCP conducted under subsection (6) of this section.

(b) Observation procedures.

(i) Whenever observation of the measuring or monitoring of employee exposure to DBCP requires entry into an area where the use of protective clothing or equipment is required, the employer (~~(shall)~~) must provide the observer with personal protective clothing or equipment required to be worn by employees working in the area, (~~(assure)~~) ensure the use of such clothing and equipment, and require the observer to comply with all other applicable safety and health procedures.

(ii) Without interfering with the monitoring or measurement, observers shall be entitled to:

(A) Receive an explanation of the measurement procedures;

(B) Observe all steps related to the measurement of airborne concentrations of DBCP performed at the place of exposure; and

(C) Record the results obtained.

(19) Appendices. The information contained in the appendices is not intended, by itself, to create any additional

obligations not otherwise imposed or to detract from any existing obligation.

AMENDATORY SECTION (Amending WSR 99-10-071, filed 5/4/99, effective 9/1/99)

WAC 296-62-07343 Appendix A—Substance safety data sheet for DBCP. (1) Substance identification.

(a) Synonyms and trades names: DBCP; Dibromochloropropane; Fumazone (Dow Chemical Company TM); Nemaflume; Nemagon (Shell Chemical Co. TM); Nemaset; BBC 12; and OS 1879.

(b) Permissible exposure:

(i) Airborne. 1 part DBCP vapor per billion parts of air (1 ppb); time-weighted average (TWA) for an eight-hour workday.

(ii) Dermal. Eye contact and skin contact with DBCP are prohibited.

(c) Appearance and odor: Technical grade DBCP is a dense yellow or amber liquid with a pungent odor. It may also appear in granular form, or blended in varying concentrations with other liquids.

(d) Uses: DBCP is used to control nematodes, very small worm-like plant parasites, on crops including cotton, soybeans, fruits, nuts, vegetables and ornamentals.

(2) Health hazard data.

(a) Routes of entry: Employees may be exposed:

(i) Through inhalation (breathing);

(ii) Through ingestion (swallowing);

(iii) Skin contact; and

(iv) Eye contact.

(b) Effects of exposure:

(i) Acute exposure. DBCP may cause drowsiness, irritation of the eyes, nose, throat and skin, nausea and vomiting. In addition, overexposure may cause damage to the lungs, liver or kidneys.

(ii) Chronic exposure. Prolonged or repeated exposure to DBCP has been shown to cause sterility in humans. It also has been shown to produce cancer and sterility in laboratory animals and has been determined to constitute an increased risk of cancer in people.

(iii) Reporting signs and symptoms. If you develop any of the above signs or symptoms that you think are caused by exposure to DBCP, you should inform your employer.

(3) Emergency first-aid procedures.

(a) Eye exposure. If DBCP liquid or dust containing DBCP gets into your eyes, wash your eyes immediately with large amounts of water, lifting the lower and upper lids occasionally. Get medical attention immediately. Contact lenses should not be worn when working with DBCP.

(b) Skin exposure. If DBCP liquids or dusts containing DBCP get on your skin, immediately wash using soap or mild detergent and water. If DBCP liquids or dusts containing DBCP penetrate through your clothing, remove the clothing immediately and wash. If irritation is present after washing get medical attention.

(c) Breathing. If you or any person breathe in large amounts of DBCP, move the exposed person to fresh air at once. If breathing has stopped, perform artificial respiration.

Do not use mouth-to-mouth. Keep the affected person warm and at rest. Get medical attention as soon as possible.

(d) Swallowing. When DBCP has been swallowed and the person is conscious, give the person large amounts of water immediately. After the water has been swallowed, try to get the person to vomit by having ~~((him))~~ them touch the back of ~~((his))~~ their throat with ~~((his))~~ their finger. Do not make an unconscious person vomit. Get medical attention immediately.

(e) Rescue. Notify someone. Put into effect the established emergency rescue procedures. Know the locations of the emergency rescue equipment before the need arises.

(4) Respirators and protective clothing.

(a) Respirators. You may be required to wear a respirator in emergencies and while your employer is in the process of reducing DBCP exposures through engineering controls. If respirators are worn, they must have a label issued by the National Institute for Occupational Safety and Health (NIOSH) under the provisions of 42 C.F.R. part 84 stating that the respirators have been certified for use with organic vapors. For effective protection, a respirator must fit your face and head snugly. The respirator should not be loosened or removed in work situations where its use is required. Respirators must not be loosened or removed in work situations where their use is required.

(b) Protective clothing. When working with DBCP you must wear for your protection impermeable work clothing provided by your employer. (Standard rubber and neoprene protective clothing do not offer adequate protection). DBCP must never be allowed to remain on the skin. Clothing and shoes must not be allowed to become contaminated with DBCP, and if they do, they must be promptly removed and not worn again until completely free of DBCP. Turn in impermeable clothing that has developed leaks for repair or replacement.

(c) Eye protection. You must wear splashproof safety goggles where there is any possibility of DBCP liquid or dust contacting your eyes.

(5) Precautions for safe use, handling, and storage.

(a) DBCP must be stored in tightly closed containers in a cool, well-ventilated area.

(b) If your work clothing may have become contaminated with DBCP, or liquids or dusts containing DBCP, you must change into uncontaminated clothing before leaving the work premises.

(c) You must promptly remove any protective clothing that becomes contaminated with DBCP. This clothing must not be reworn until the DBCP is removed from the clothing.

(d) If your skin becomes contaminated with DBCP, you must immediately and thoroughly wash or shower with soap or mild detergent and water to remove any DBCP from your skin.

(e) You must not keep food, beverages, cosmetics, or smoking materials, nor eat or smoke, in regulated areas.

(f) If you work in a regulated area, you must wash your hands thoroughly with soap or mild detergent and water, before eating, smoking or using toilet facilities.

(g) If you work in a regulated area, you must remove any protective equipment or clothing before leaving the regulated area.

(h) Ask your supervisor where DBCP is used in your work area and for any additional safety and health rules.

(6) Access to information.

(a) Each year, your employer is required to inform you of the information contained in this substance safety data sheet for DBCP. In addition, your employer must instruct you in the safe use of DBCP, emergency procedures, and the correct use of protective equipment.

(b) Your employer is required to determine whether you are being exposed to DBCP. You or your representative have the right to observe employee exposure measurements and to record the result obtained. Your employer is required to inform you of your exposure. If your employer determines that you are being overexposed, they are required to inform you of the actions which are being taken to reduce your exposure.

(c) Your employer is required to keep records of your exposure and medical examinations. Your employer is required to keep exposure and medical data for at least forty years or the duration of your employment plus twenty years, whichever is longer.

(d) Your employer is required to release exposure and medical records to you, your physician, or other individual designated by you upon your written request.

AMENDATORY SECTION (Amending WSR 05-17-168, filed 8/23/05, effective 1/1/06)

WAC 296-62-07355 Ethylene oxide. Scope and application.

Note: The requirements in WAC 296-62-07355 through 296-62-07386 apply only to agriculture. The requirements for all other industries relating to ethylene oxide have been moved to chapter 296-855 WAC, Ethylene oxide.

(1) WAC 296-62-07355 through 296-62-07389 applies to all occupational exposures to ethylene oxide (EtO), Chemical Abstracts Service Registry No. 75-21-8, except as provided in subsection (2) of this section.

(2) WAC 296-62-07355 through 296-62-07389 does not apply to the processing, use, or handling of products containing EtO where objective data are reasonably relied upon that demonstrate that the product is not capable of releasing EtO in airborne concentrations at or above the action level, and may not reasonably be foreseen to release EtO in excess of the excursion limit, under the expected conditions of processing, use, or handling that will cause the greatest possible release.

(3) Where products containing EtO are exempted under subsection (2) of this section, the employer ~~((shall))~~ must maintain records of the objective data supporting that exemption and the basis for the employer's reliance on the data, as provided in WAC 296-62-07375(1).

AMENDATORY SECTION (Amending WSR 87-24-051, filed 11/30/87)

WAC 296-62-07357 Definitions. For the purpose of WAC 296-62-07355 through 296-62-07389, the following definitions shall apply:

((1) "Action level" means) **Action level.** A concentration of airborne EtO of 0.5 ppm calculated as an eight-hour time-weighted average.

((2) "Authorized person" means) **Authorized person.** Any person specifically authorized by the employer whose duties require the person to enter a regulated area, or any person entering such an area as a designated representative of employees for the purpose of exercising the right to observe monitoring and measuring procedures under WAC 296-62-07377, or any other person authorized by chapter 49.17 RCW or regulations issued under chapter 49.17 RCW.

((3) "Director" means) **Director.** The director of the department of labor and industries, or designee.

((4) "Emergency" means) **Emergency.** Any occurrence such as, but not limited to, equipment failure, rupture of containers, or failure of control equipment that is likely to or does result in an unexpected significant release of EtO.

((5) "Employee exposure" means) **Employee exposure.** Exposure to airborne EtO which would occur if the employee were not using respiratory protective equipment.

((6) "Ethylene oxide" or "EtO" means) **Ethylene oxide or EtO.** The three-membered ring organic compound with chemical formula C_2H_4O .

AMENDATORY SECTION (Amending WSR 88-23-054, filed 11/14/88)

WAC 296-62-07359 Permissible exposure limits (PEL). (1) Eight-hour time-weighted average (TWA). The employer ((shall)) **must** ensure that no employee is exposed to an airborne concentration of EtO in excess of one part EtO per million parts of air (1 ppm) as an eight-hour time-weighted average. (Eight-hour TWA.)

(2) Excursion limit. The employer ((shall)) **must** ensure that no employee is exposed to an airborne concentration of EtO in excess of five parts of EtO per million parts of air (5 ppm) as averaged over a sampling period of fifteen minutes.

AMENDATORY SECTION (Amending WSR 88-23-054, filed 11/14/88)

WAC 296-62-07361 Exposure monitoring. (1) General.

(a) Determinations of employee exposure ((shall)) **must** be made from breathing zone air samples that are representative of the eight-hour TWA and fifteen-minute short-term exposures of each employee.

(b) Representative eight-hour TWA employee exposure ((shall)) **must** be determined on the basis of one or more samples representing full-shift exposure for each shift for each job classification in each work area. Representative fifteen-minute short-term employee exposures ((shall)) **must** be determined on the basis of one or more samples representing fifteen-minute exposures associated with operations that are most likely to produce exposures above the excursion limit for each shift for each job classification in each work area.

(c) Where the employer can document that exposure levels are equivalent for similar operations in different work shifts, the employer need only determine representative employee exposure for that operation during one shift.

(2) Initial monitoring.

(a) Each employer who has a workplace or work operation covered by WAC 296-62-07355 through 296-62-07389, except as provided in WAC 296-62-07355(2) or (b) of this subsection, ((shall)) **must** perform initial monitoring to determine accurately the airborne concentrations of EtO to which employees may be exposed.

(b) Where the employer has monitored after June 15, 1983, and the monitoring satisfies all other requirements of WAC 296-62-07355 through 296-62-07389, the employer may rely on such earlier monitoring results to satisfy the requirements of (a) of this subsection.

(c) Where the employer has previously monitored for the excursion limit and the monitoring satisfies all other requirements of this section, the employer may rely on such earlier monitoring results to satisfy the requirements of (a) of this subsection.

(3) Monitoring frequency (periodic monitoring).

(a) If the monitoring required by subsection (2) of this section reveals employee exposure at or above the action level but at or below the eight-hour TWA, the employer ((shall)) **must** repeat such monitoring for each such employee at least every six months.

(b) If the monitoring required by subsection (2)(a) of this section reveals employee exposure above the eight-hour TWA, the employer ((shall)) **must** repeat such monitoring for each such employee at least every three months.

(c) The employer may alter the monitoring schedule from quarterly to semiannually for any employee for whom two consecutive measurements taken at least seven days apart indicate that the employee's exposure has decreased to or below the eight-hour TWA.

(d) If the monitoring required by subsection (2)(a) of this section reveals employee exposure above the fifteen-minute excursion limit, the employer shall repeat such monitoring for each such employee at least every three months, and more often as necessary to evaluate the employee's short-term exposures.

(4) Termination of monitoring.

(a) If the initial monitoring required by subsection (2)(a) of this section reveals employee exposure to be below the action level, the employer may discontinue TWA monitoring for those employees whose exposures are represented by the initial monitoring.

(b) If the periodic monitoring required by subsection (3) of this section reveals that employee exposures, as indicated by at least two consecutive measurements taken at least seven days apart, are below the action level, the employer may discontinue TWA monitoring for those employees whose exposures are represented by such monitoring.

(c) If the initial monitoring required by subsection (2)(a) of this section reveals the employee exposure to be at or below the excursion limit, the employer may discontinue excursion limit monitoring for those employees whose exposures are represented by the initial monitoring.

(d) If the periodic monitoring required by subsection (3) of this section reveals that employee exposures, as indicated by at least two consecutive measurements taken at least seven days apart, are at or below the excursion limit, the employer may discontinue excursion limit monitoring for those

employees whose exposures are represented by such monitoring.

(5) Additional monitoring. Notwithstanding the provisions of subsection (4) of this section, the employer ((shall)) must institute the exposure monitoring required under subsections (2)(a) and (3) of this section whenever there has been a change in the production, process, control equipment, personnel or work practices that may result in new or additional exposures to EtO or when the employer has any reason to suspect that a change may result in new or additional exposures.

(6) Accuracy of monitoring.

(a) Monitoring ((shall)) must be accurate, to a confidence level of ninety-five percent, to within plus or minus twenty-five percent for airborne concentrations of EtO at the 1 ppm TWA and to within plus or minus thirty-five percent for airborne concentrations of EtO at the action level of 0.5 ppm.

(b) Monitoring ((shall)) must be accurate, to a confidence level of ninety-five percent, to within plus or minus thirty-five percent for airborne concentrations of EtO at the excursion limit.

(7) Employee notification of monitoring results.

(a) The employer ((shall)) must, within fifteen working days after the receipt of the results of any monitoring performed under WAC 296-62-07355 through 296-62-07389, notify the affected employee of these results in writing either individually or by posting of results in an appropriate location that is accessible to affected employees.

(b) The written notification required by (a) of this subsection ((shall)) must contain the corrective action being taken by the employer to reduce employee exposure to or below the TWA and/or excursion limit, wherever monitoring results indicated that the TWA and/or excursion limit has been exceeded.

AMENDATORY SECTION (Amending WSR 88-23-054, filed 11/14/88)

WAC 296-62-07363 Regulated areas. (1) The employer ((shall)) must establish a regulated area wherever occupational exposures to airborne concentrations of EtO may exceed the TWA or wherever the EtO concentration exceeds or can reasonably be expected to exceed the excursion limit.

(2) Access to regulated areas ((shall)) must be limited to authorized persons.

(3) Regulated areas ((shall)) must be demarcated in any manner that minimizes the number of employees within the regulated area.

AMENDATORY SECTION (Amending WSR 88-23-054, filed 11/14/88)

WAC 296-62-07365 Methods of compliance. (1) Engineering controls and work practices.

(a) The employer ((shall)) must institute engineering controls and work practices to reduce and maintain employee exposure to or below the TWA and to or below the excursion limit, except to the extent that such controls are not feasible.

(b) Wherever the feasible engineering controls and work practices that can be instituted are not sufficient to reduce employee exposure to or below the TWA and to or below the excursion limit, the employer ((shall)) must use them to reduce employee exposure to the lowest levels achievable by these controls and ((shall)) must supplement them by the use of respiratory protection that complies with the requirements of WAC 296-62-07367.

(c) Engineering controls are generally infeasible for the following operations: Collection of quality assurance sampling from sterilized materials removal of biological indicators from sterilized materials: Loading and unloading of tank cars; changing of ethylene oxide tanks on sterilizers; and vessel cleaning. For these operations, engineering controls are required only where the director demonstrates that such controls are feasible.

(2) Compliance program.

(a) Where the TWA or excursion limit is exceeded, the employer ((shall)) must establish and implement a written program to reduce employee exposure to or below the TWA and to or below the excursion limit by means of engineering and work practice controls, as required by subsection (1) of this section, and by the use of respiratory protection where required or permitted under WAC 296-62-07355 through 296-62-07389.

(b) The compliance program ((shall)) must include a schedule for periodic leak detection surveys and a written plan for emergency situations, as specified in WAC 296-62-07369 (1)(a).

(c) Written plans for a program required in this subsection ((shall)) must be developed and furnished upon request for examination and copying to the director, affected employees and designated employee representatives. Such plans ((shall)) must be reviewed at least every twelve months, and ((shall)) must be updated as necessary to reflect significant changes in the status of the employer's compliance program.

(d) The employer ((shall)) must not implement a schedule of employee rotation as a means of compliance with the TWA or excursion limit.

AMENDATORY SECTION (Amending WSR 99-10-071, filed 5/4/99, effective 9/1/99)

WAC 296-62-07369 Emergency situations. (1) Written plan.

(a) A written plan for emergency situations ((shall)) must be developed for each workplace where there is a possibility of an emergency. Appropriate portions of the plan ((shall)) must be implemented in the event of an emergency.

(b) The plan ((shall)) must specifically provide that employees engaged in correcting emergency conditions ((shall)) must be equipped with respiratory protection as required by WAC 296-62-07367 until the emergency is abated.

(c) The plan ((shall)) must include the elements prescribed in WAC 296-24-567, "Employee emergency plans and fire prevention plans."

(2) Alerting employees. Where there is the possibility of employee exposure to EtO due to an emergency, means ((shall)) must be developed to alert potentially affected

employees of such occurrences promptly. Affected employees ~~((shall))~~ must be immediately evacuated from the area in the event that an emergency occurs.

AMENDATORY SECTION (Amending WSR 87-24-051, filed 11/30/87)

WAC 296-62-07371 Medical surveillance. (1) General.

(a) Employees covered.

(i) The employer ~~((shall))~~ must institute a medical surveillance program for all employees who are or may be exposed to EtO at or above the action level, without regard to the use of respirators, for at least thirty days a year.

(ii) The employer ~~((shall))~~ must make available medical examinations and consultations to all employees who have been exposed to EtO in an emergency situation.

(b) Examination by a physician. The employer ~~((shall))~~ must ensure that all medical examinations and procedures are performed by or under the supervision of a licensed physician, and are provided without cost to the employee, without loss of pay, and at a reasonable time and place.

(2) Medical examinations and consultations.

(a) Frequency. The employer ~~((shall))~~ must make available medical examinations and consultations to each employee covered under subsection (1)(a) of this section on the following schedules:

(i) Prior to assignment of the employee to an area where exposure may be at or above the action level for at least thirty days a year.

(ii) At least annually each employee exposed at or above the action level for at least thirty days in the past year.

(iii) At termination of employment or reassignment to an area where exposure to EtO is not at or above the action level for at least thirty days a year.

(iv) As medically appropriate for any employee exposed during an emergency.

(v) As soon as possible, upon notification by an employee either (A) that the employee has developed signs or symptoms indicating possible overexposure to EtO, or (B) that the employee desires medical advice concerning the effects of current or past exposure to EtO on the employee's ability to produce a healthy child.

(vi) If the examining physician determines that any of the examinations should be provided more frequently than specified, the employer ~~((shall))~~ must provide such examinations to affected employees at the frequencies recommended by the physician.

(b) Content.

(i) Medical examinations made available pursuant to (a)(i) through (iv) of this subsection ~~((shall))~~ must include:

(A) A medical and work history with special emphasis directed to symptoms related to the pulmonary, hematologic, neurologic, and reproductive systems and to the eyes and skin.

(B) A physical examination with particular emphasis given to the pulmonary, hematologic, neurologic, and reproductive systems and to the eyes and skin.

(C) A complete blood count to include at least a white cell count (including differential cell count), red cell count, hematocrit, and hemoglobin.

(D) Any laboratory or other test which the examining physician deems necessary by sound medical practice.

(ii) The content of medical examinations or consultation made available pursuant to (a)(i)(v) of this subsection shall be determined by the examining physician, and shall include pregnancy testing or laboratory evaluation of fertility, if requested by the employee and deemed appropriate by the physician.

(3) Information provided to the physician. The employer ~~((shall))~~ must provide the following information to the examining physician:

(a) A copy of WAC 296-62-07355 through 296-62-07389.

(b) A description of the affected employee's duties as they relate to the employee's exposure.

(c) The employee's representative exposure level or anticipated exposure level.

(d) A description of any personal protective and respiratory equipment used or to be used.

(e) Information from previous medical examinations of the affected employee that is not otherwise available to the examining physician.

(4) Physician's written opinion.

(a) The employer ~~((shall))~~ must obtain a written opinion from the examining physician. This written opinion ~~((shall))~~ must contain the results of the medical examination and ~~((shall))~~ must include:

(i) The physician's opinion as to whether the employee has any detected medical conditions that would place the employee at an increased risk of material health impairment from exposure to EtO;

(ii) Any recommended limitations on the employee or upon the use of personal protective equipment such as clothing or respirators; and

(iii) A statement that the employee has been informed by the physician of the results of the medical examination and of any medical conditions resulting from EtO exposure that require further explanation or treatment.

(b) The employer ~~((shall))~~ must instruct the physician not to reveal in the written opinion given to the employer specific findings or diagnoses unrelated to occupational exposure to EtO.

(c) The employer ~~((shall))~~ must provide a copy of the physician's written opinion to the affected employee within fifteen days from its receipt.

AMENDATORY SECTION (Amending WSR 14-07-086, filed 3/18/14, effective 5/1/14)

WAC 296-62-07373 Communication of EtO hazards.

(1) Hazard communication - General.

(a) Chemical manufacturers, importers, distributors and employers ~~((shall))~~ must comply with all requirements of the Hazard Communication Standard (HCS), WAC 296-901-140 for EtO.

(b) In classifying the hazards of EtO at least the following hazards are to be addressed: Cancer; reproductive effects;

mutagenicity; central nervous system; skin sensitization; skin, eye and respiratory tract irritation; acute toxicity effects; and flammability.

(c) Employers ~~((shall))~~ must include EtO in the hazard communication program established to comply with the HCS, WAC 296-901-140. Employers ~~((shall))~~ must ensure that each employee has access to labels on containers of EtO and to safety data sheets, and is trained in accordance with the requirements of HCS and WAC 296-855-20090.

(2) Signs and labels.

(a) Signs.

~~((+))~~ The employer ~~((shall))~~ must post and maintain legible signs demarcating regulated areas and entrances or accessways to regulated areas that bear the following legend:

DANGER
ETHYLENE OXIDE
MAY CAUSE CANCER
MAY DAMAGE FERTILITY OR THE UNBORN CHILD
RESPIRATORY PROTECTION AND PROTECTIVE CLOTHING MAY
BE
REQUIRED IN THIS AREA
AUTHORIZED PERSONNEL ONLY

~~((ii))~~ Prior to June 1, 2016, employers may use the following legend in lieu of that specified in (a)(i) of this subsection:

DANGER
ETHYLENE OXIDE
CANCER HAZARD AND REPRODUCTIVE HAZARD
AUTHORIZED PERSONNEL ONLY
RESPIRATORS AND PROTECTIVE CLOTHING MAY BE REQUIRED
TO BE WORN IN THIS AREA))

(b) Labels.

~~((+))~~ The employer ~~((shall))~~ must ensure that labels are affixed to all containers of EtO whose contents are capable of causing employee exposure at or above the action level or whose contents may reasonably be foreseen to cause employee exposure above the excursion limit, and that the labels remain affixed when the containers of EtO leave the workplace. For the purpose of this subsection, reaction vessels, storage tanks, and pipes or piping systems are not considered to be containers.

~~((ii))~~ Prior to June 1, 2015, employers may include the following information on containers of EtO in lieu of the labeling requirements in subsection (1)(a) of this section:

(A)

DANGER
CONTAINS ETHYLENE OXIDE
CANCER HAZARD AND REPRODUCTIVE HAZARD; and

~~(B)~~ A warning statement against breathing airborne concentrations of EtO.

~~(e)~~ The labeling requirements under WAC 296-62-07355 through 296-62-07389 do not apply where EtO is used as a pesticide, as such term is defined in the Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. 136 et seq.), when it is labeled pursuant to that act and regulations issued under that act by the Environmental Protection Agency.

~~(d))~~ (c) The details of the hazard communication program developed by the employer, including an explanation of

the labeling system and how employees can obtain and use the appropriate hazard information.

(3) Safety data sheets. Employers who are manufacturers or importers of EtO ~~((shall))~~ must comply with the requirements regarding development of safety data sheets as specified in WAC 296-901-14014 of the Hazard Communication Standard.

(4) Information and training.

(a) The employer ~~((shall))~~ must provide employees who are potentially exposed to EtO at or above the action level or above the excursion limit with information and training on EtO at the time of initial assignment and at least annually thereafter.

(b) Employees ~~((shall))~~ must be informed of the following:

(i) The requirements of WAC 296-62-07353 through 296-62-07389 with an explanation of its contents, including Appendices A and B;

(ii) Any operations in their work area where EtO is present;

(iii) The location and availability of the written EtO final rule; and

(iv) The medical surveillance program required by WAC 296-62-07371 with an explanation of the information in Appendix C.

(c) Employee training ~~((shall))~~ must include at least:

(i) Methods and observations that may be used to detect the presence or release of EtO in the work area (such as monitoring conducted by the employer, continuous monitoring devices, etc.);

(ii) The physical and health hazards of EtO;

(iii) The measures employees can take to protect themselves from hazards associated with EtO exposure, including specific procedures the employer has implemented to protect employees from exposure to EtO, such as work practices, emergency procedures, and personal protective equipment to be used; and

(iv) The details of the hazard communication program developed by the employer, including an explanation of the labeling system and how employees can obtain and use the appropriate hazard information.

AMENDATORY SECTION (Amending WSR 04-10-026, filed 4/27/04, effective 8/1/04)

WAC 296-62-07375 Recordkeeping. (1) Objective data for exempted operations.

(a) Where the processing, use, or handling of products made from or containing EtO are exempted from other requirements of WAC 296-62-07355 through 296-62-07389 under WAC 296-62-07355, or where objective data have been relied on in lieu of initial monitoring under WAC 296-62-07361 (2)(b), the employer ~~((shall))~~ must establish and maintain an accurate record of objective data reasonably relied upon in support of the exemption.

(b) This record ~~((shall))~~ must include at least the following information:

(i) The product qualifying for exemption;

(ii) The source of the objective data;

(iii) The testing protocol, results of testing, and/or analysis of the material for the release of EtO;

(iv) A description of the operation exempted and how the data support the exemption; and

(v) Other data relevant to the operations, materials, processing, or employee exposures covered by the exemption.

(c) The employer ~~((shall))~~ must maintain this record for the duration of the employer's reliance upon such objective data.

(2) Exposure measurements.

(a) The employer ~~((shall))~~ must keep an accurate record of all measurements taken to monitor employee exposure to EtO as prescribed in WAC 296-62-07361.

(b) This record ~~((shall))~~ must include at least the following information:

(i) The date of measurement;

(ii) The operation involving exposure to EtO which is being monitored;

(iii) Sampling and analytical methods used and evidence of their accuracy;

(iv) Number, duration, and results of samples taken;

(v) Type of protective devices worn, if any; and

(vi) Name, Social Security number and exposure of the employees whose exposures are represented.

(c) The employer ~~((shall))~~ must maintain this record for at least thirty years, in accordance with chapter 296-802 WAC.

(3) Medical surveillance.

(a) The employer ~~((shall))~~ must establish and maintain an accurate record for each employee subject to medical surveillance by WAC 296-62-07371 (1)(a), in accordance with chapter 296-802 WAC.

(b) The record ~~((shall))~~ must include at least the following information:

(i) The name and Social Security number of the employee;

(ii) Physicians' written opinions;

(iii) Any employee medical complaints related to exposure to EtO; and

(iv) A copy of the information provided to the physician as required by WAC 296-62-07371(3).

(c) The employer ~~((shall))~~ must ensure that this record is maintained for the duration of employment plus thirty years, in accordance with chapter 296-802 WAC.

(4) Availability.

(a) The employer, upon written request, ~~((shall))~~ must make all records required to be maintained by WAC 296-62-07355 through 296-62-07389 available to the director for examination and copying.

(b) The employer, upon request, ~~((shall))~~ must make any exemption and exposure records required by WAC 296-62-07377 (1) and (2) available for examination and copying to affected employees, former employees, designated representatives and the director, in accordance with chapter 296-802 WAC.

(c) The employer, upon request, ~~((shall))~~ must make employee medical records required by subsection (3) of this section available for examination and copying to the subject employee, anyone having the specific written consent of the

subject employee, and the director, in accordance with chapter 296-802 WAC.

(5) Transfer of records.

(a) The employer ~~((shall))~~ must comply with the requirements concerning transfer of records set forth in chapter 296-802 WAC.

(b) Whenever the employer ceases to do business and there is no successor employer to receive and retain the records for the prescribed period, the employer ~~((shall))~~ must notify the director at least ninety days prior to disposal and transmit them to the director.

AMENDATORY SECTION (Amending WSR 87-24-051, filed 11/30/87)

WAC 296-62-07377 Observation of monitoring. (1) Employee observation. The employer ~~((shall))~~ must provide affected employees or their designated representatives an opportunity to observe any monitoring of employee exposure to EtO conducted in accordance with WAC 296-62-07361.

(2) Observation procedures. When observation of the monitoring of employee exposure to EtO requires entry into an area where the use of protective clothing or equipment is required, the observer ~~((shall))~~ must be provided with and be required to use such clothing and equipment and ~~((shall))~~ must comply with all other applicable safety and health procedures.

AMENDATORY SECTION (Amending WSR 93-21-075, filed 10/20/93, effective 12/1/93)

WAC 296-62-07403 Definitions. ~~((1) Action level (AL) is defined as)~~ **Action level (AL).** An airborne concentration of cadmium of 2.5 micrograms per cubic meter of air (2.5 µg/m³), calculated as an 8-hour time-weighted average (TWA).

~~((2) Authorized person means)~~ **Authorized person.** Any person authorized by the employer and required by work duties to be present in regulated areas or any person authorized by the WISH Act or regulations issued under it to be in regulated areas.

~~((3) Director means)~~ **Director.** The director of the department of labor and industries, or authorized representatives.

~~((4))~~ **Employee exposure and similar language referring to the air cadmium level to which an employee is exposed ((means)).** The exposure to airborne cadmium that would occur if the employee were not using respiratory protective equipment.

~~((5))~~ **Final medical determination ((is)).** The written medical opinion of the employee's health status by the examining physician under WAC 296-62-07423 (3) through (12) or, if multiple physician review under WAC 296-62-07423 (13) or the alternative physician determination under WAC 296-62-07423(14) is invoked, it is the final, written medical finding, recommendation or determination that emerges from that process.

~~((6))~~ **High-efficiency particulate air (HEPA) filter ((means)).** A filter capable of trapping and retaining at least 99.97 percent of mono-dispersed particles of 0.3 micrometers in diameter.

~~((7) Regulated area means)~~ **Regulated area.** An area demarcated by the employer where an employee's exposure to airborne concentrations of cadmium exceeds, or can reasonably be expected to exceed the permissible exposure limit (PEL).

AMENDATORY SECTION (Amending WSR 93-07-044, filed 3/13/93, effective 4/27/93)

WAC 296-62-07405 Permissible exposure limit (PEL). The employer ~~((shall assure))~~ **must ensure** that no employee is exposed to an airborne concentration of cadmium in excess of five micrograms per cubic meter of air ($5 \mu\text{g}/\text{m}^3$), calculated as an 8-hour time-weighted average exposure (TWA).

AMENDATORY SECTION (Amending WSR 93-07-044, filed 3/13/93, effective 4/27/93)

WAC 296-62-07407 Exposure monitoring. (1) General.

(a) Each employer who has a workplace or work operation covered by this section ~~((shall))~~ **must** determine if any employee may be exposed to cadmium at or above the action level.

(b) Determinations of employee exposure ~~((shall))~~ **must** be made from breathing zone air samples that reflect the monitored employee's regular, daily 8-hour TWA exposure to cadmium.

(c) 8-hour TWA exposures ~~((shall))~~ **must** be determined for each employee on the basis of one or more personal breathing zone air samples reflecting full shift exposure on each shift, for each job classification, in each work area. Where several employees perform the same job tasks, in the same job classification, on the same shift, in the same work area, and the length, duration, and level of cadmium exposures are similar, an employer may sample a representative fraction of the employees instead of all employees in order to meet this requirement. In representative sampling, the employer ~~((shall))~~ **must** sample the employee(s) expected to have the highest cadmium exposures.

(2) Specific.

(a) Initial monitoring. Except as provided for in (b) and (c) of this subsection, the employer ~~((shall))~~ **must** monitor employee exposures and ~~((shall))~~ **must** base initial determinations on the monitoring results.

(b) Where the employer has monitored after September 14, 1991, under conditions that in all important aspects closely resemble those currently prevailing and where that monitoring satisfies all other requirements of this section, including the accuracy and confidence levels of subsection (6) of this section, the employer may rely on such earlier monitoring results to satisfy the requirements of WAC 296-62-07427 (2)(a).

(c) Where the employer has objective data, as defined in WAC 296-62-07427(2), demonstrating that employee exposure to cadmium will not exceed the action level under the expected conditions of processing, use, or handling, the employer may rely upon such data instead of implementing initial monitoring.

(3) Monitoring frequency (periodic monitoring).

(a) If the initial monitoring or periodic monitoring reveals employee exposures to be at or above the action level, the employer ~~((shall))~~ **must** monitor at a frequency and pattern needed to represent the levels of exposure of employees and where exposures are above the PEL to ~~((assure))~~ **ensure** the adequacy of respiratory selection and the effectiveness of engineering and work practice controls. However, such exposure monitoring ~~((shall))~~ **must** be performed at least every six months. The employer, at a minimum, ~~((shall))~~ **must** continue these semiannual measurements unless and until the conditions set out in (b) of this subsection are met.

(b) If the initial monitoring or the periodic monitoring indicates that employee exposures are below the action level and that result is confirmed by the results of another monitoring taken at least seven days later, the employer may discontinue the monitoring for those employees whose exposures are represented by such monitoring.

(4) Additional monitoring. The employer also ~~((shall))~~ **must** institute the exposure monitoring required under (2)(a) and (3) of this section whenever there has been a change in the raw materials, equipment, personnel, work practices, or finished products that may result in additional employees being exposed to cadmium at or above the action level or in employees already exposed to cadmium at or above the action level being exposed above the PEL, or whenever the employer has any reason to suspect that any other change might result in such further exposure.

(5) Employee notification of monitoring results.

(a) Within fifteen working days after the receipt of the results of any monitoring performed under this section, the employer ~~((shall))~~ **must** notify each affected employee individually in writing of the results. In addition, within the same time period the employer ~~((shall))~~ **must** post the results of the exposure monitoring in an appropriate location that is accessible to all affected employees.

(b) Wherever monitoring results indicate that employee exposure exceeds the PEL, the employer ~~((shall))~~ **must** include in the written notice a statement that the PEL has been exceeded and a description of the corrective action being taken by the employer to reduce employee exposure to or below the PEL.

(6) Accuracy of measurement. The employer ~~((shall))~~ **must** use a method of monitoring and analysis that has an accuracy of not less than plus or minus twenty-five percent, with a confidence level of ninety-five percent, for airborne concentrations of cadmium at or above the action level, the permissible exposure limit (PEL), and the separate engineering control air limit (SECAL).

AMENDATORY SECTION (Amending WSR 93-07-044, filed 3/13/93, effective 4/27/93)

WAC 296-62-07409 Regulated areas. (1) Establishment. The employer ~~((shall))~~ **must** establish a regulated area wherever an employee's exposure to airborne concentrations of cadmium is, or can reasonably be expected to be in excess of the permissible exposure limit (PEL).

(2) Demarcation. Regulated areas ~~((shall))~~ **must** be demarcated from the rest of the workplace in any manner that

adequately establishes and alerts employees of the boundaries of the regulated area.

(3) Access. Access to regulated areas (~~(shall)~~) must be limited to authorized persons.

(4) Provision of respirators. Each person entering a regulated area (~~(shall)~~) must be supplied with and required to use a respirator, selected in accordance with WAC 296-62-07413 (2).

(5) Prohibited activities. The employer (~~(shall assure)~~) must ensure that employees do not eat, drink, smoke, chew tobacco or gum, or apply cosmetics in regulated areas, carry the products associated with these activities into regulated areas, or store such products in those areas.

AMENDATORY SECTION (Amending WSR 93-21-075, filed 10/20/93, effective 12/1/93)

WAC 296-62-07411 Methods of compliance. (1) Compliance hierarchy.

(a) Except as specified in (b), (c), and (d) of this subsection, the employer (~~(shall)~~) must implement engineering and work practice controls to reduce and maintain employee exposure to cadmium at or below the PEL, except to the extent that the employer can demonstrate that such controls are not feasible.

(b) Except as specified in (c) and (d) of this subsection, in industries where a separate engineering control air limit (SECAL) has been specified for particular processes (Table ((+) I of this subsection), the employer (~~(shall)~~) must implement engineering and work practice controls to reduce and maintain employee exposure at or below the SECAL, except to the extent that the employer can demonstrate that such controls are not feasible.

Table I.—Separate Engineering Control Airborne Limits (SECALs) for Processes in Selected Industries

Industry	Process	SECAL (µg/m ³)
Nickel cadmium battery	Plate making, plate preparation	50
	All other processes	15
Zinc/Cadmium refining*	Cadmium refining, casting, melting, oxide production, sinter plant	50
Pigment manufacture	Calcine, crushing, milling, blending	50
	All other processes	15
Stabilizers*	Cadmium oxide charging, crushing, drying, blending	50
Lead smelting*	Sinter plant, blast furnace, bag-house, yard area	50
Plating*	Mechanical plating	15

* Processes in these industries that are not specified in this table must achieve the PEL using engineering controls and work practices as required in (a) of this subsection.

(c) The requirement to implement engineering and work practice controls to achieve the PEL or, where applicable, the SECAL does not apply where the employer demonstrates the following:

- (i) The employee is only intermittently exposed; and
- (ii) The employee is not exposed above the PEL on thirty or more days per year (twelve consecutive months).

(d) Wherever engineering and work practice controls are required and are not sufficient to reduce employee exposure to or below the PEL or, where applicable, the SECAL, the employer nonetheless (~~(shall)~~) must implement such controls to reduce exposures to the lowest levels achievable. The employer (~~(shall)~~) must supplement such controls with respiratory protection that complies with the requirements of WAC 296-62-07413 and the PEL.

(e) The employer (~~(shall)~~) must not use employee rotation as a method of compliance.

(2) Compliance program.

(a) Where the PEL is exceeded, the employer (~~(shall)~~) must establish and implement a written compliance program to reduce employee exposure to or below the PEL by means of engineering and work practice controls, as required by subsection (1) of this section. To the extent that engineering and work practice controls cannot reduce exposures to or below the PEL, the employer (~~(shall)~~) must include in the written compliance program the use of appropriate respiratory protection to achieve compliance with the PEL.

(b) Written compliance programs (~~(shall)~~) must include at least the following:

(i) A description of each operation in which cadmium is emitted; e.g., machinery used, material processed, controls in place, crew size, employee job responsibilities, operating procedures, and maintenance practices;

(ii) A description of the specific means that will be employed to achieve compliance, including engineering plans and studies used to determine methods selected for controlling exposure to cadmium, as well as, where necessary, the use of appropriate respiratory protection to achieve the PEL;

(iii) A report of the technology considered in meeting the PEL;

(iv) Air monitoring data that document the sources of cadmium emissions;

(v) A detailed schedule for implementation of the program, including documentation such as copies of purchase orders for equipment, construction contracts, etc.;

(vi) A work practice program that includes items required under WAC 296-62-07415, 296-62-07417, and 296-62-07419;

(vii) A written plan for emergency situations, as specified in WAC 296-62-07415; and

(viii) Other relevant information.

(c) The written compliance programs (~~(shall)~~) must be reviewed and updated at least annually, or more often if necessary, to reflect significant changes in the employer's compliance status.

(d) Written compliance programs (~~(shall)~~) must be provided upon request for examination and copying to affected employees, designated employee representatives, and the director.

(3) Mechanical ventilation.

(a) When ventilation is used to control exposure, measurements that demonstrate the effectiveness of the system in controlling exposure, such as capture velocity, duct velocity,

or static pressure (~~(shall)~~) must be made as necessary to maintain its effectiveness.

(b) Measurements of the system's effectiveness in controlling exposure (~~(shall)~~) must be made as necessary within five working days of any change in production, process, or control that might result in a significant increase in employee exposure to cadmium.

(c) Recirculation of air. If air from exhaust ventilation is recirculated into the workplace, the system (~~(shall)~~) must have a high efficiency filter and be monitored to (~~(assure)~~) ensure effectiveness.

(d) Procedures (~~(shall)~~) must be developed and implemented to minimize employee exposure to cadmium when maintenance of ventilation systems and changing of filters is being conducted.

AMENDATORY SECTION (Amending WSR 93-07-044, filed 3/13/93, effective 4/27/93)

WAC 296-62-07415 Emergency situations. The employer (~~(shall)~~) must develop and implement a written plan for dealing with emergency situations involving substantial releases of airborne cadmium. The plan (~~(shall)~~) must include provisions for the use of appropriate respirators and personal protective equipment. In addition, employees not essential to correcting the emergency situation (~~(shall)~~) must be restricted from the area and normal operations halted in that area until the emergency is abated.

AMENDATORY SECTION (Amending WSR 01-11-038, filed 5/9/01, effective 9/1/01)

WAC 296-62-07417 Protective work clothing and equipment. (1) Provision and use. If an employee is exposed to airborne cadmium above the PEL or where skin or eye irritation is associated with cadmium exposure at any level, the employer (~~(shall)~~) must provide at no cost to the employee, and (~~(assure)~~) ensure that the employee uses, appropriate protective work clothing and equipment that prevents contamination of the employee and the employee's garments. Protective work clothing and equipment includes, but is not limited to:

- (a) Coveralls or similar full-body work clothing;
- (b) Gloves, head coverings, and boots or foot coverings; and
- (c) Face shields, vented goggles, or other appropriate protective equipment that complies with WAC 296-800-160.

(2) Removal and storage.

(a) The employer (~~(shall-assure)~~) must ensure that employees remove all protective clothing and equipment contaminated with cadmium at the completion of the work shift and do so only in change rooms provided in accordance with WAC 296-62-07419(1).

(b) The employer (~~(shall-assure)~~) must ensure that no employee takes cadmium-contaminated protective clothing or equipment from the workplace, except for employees authorized to do so for purposes of laundering, cleaning, maintaining, or disposing of cadmium contaminated protective clothing and equipment at an appropriate location or facility away from the workplace.

(c) The employer (~~(shall-assure)~~) must ensure that contaminated protective clothing and equipment, when removed for laundering, cleaning, maintenance, or disposal, is placed and stored in sealed, impermeable bags or other closed, impermeable containers that are designed to prevent dispersion of cadmium dust.

(d) The employer (~~(shall-assure)~~) must ensure that bags or containers of contaminated protective clothing and equipment that are to be taken out of the change rooms or the workplace for laundering, cleaning, maintenance, or disposal (~~(shall)~~) must bear labels in accordance with WAC 296-62-07425(3).

(3) Cleaning, replacement, and disposal.

(a) The employer (~~(shall)~~) must provide the protective clothing and equipment required by subsection (1) of this section in a clean and dry condition as often as necessary to maintain its effectiveness, but in any event at least weekly. The employer is responsible for cleaning and laundering the protective clothing and equipment required by this paragraph to maintain its effectiveness and is also responsible for disposing of such clothing and equipment.

(b) The employer also is responsible for repairing or replacing required protective clothing and equipment as needed to maintain its effectiveness. When rips or tears are detected while an employee is working they (~~(shall)~~) must be immediately mended, or the worksuit (~~(shall)~~) must be immediately replaced.

(c) The employer (~~(shall)~~) must prohibit the removal of cadmium from protective clothing and equipment by blowing, shaking, or any other means that disperses cadmium into the air.

(d) The employer (~~(shall-assure)~~) must ensure that any laundering of contaminated clothing or cleaning of contaminated equipment in the workplace is done in a manner that prevents the release of airborne cadmium in excess of the permissible exposure limit prescribed in WAC 296-62-07405.

(e) The employer (~~(shall)~~) must inform any person who launders or cleans protective clothing or equipment contaminated with cadmium of the potentially harmful effects of exposure to cadmium and that the clothing and equipment should be laundered or cleaned in a manner to effectively prevent the release of airborne cadmium in excess of the PEL.

AMENDATORY SECTION (Amending WSR 03-18-090, filed 9/2/03, effective 11/1/03)

WAC 296-62-07419 Hygiene areas and practices. (1) General. For employees whose airborne exposure to cadmium is above the PEL, the employer (~~(shall)~~) must provide clean change rooms, handwashing facilities, showers, and lunchroom facilities that comply with WAC 296-800-230.

(2) Change rooms. The employer (~~(shall-assure)~~) must ensure that change rooms are equipped with separate storage facilities for street clothes and for protective clothing and equipment, which are designed to prevent dispersion of cadmium and contamination of the employee's street clothes.

(3) Showers and handwashing facilities.

(a) The employer (~~(shall-assure)~~) must ensure that employees who are exposed to cadmium above the PEL shower during the end of the work shift.

(b) The employer (~~(shall assure)~~) must ensure that employees whose airborne exposure to cadmium is above the PEL wash their hands and faces prior to eating, drinking, smoking, chewing tobacco or gum, or applying cosmetics.

(4) Lunchroom facilities.

(a) The employer (~~(shall assure)~~) must ensure that the lunchroom facilities are readily accessible to employees, that tables for eating are maintained free of cadmium, and that no employee in a lunchroom facility is exposed at any time to cadmium at or above a concentration of 2.5 µg/m³.

(b) The employer (~~(shall assure)~~) must ensure that employees do not enter lunchroom facilities with protective work clothing or equipment unless surface cadmium has been removed from the clothing and equipment by HEPA vacuuming or some other method that removes cadmium dust without dispersing it.

AMENDATORY SECTION (Amending WSR 02-12-098, filed 6/5/02, effective 8/1/02)

WAC 296-62-07421 Housekeeping. (1) All surfaces (~~(shall)~~) must be maintained as free as practicable of accumulations of cadmium.

(2) All spills and sudden releases of material containing cadmium (~~(shall)~~) must be cleaned up as soon as possible.

(3) Surfaces contaminated with cadmium (~~(shall)~~) must, wherever possible, be cleaned by vacuuming or other methods that minimize the likelihood of cadmium becoming airborne.

(4) HEPA-filtered vacuuming equipment or equally effective filtration methods (~~(shall)~~) must be used for vacuuming. The equipment (~~(shall)~~) must be used and emptied in a manner that minimizes the reentry of cadmium into the workplace.

(5) Shoveling, dry or wet sweeping, and brushing may be used only where vacuuming or other methods that minimize the likelihood of cadmium becoming airborne have been tried and found not to be effective.

(6) Compressed air (~~(shall)~~) must not be used to remove cadmium from any surface unless the compressed air is used in conjunction with a ventilation system designed to capture the dust cloud created by the compressed air.

(7) Waste, scrap, debris, bags, containers, personal protective equipment, and clothing contaminated with cadmium and consigned for disposal must be collected and disposed of in sealed impermeable bags or other closed, impermeable containers. These bags and containers must be labeled in accordance with WAC 296-62-07425(3).

AMENDATORY SECTION (Amending WSR 93-21-075, filed 10/20/93, effective 12/1/93)

WAC 296-62-07423 Medical surveillance. (1) General.

(a) Scope.

(i) Currently exposed. The employer (~~(shall)~~) must institute a medical surveillance program for all employees who are or may be exposed to cadmium at or above the action level unless the employer demonstrates that the employee is not, and will not be, exposed at or above the action level on

thirty or more days per year (twelve consecutive months); and

(ii) Previously exposed. The employer (~~(shall)~~) must also institute a medical surveillance program for all employees who prior to the effective date of this section might previously have been exposed to cadmium at or above the action level by the employer, unless the employer demonstrates that the employee did not prior to the effective date of this section work for the employer in jobs with exposure to cadmium for an aggregated total of more than sixty months.

(b) To determine an employee's fitness for using a respirator, the employer (~~(shall)~~) must provide the limited medical examination specified in subsection (6) of this section.

(c) The employer (~~(shall assure)~~) must ensure that all medical examinations and procedures required by this standard are performed by or under the supervision of a licensed physician, who has read and is familiar with the health effects WAC 296-62-07441, Appendix A, the regulatory text of this section, the protocol for sample handling and laboratory selection in WAC 296-62-07451, Appendix F and the questionnaire of WAC 296-62-07447, Appendix D. These examinations and procedures (~~(shall)~~) must be provided without cost to the employee and at a time and place that is reasonable and convenient to employees.

(d) The employer (~~(shall assure)~~) must ensure that the collecting and handling of biological samples of cadmium in urine (CdU), cadmium in blood (CdB), and beta-2 microglobulin in urine (β₂-M) taken from employees under this section is done in a manner that (~~(assures)~~) ensures their reliability and that analysis of biological samples of cadmium in urine (CdU), cadmium in blood (CdB), and beta-2 microglobulin in urine (β₂-M) taken from employees under this section is performed in laboratories with demonstrated proficiency for that particular analyte. (See WAC 296-62-07451, Appendix F.)

(2) Initial examination.

(a) The employer (~~(shall)~~) must provide an initial (pre-placement) examination to all employees covered by the medical surveillance program required in subsection (1)(a) of this section. The examination (~~(shall)~~) must be provided to those employees within thirty days after initial assignment to a job with exposure to cadmium or no later than ninety days after the effective date of this section, whichever date is later.

(b) The initial (preplacement) medical examination (~~(shall)~~) must include:

(i) A detailed medical and work history, with emphasis on: Past, present, and anticipated future exposure to cadmium; any history of renal, cardiovascular, respiratory, hematopoietic, reproductive, and/or musculo-skeletal system dysfunction; current usage of medication with potential nephrotoxic side-effects; and smoking history and current status; and

(ii) Biological monitoring that includes the following tests:

(A) Cadmium in urine (CdU), standardized to grams of creatinine (g/Cr);

(B) Beta-2 microglobulin in urine (β₂-M), standardized to grams of creatinine (g/Cr), with pH specified, as described in WAC 296-62-07451, Appendix F; and

(C) Cadmium in blood (CdB), standardized to liters of whole blood (lwb).

(c) Recent examination: An initial examination is not required to be provided if adequate records show that the employee has been examined in accordance with the requirements of (b) of this subsection within the past twelve months. In that case, such records ((~~shall~~) must) be maintained as part of the employee's medical record and the prior exam ((~~shall~~) must) be treated as if it were an initial examination for the purposes of subsections (3) and (4) of this section.

(3) Actions triggered by initial biological monitoring:

(a) If the results of the initial biological monitoring tests show the employee's CdU level to be at or below 3 µg/g Cr, β₂-M level to be at or below 300 µg/g Cr and CdB level to be at or below 5 µg/lwb, then:

(i) For currently exposed employees, who are subject to medical surveillance under subsection (1)(a)(i) of this section, the employer ((~~shall~~) must) provide the minimum level of periodic medical surveillance in accordance with the requirements in subsection (4)(a) of this section; and

(ii) For previously exposed employees, who are subject to medical surveillance under subsection (1)(a)(ii) of this section, the employer ((~~shall~~) must) provide biological monitoring for CdU, β₂-M, and CdB one year after the initial biological monitoring and then the employer ((~~shall~~) must) comply with the requirements of subsection (4)(e) of this section.

(b) For all employees who are subject to medical surveillance under subsection (1)(a) of this section, if the results of the initial biological monitoring tests show the level of CdU to exceed 3 µg/g Cr, the level of β₂-M to exceed 300 µg/g Cr, or the level of CdB to exceed 5 µg/lwb, the employer ((~~shall~~) must):

(i) Within two weeks after receipt of biological monitoring results, reassess the employee's occupational exposure to cadmium as follows:

(A) Reassess the employee's work practices and personal hygiene;

(B) Reevaluate the employee's respirator use, if any, and the respirator program;

(C) Review the hygiene facilities;

(D) Reevaluate the maintenance and effectiveness of the relevant engineering controls;

(E) Assess the employee's smoking history and status;

(ii) Within thirty days after the exposure reassessment, specified in (b)(i) of this subsection, take reasonable steps to correct any deficiencies found in the reassessment that may be responsible for the employee's excess exposure to cadmium; and,

(iii) Within ninety days after receipt of biological monitoring results, provide a full medical examination to the employee in accordance with the requirements of WAC 296-62-07423 (4)(b). After completing the medical examination, the examining physician ((~~shall~~) must) determine in a written medical opinion whether to medically remove the employee. If the physician determines that medical removal is not necessary, then until the employee's CdU level falls to or below 3 µg/g Cr, β₂-M level falls to or below 300 µg/g Cr and CdB level falls to or below 5 µg/lwb, the employer ((~~shall~~) must):

(A) Provide biological monitoring in accordance with subsection (2)(b)(ii) of this section on a semiannual basis; and

(B) Provide annual medical examinations in accordance with subsection (4)(b) of this section.

(c) For all employees who are subject to medical surveillance under subsection (1)(a) of this section, if the results of the initial biological monitoring tests show the level of CdU to be in excess of 15 µg/g Cr, or the level of CdB to be in excess of 15 µg/lwb, or the level of β₂-M to be in excess of 1,500 µg/g Cr, the employer ((~~shall~~) must) comply with the requirements of (b)(i) and (ii) of this subsection. Within ninety days after receipt of biological monitoring results, the employer ((~~shall~~) must) provide a full medical examination to the employee in accordance with the requirements of subsection (4)(b) of this section. After completing the medical examination, the examining physician ((~~shall~~) must) determine in a written medical opinion whether to medically remove the employee. However, if the initial biological monitoring results and the biological monitoring results obtained during the medical examination both show that: CdU exceeds 15 µg/g Cr; or CdB exceeds 15 µg/lwb; or β₂-M exceeds 1500 µg/g Cr, and in addition CdU exceeds 3 µg/g Cr or CdB exceeds 5 µg/liter of whole blood, then the physician ((~~shall~~) must) medically remove the employee from exposure to cadmium at or above the action level. If the second set of biological monitoring results obtained during the medical examination does not show that a mandatory removal trigger level has been exceeded, then the employee is not required to be removed by the mandatory provisions of this section. If the employee is not required to be removed by the mandatory provisions of this section or by the physician's determination, then until the employee's CdU level falls to or below 3 µg/g Cr, β₂-M level falls to or below 300 µg/g Cr and CdB level falls to or below 5 µg/lwb, the employer ((~~shall~~) must):

(i) Periodically reassess the employee's occupational exposure to cadmium;

(ii) Provide biological monitoring in accordance with subsection (2)(b)(ii) of this section on a quarterly basis; and

(iii) Provide semiannual medical examinations in accordance with subsection (4)(b) of this section.

(d) For all employees to whom medical surveillance is provided, beginning on January 1, 1999, and in lieu of (a) through (c) of this subsection:

(i) If the results of the initial biological monitoring tests show the employee's CdU level to be at or below 3 µg/g Cr, β₂-M level to be at or below 300 µg/g Cr and CdB level to be at or below 5 µg/lwb, then for currently exposed employees, the employer ((~~shall~~) must) comply with the requirements of (a)(i) of this subsection and for previously exposed employees, the employer shall comply with the requirements of (a)(ii) of this subsection;

(ii) If the results of the initial biological monitoring tests show the level of CdU to exceed 3 µg/g Cr, the level of β₂-M to exceed 300 µg/g Cr, or the level of CdB to exceed 5 µg/lwb, the employer ((~~shall~~) must) comply with the requirements of (b)(i) through (iii) of this subsection; and

(iii) If the results of the initial biological monitoring tests show the level of CdU to be in excess of 7 µg/g Cr, or the

level of CdB to be in excess of 10 $\mu\text{g/lwb}$, or the level of $\beta_2\text{-M}$ to be in excess of 750 $\mu\text{g/g Cr}$, the employer ~~((shall))~~ must: Comply with the requirements of (b)(i) through (ii) of this subsection; and, within ninety days after receipt of biological monitoring results, provide a full medical examination to the employee in accordance with the requirements of subsection (4)(b) of this section. After completing the medical examination, the examining physician ~~((shall))~~ must determine in a written medical opinion whether to medically remove the employee. However, if the initial biological monitoring results and the biological monitoring results obtained during the medical examination both show that: CdU exceeds 7 $\mu\text{g/g Cr}$; or CdB exceeds 10 $\mu\text{g/lwb}$; or $\beta_2\text{-M}$ exceeds 750 $\mu\text{g/g Cr}$, and in addition CdU exceeds 3 $\mu\text{g/g Cr}$ or CdB exceeds 5 $\mu\text{g/liter}$ of whole blood, then the physician ~~((shall))~~ must medically remove the employee from exposure to cadmium at or above the action level. If the second set of biological monitoring results obtained during the medical examination does not show that a mandatory removal trigger level has been exceeded, then the employee is not required to be removed by the mandatory provisions of this section. If the employee is not required to be removed by the mandatory provisions of this section or by the physician's determination, then until the employee's CdU level falls to or below 3 $\mu\text{g/g Cr}$, $\beta_2\text{-M}$ level falls to or below 300 $\mu\text{g/g Cr}$ and CdB level falls to or below 5 $\mu\text{g/lwb}$, the employer ~~((shall))~~ must: Periodically reassess the employee's occupational exposure to cadmium; provide biological monitoring in accordance with subsection (2)(b)(ii) of this section on a quarterly basis; and provide semiannual medical examinations in accordance with subsection (4)(b) of this section.

(4) Periodic medical surveillance.

(a) For each employee who is covered under subsection (1)(a)(i) of this section, the employer ~~((shall))~~ must provide at least the minimum level of periodic medical surveillance, which consists of periodic medical examinations and periodic biological monitoring. A periodic medical examination ~~((shall))~~ must be provided within one year after the initial examination required by subsection (2) of this section and thereafter at least biennially. Biological sampling ~~((shall))~~ must be provided at least annually, either as part of a periodic medical examination or separately as periodic biological monitoring.

(b) The periodic medical examination ~~((shall))~~ must include:

(i) A detailed medical and work history, or update thereof, with emphasis on: Past, present and anticipated future exposure to cadmium; smoking history and current status; reproductive history; current use of medications with potential nephrotoxic side-effects; any history of renal, cardiovascular, respiratory, hematopoietic, and/or musculoskeletal system dysfunction; and as part of the medical and work history, for employees who wear respirators, questions 3-11 and 25-32 in WAC 296-62-07447, Appendix D;

(ii) A complete physical examination with emphasis on: Blood pressure, the respiratory system, and the urinary system;

(iii) A 14 inch by 17 inch, or a reasonably standard sized posterior-anterior chest X-ray (after the initial X-ray, the fre-

quency of chest X-rays is to be determined by the examining physician);

(iv) Pulmonary function tests, including forced vital capacity (FVC) and forced expiratory volume at 1 second (FEV1);

(v) Biological monitoring, as required in subsection (2)(b)(ii) of this section;

(vi) Blood analysis, in addition to the analysis required under this section, including blood urea nitrogen, complete blood count, and serum creatinine;

(vii) Urinalysis, in addition to the analysis required under subsection (2)(b)(ii) of this section, including the determination of albumin, glucose, and total and low molecular weight proteins;

(viii) For males over forty years old, prostate palpation, or other at least as effective diagnostic test(s); and

(ix) Any additional tests deemed appropriate by the examining physician.

(c) Periodic biological monitoring ~~((shall))~~ must be provided in accordance with subsection (2)(b)(ii) of this section.

(d) If the results of periodic biological monitoring or the results of biological monitoring performed as part of the periodic medical examination show the level of the employee's CdU, $\beta_2\text{-M}$, or CdB to be in excess of the levels specified in subsection (3)(b) or (c) of this section; or, beginning on January 1, 1999, in excess of the levels specified in subsection (3)(b) or (d) of this section, the employer ~~((shall))~~ must take the appropriate actions specified in subsection (3)(b) through (d) of this section.

(e) For previously exposed employees under subsection (1)(a)(ii) of this section:

(i) If the employee's levels of CdU did not exceed 3 $\mu\text{g/g Cr}$, CdB did not exceed 5 $\mu\text{g/lwb}$, and $\beta_2\text{-M}$ did not exceed 300 $\mu\text{g/g Cr}$ in the initial biological monitoring tests, and if the results of the followup biological monitoring required by subsection (3)(a)(ii) of this section one year after the initial examination confirm the previous results, the employer may discontinue all periodic medical surveillance for that employee.

(ii) If the initial biological monitoring results for CdU, CdB, or $\beta_2\text{-M}$ were in excess of the levels specified in subsection (3)(a) of this section, but subsequent biological monitoring results required by subsection (3)(b) through (e) of this section show that the employee's CdU levels no longer exceed 3 $\mu\text{g/g Cr}$, CdB levels no longer exceed 5 $\mu\text{g/lwb}$, and $\beta_2\text{-M}$ levels no longer exceed 300 $\mu\text{g/g Cr}$, the employer shall provide biological monitoring for CdU, CdB, and $\beta_2\text{-M}$ one year after these most recent biological monitoring results. If the results of the followup biological monitoring, specified in this section, confirm the previous results, the employer may discontinue all periodic medical surveillance for that employee.

(iii) However, if the results of the follow-up tests specified in (e)(i) or (ii) of this subsection indicate that the level of the employee's CdU, $\beta_2\text{-M}$, or CdB exceeds these same levels, the employer is required to provide annual medical examinations in accordance with the provisions of (b) of this subsection until the results of biological monitoring are consistently below these levels or the examining physician

determines in a written medical opinion that further medical surveillance is not required to protect the employee's health.

(f) A routine, biennial medical examination is not required to be provided in accordance with subsections (3)(a) and (4) of this section if adequate medical records show that the employee has been examined in accordance with the requirements of (b) of this subsection within the past twelve months. In that case, such records ~~((shall))~~ must be maintained by the employer as part of the employee's medical record, and the next routine, periodic medical examination ~~((shall))~~ must be made available to the employee within two years of the previous examination.

(5) Actions triggered by medical examinations.

If the results of a medical examination carried out in accordance with this section indicate any laboratory or clinical finding consistent with cadmium toxicity that does not require employer action under subsection ~~((s))~~ (2), (3), or (4) of this section, the employer, within thirty days, ~~((shall))~~ must reassess the employee's occupational exposure to cadmium and take the following corrective action until the physician determines they are no longer necessary:

(a) Periodically reassess: The employee's work practices and personal hygiene; the employee's respirator use, if any; the employee's smoking history and status; the respiratory protection program; the hygiene facilities; and the maintenance and effectiveness of the relevant engineering controls;

(b) Within thirty days after the reassessment, take all reasonable steps to correct the deficiencies found in the reassessment that may be responsible for the employee's excess exposure to cadmium;

(c) Provide semiannual medical reexaminations to evaluate the abnormal clinical sign(s) of cadmium toxicity until the results are normal or the employee is medically removed; and

(d) Where the results of tests for total proteins in urine are abnormal, provide a more detailed medical evaluation of the toxic effects of cadmium on the employee's renal system.

(6) Examination for respirator use.

(a) To determine an employee's fitness for respirator use, the employer ~~((shall))~~ must provide a medical examination that includes the elements specified in (a)(i) through (iv) of this subsection. This examination ~~((shall))~~ must be provided prior to the employee's being assigned to a job that requires the use of a respirator or no later than ninety days after this section goes into effect, whichever date is later, to any employee without a medical examination within the preceding twelve months that satisfies the requirements of this paragraph.

(i) A detailed medical and work history, or update thereof, with emphasis on: Past exposure to cadmium; smoking history and current status; any history of renal, cardiovascular, respiratory, hematopoietic, and/or musculoskeletal system dysfunction; a description of the job for which the respirator is required; and questions 3 through 11 and 25 through 32 in WAC 296-62-07447, Appendix D;

(ii) A blood pressure test;

(iii) Biological monitoring of the employee's levels of CdU, CdB and β_2 -M in accordance with the requirements of subsection (2)(b)(ii) of this section, unless such results

already have been obtained within the previous twelve months; and

(iv) Any other test or procedure that the examining physician deems appropriate.

(b) After reviewing all the information obtained from the medical examination required in (a) of this subsection, the physician ~~((shall))~~ must determine whether the employee is fit to wear a respirator.

(c) Whenever an employee has exhibited difficulty in breathing during a respirator fit test or during use of a respirator, the employer, as soon as possible, ~~((shall))~~ must provide the employee with a periodic medical examination in accordance with subsection (4)(b) of this section to determine the employee's fitness to wear a respirator.

(d) Where the results of the examination required under (a), (b), or (c) of this subsection are abnormal, medical limitation or prohibition of respirator use ~~((shall))~~ must be considered. If the employee is allowed to wear a respirator, the employee's ability to continue to do so ~~((shall))~~ must be periodically evaluated by a physician.

(7) Emergency examinations.

(a) In addition to the medical surveillance required in subsections (2) through (6) of this section, the employer ~~((shall))~~ must provide a medical examination as soon as possible to any employee who may have been acutely exposed to cadmium because of an emergency.

(b) The examination ~~((shall))~~ must include the requirements of subsection (4)(b) of this section, with emphasis on the respiratory system, other organ systems considered appropriate by the examining physician, and symptoms of acute overexposure, as identified in WAC 296-62-07441 (2)(b)(i) through (ii) and (4), Appendix A.

(8) Termination of employment examination.

(a) At termination of employment, the employer ~~((shall))~~ must provide a medical examination in accordance with subsection (4)(b) of this section, including a chest X-ray, to any employee to whom at any prior time the employer was required to provide medical surveillance under subsection (1)(a) or (7) of this section. However, if the last examination satisfied the requirements of subsection (4)(b) of this section and was less than six months prior to the date of termination, no further examination is required unless otherwise specified in subsection (3) or (5) of this section;

(b) However, for employees covered by subsection (1)(a)(ii) of this section, if the employer has discontinued all periodic medical surveillance under subsection (4)(e) of this section, no termination of employment medical examination is required.

(9) Information provided to the physician. The employer ~~((shall))~~ must provide the following information to the examining physician:

(a) A copy of this standard and appendices;

(b) A description of the affected employee's former, current, and anticipated duties as they relate to the employee's occupational exposure to cadmium;

(c) The employee's former, current, and anticipated future levels of occupational exposure to cadmium;

(d) A description of any personal protective equipment, including respirators, used or to be used by the employee,

including when and for how long the employee has used that equipment; and

(e) Relevant results of previous biological monitoring and medical examinations.

(10) Physician's written medical opinion.

(a) The employer ~~((shall))~~ must promptly obtain a written, signed medical opinion from the examining physician for each medical examination performed on each employee. This written opinion ~~((shall))~~ must contain:

(i) The physician's diagnosis for the employee;

(ii) The physician's opinion as to whether the employee has any detected medical condition(s) that would place the employee at increased risk of material impairment to health from further exposure to cadmium, including any indications of potential cadmium toxicity;

(iii) The results of any biological or other testing or related evaluations that directly assess the employee's absorption of cadmium;

(iv) Any recommended removal from, or limitation on the activities or duties of the employee or on the employee's use of personal protective equipment, such as respirators;

(v) A statement that the physician has clearly and carefully explained to the employee the results of the medical examination, including all biological monitoring results and any medical conditions related to cadmium exposure that require further evaluation or treatment, and any limitation on the employee's diet or use of medications.

(b) The employer promptly ~~((shall))~~ must obtain a copy of the results of any biological monitoring provided by an employer to an employee independently of a medical examination under subsections (2) and (4) of this section, and, in lieu of a written medical opinion, an explanation sheet explaining those results.

(c) The employer ~~((shall))~~ must instruct the physician not to reveal orally or in the written medical opinion given to the employer specific findings or diagnoses unrelated to occupational exposure to cadmium.

(11) Medical removal protection (MRP).

(a) General.

(i) The employer ~~((shall))~~ must temporarily remove an employee from work where there is excess exposure to cadmium on each occasion that medical removal is required under subsection (3), (4), or (6) of this section and on each occasion that a physician determines in a written medical opinion that the employee should be removed from such exposure. The physician's determination may be based on biological monitoring results, inability to wear a respirator, evidence of illness, other signs or symptoms of cadmium-related dysfunction or disease, or any other reason deemed medically sufficient by the physician.

(ii) The employer ~~((shall))~~ must medically remove an employee in accordance with this subsection regardless of whether at the time of removal a job is available into which the removed employee may be transferred.

(iii) Whenever an employee is medically removed under this subsection, the employer ~~((shall))~~ must transfer the removed employee to a job where the exposure to cadmium is within the permissible levels specified in that subsection as soon as one becomes available.

(iv) For any employee who is medically removed under the provisions of (a) of this subsection, the employer ~~((shall))~~ must provide follow-up biological monitoring in accordance with subsection (2)(b)(ii) of this section at least every three months and follow-up medical examinations semiannually at least every six months until in a written medical opinion the examining physician determines that either the employee may be returned to ~~((his/her))~~ their former job status as specified under (d) through (e) of this subsection or the employee must be permanently removed from excess cadmium exposure.

(v) The employer may not return an employee who has been medically removed for any reason to ~~((his/her))~~ their former job status until a physician determines in a written medical opinion that continued medical removal is no longer necessary to protect the employee's health.

(b) Where an employee is found unfit to wear a respirator under subsection (6)(b) of this section, the employer ~~((shall))~~ must remove the employee from work where exposure to cadmium is above the PEL.

(c) Where removal is based on any reason other than the employee's inability to wear a respirator, the employer ~~((shall))~~ must remove the employee from work where exposure to cadmium is at or above the action level.

(d) Except as specified in (e) of this subsection, no employee who was removed because ~~((his/her))~~ their level of CdU, CdB and/or β_2 -M exceeded the medical removal trigger levels in subsection (3) or (4) of this section may be returned to work with exposure to cadmium at or above the action level until the employee's levels of CdU fall to or below 3 $\mu\text{g/g}$ Cr, CdB falls to or below 5 $\mu\text{g/lwb}$, and β_2 -M falls to or below 300 $\mu\text{g/g}$ Cr.

(e) However, when in the examining physician's opinion continued exposure to cadmium will not pose an increased risk to the employee's health and there are special circumstances that make continued medical removal an inappropriate remedy, the physician ~~((shall))~~ must fully discuss these matters with the employee, and then in a written determination may return a worker to ~~((his/her))~~ their former job status despite what would otherwise be unacceptably high biological monitoring results. Thereafter, the returned employee ~~((shall))~~ must continue to be provided with medical surveillance as if ~~((he/she))~~ they were still on medical removal until the employee's levels of CdU fall to or below 3 $\mu\text{g/g}$ Cr, CdB falls to or below 5 $\mu\text{g/lwb}$, and β_2 -M falls to or below 300 $\mu\text{g/g}$ Cr.

(f) Where an employer, although not required by (a) through (c) of this subsection to do so, removes an employee from exposure to cadmium or otherwise places limitations on an employee due to the effects of cadmium exposure on the employee's medical condition, the employer ~~((shall))~~ must provide the same medical removal protection benefits to that employee under subsection (12) of this section as would have been provided had the removal been required under (a) through (c) of this subsection.

(12) Medical removal protection benefits (MRPB).

(a) The employer ~~((shall))~~ must provide MRPB for up to a maximum of eighteen months to an employee each time and while the employee is temporarily medically removed under subsection (11) of this section.

(b) For purposes of this section, the requirement that the employer provide MRPB means that the employer ~~((shall))~~ must maintain the total normal earnings, seniority, and all other employee rights and benefits of the removed employee, including the employee's right to ~~((his/her))~~ their former job status, as if the employee had not been removed from the employee's job or otherwise medically limited.

(c) Where, after eighteen months on medical removal because of elevated biological monitoring results, the employee's monitoring results have not declined to a low enough level to permit the employee to be returned to ~~((his/her))~~ their former job status:

(i) The employer ~~((shall))~~ must make available to the employee a medical examination pursuant in order to obtain a final medical determination as to whether the employee may be returned to ~~((his/her))~~ their former job status or must be permanently removed from excess cadmium exposure; and

(ii) The employer ~~((shall assure))~~ must ensure that the final medical determination indicates whether the employee may be returned to ~~((his/her))~~ their former job status and what steps, if any, should be taken to protect the employee's health.

(d) The employer may condition the provision of MRPB upon the employee's participation in medical surveillance provided in accordance with this section.

(13) Multiple physician review.

(a) If the employer selects the initial physician to conduct any medical examination or consultation provided to an employee under this section, the employee may designate a second physician to:

(i) Review any findings, determinations, or recommendations of the initial physician; and

(ii) Conduct such examinations, consultations, and laboratory tests as the second physician deems necessary to facilitate this review.

(b) The employer ~~((shall))~~ must promptly notify an employee of the right to seek a second medical opinion after each occasion that an initial physician provided by the employer conducts a medical examination or consultation pursuant to this section. The employer may condition its participation in, and payment for, multiple physician review upon the employee doing the following within fifteen days after receipt of this notice, or receipt of the initial physician's written opinion, whichever is later:

(i) Informing the employer that he or she intends to seek a medical opinion; and

(ii) Initiating steps to make an appointment with a second physician.

(c) If the findings, determinations, or recommendations of the second physician differ from those of the initial physician, then the employer and the employee ~~((shall assure))~~ must ensure that efforts are made for the two physicians to resolve any disagreement.

(d) If the two physicians have been unable to quickly resolve their disagreement, then the employer and the employee, through their respective physicians, ~~((shall))~~ must designate a third physician to:

(i) Review any findings, determinations, or recommendations of the other two physicians; and

(ii) Conduct such examinations, consultations, laboratory tests, and discussions with the other two physicians as the third physician deems necessary to resolve the disagreement among them.

(e) The employer ~~((shall))~~ must act consistently with the findings, determinations, and recommendations of the third physician, unless the employer and the employee reach an agreement that is consistent with the recommendations of at least one of the other two physicians.

(14) Alternate physician determination. The employer and an employee or designated employee representative may agree upon the use of any alternate form of physician determination in lieu of the multiple physician review provided by subsection (13) of this section, so long as the alternative is expeditious and at least as protective of the employee.

(15) Information the employer must provide the employee.

(a) The employer ~~((shall))~~ must provide a copy of the physician's written medical opinion to the examined employee within two weeks after receipt thereof.

(b) The employer ~~((shall))~~ must provide the employee with a copy of the employee's biological monitoring results and an explanation sheet explaining the results within two weeks after receipt thereof.

(c) Within thirty days after a request by an employee, the employer ~~((shall))~~ must provide the employee with the information the employer is required to provide the examining physician under subsection (9) of this section.

(16) Reporting. In addition to other medical events that are required to be reported on the OSHA Form No. 200, the employer ~~((shall))~~ must report any abnormal condition or disorder caused by occupational exposure to cadmium associated with employment as specified in WAC ~~((296-27-060))~~ 296-27-02105.

AMENDATORY SECTION (Amending WSR 14-07-086, filed 3/18/14, effective 5/1/14)

WAC 296-62-07425 Communication of cadmium hazards. (1) General. Chemical manufacturers, importers, distributors and employers ~~((shall))~~ must comply with all requirements of WAC 296-901-140~~((;))~~ Hazard communication.

(2) In classifying the hazards of cadmium at least the following hazards are to be addressed: Cancer; lung effects; kidney effects; and acute toxicity effects.

(3) Employers ~~((shall))~~ must include cadmium in the hazard communication program established to comply with WAC 296-901-140~~((;))~~ Hazard communication. Employers ~~((shall))~~ must ensure that each employee has access to labels on containers of cadmium and to safety data sheets (SDSs), and is trained in accordance with the requirements of WAC 296-901-140~~((;))~~ Hazard communication and subsection (m)(4) of this section.

(4) Warning signs.

(a) Warning signs ~~((shall))~~ must be provided and displayed in regulated areas. In addition, warning signs ~~((shall))~~ must be posted at all approaches to regulated areas so that an employee may read the signs and take necessary protective steps before entering the area.

(b) ~~((Prior to June 1, 2016, employers may use the following legend in lieu of that specified in (d) of this subsection:~~

~~DANGER CADMIUM CANCER HAZARD CAN CAUSE LUNG AND KIDNEY DISEASE AUTHORIZED PERSONNEL ONLY RESPIRATORS REQUIRED IN THIS AREA~~

(e)) The employer ~~((shall))~~ must ensure that signs required by this subsection are illuminated, cleaned, and maintained as necessary so that the legend is readily visible.

~~((d))~~ (c) Warning signs required by (a) of this subsection ~~((shall))~~ must bear the following legend:

~~DANGER CADMIUM MAY CAUSE CANCER CAUSES DAMAGE TO LUNGS AND KIDNEYS WEAR RESPIRATORY PROTECTION IN THIS AREA AUTHORIZED PERSONNEL ONLY~~

(5) Warning labels.

(a) Shipping and storage containers containing cadmium, cadmium compounds, or cadmium contaminated clothing, equipment, waste, scrap, or debris ~~((shall))~~ must bear appropriate warning labels, as specified in subsection (1) of this section.

~~(b) ((Prior to June 1, 2015, employers may include the following information on warning labels in lieu of the labeling requirements specified in subsection (1) of this section and (e) of this subsection:~~

~~DANGER CONTAINS CADMIUM CANCER HAZARD AVOID CREATING DUST CAN CAUSE LUNG AND KIDNEY DISEASE~~

~~(e))~~ The warning labels for containers of contaminated protective clothing, equipment, waste, scrap, or debris ~~((shall))~~ must include at least the following information:

~~DANGER CONTAINS CADMIUM MAY CAUSE CANCER CAUSES DAMAGE TO LUNGS AND KIDNEYS AVOID CREATING DUST~~

~~((d))~~ (c) Where feasible, installed cadmium products ~~((shall))~~ must have a visible label or other indication that cadmium is present.

(6) Employee information and training.

(a) The employer ~~((shall))~~ must train each employee who is potentially exposed to cadmium in accordance with the requirements of this chapter. The employer ~~((shall))~~ must institute a training program, ensure employee participation in the program, and maintain a record of the contents of such program.

(b) Training ~~((shall))~~ must be provided prior to or at the time of initial assignment to a job involving potential exposure to cadmium and at least annually thereafter.

(c) The employer ~~((shall))~~ must make the training program understandable to the employee and ~~((shall assure))~~ must ensure that each employee is informed of the following:

(i) The health hazards associated with cadmium exposure, with special attention to the information incorporated in WAC 296-62-07441, Appendix A;

(ii) The quantity, location, manner of use, release, and storage of cadmium in the workplace and the specific nature of operations that could result in exposure to cadmium, especially exposures above the PEL;

(iii) The engineering controls and work practices associated with the employee's job assignment;

(iv) The measures employees can take to protect themselves from exposure to cadmium, including modification of such habits as smoking and personal hygiene, and specific procedures the employer has implemented to protect employees from exposure to cadmium such as appropriate work practices, emergency procedures, and the provision of personal protective equipment;

(v) The purpose, proper selection, fitting, proper use, and limitations of protective clothing;

(vi) The purpose and a description of the medical surveillance program required by WAC 296-62-07423;

(vii) The contents of this section and its appendices;

(viii) The employee's rights of access to records under WAC 296-901-140 and chapter 296-802 WAC; and

(ix) The purpose, proper use, limitations, and other training requirements for respiratory protection as required in chapter ~~((296-62))~~ 296-842 WAC~~((Part E))~~.

(d) Additional access to information and training program and materials.

(i) The employer ~~((shall))~~ must make a copy of this section and its appendices readily available without cost to all affected employees and ~~((shall))~~ must provide a copy if requested.

(ii) The employer ~~((shall))~~ must provide to the director, upon request, all materials relating to the employee information and the training program.

AMENDATORY SECTION (Amending WSR 04-10-026, filed 4/27/04, effective 8/1/04)

WAC 296-62-07427 Recordkeeping. (1) Exposure monitoring.

(a) The employer ~~((shall))~~ must establish and keep an accurate record of all air monitoring for cadmium in the workplace.

(b) This record ~~((shall))~~ must include at least the following information:

(i) The monitoring date, duration, and results in terms of an 8-hour TWA of each sample taken;

(ii) The name, Social Security number, and job classification of the employees monitored and of all other employees whose exposures the monitoring is intended to represent;

(iii) A description of the sampling and analytical methods used and evidence of their accuracy;

(iv) The type of respiratory protective device, if any, worn by the monitored employee;

(v) A notation of any other conditions that might have affected the monitoring results.

(c) The employer ~~((shall))~~ must maintain this record for at least thirty years, in accordance with chapter 296-802 WAC.

(2) Objective data for exemption from requirement for initial monitoring.

(a) For purposes of this section, objective data are information demonstrating that a particular product or material containing cadmium or a specific process, operation, or activity involving cadmium cannot release dust or fumes in concentrations at or above the action level even under the worst-case release conditions. Objective data can be obtained from an industry-wide study or from laboratory product test results

from manufacturers of cadmium-containing products or materials. The data the employer uses from an industry-wide survey must be obtained under workplace conditions closely resembling the processes, types of material, control methods, work practices and environmental conditions in the employer's current operations.

(b) The employer ~~((shall))~~ **must** establish and maintain a record of the objective data for at least thirty years.

(3) Medical surveillance.

(a) The employer ~~((shall))~~ **must** establish and maintain an accurate record for each employee covered by medical surveillance under WAC 296-62-07423 (1)(a).

(b) The record ~~((shall))~~ **must** include at least the following information about the employee:

(i) Name, Social Security number, and description of the duties;

(ii) A copy of the physician's written opinions and an explanation sheet for biological monitoring results;

(iii) A copy of the medical history, and the results of any physical examination and all test results that are required to be provided by this section, including biological tests, X-rays, pulmonary function tests, etc., or that have been obtained to further evaluate any condition that might be related to cadmium exposure;

(iv) The employee's medical symptoms that might be related to exposure to cadmium; and

(v) A copy of the information provided to the physician as required by WAC 296-62-07423 (9)(b) through (e).

(c) The employer ~~((shall assure))~~ **must ensure** that this record is maintained for the duration of employment plus thirty years, in accordance with chapter 296-802 WAC.

(4) Training. The employer ~~((shall))~~ **must** certify that employees have been trained by preparing a certification record which includes the identity of the person trained, the signature of the employer or the person who conducted the training, and the date the training was completed. The certification records ~~((shall))~~ **must** be prepared at the completion of training and ~~((shall))~~ **must** be maintained on file for one year beyond the date of training of that employee.

(5) Availability.

(a) Except as otherwise provided for in this section, access to all records required to be maintained by subsections (1) through (4) of this section ~~((shall))~~ **must** be in accordance with the provisions of chapter 296-802 WAC.

(b) Within fifteen days after a request, the employer ~~((shall))~~ **must** make an employee's medical records required to be kept by subsection (3) of this section available for examination and copying to the subject employee, to designated representatives, to anyone having the specific written consent of the subject employee, and after the employee's death or incapacitation, to the employee's family members.

(6) Transfer of records. Whenever an employer ceases to do business and there is no successor employer to receive and retain records for the prescribed period or the employer intends to dispose of any records required to be preserved for at least thirty years, the employer ~~((shall))~~ **must** comply with the requirements concerning transfer of records set forth in chapter 296-802 WAC.

AMENDATORY SECTION (Amending WSR 93-07-044, filed 3/13/93, effective 4/27/93)

WAC 296-62-07429 Observation of monitoring. (1) Employee observation. The employer ~~((shall))~~ **must** provide affected employees or their designated representatives an opportunity to observe any monitoring of employee exposure to cadmium.

(2) Observation procedures. When observation of monitoring requires entry into an area where the use of protective clothing or equipment is required, the employer ~~((shall))~~ **must** provide the observer with that clothing and equipment and ~~((shall assure))~~ **must ensure** that the observer uses such clothing and equipment and complies with all other applicable safety and health procedures.

AMENDATORY SECTION (Amending WSR 99-10-071, filed 5/4/99, effective 9/1/99)

WAC 296-62-07441 Appendix A, substance safety data sheet—Cadmium. (1) Substance identification.

(a) Substance: Cadmium.

(b) 8-Hour, time-weighted-average, permissible exposure limit (TWA PEL):

(c) TWA PEL: Five micrograms of cadmium per cubic meter of air 5 µg/m³, time-weighted average (TWA) for an 8-hour workday.

(d) Appearance: Cadmium metal—soft, blue-white, malleable, lustrous metal or grayish-white powder. Some cadmium compounds may also appear as a brown, yellow, or red powdery substance.

(2) Health hazard data.

(a) Routes of exposure. Cadmium can cause local skin or eye irritation. Cadmium can affect your health if you inhale it or if you swallow it.

(b) Effects of overexposure.

(i) Short-term (acute) exposure: Cadmium is much more dangerous by inhalation than by ingestion. High exposures to cadmium that may be immediately dangerous to life or health occur in jobs where workers handle large quantities of cadmium dust or fume; heat cadmium-containing compounds or cadmium-coated surfaces; weld with cadmium solders or cut cadmium-containing materials such as bolts.

(ii) Severe exposure may occur before symptoms appear. Early symptoms may include mild irritation of the upper respiratory tract, a sensation of constriction of the throat, a metallic taste and/or a cough. A period of one to ten hours may precede the onset of rapidly progressing shortness of breath, chest pain, and flu-like symptoms with weakness, fever, headache, chills, sweating, and muscular pain. Acute pulmonary edema usually develops within twenty-four hours and reaches a maximum by three days. If death from asphyxia does not occur, symptoms may resolve within a week.

(iii) Long-term (chronic) exposure. Repeated or long-term exposure to cadmium, even at relatively low concentrations, may result in kidney damage and an increased risk of cancer of the lung and of the prostate.

(c) Emergency first-aid procedures.

(i) Eye exposure: Direct contact may cause redness or pain. Wash eyes immediately with large amounts of water,

lifting the upper and lower eyelids. Get medical attention immediately.

(ii) Skin exposure: Direct contact may result in irritation. Remove contaminated clothing and shoes immediately. Wash affected area with soap or mild detergent and large amounts of water. Get medical attention immediately.

(iii) Ingestion: Ingestion may result in vomiting, abdominal pain, nausea, diarrhea, headache, and sore throat. Treatment for symptoms must be administered by medical personnel. Under no circumstances should the employer allow any person whom ~~(he/she)~~ they retain~~((s))~~, employ~~((s))~~, supervise~~((s))~~, or control~~((s))~~ to engage in therapeutic chelation. Such treatment is likely to translocate cadmium from pulmonary or other tissue to renal tissue. Get medical attention immediately.

(iv) Inhalation: If large amounts of cadmium are inhaled, the exposed person must be moved to fresh air at once. If breathing has stopped, perform cardiopulmonary resuscitation. Administer oxygen if available. Keep the affected person warm and at rest. Get medical attention immediately.

(v) Rescue: Move the affected person from the hazardous exposure. If the exposed person has been overcome, attempt rescue only after notifying at least one other person of the emergency and putting into effect established emergency procedures. Do not become a casualty yourself. Understand your emergency rescue procedures and know the location of the emergency equipment before the need arises.

(3) Employee information.

(a) Protective clothing and equipment.

(i) Respirators: You may be required to wear a respirator for nonroutine activities; in emergencies; while your employer is in the process of reducing cadmium exposures through engineering controls; and where engineering controls are not feasible. If air-purifying respirators are worn, they must have a label issued by the National Institute for Occupational Safety and Health (NIOSH) under the provisions of 42 C.F.R. part 84 stating that the respirators have been certified for use with cadmium. Cadmium does not have a detectable odor except at levels well above the permissible exposure limits. If you can smell cadmium while wearing a respirator, proceed immediately to fresh air. If you experience difficulty breathing while wearing a respirator, tell your employer.

(ii) Protective clothing: You may be required to wear impermeable clothing, gloves, foot gear, a face shield, or other appropriate protective clothing to prevent skin contact with cadmium. Where protective clothing is required, your employer must provide clean garments to you as necessary to assure that the clothing protects you adequately. The employer must replace or repair protective clothing that has become torn or otherwise damaged.

(iii) Eye protection: You may be required to wear splash-proof or dust resistant goggles to prevent eye contact with cadmium.

(b) Employer requirements.

(i) Medical: If you are exposed to cadmium at or above the action level, your employer is required to provide a medical examination, laboratory tests and a medical history according to the medical surveillance provisions under WAC 296-62-07423. (See summary chart and tables in this section,

appendix A.) These tests ~~((shall))~~ must be provided without cost to you. In addition, if you are accidentally exposed to cadmium under conditions known or suspected to constitute toxic exposure to cadmium, your employer is required to make special tests available to you.

(ii) Access to records: All medical records are kept strictly confidential. You or your representative are entitled to see the records of measurements of your exposure to cadmium. Your medical examination records can be furnished to your personal physician or designated representative upon request by you to your employer.

(iii) Observation of monitoring: Your employer is required to perform measurements that are representative of your exposure to cadmium and you or your designated representative are entitled to observe the monitoring procedure. You are entitled to observe the steps taken in the measurement procedure, and to record the results obtained. When the monitoring procedure is taking place in an area where respirators or personal protective clothing and equipment are required to be worn, you or your representative must also be provided with, and must wear the protective clothing and equipment.

(c) Employee requirements. You will not be able to smoke, eat, drink, chew gum or tobacco, or apply cosmetics while working with cadmium in regulated areas. You will also not be able to carry or store tobacco products, gum, food, drinks, or cosmetics in regulated areas because these products easily become contaminated with cadmium from the workplace and can therefore create another source of unnecessary cadmium exposure. Some workers will have to change out of work clothes and shower at the end of the day, as part of their workday, in order to wash cadmium from skin and hair. Handwashing and cadmium-free eating facilities ~~((shall))~~ must be provided by the employer and proper hygiene should always be performed before eating. It is also recommended that you do not smoke or use tobacco products, because among other things, they naturally contain cadmium. For further information, read the labeling on such products.

(4) Physician information.

(a) Introduction. The medical surveillance provisions of WAC 296-62-07423 generally are aimed at accomplishing three main interrelated purposes: First, identifying employees at higher risk of adverse health effects from excess, chronic exposure to cadmium; second, preventing cadmium-induced disease; and third, detecting and minimizing existing cadmium-induced disease. The core of medical surveillance in this standard is the early and periodic monitoring of the employee's biological indicators of:

(i) Recent exposure to cadmium;

(ii) Cadmium body burden; and

(iii) Potential and actual kidney damage associated with exposure to cadmium. The main adverse health effects associated with cadmium overexposure are lung cancer and kidney dysfunction. It is not yet known how to adequately biologically monitor human beings to specifically prevent cadmium-induced lung cancer. By contrast, the kidney can be monitored to provide prevention and early detection of cadmium-induced kidney damage. Since, for noncarcinogenic effects, the kidney is considered the primary target organ of chronic exposure to cadmium, the medical surveillance pro-

visions of this standard effectively focus on cadmium-induced kidney disease. Within that focus, the aim, where possible, is to prevent the onset of such disease and, where necessary, to minimize such disease as may already exist. The by-products of successful prevention of kidney disease are anticipated to be the reduction and prevention of other cadmium-induced diseases.

(b) Health effects. The major health effects associated with cadmium overexposure are described below.

(i) Kidney: The most prevalent nonmalignant disease observed among workers chronically exposed to cadmium is kidney dysfunction. Initially, such dysfunction is manifested as proteinuria. The proteinuria associated with cadmium exposure is most commonly characterized by excretion of low-molecular weight proteins (15,000 to 40,000 MW) accompanied by loss of electrolytes, uric acid, calcium, amino acids, and phosphate. The compounds commonly excreted include: Beta-2-microglobulin (β_2 -M), retinol binding protein (RBP), immunoglobulin light chains, and lysozyme. Excretion of low molecular weight proteins are characteristic of damage to the proximal tubules of the kidney (Iwao et al., 1980). It has also been observed that exposure to cadmium may lead to urinary excretion of high-molecular weight proteins such as albumin, immunoglobulin G, and glycoproteins (Ex. 29). Excretion of high-molecular weight proteins is typically indicative of damage to the glomeruli of the kidney. Bernard et al., (1979) suggest that damage to the glomeruli and damage to the proximal tubules of the kidney may both be linked to cadmium exposure but they may occur independently of each other. Several studies indicate that the onset of low-molecular weight proteinuria is a sign of irreversible kidney damage (Friberg et al., 1974; Roels et al., 1982; Piscator 1984; Elinder et al., 1985; Smith et al., 1986). Above specific levels of β_2 -M associated with cadmium exposure it is unlikely that β_2 -M levels return to normal even when cadmium exposure is eliminated by removal of the individual from the cadmium work environment (Friberg, Ex. 29, 1990). Some studies indicate that such proteinuria may be progressive; levels of β_2 -M observed in the urine increase with time even after cadmium exposure has ceased. See, for example, Elinder et al., 1985. Such observations, however, are not universal, and it has been suggested that studies in which proteinuria has not been observed to progress may not have tracked patients for a sufficiently long time interval (Jarup, Ex. 8-661). When cadmium exposure continues after the onset of proteinuria, chronic nephrotoxicity may occur (Friberg, Ex. 29). Uremia results from the inability of the glomerulus to adequately filter blood. This leads to severe disturbance of electrolyte concentrations and may lead to various clinical complications including kidney stones (L-140-50). After prolonged exposure to cadmium, glomerular proteinuria, glucosuria, aminoaciduria, phosphaturia, and hypercalciuria may develop (Exs. 8-86, 4-28, 14-18). Phosphate, calcium, glucose, and amino acids are essential to life, and under normal conditions, their excretion should be regulated by the kidney. Once low molecular weight proteinuria has developed, these elements dissipate from the human body. Loss of glomerular function may also occur, manifested by decreased glomerular filtration rate and increased serum cre-

atinine. Severe cadmium-induced renal damage may eventually develop into chronic renal failure and uremia (Ex. 55). Studies in which animals are chronically exposed to cadmium confirm the renal effects observed in humans (Friberg et al., 1986). Animal studies also confirm problems with calcium metabolism and related skeletal effects which have been observed among humans exposed to cadmium in addition to the renal effects. Other effects commonly reported in chronic animal studies include anemia, changes in liver morphology, immunosuppression and hypertension. Some of these effects may be associated with co-factors. Hypertension, for example, appears to be associated with diet as well as cadmium exposure. Animals injected with cadmium have also shown testicular necrosis (Ex. 8-86B).

(ii) Biological markers. It is universally recognized that the best measures of cadmium exposures and its effects are measurements of cadmium in biological fluids, especially urine and blood. Of the two, CdU is conventionally used to determine body burden of cadmium in workers without kidney disease. CdB is conventionally used to monitor for recent exposure to cadmium. In addition, levels of CdU and CdB historically have been used to predict the percent of the population likely to develop kidney disease (Thun et al., Ex. L-140-50; WHO, Ex. 8-674; ACGIH, Exs. 8-667, 140-50). The third biological parameter upon which WISHA relies for medical surveillance is beta-2-microglobulin in urine (β_2 -M), a low molecular weight protein. Excess β_2 -M has been widely accepted by physicians and scientists as a reliable indicator of functional damage to the proximal tubule of the kidney (Exs. 8-447, 144-3-C, 4-47, L-140-45, 19-43-A). Excess β_2 -M is found when the proximal tubules can no longer reabsorb this protein in a normal manner. This failure of the proximal tubules is an early stage of a kind of kidney disease that commonly occurs among workers with excessive cadmium exposure. Used in conjunction with biological test results indicating abnormal levels of CdU and CdB, the finding of excess β_2 -M can establish for an examining physician that any existing kidney disease is probably cadmium-related (Trs. 6/6/90, pp. 82-86, 122, 134). The upper limits of normal levels for cadmium in urine and cadmium in blood are 3 μ g Cd/gram creatinine in urine and 5 μ gCd/liter whole blood, respectively. These levels were derived from broad-based population studies. Three issues confront the physicians in the use of β_2 -M as a marker of kidney dysfunction and material impairment. First, there are a few other causes of elevated levels of β_2 -M not related to cadmium exposures, some of which may be rather common diseases and some of which are serious diseases (e.g., myeloma or transient flu, Exs. 29 and 8-086). These can be medically evaluated as alternative causes (Friberg, Ex. 29). Also, there are other factors that can cause β_2 -M to degrade so that low levels would result in workers with tubular dysfunction. For example, regarding the degradation of β_2 -M, workers with acidic urine (pH<6) might have β_2 -M levels that are within the "normal" range when in fact kidney dysfunction has occurred (Ex. L-140-1) and the low molecular weight proteins are degraded in acid urine. Thus, it is very important that the pH of urine be measured, that urine samples be buffered as necessary (See WAC 296-

62-07451, appendix F.), and that urine samples be handled correctly, i.e., measure the pH of freshly voided urine samples, then if necessary, buffer to $\text{pH} > 6$ (or above for shipping purposes), measure pH again and then, perhaps, freeze the sample for storage and shipping. (See also WAC 296-62-07451, appendix F.) Second, there is debate over the pathological significance of proteinuria, however, most world experts believe that $\beta_2\text{-M}$ levels greater than $300 \mu\text{g/g Cr}$ are abnormal (Elinder, Ex. 55, Friberg, Ex. 29). Such levels signify kidney dysfunction that constitutes material impairment of health. Finally, detection of $\beta_2\text{-M}$ at low levels has often been considered difficult, however, many laboratories have the capability of detecting excess $\beta_2\text{-M}$ using simple kits, such as the Phadebas Delphia test, that are accurate to levels of $100 \mu\text{g } \beta_2\text{-M/g Cr U}$ (Ex. L-140-1). Specific recommendations for ways to measure $\beta_2\text{-M}$ and proper handling of urine samples to prevent degradation of $\beta_2\text{-M}$ have been addressed by WISHA in WAC 296-62-07451, appendix F, in the section on laboratory standardization. All biological samples must be analyzed in a laboratory that is proficient in the analysis of that particular analyte, under WAC 296-62-07423 (1)(d). (See WAC 296-62-07451, appendix F.) Specifically, under WAC 296-62-07423 (1)(d), the employer is to ~~((assure))~~ ensure that the collecting and handling of biological samples of cadmium in urine (CdU), cadmium in blood (CdB), and beta-2 microglobulin in urine ($\beta_2\text{-M}$) taken from employees is collected in a manner that ~~((assures))~~ ensures reliability. The employer must also ~~((assure))~~ ensure that analysis of biological samples of cadmium in urine (CdU), cadmium in blood (CdB), and beta-2 microglobulin in urine ($\beta_2\text{-M}$) taken from employees is performed in laboratories with demonstrated proficiency for that particular analyte. (See WAC 296-62-07451, appendix F.)

(iii) Lung and prostate cancer. The primary sites for cadmium-associated cancer appear to be the lung and the prostate (L-140-50). Evidence for an association between cancer and cadmium exposure derives from both epidemiological studies and animal experiments. Mortality from prostate cancer associated with cadmium is slightly elevated in several industrial cohorts, but the number of cases is small and there is not clear dose-response relationship. More substantive evidence exists for lung cancer. The major epidemiological study of lung cancer was conducted by Thun et al., (Ex. 4-68). Adequate data on cadmium exposures were available to allow evaluation of dose-response relationships between cadmium exposure and lung cancer. A statistically significant excess of lung cancer attributed to cadmium exposure was observed in this study even when confounding variables such as co-exposure to arsenic and smoking habits were taken into consideration (Ex. L-140-50). The primary evidence for quantifying a link between lung cancer and cadmium exposure from animal studies derives from two rat bioassay studies; one by Takenaka et al., (1983), which is a study of cadmium chloride and a second study by Oldiges and Glaser (1990) of four cadmium compounds. Based on the above cited studies, the U.S. Environmental Protection Agency (EPA) classified cadmium as "B1," a probable human carcinogen, in 1985 (Ex. 4-4). The International Agency for Research on Cancer (IARC) in 1987 also recommended that

cadmium be listed as "2A," a probable human carcinogen (Ex. 4-15). The American Conference of Governmental Industrial Hygienists (ACGIH) has recently recommended that cadmium be labeled as a carcinogen. Since 1984, NIOSH has concluded that cadmium is possibly a human carcinogen and has recommended that exposures be controlled to the lowest level feasible.

(iv) Noncarcinogenic effects. Acute pneumonitis occurs 10 to 24 hours after initial acute inhalation of high levels of cadmium fumes with symptoms such as fever and chest pain (Exs. 30, 8-86B). In extreme exposure cases pulmonary edema may develop and cause death several days after exposure. Little actual exposure measurement data is available on the level of airborne cadmium exposure that causes such immediate adverse lung effects, nonetheless, it is reasonable to believe a cadmium concentration of approximately 1 mg/m^3 over an eight hour period is "immediately dangerous" (55 FR 4052, ANSI; Ex. 8-86B). In addition to acute lung effects and chronic renal effects, long term exposure to cadmium may cause other severe effects on the respiratory system. Reduced pulmonary function and chronic lung disease indicative of emphysema have been observed in workers who have had prolonged exposure to cadmium dust or fumes (Exs. 4-29, 4-22, 4-42, 4-50, 4-63). In a study of workers conducted by Kazantzis et al., a statistically significant excess of worker deaths due to chronic bronchitis was found, which in his opinion was directly related to high cadmium exposures of 1 mg/m^3 or more (Tr. 6/8/90, pp. 156-157). Cadmium need not be respirable to constitute a hazard. Inspirable cadmium particles that are too large to be respirable but small enough to enter the tracheobronchial region of the lung can lead to bronchoconstriction, chronic pulmonary disease, and cancer of that portion of the lung. All of these diseases have been associated with occupational exposure to cadmium (Ex. 8-86B). Particles that are constrained by their size to the extrathoracic regions of the respiratory system such as the nose and maxillary sinuses can be swallowed through mucociliary clearance and be absorbed into the body (ACGIH, Ex. 8-692). The impaction of these particles in the upper airways can lead to anosmia, or loss of sense of smell, which is an early indication of overexposure among workers exposed to heavy metals. This condition is commonly reported among cadmium-exposed workers (Ex. 8-86-B).

(c) Medical surveillance. In general, the main provisions of the medical surveillance section of the standard, under WAC 296-62-07423 (1) through (16), are as follows:

- (i) Workers exposed above the action level are covered;
- (ii) Workers with intermittent exposures are not covered;
- (iii) Past workers who are covered receive biological monitoring for at least one year;
- (iv) Initial examinations include a medical questionnaire and biological monitoring of cadmium in blood (CdB), cadmium in urine (CdU), and Beta-2-microglobulin in urine ($\beta_2\text{-M}$);
- (v) Biological monitoring of these three analytes is performed at least annually; full medical examinations are performed biennially;
- (vi) Until five years from the effective date of the standard, medical removal is required when CdU is greater than $15 \mu\text{g/gram creatinine (g Cr)}$, or CdB is greater than 15

$\mu\text{g/liter}$ whole blood (lwb), or $\beta_2\text{-M}$ is greater than 1500 $\mu\text{g/g}$ Cr, and CdB is greater than 5 $\mu\text{g/lwb}$ or CdU is greater than 3 $\mu\text{g/g}$ Cr;

(vii) Beginning five years after the standard is in effect, medical removal triggers will be reduced;

(viii) Medical removal protection benefits are to be provided for up to eighteen months;

(ix) Limited initial medical examinations are required for respirator usage;

(x) Major provisions are fully described under WAC 296-62-07423; they are outlined here as follows:

(A) Eligibility.

(B) Biological monitoring.

(C) Actions triggered by levels of CdU, CdB, and $\beta_2\text{-M}$ (See Summary Charts and Tables in WAC 296-62-07441(5).)

(D) Periodic medical surveillance.

(E) Actions triggered by periodic medical surveillance (See appendix A Summary Chart and Tables in WAC 296-62-07441(5).)

(F) Respirator usage.

(G) Emergency medical examinations.

(H) Termination examination.

(I) Information to physician.

(J) Physician's medical opinion.

(K) Medical removal protection.

(L) Medical removal protection benefits.

(M) Multiple physician review.

(N) Alternate physician review.

(O) Information employer gives to employee.

(P) Recordkeeping.

(Q) Reporting on OSHA form 200.

(xi) The above mentioned summary of the medical surveillance provisions, the summary chart, and tables for the actions triggered at different levels of CdU, CdB and $\beta_2\text{-M}$ (in subsection (5) of this section, Attachment 1) are included only for the purpose of facilitating understanding of the provisions of WAC 296-62-07423(3) of the final cadmium standard. The summary of the provisions, the summary chart, and the tables do not add to or reduce the requirements in WAC 296-62-07423(3).

(d) Recommendations to physicians.

(i) It is strongly recommended that patients with tubular proteinuria are counseled on: The hazards of smoking; avoidance of nephrotoxins and certain prescriptions and over-the-counter medications that may exacerbate kidney symptoms; how to control diabetes and/or blood pressure; proper hydration, diet, and exercise (Ex. 19-2). A list of prominent or common nephrotoxins is attached. (See subsection (6) of this section, Attachment 2.)

(ii) DO NOT CHELATE; KNOW WHICH DRUGS ARE NEPHROTOXINS OR ARE ASSOCIATED WITH NEPHRITIS.

(iii) The gravity of cadmium-induced renal damage is compounded by the fact there is no medical treatment to prevent or reduce the accumulation of cadmium in the kidney (Ex. 8-619). Dr. Friberg, a leading world expert on cadmium toxicity, indicated in 1992, that there is no form of chelating agent that could be used without substantial risk. He stated that tubular proteinuria has to be treated in the same way as other kidney disorders (Ex. 29).

(iv) After the results of a workers' biological monitoring or medical examination are received the employer is required to provide an information sheet to the patient, briefly explaining the significance of the results. (See subsection (7) of this section.)

(v) For additional information the physician is referred to the following additional resources:

(A) The physician can always obtain a copy of the OSHA final rule preamble, with its full discussion of the health effects, from OSHA's Computerized Information System (OCIS).

(B) The OSHA Docket Officer maintains a record of the OSHA rulemaking. The Cadmium Docket (H-057A), is located at 200 Constitution Ave. NW., Room N-2625, Washington, DC 20210; telephone: (202) 219-7894.

(C) The following articles and exhibits in particular from that docket (H-057A):

Exhibit number	Author and paper title
8-447	Lauwerys et. al., Guide for physicians, "Health Maintenance of Workers Exposed to Cadmium," published by the Cadmium Council.
4-67	Takenaka, S., H. Oldiges, H. Konig, D. Hochrainer, G. Oberdorster. "Carcinogenicity of Cadmium Chloride Aerosols in Wistar Rats." JNCI 70:367-373, 1983. (32)
4-68	Thun, M.J., T.M. Schnoor, A.B. Smith, W.E. Halperin, R.A. Lemen. "Mortality Among a Cohort of U.S. Cadmium Production Workers—An Update." JNCI 74(2):325-33, 1985. (8)
4-25	Elinder, C.G., Kjellstrom, T., Hogstedt, C., et al., "Cancer Mortality of Cadmium Workers." Brit. J. Ind. Med. 42:651-655, 1985. (14)
4-26	Ellis, K.J. et al., "Critical Concentrations of Cadmium in Human Renal Cortex: Dose Effect Studies to Cadmium Smelter Workers." J. Toxicol. Environ. Health 7:691-703, 1981. (76)
4-27	Ellis, K.J., S.H. Cohn and T.J. Smith. "Cadmium Inhalation Exposure Estimates: Their Significance with Respect to Kidney and Liver Cadmium Burden." J. Toxicol. Environ. Health 15:173-187, 1985.
4-28	Falck, F.Y., Jr., Fine, L.J., Smith, R.G., McClatchey, K.D., Annesley, T., England, B., and Schork, A.M. "Occupational Cadmium Exposure and Renal Status." Am. J. Ind. Med. 4:541, 1983. (64)

Exhibit number	Author and paper title
8-86A	Friberg, L., C.G. Elinder, et al., "Cadmium and Health a Toxicological and Epidemiological Appraisal, Volume I, Exposure, Dose, and Metabolism." CRC Press, Inc., Boca Raton, FL, 1986. (Available from the OSHA Technical Data Center)
8-86B	Friberg, L., C.G. Elinder, et al., "Cadmium and Health: A Toxicological and Epidemiological Appraisal, Volume II, Effects and Response." CRC Press, Inc., Boca Raton, FL, 1986. (Available from the OSHA Technical Data Center)
L-140-45	Elinder, C.G., "Cancer Mortality of Cadmium Workers," Brit. J. Ind. Med., 42, 651-655, 1985.
L-140-50	Thun, M., Elinder, C.G., Friberg, L., "Scientific Basis for an Occupational Standard for Cadmium, Am. J. Ind. Med., 20; 629-642, 1991.

(5) Information sheet. The information sheet (subsection (8) of this section, Attachment 3) or an equally explanatory one should be provided to you after any biological monitoring results are reviewed by the physician, or where applicable, after any medical examination.

(6) Attachment 1—Appendix A, summary chart and Tables A and B of actions triggered by biological monitoring.

(a) Summary chart: WAC 296-62-07423(3) Medical surveillance—Categorizing biological monitoring results.

(i) Biological monitoring results categories are set forth in Table A for the periods ending December 31, 1998, and for the period beginning January 1, 1999.

(ii) The results of the biological monitoring for the initial medical exam and the subsequent exams (~~shall~~) must determine an employee's biological monitoring result category.

(b) Actions triggered by biological monitoring.

(i) The actions triggered by biological monitoring for an employee are set forth in Table B.

(ii) The biological monitoring results for each employee under WAC 296-62-07423(3) (~~shall~~) must determine the actions required for that employee. That is, for any employee in biological monitoring category C, the employer will perform all of the actions for which there is an X in column C of Table B.

(iii) An employee is assigned the alphabetical category ("A" being the lowest) depending upon the test results of the three biological markers.

(iv) An employee is assigned category A if monitoring results for all three biological markers fall at or below the levels indicated in the table listed for category A.

(v) An employee is assigned category B if any monitoring result for any of the three biological markers fall within the range of levels indicated in the table listed for category B, providing no result exceeds the levels listed for category B.

(vi) An employee is assigned category C if any monitoring result for any of the three biological markers are above the levels listed for category C.

(c) The user of Tables A and B should know that these tables are provided only to facilitate understanding of the relevant provisions of WAC 296-62-07423. Tables A and B are not meant to add to or subtract from the requirements of those provisions.

Table A
Categorization of Biological Monitoring Results
Applicable Through 1998 Only

Biological marker	Monitoring result categories		
	A	B	C
Cadmium in urine (CdU) (µg/g creatinine)	≤3	>3 and ≤15	>15
β ₂ -microglobulin (β ₂ -M) (µg/g creatinine)	≤300	>300 and ≤1500	>1500*
Cadmium in blood (CdB) (µg/liter whole blood)	≤5	>5 and ≤15	>15

* If an employee's β₂-M levels are above 1,500 µg/g creatinine, in order for mandatory medical removal to be required (See WAC 296-62-07441, Appendix A Table B.), either the employee's CdU level must also be >3 µg/g creatinine or CdB level must also be >5 µg/liter whole blood.

Applicable Beginning January 1, 1999

Biological marker	Monitoring result categories		
	A	B	C
Cadmium in urine (CdU) (µg/g creatinine)	≤3	>3 and ≤7	>7
β ₂ -microglobulin (β ₂ -M) (µg/g creatinine)	≤300	>300 and ≤750	>750*
Cadmium in blood (CdB) (µg/liter whole blood)	≤5	>5 and ≤10	>10

* If an employee's β₂-M levels are above 750 µg/g creatinine, in order for mandatory medical removal to be required (See WAC 296-62-07441, Appendix A Table B.), either the employee's CdU level must also be >3 µg/g creatinine or CdB level must also be >5 µg/liter whole blood.

Table B—Actions determined by biological monitoring.

This table presents the actions required based on the monitoring result in Table A. Each item is a separate requirement in citing noncompliance. For example, a medical examination within ninety days for an employee in category B is separate from the requirement to administer a periodic medical examination for category B employees on an annual basis.

Table B
Monitoring result category

Required actions	A ¹	B ¹	C ¹
	(1) Biological monitoring:		
(a) Annual.	X		
(b) Semiannual			X

	A ¹	B ¹	C ¹
(c) Quarterly			X
(2) Medical examination:			
(a) Biennial	X		
(b) Annual.		X	
(c) Semiannual.			X
(d) Within 90 days		X	X
(3) Assess within two weeks:			
(a) Excess cadmium exposure		X	X
(b) Work practices		X	X
(c) Personal hygiene		X	X
(d) Respirator usage		X	X
(e) Smoking history		X	X
(f) Hygiene facilities		X	X
(g) Engineering controls		X	X
(h) Correct within 30 days		X	X
(i) Periodically assess exposures			X
(4) Discretionary medical removal		X	X
(5) Mandatory medical removal			X ²

¹ For all employees covered by medical surveillance exclusively because of exposures prior to the effective date of this standard, if they are in Category A, the employer shall follow the requirements of WAC 296-62-07423 (3)(a)(ii) and (4)(e)(i). If they are in Category B or C, the employer shall follow the requirements of WAC 296-62-07423 (4)(e)(ii) and (iii).

² See footnote in Table A.

(7) Attachment 2, list of medications.

(a) A list of the more common medications that a physician, and the employee, may wish to review is likely to include some of the following:

(i) Anticonvulsants: Paramethadione, phenytoin, trimethadone;

(ii) Antihypertensive drugs: Captopril, methyl dopa;

(iii) Antimicrobials: Aminoglycosides, amphotericin B, cephalosporins, ethambutol;

(iv) Antineoplastic agents: Cisplatin, methotrexate, mitomycin-C, nitrosoureas, radiation;

(v) Sulfonamide diuretics: Acetazolamide, chlorthalidone, furosemide, thiazides;

(vi) Halogenated alkanes, hydrocarbons, and solvents that may occur in some settings: Carbon tetrachloride, ethylene glycol, toluene; iodinated radiographic contrast media; nonsteroidal anti-inflammatory drugs; and

(vii) Other miscellaneous compounds: Acetaminophen, allopurinol, amphetamines, azathioprine, cimetidine, cyclosporine, lithium, methoxyflurane, methysergide, D-penicillamine, phenacetin, phenendione.

(b) A list of drugs associated with acute interstitial nephritis includes:

(i) Antimicrobial drugs: Cephalosporins, chloramphenicol, colistin, erythromycin, ethambutol, isoniazid, para-amin-

osalicylic acid, penicillins, polymyxin B, rifampin, sulfonamides, tetracyclines, and vancomycin;

(ii) Other miscellaneous drugs: Allopurinol, antipyrine, azathioprine, captopril, cimetidine, clofibrate, methyl dopa, phenindione, phenylpropanolamine, phenytoin, probenecid, sulfipyrazone, sulfonamide diuretics, triamterene; and

(iii) Metals: Bismuth, gold. This list has been derived from commonly available medical textbooks (e.g., Ex. 14-18). The list has been included merely to facilitate the physician's, employer's, and employee's understanding. The list does not represent an official OSHA opinion or policy regarding the use of these medications for particular employees. The use of such medications should be under physician discretion.

(8) Attachment 3—Biological monitoring and medical examination results.

Employee _____
 Testing _____
 Date _____

Cadmium in Urine ___ µg/g Cr—Normal Levels: ≤=3 µg/g Cr.

Cadmium in Blood ___ µg/lwb—Normal Levels: ≤=5 µg/lwb.

Beta-2-microglobulin in Urine ___ µg/g Cr—Normal Levels: ≤=300 µg/g Cr.

Physical Examination Results:

N/A ___ Satisfactory ___

Unsatisfactory ___ (see physician again).

Physician's Review of Pulmonary Function Test:

N/A ___ Normal ___ Abnormal ___.

Next biological monitoring or medical examination scheduled for _____

(a) The biological monitoring program has been designed for three main purposes:

(i) To identify employees at risk of adverse health effects from excess, chronic exposure to cadmium;

(ii) To prevent cadmium-induced disease(s); and

(iii) To detect and minimize existing cadmium-induced disease(s).

(b) The levels of cadmium in the urine and blood provide an estimate of the total amount of cadmium in the body. The amount of a specific protein in the urine (beta-2-microglobulin) indicates changes in kidney function. All three tests must be evaluated together. A single mildly elevated result may not be important if testing at a later time indicates that the results are normal and the workplace has been evaluated to decrease possible sources of cadmium exposure. The levels of cadmium or beta-2-microglobulin may change over a period of days to months and the time needed for those changes to occur is different for each worker.

(c) If the results for biological monitoring are above specific "high levels" (cadmium urine greater than 10 micrograms per gram of creatinine µg/g Cr), cadmium blood greater than 10 micrograms per liter of whole blood (µg/lwb), or beta-2-microglobulin greater than 1000 micrograms per gram of creatinine (µg/g Cr)), the worker has a much greater chance of developing other kidney diseases.

(d) One way to measure for kidney function is by measuring beta-2-microglobulin in the urine. Beta-2-microglobulin is a protein which is normally found in the blood as it is being filtered in the kidney, and the kidney reabsorbs or returns almost all of the beta-2-microglobulin to the blood. A very small amount (less than 300 µg/g Cr in the urine) of beta-2-microglobulin is not reabsorbed into the blood, but is released in the urine. If cadmium damages the kidney, the amount of beta-2-microglobulin in the urine increases because the kidney cells are unable to reabsorb the beta-2-microglobulin normally. An increase in the amount of beta-2-microglobulin in the urine is a very early sign of kidney dysfunction. A small increase in beta-2-microglobulin in the urine will serve as an early warning sign that the worker may be absorbing cadmium from the air, cigarettes contaminated in the workplace, or eating in areas that are cadmium contaminated.

(e) Even if cadmium causes permanent changes in the kidney's ability to reabsorb beta-2-microglobulin, and the beta-2-microglobulin is above the "high levels," the loss of kidney function may not lead to any serious health problems. Also, renal function naturally declines as people age. The risk for changes in kidney function for workers who have biological monitoring results between the "normal values" and the "high levels" is not well known. Some people are more cadmium-tolerant, while others are more cadmium-susceptible.

(f) For anyone with even a slight increase of beta-2-microglobulin, cadmium in the urine, or cadmium in the blood, it is very important to protect the kidney from further damage. Kidney damage can come from other sources than excess cadmium-exposure so it is also recommended that if a worker's levels are "high" (~~he/she~~) they should receive counseling about drinking more water; avoiding cadmium-tainted tobacco and certain medications (nephrotoxins, acetaminophen); controlling diet, vitamin intake, blood pressure and diabetes; etc.

AMENDATORY SECTION (Amending WSR 93-21-075, filed 10/20/93, effective 12/1/93)

WAC 296-62-07447 Appendix D—Occupational health history interview with reference to cadmium exposure directions.

(To be read by employee and signed prior to the interview.)

Please answer the questions you will be asked as completely and carefully as you can. These questions are asked of everyone who works with cadmium. You will also be asked to give blood and urine samples. The doctor will give your employer a written opinion on whether you are physically capable of working with cadmium. Legally, the doctor cannot share personal information you may tell (~~him/her~~) them with your employer. The following information is considered strictly confidential. The results of the tests will go to you, your doctor and your employer. You will also receive an information sheet explaining the results of any biological monitoring or physical examinations performed. If you are just being hired, the results of this interview and examination will be used to:

(1) Establish your health status and see if working with cadmium might be expected to cause unusual problems;

(2) Determine your health status today and see if there are changes over time;

(3) See if you can wear a respirator safely. If you are not a new hire: WISHA says that everyone who works with cadmium can have periodic medical examinations performed by a doctor. The reasons for this are:

(a) If there are changes in your health, either because of cadmium or some other reason, to find them early;

(b) To prevent kidney damage.

Please sign below.

I have read these directions and understand them:

Employee signature

Date

Thank you for answering these questions. (Suggested Format)

Name

Age

Social Security #

Company

Job

Type of Preplacement Exam:

Periodic Termination Initial Other

Blood Pressure

Pulse Rate

1. How long have you worked at the job listed above?

Not yet hired Number of months Number of years

2. Job Duties etc.

.....
.....

3. Have you ever been told by a doctor that you had bronchitis?

Yes No

If yes, how long ago?

Number of months Number of years

4. Have you ever been told by a doctor that you had emphysema?

Yes No

If yes, how long ago?

Number of years Number of months

5. Have you ever been told by a doctor that you had other lung problems?

Yes No

If yes, please describe type of lung problems and when you had these problems

.....
.....

6. In the past year, have you had a cough?
 Yes No
 If yes, did you cough up sputum?
 Yes No
 If yes, how long did the cough with sputum production last?
 Less than 3 months 3 months or longer
 If yes, for how many years have you had episodes of cough with sputum production lasting this long?
 Less than one 1 2 Longer than 2

7. Have you ever smoked cigarettes?
 Yes No

8. Do you now smoke cigarettes?
 Yes No

9. If you smoke or have smoked cigarettes, for how many years have you smoked, or did you smoke?
 Less than 1 year Number of years
 What is or was the greatest number of packs per day that you have smoked?
 Number of packs
 If you quit smoking cigarettes, how many years ago did you quit?
 Less than 1 year Number of years
 How many packs a day do you now smoke?
 Number of packs per day

10. Have you ever been told by a doctor that you had a kidney or urinary tract disease or disorder?
 Yes No

11. Have you ever had any of these disorders?
 Kidney stones Yes No
 Protein in urine Yes No
 Blood in urine Yes No
 Difficulty urinating Yes No
 Other kidney/Urinary disorders Yes No
 Please describe problems, age, treatment, and follow up for any kidney or urinary problems you have had:

12. Have you ever been told by a doctor or other health care provider who took your blood pressure that your blood pressure was high?
 Yes No

13. Have you ever been advised to take any blood pressure medication?
 Yes No

14. Are you presently taking any blood pressure medication?
 Yes No

15. Are you presently taking any other medication?
 Yes No

16. Please list any blood pressure or other medications and describe how long you have been taking each one:

Medicine:

How Long Taken

17. Have you ever been told by a doctor that you have diabetes? (sugar in your blood or urine)
 Yes No
 If yes, do you presently see a doctor about your diabetes?
 Yes No
 If yes, how do you control your blood sugar?
 Diet alone Diet plus oral medicine Diet plus insulin (injection)

18. Have you ever been told by a doctor that you had:
 Anemia Yes No
 A low blood count? Yes No

19. Do you presently feel that you tire or run out of energy sooner than normal or sooner than other people your age?
 Yes No
 If yes, for how long have you felt that you tire easily?
 Less than 1 year Number of years

20. Have you given blood within the last year?
 Yes No
 If yes, how many times?
 Number of times
 How long ago was the last time you gave blood?
 Less than 1 month Number of months

21. Within the last year have you had any injuries with heavy bleeding?
 Yes No
 If yes, how long ago?
 Less than 1 month Number of months
 describe:

22. Have you recently had any surgery?
 Yes No
 If yes, please describe:

23. Have you seen any blood lately in your stool or after a bowel movement?
 Yes No

24. Have you ever had a test for blood in your stool?
 Yes No
 If yes, did the test show any blood in the stool?
 Yes No
 What further evaluation and treatment were done?

The following questions pertain to the ability to wear a respirator. Additional information for the physician can be found in The Respiratory Protective Devices Manual.

25. Have you ever been told by a doctor that you have asthma?
 Yes No
 If yes, are you presently taking any medication for asthma?
 Mark all that apply. Shots Pills Inhaler

26. Have you ever had a heart attack?
 Yes No
 If yes, how long ago?
 Number of years Number of months

27. Have you ever had pains in your chest?
 Yes No
 If yes, when did it usually happen?
 While resting While working While exercising Activity didn't matter

28. Have you ever had a thyroid problem?
 Yes No

29. Have you ever had a seizure or fits?
 Yes No

30. Have you ever had a stroke (cerebrovascular accident)?
 Yes No

31. Have you ever had a ruptured eardrum or a serious hearing problem?
 Yes No

32. Do you now have a claustrophobia, meaning fear of crowded or closed in spaces or any psychological problems that would make it hard for you to wear a respirator?
 Yes No
 The following questions pertain to reproductive history.

33. Have you or your partner had a problem conceiving a child?
 Yes No
 If yes, specify: Self Present mate Previous mate

34. Have you or your partner consulted a physician for a fertility or other reproductive problem?
 Yes No
 If yes, specify who consulted the physician: Self Spouse/partner Self and partner
 If yes, specify diagnosis made:

35. Have you or your partner ever conceived a child resulting in a miscarriage, still birth or deformed offspring?
 Yes No
 If yes, specify: Miscarriage Still birth Deformed offspring
 If outcome was a deformed offspring, please specify type:

36. Was this outcome a result of a pregnancy of: Yours with present partner Yours with a previous partner

37. Did the timing of any abnormal pregnancy outcome coincide with present employment?
 Yes No
 List dates of occurrences:

38. What is the occupation of your spouse or partner?

For Women Only

39. Do you have menstrual periods?
 Yes No
 Have you had menstrual irregularities?
 Yes No
 If yes, specify type:

.....

If yes, what was the approximated date this problem began?
 Approximate date problem stopped?

For Men Only

40. Have you ever been diagnosed by a physician as having prostate gland problem(s)?
 Yes No
 If yes, please describe type of problem(s) and what was done to evaluate and treat the problem(s):

.....

Reviser's note: The brackets and enclosed material in the text of the above section occurred in the copy filed by the agency and appear in the Register pursuant to the requirements of RCW 34.08.040.

AMENDATORY SECTION (Amending WSR 14-07-086, filed 3/18/14, effective 5/1/14)

WAC 296-62-07460 1,3-Butadiene. (1) Scope and application.

(a) This section applies to all occupational exposures to 1,3-Butadiene (BD), Chemical Abstracts Service Registry No. 106-99-0, except as provided in (b) of this subsection.

(b)(i) Except for the recordkeeping provisions in subsection (13)(a) of this section, this section does not apply to the processing, use, or handling of products containing BD or to other work operations and streams in which BD is present where objective data are reasonably relied upon that demon-

strate the work operation or the product or the group of products or operations to which it belongs may not reasonably be foreseen to release BD in airborne concentrations at or above the action level or in excess of the STEL under the expected conditions of processing, use, or handling that will cause the greatest possible release or in any plausible accident.

(ii) This section also does not apply to work operations, products or streams where the only exposure to BD is from liquid mixtures containing 0.1% or less of BD by volume or the vapors released from such liquids, unless objective data become available that show that airborne concentrations generated by such mixtures can exceed the action level or STEL under reasonably predictable conditions of processing, use or handling that will cause the greatest possible release.

(iii) Except for labeling requirements and requirements for emergency response, this section does not apply to the storage, transportation, distribution or sale of BD or liquid mixtures in intact containers or in transportation pipelines sealed in such a manner as to fully contain BD vapors or liquids.

(c) Where products or processes containing BD are exempted under (b) of this subsection, the employer (~~shall~~) must maintain records of the objective data supporting that exemption and the basis for the employer's reliance on the data, as provided in subsection (13)(a) of this section.

(2) Definitions: For the purpose of this section, the following definitions shall apply:

(~~"Action level" means~~) **Action level.** A concentration of airborne BD of 0.5 ppm calculated as an 8-hour time-weighted average.

(~~"Authorized person" means~~) **Authorized person.** Any person specifically designated by the employer, whose duties require entrance into a regulated area, or a person entering such an area as a designated representative of employees to exercise the right to observe monitoring and measuring procedures under subsection (4)(h) of this section, or a person designated under the WISH Act or regulations issued under the WISH Act to enter a regulated area.

(~~"1,3-Butadiene" means~~) **1,3-Butadiene.** An organic compound with chemical formula $\text{CH}_2=\text{CH}-\text{CH}=\text{CH}_2$ that has a molecular weight of approximately 54.15 gm/mole.

(~~"Business day" means~~) **Business day.** Any Monday through Friday, except those days designated as federal, state, local or company specific holidays.

(~~"Complete blood count (CBC)" means~~) **Complete blood count (CBC).** Laboratory tests performed on whole blood specimens and includes the following: White blood cell count (WBC), hematocrit (Hct), red blood cell count (RBC), hemoglobin (Hgb), differential count of white blood cells, red blood cell morphology, red blood cell indices, and platelet count.

(~~"Day" means~~) **Day.** Any part of a calendar day.

(~~"Director" means~~) **Director.** The director of the department of labor and industries, or authorized representatives.

(~~"Emergency situation" means~~) **Emergency situation.** Any occurrence such as, but not limited to, equipment failure, rupture of containers, or failure of control equipment that may or does result in an uncontrolled significant release of BD.

(~~"Employee exposure" means~~) **Employee exposure.** Exposure of a worker to airborne concentrations of BD which would occur if the employee were not using respiratory protective equipment.

(~~"Objective data" means~~) **Objective data.** Monitoring data, or mathematical modelling or calculations based on composition, chemical and physical properties of a material, stream or product.

(~~"Permissible exposure limits (PELs)" means~~) **Permissible exposure limits (PELs).** Either the 8-hour time-weighted average (8-hour TWA) exposure or the short-term exposure limit (STEL).

(~~"Physician or other licensed health care professional" is~~) **Physician or other licensed health care professional.** An individual whose legally permitted scope of practice (i.e., license, registration, or certification) allows (~~him or her~~) them to independently provide or be delegated the responsibility to provide one or more of the specific health care services required by (k) of this subsection.

(~~"Regulated area" means~~) **Regulated area.** Any area where airborne concentrations of BD exceed or can reasonably be expected to exceed the 8-hour time-weighted average (8-hour TWA) exposure of 1 ppm or the short-term exposure limit (STEL) of 5 ppm for 15 minutes.

(~~"This section" means~~) **This section.** This 1,3-butadiene standard.

(3) Permissible exposure limits (PELs).

(a) Time-weighted average (TWA) limit. The employer (~~shall~~) must ensure that no employee is exposed to an airborne concentration of BD in excess of one part BD per million parts of air (ppm) measured as an eight (8)-hour time-weighted average.

(b) Short-term exposure limit (STEL). The employer (~~shall~~) must ensure that no employee is exposed to an airborne concentration of BD in excess of five parts of BD per million parts of air (5 ppm) as determined over a sampling period of fifteen minutes.

(4) Exposure monitoring.

(a) General.

(i) Determinations of employee exposure (~~shall~~) must be made from breathing zone air samples that are representative of the 8-hour TWA and 15-minute short-term exposures of each employee.

(ii) Representative 8-hour TWA employee exposure (~~shall~~) must be determined on the basis of one or more samples representing full-shift exposure for each shift and for each job classification in each work area.

(iii) Representative 15-minute short-term employee exposures (~~shall~~) must be determined on the basis of one or more samples representing 15-minute exposures associated with operations that are most likely to produce exposures above the STEL for each shift and for each job classification in each work area.

(iv) Except for the initial monitoring required under (b) of this subsection, where the employer can document that exposure levels are equivalent for similar operations on different work shifts, the employer need only determine representative employee exposure for that operation from the shift during which the highest exposure is expected.

(b) Initial monitoring.

(i) Each employer who has a workplace or work operation covered by this section, ~~((shall))~~ must perform initial monitoring to determine accurately the airborne concentrations of BD to which employees may be exposed, or ~~((shall))~~ must rely on objective data pursuant to subsection (1)(b)(i) of this section to fulfill this requirement. The initial monitoring required under this subitem ~~((shall))~~ must be completed within sixty days of the introduction of BD into the workplace.

(ii) Where the employer has monitored within two years prior to the effective date of this section and the monitoring satisfies all other requirements of this section, the employer may rely on such earlier monitoring results to satisfy the requirements of (b)(i) of this subsection, provided that the conditions under which the initial monitoring was conducted have not changed in a manner that may result in new or additional exposures.

(c) Periodic monitoring and its frequency.

(i) If the initial monitoring required by (b) of this subsection reveals employee exposure to be at or above the action level but at or below both the 8-hour TWA limit and the STEL, the employer ~~((shall))~~ must repeat the representative monitoring required by (a) of this subsection every twelve months.

(ii) If the initial monitoring required by (b) of this subsection reveals employee exposure to be above the 8-hour TWA limit, the employer ~~((shall))~~ must repeat the representative monitoring required by (a)(ii) of this subsection at least every three months until the employer has collected two samples per quarter (each at least 7 days apart) within a two-year period, after which such monitoring must occur at least every six months.

(iii) If the initial monitoring required by (b) of this subsection reveals employee exposure to be above the STEL, the employer ~~((shall))~~ must repeat the representative monitoring required by (a)(iii) of this subsection at least every three months until the employer has collected two samples per quarter (each at least 7 days apart) within a two-year period, after which such monitoring must occur at least every six months.

(iv) The employer may alter the monitoring schedule from every six months to annually for any required representative monitoring for which two consecutive measurements taken at least 7 days apart indicate that employee exposure has decreased to or below the 8-hour TWA, but is at or above the action level.

(d) Termination of monitoring.

(i) If the initial monitoring required by (b) of this subsection reveals employee exposure to be below the action level and at or below the STEL, the employer may discontinue the monitoring for employees whose exposures are represented by the initial monitoring.

(ii) If the periodic monitoring required by (c) of this subsection reveals that employee exposures, as indicated by at least two consecutive measurements taken at least 7 days apart, are below the action level and at or below the STEL, the employer may discontinue the monitoring for those employees who are represented by such monitoring.

(e) Additional monitoring.

(i) The employer ~~((shall))~~ must institute the exposure monitoring required under subsection (4) of this section whenever there has been a change in the production, process, control equipment, personnel or work practices that may result in new or additional exposures to BD or when the employer has any reason to suspect that a change may result in new or additional exposures.

(ii) Whenever spills, leaks, ruptures or other breakdowns occur that may lead to employee exposure above the 8-hour TWA limit or above the STEL, the employer ~~((shall))~~ must monitor (using leak source, such as direct reading instruments, area or personal monitoring), after the cleanup of the spill or repair of the leak, rupture or other breakdown, to ensure that exposures have returned to the level that existed prior to the incident.

(f) Accuracy of monitoring.

Monitoring ~~((shall))~~ must be accurate, at a confidence level of 95 percent, to within plus or minus 25 percent for airborne concentrations of BD at or above the 1 ppm TWA limit and to within plus or minus 35 percent for airborne concentrations of BD at or above the action level of 0.5 ppm and below the 1 ppm TWA limit.

(g) Employee notification of monitoring results.

(i) The employer ~~((shall))~~ must, within 5 business days after the receipt of the results of any monitoring performed under this section, notify the affected employees of these results in writing either individually or by posting of results in an appropriate location that is accessible to affected employees.

(ii) The employer ~~((shall))~~ must, within 15 business days after receipt of any monitoring performed under this section indicating the 8-hour TWA or STEL has been exceeded, provide the affected employees, in writing, with information on the corrective action being taken by the employer to reduce employee exposure to or below the 8-hour TWA or STEL and the schedule for completion of this action.

(h) Observation of monitoring.

(i) Employee observation. The employer ~~((shall))~~ must provide affected employees or their designated representatives an opportunity to observe any monitoring of employee exposure to BD conducted in accordance with this section.

(ii) Observation procedures. When observation of the monitoring of employee exposure to BD requires entry into an area where the use of protective clothing or equipment is required, the employer ~~((shall))~~ must provide the observer at no cost with protective clothing and equipment, and ~~((shall))~~ must ensure that the observer uses this equipment and complies with all other applicable safety and health procedures.

(5) Regulated areas.

(a) The employer ~~((shall))~~ must establish a regulated area wherever occupational exposures to airborne concentrations of BD exceed or can reasonably be expected to exceed the permissible exposure limits, either the 8-hour TWA or the STEL.

(b) Access to regulated areas ~~((shall))~~ must be limited to authorized persons.

(c) Regulated areas ~~((shall))~~ must be demarcated from the rest of the workplace in any manner that minimizes the

number of employees exposed to BD within the regulated area.

(d) An employer at a multiemployer worksite who establishes a regulated area ((~~shall~~)) must communicate the access restrictions and locations of these areas to other employers with work operations at that worksite whose employees may have access to these areas.

(6) Methods of compliance.

(a) Engineering controls and work practices.

(i) The employer ((~~shall~~)) must institute engineering controls and work practices to reduce and maintain employee exposure to or below the PELs, except to the extent that the employer can establish that these controls are not feasible or where subsection (8)(a)(i) of this section applies.

(ii) Wherever the feasible engineering controls and work practices which can be instituted are not sufficient to reduce employee exposure to or below the 8-hour TWA or STEL, the employer ((~~shall~~)) must use them to reduce employee exposure to the lowest levels achievable by these controls and ((~~shall~~)) must supplement them by the use of respiratory protection that complies with the requirements of subsection (8) of this section.

(b) Compliance plan.

(i) Where any exposures are over the PELs, the employer ((~~shall~~)) must establish and implement a written plan to reduce employee exposure to or below the PELs primarily by means of engineering and work practice controls, as required by (a) of this subsection, and by the use of respiratory protection where required or permitted under this section. No compliance plan is required if all exposures are under the PELs.

(ii) The written compliance plan ((~~shall~~)) must include a schedule for the development and implementation of the engineering controls and work practice controls including periodic leak detection surveys.

(iii) Copies of the compliance plan required in (b) of this subsection ((~~shall~~)) must be furnished upon request for examination and copying to the director, affected employees and designated employee representatives. Such plans ((~~shall~~)) must be reviewed at least every 12 months, and ((~~shall~~)) must be updated as necessary to reflect significant changes in the status of the employer's compliance program.

(iv) The employer ((~~shall~~)) must not implement a schedule of employee rotation as a means of compliance with the PELs.

(7) Exposure goal program.

(a) For those operations and job classifications where employee exposures are greater than the action level, in addition to compliance with the PELs, the employer ((~~shall~~)) must have an exposure goal program that is intended to limit employee exposures to below the action level during normal operations.

(b) Written plans for the exposure goal program ((~~shall~~)) must be furnished upon request for examination and copying to the director, affected employees and designated employee representatives.

(c) Such plans ((~~shall~~)) must be updated as necessary to reflect significant changes in the status of the exposure goal program.

(d) Respirator use is not required in the exposure goal program.

(e) The exposure goal program ((~~shall~~)) must include the following items unless the employer can demonstrate that the item is not feasible, will have no significant effect in reducing employee exposures, or is not necessary to achieve exposures below the action level:

(i) A leak prevention, detection, and repair program.

(ii) A program for maintaining the effectiveness of local exhaust ventilation systems.

(iii) The use of pump exposure control technology such as, but not limited to, mechanical double-sealed or seal-less pumps.

(iv) Gauging devices designed to limit employee exposure, such as magnetic gauges on rail cars.

(v) Unloading devices designed to limit employee exposure, such as a vapor return system.

(vi) A program to maintain BD concentration below the action level in control rooms by use of engineering controls.

(8) Respiratory protection.

(a) General. For employees who use respirators required by this section, the employer must provide each employee an appropriate respirator that complies with the requirements of this subsection. Respirators must be used during:

(i) Periods necessary to install or implement feasible engineering and work-practice controls;

(ii) Nonroutine work operations that are performed infrequently and for which exposures are limited in duration;

(iii) Work operations for which feasible engineering controls and work-practice controls are not yet sufficient to reduce employee exposures to or below the PELs;

(iv) Emergencies.

(b) Respirator program.

(i) The employer must implement a respiratory protection program as required by chapter 296-842 WAC, except WAC 296-842-13005 and 296-842-14005, which covers each employee required by this section to use a respirator.

(ii) If air-purifying respirators are used, the employer must replace the air-purifying filter elements according to the replacement schedule set for the class of respirators listed in Table 1 of this section, and at the beginning of each work shift.

(iii) Instead of using the replacement schedule listed in Table 1 of this section, the employer may replace cartridges or canisters at 90% of their expiration service life, provided the employer:

(A) Demonstrates that employees will be adequately protected by this procedure;

(B) Uses BD breakthrough data for this purpose that have been derived from tests conducted under worst-case conditions of humidity, temperature, and air-flow rate through the filter element, and the employer also describes the data supporting the cartridge- or canister-change schedule, as well as the basis for using the data in the employer's respirator program.

(iv) A label must be attached to each filter element to indicate the date and time it is first installed on the respirator.

(v) If NIOSH approves an end-of-service-life indicator (ESLI) for an air-purifying filter element, the element may be used until the ESLI shows no further useful service life or until the element is replaced at the beginning of the next work shift, whichever occurs first.

(vi) Regardless of the air-purifying element used, if an employee detects the odor of BD, the employer must replace the air-purifying element immediately.

(c) Respirator selection.

(i) The employer must select appropriate respirators from Table 1 of this section.

Table 1. - Minimum Requirements for Respiratory Protection for Airborne BD

Concentration of Airborne BD (ppm) or condition of use	Minimum required respirator
Less than or equal to 5 ppm (5 times PEL)	(a) Air-purifying half mask or full facepiece respirator equipped with approved BD or organic vapor cartridges or canisters. Cartridges or canisters shall be replaced every 4 hours.
Less than or equal to 10 ppm (10 times PEL)	(a) Air-purifying half mask or full facepiece respirator equipped with approved BD or organic vapor cartridges or canisters. Cartridges or canisters shall be replaced every 3 hours.
Less than or equal to 25 ppm (25 times PEL)	(a) Air-purifying full facepiece respirator equipped with approved BD or organic vapor cartridges or canisters. Cartridges or canisters shall be replaced every 2 hours. (b) Any powered air-purifying respirator equipped with approved BD or organic vapor cartridges. PAPR cartridges shall be replaced every 2 hours. (c) Continuous flow supplied air respirator equipped with a hood or helmet.
Less than or equal to 50 ppm (50 times PEL)	(a) Air-purifying full facepiece respirator equipped with approved BD or organic vapor cartridges or canisters. Cartridges or canisters shall be replaced every 1 hour.

Concentration of Airborne BD (ppm) or condition of use	Minimum required respirator
Less than or equal to 1,000 ppm (1,000 times PEL)	(b) Powered air purifying respirator equipped with a tight-fitting facepiece and an approved BD or organic vapor cartridges. PAPR cartridges shall be replaced every 1 hour. (a) Supplied air respirator equipped with a half mask or full facepiece and operated in a pressure demand or other positive pressure mode.
Greater than 1,000 ppm	(a) Self-contained breathing unknown concentration, or apparatus equipped with a fire fighting full facepiece and operated in a pressure demand or other positive pressure mode. (b) Any supplied air respirator equipped with a full facepiece and operated in a pressure demand or other positive pressure mode in combination with an auxiliary self-contained breathing apparatus operated in a pressure demand or other positive pressure mode.
Escape from IDLH Conditions	(a) Any positive pressure self-contained breathing apparatus with an appropriate service life. (b) Any air-purifying full facepiece respirator equipped with a front or back mounted BD or organic vapor canister.

Notes: Respirators approved for use in higher concentrations are permitted to be used in lower concentrations. Full facepiece is required when eye irritation is anticipated.

(ii) Air-purifying respirators must have filter elements certified by NIOSH for organic vapor or BD.

(iii) When an employee whose job requires the use of a respirator cannot use a negative-pressure respirator, the employer must provide the employee with a respirator that has less breathing resistance than the negative-pressure respirator, such as a powered air-purifying respirator or supplied-air respirator, when the employee is able to use it and if it provides the employee adequate protection.

(9) Protective clothing and equipment. Where appropriate to prevent eye contact and limit dermal exposure to BD, the employer ((shall)) must provide protective clothing and equipment at no cost to the employee and ((shall)) must ensure its use. Eye and face protection ((shall)) must meet the requirements of WAC 296-800-160.

(10) Emergency situations. Written plan. A written plan for emergency situations ((shall)) must be developed, or an existing plan ((shall)) must be modified, to contain the applicable elements specified in WAC 296-24-567(7) Employee emergency plans and fire prevention plans, and in ((WAC 296-62-3112)) chapter 296-843 WAC, Hazardous waste operations ((and emergency responses)), for each workplace where there is a possibility of an emergency.

(11) Medical screening and surveillance.

(a) Employees covered. The employer ((shall)) must institute a medical screening and surveillance program as specified in this subsection for:

(i) Each employee with exposure to BD at concentrations at or above the action level on 30 or more days or for employees who have or may have exposure to BD at or above the PELs on 10 or more days a year;

(ii) Employers (including successor owners) ((shall)) must continue to provide medical screening and surveillance for employees, even after transfer to a non-BD exposed job and regardless of when the employee is transferred, whose work histories suggest exposure to BD:

(A) At or above the PELs on 30 or more days a year for 10 or more years;

(B) At or above the action level on 60 or more days a year for 10 or more years; or

(C) Above 10 ppm on 30 or more days in any past year; and

(iii) Each employee exposed to BD following an emergency situation.

(b) Program administration.

(i) The employer ((shall)) must ensure that the health questionnaire, physical examination and medical procedures are provided without cost to the employee, without loss of pay, and at a reasonable time and place.

(ii) Physical examinations, health questionnaires, and medical procedures ((shall)) must be performed or administered by a physician or other licensed health care professional.

(iii) Laboratory tests ((shall)) must be conducted by an accredited laboratory.

(c) Frequency of medical screening activities. The employer ((shall)) must make medical screening available on the following schedule:

(i) For each employee covered under (a)(i) and (ii) of this subsection, a health questionnaire and complete blood count (CBC) with differential and platelet count every year, and a physical examination as specified below:

(A) An initial physical examination that meets the requirements of this rule, if twelve months or more have elapsed since the last physical examination conducted as part of a medical screening program for BD exposure;

(B) Before assumption of duties by the employee in a job with BD exposure;

(C) Every 3 years after the initial physical examination;

(D) At the discretion of the physician or other licensed health care professional reviewing the annual health questionnaire and CBC;

(E) At the time of employee reassignment to an area where exposure to BD is below the action level, if the employee's past exposure history does not meet the criteria of (a)(ii) of this subsection for continued coverage in the screening and surveillance program, and if twelve months or more have elapsed since the last physical examination; and

(F) At termination of employment if twelve months or more have elapsed since the last physical examination.

(ii) Following an emergency situation, medical screening ((shall)) must be conducted as quickly as possible, but not later than 48 hours after the exposure.

(iii) For each employee who must wear a respirator, physical ability to perform the work and use the respirator must be determined as required by chapter 296-842 WAC.

(d) Content of medical screening.

(i) Medical screening for employees covered by (a)(i) and (ii) of this subsection ((shall)) must include:

(A) A baseline health questionnaire that includes a comprehensive occupational and health history and is updated annually. Particular emphasis ((shall)) must be placed on the hematopoietic and reticuloendothelial systems, including exposure to chemicals, in addition to BD, that may have an adverse effect on these systems, the presence of signs and symptoms that might be related to disorders of these systems, and any other information determined by the examining physician or other licensed health care professional to be necessary to evaluate whether the employee is at increased risk of material impairment of health from BD exposure. Health questionnaires ((shall)) must consist of the sample forms in Appendix C to this section, or be equivalent to those samples;

(B) A complete physical examination, with special emphasis on the liver, spleen, lymph nodes, and skin;

(C) A CBC; and

(D) Any other test which the examining physician or other licensed health care professional deems necessary to evaluate whether the employee may be at increased risk from exposure to BD.

(ii) Medical screening for employees exposed to BD in an emergency situation ((shall)) must focus on the acute effects of BD exposure and at a minimum include: A CBC within 48 hours of the exposure and then monthly for three months; and a physical examination if the employee reports irritation of the eyes, nose, throat, lungs, or skin, blurred vision, coughing, drowsiness, nausea, or headache. Continued employee participation in the medical screening and surveillance program, beyond these minimum requirements, ((shall)) must be at the discretion of the physician or other licensed health care professional.

(e) Additional medical evaluations and referrals.

(i) Where the results of medical screening indicate abnormalities of the hematopoietic or reticuloendothelial systems, for which a nonoccupational cause is not readily apparent, the examining physician or other licensed health care professional ((shall)) must refer the employee to an appropriate specialist for further evaluation and ((shall)) must make available to the specialist the results of the medical screening.

(ii) The specialist to whom the employee is referred under this subsection ((~~shall~~)) must determine the appropriate content for the medical evaluation, e.g., examinations, diagnostic tests and procedures, etc.

(f) Information provided to the physician or other licensed health care professional. The employer ((~~shall~~)) must provide the following information to the examining physician or other licensed health care professional involved in the evaluation:

(i) A copy of this section including its appendices;

(ii) A description of the affected employee's duties as they relate to the employee's BD exposure;

(iii) The employee's actual or representative BD exposure level during employment tenure, including exposure incurred in an emergency situation;

(iv) A description of pertinent personal protective equipment used or to be used; and

(v) Information, when available, from previous employment-related medical evaluations of the affected employee which is not otherwise available to the physician or other licensed health care professional or the specialist.

(g) The written medical opinion.

(i) For each medical evaluation required by this section, the employer ((~~shall~~)) must ensure that the physician or other licensed health care professional produces a written opinion and provides a copy to the employer and the employee within 15 business days of the evaluation. The written opinion ((~~shall~~)) must be limited to the following information:

(A) The occupationally pertinent results of the medical evaluation;

(B) A medical opinion concerning whether the employee has any detected medical conditions which would place the employee's health at increased risk of material impairment from exposure to BD;

(C) Any recommended limitations upon the employee's exposure to BD; and

(D) A statement that the employee has been informed of the results of the medical evaluation and any medical conditions resulting from BD exposure that require further explanation or treatment.

(ii) The written medical opinion provided to the employer ((~~shall~~)) must not reveal specific records, findings, and diagnoses that have no bearing on the employee's ability to work with BD.

Note: This provision does not negate the ethical obligation of the physician or other licensed health care professional to transmit any other adverse findings directly to the employee.

(h) Medical surveillance.

(i) The employer ((~~shall~~)) must ensure that information obtained from the medical screening program activities is aggregated (with all personal identifiers removed) and periodically reviewed, to ascertain whether the health of the employee population of that employer is adversely affected by exposure to BD.

(ii) Information learned from medical surveillance activities must be disseminated to covered employees, as defined in (a) of this subsection, in a manner that ensures the confidentiality of individual medical information.

(12) Communication of BD hazards.

(a) Hazard communication - General.

(i) Chemical manufacturers, importers, distributors and employers ((~~shall~~)) must comply with all requirements of the Hazard Communication Standard (HCS), WAC 296-901-140 for BD.

(ii) In classifying the hazards of BD at least the following hazards are to be addressed: Cancer; eye and respiratory tract irritation; central nervous system effects; and flammability.

(iii) Employers ((~~shall~~)) must include BD in the hazard communication program established to comply with the HCS, WAC 296-901-140. Employers ((~~shall~~)) must ensure that each employee has access to labels on containers of BD and to safety data sheets, and is trained in accordance with the requirements of HCS and (b) of this subsection.

(b) Employee information and training.

(i) The employer ((~~shall~~)) must train each employee who is potentially exposed to BD at or above the action level or the STEL in accordance with the requirements of WAC 296-901-140((;)) Hazard communication.

(ii) The employer ((~~shall~~)) must institute a training program for all employees who are potentially exposed to BD at or above the action level or the STEL, ensure employee participation in the program and maintain a record of the contents of such program.

(iii) Training ((~~shall~~)) must be provided prior to or at the time of initial assignment to a job potentially involving exposure to BD at or above the action level or STEL and at least annually thereafter.

(iv) The training program ((~~shall~~)) must be conducted in a manner that the employee is able to understand. The employer ((~~shall~~)) must ensure that each employee exposed to BD over the action level or STEL is informed of the following:

(A) The health hazards associated with BD exposure, and the purpose and a description of the medical screening and surveillance program required by this section;

(B) The quantity, location, manner of use, release, and storage of BD and the specific operations that could result in exposure to BD, especially exposures above the PEL or STEL;

(C) The engineering controls and work practices associated with the employee's job assignment, and emergency procedures and personal protective equipment;

(D) The measures employees can take to protect themselves from exposure to BD;

(E) The contents of this standard and its appendices; and

(F) The right of each employee exposed to BD at or above the action level or STEL to obtain:

(I) Medical examinations as required by subsection (10) of this section at no cost to the employee;

(II) The employee's medical records required to be maintained by subsection (13)(c) of this section; and

(III) All air monitoring results representing the employee's exposure to BD and required to be kept by subsection (13)(b) of this section.

(c) Access to information and training materials.

(i) The employer ((~~shall~~)) must make a copy of this standard and its appendices readily available without cost to all affected employees and their designated representatives and ((~~shall~~)) must provide a copy if requested.

(ii) The employer (~~(shall)~~) must provide to the director, or the designated employee representatives, upon request, all materials relating to the employee information and the training program.

(13) Recordkeeping.

(a) Objective data for exemption from initial monitoring.

(i) Where the processing, use, or handling of products or streams made from or containing BD are exempted from other requirements of this section under subsection (1)(b) of this section, or where objective data have been relied on in lieu of initial monitoring under subsection (4)(b)(ii) of this section, the employer (~~(shall)~~) must establish and maintain a record of the objective data reasonably relied upon in support of the exemption.

(ii) This record (~~(shall)~~) must include at least the following information:

(A) The product or activity qualifying for exemption;

(B) The source of the objective data;

(C) The testing protocol, results of testing, and analysis of the material for the release of BD;

(D) A description of the operation exempted and how the data support the exemption; and

(E) Other data relevant to the operations, materials, processing, or employee exposures covered by the exemption.

(iii) The employer (~~(shall)~~) must maintain this record for the duration of the employer's reliance upon such objective data.

(b) Exposure measurements.

(i) The employer (~~(shall)~~) must establish and maintain an accurate record of all measurements taken to monitor employee exposure to BD as prescribed in subsection (4) of this section.

(ii) The record (~~(shall)~~) must include at least the following information:

(A) The date of measurement;

(B) The operation involving exposure to BD which is being monitored;

(C) Sampling and analytical methods used and evidence of their accuracy;

(D) Number, duration, and results of samples taken;

(E) Type of protective devices worn, if any;

(F) Name, Social Security number and exposure of the employees whose exposures are represented; and

(G) The written corrective action and the schedule for completion of this action required by subsection (4)(g)(ii) of this section.

(iii) The employer (~~(shall)~~) must maintain this record for at least 30 years in accordance with chapter 296-802 WAC.

(c) Medical screening and surveillance.

(i) The employer (~~(shall)~~) must establish and maintain an accurate record for each employee subject to medical screening and surveillance under this section.

(ii) The record (~~(shall)~~) must include at least the following information:

(A) The name and Social Security number of the employee;

(B) Physician's or other licensed health care professional's written opinions as described in subsection (11)(e) of this section;

(C) A copy of the information provided to the physician or other licensed health care professional as required by subsection (11)(e) of this section.

(iii) Medical screening and surveillance records (~~(shall)~~) must be maintained for each employee for the duration of employment plus 30 years, in accordance with chapter 296-802 WAC.

(d) Availability.

(i) The employer, upon written request, (~~(shall)~~) must make all records required to be maintained by this section available for examination and copying to the director.

(ii) Access to records required to be maintained by (a) and (b) of this subsection (~~(shall)~~) must be granted in accordance with chapter 296-802 WAC.

(e) Transfer of records. The employer shall transfer medical and exposure records as set forth in WAC 296-802-60005.

(14) (~~Dates-~~

~~(a) Effective date. This section shall become effective (day, month), 1997.~~

~~(b)) Start-up dates.~~

~~((+)) (a) The initial monitoring required under subsection (4)(b) of this section (~~(shall)~~) must be completed immediately or within sixty days of the introduction of BD into the workplace.~~

~~((+)) (b) The requirements of subsections (3) through (13) of this section, including feasible work practice controls but not including engineering controls specified in subsection (6)(a) of this section, (~~(shall)~~) must be complied with immediately.~~

~~((+)) (iii) Engineering controls specified by subsection (6)(a) of this section shall be implemented by February 4, 1999, and the exposure goal program specified in subsection (7) of this section shall be implemented by February 4, 2000.)~~

(15) Appendices.

Appendices A, B, C, D, and F to this section are informational and are not intended to create any additional obligations not otherwise imposed or to detract from any existing obligations.

Appendix A. Substance Safety Data Sheet For 1,3-Butadiene (Non-Mandatory)

(1) Substance Identification.

(a) Substance: 1,3-Butadiene (CH₂=CH-CH=CH₂).

(b) Synonyms: 1,3-Butadiene (BD); butadiene; biethylene; bi-vinyl; divinyl; butadiene-1,3; buta-1,3-diene; erythrene; NCI-C50602; CAS-106-99-0.

(c) BD can be found as a gas or liquid.

(d) BD is used in production of styrene-butadiene rubber and polybutadiene rubber for the tire industry. Other uses include copolymer latexes for carpet backing and paper coating, as well as resins and polymers for pipes and automobile and appliance parts. It is also used as an intermediate in the production of such chemicals as fungicides.

(e) Appearance and odor: BD is a colorless, noncorrosive, flammable gas with a mild aromatic odor at standard ambient temperature and pressure.

(f) Permissible exposure: Exposure may not exceed 1 part BD per million parts of air averaged over the 8-hour workday, nor may short-term exposure exceed 5 parts of BD

per million parts of air averaged over any 15-minute period in the 8-hour workday.

(2) Health Hazard Data.

(a) BD can affect the body if the gas is inhaled or if the liquid form, which is very cold (cryogenic), comes in contact with the eyes or skin.

(b) Effects of overexposure: Breathing very high levels of BD for a short time can cause central nervous system effects, blurred vision, nausea, fatigue, headache, decreased blood pressure and pulse rate, and unconsciousness. There are no recorded cases of accidental exposures at high levels that have caused death in humans, but this could occur. Breathing lower levels of BD may cause irritation of the eyes, nose, and throat. Skin contact with liquefied BD can cause irritation and frostbite.

(c) Long-term (chronic) exposure: BD has been found to be a potent carcinogen in rodents, inducing neoplastic lesions at multiple target sites in mice and rats. A recent study of BD-exposed workers showed that exposed workers have an increased risk of developing leukemia. The risk of leukemia increases with increased exposure to BD. OSHA has concluded that there is strong evidence that workplace exposure to BD poses an increased risk of death from cancers of the lymphohematopoietic system.

(d) Reporting signs and symptoms: You should inform your supervisor if you develop any of these signs or symptoms and suspect that they are caused by exposure to BD.

(3) Emergency First-Aid Procedures.

In the event of an emergency, follow the emergency plan and procedures designated for your work area. If you have been trained in first-aid procedures, provide the necessary first aid measures. If necessary, call for additional assistance from co-workers and emergency medical personnel.

(a) Eye and Skin Exposures: If there is a potential that liquefied BD can come in contact with eye or skin, face shields and skin protective equipment must be provided and used. If liquefied BD comes in contact with the eye, immediately flush the eyes with large amounts of water, occasionally lifting the lower and the upper lids. Flush repeatedly. Get medical attention immediately. Contact lenses should not be worn when working with this chemical. In the event of skin contact, which can cause frostbite, remove any contaminated clothing and flush the affected area repeatedly with large amounts of tepid water.

(b) Breathing: If a person breathes in large amounts of BD, move the exposed person to fresh air at once. If breathing has stopped, begin cardiopulmonary resuscitation (CPR) if you have been trained in this procedure. Keep the affected person warm and at rest. Get medical attention immediately.

(c) Rescue: Move the affected person from the hazardous exposure. If the exposed person has been overcome, call for help and begin emergency rescue procedures. Use extreme caution so that you do not become a casualty. Understand the plant's emergency rescue procedures and know the locations of rescue equipment before the need arises.

(4) Respirators and Protective Clothing.

(a) Respirators: Good industrial hygiene practices recommend that engineering and work practice controls be used to reduce environmental concentrations to the permissible exposure level. However, there are some exceptions where

respirators may be used to control exposure. Respirators may be used when engineering and work practice controls are not technically feasible, when such controls are in the process of being installed, or when these controls fail and need to be supplemented or during brief, nonroutine, intermittent exposure. Respirators may also be used in situations involving nonroutine work operations which are performed infrequently and in which exposures are limited in duration, and in emergency situations. In some instances cartridge respirator use is allowed, but only with strict time constraints. For example, at exposure below 5 ppm BD, a cartridge (or canister) respirator, either full or half face, may be used, but the cartridge must be replaced at least every 4 hours, and it must be replaced every 3 hours when the exposure is between 5 and 10 ppm.

If the use of respirators is necessary, the only respirators permitted are those that have been approved by the National Institute for Occupational Safety and Health (NIOSH). In addition to respirator selection, a complete respiratory protection program must be instituted which includes regular training, maintenance, fit testing, inspection, cleaning, and evaluation of respirators. If you can smell BD while wearing a respirator, proceed immediately to fresh air, and change cartridge (or canister) before reentering an area where there is BD exposure. If you experience difficulty in breathing while wearing a respirator, tell your supervisor.

(b) Protective Clothing: Employees should be provided with and required to use impervious clothing, gloves, face shields (eight-inch minimum), and other appropriate protective clothing necessary to prevent the skin from becoming frozen by contact with liquefied BD (or a vessel containing liquid BD).

Employees should be provided with and required to use splash-proof safety goggles where liquefied BD may contact the eyes.

(5) Precautions for Safe Use, Handling, and Storage.

(a) Fire and Explosion Hazards: BD is a flammable gas and can easily form explosive mixtures in air. It has a lower explosive limit of 2%, and an upper explosive limit of 11.5%. It has an autoignition temperature of 420 deg. C (788 deg. F). Its vapor is heavier than air (vapor density, 1.9) and may travel a considerable distance to a source of ignition and flash back. Usually it contains inhibitors to prevent self-polymerization (which is accompanied by evolution of heat) and to prevent formation of explosive peroxides. At elevated temperatures, such as in fire conditions, polymerization may take place. If the polymerization takes place in a container, there is a possibility of violent rupture of the container.

(b) Hazard: Slightly toxic. Slight respiratory irritant. Direct contact of liquefied BD on skin may cause freeze burns and frostbite.

(c) Storage: Protect against physical damage to BD containers. Outside or detached storage of BD containers is preferred. Inside storage should be in a cool, dry, well-ventilated, noncombustible location, away from all possible sources of ignition. Store cylinders vertically and do not stack. Do not store with oxidizing material.

(d) Usual Shipping Containers: Liquefied BD is contained in steel pressure apparatus.

(e) **Electrical Equipment:** Electrical installations in Class I hazardous locations, as defined in Article 500 of the National Electrical Code, should be in accordance with Article 501 of the Code. If explosion-proof electrical equipment is necessary, it shall be suitable for use in Group B. Group D equipment may be used if such equipment is isolated in accordance with Section 501-5(a) by sealing all conduit 1/2-inch size or larger. See Venting of Deflagrations (NFPA No. 68, 1994), National Electrical Code (NFPA No. 70, 1996), Static Electricity (NFPA No. 77, 1993), Lightning Protection Systems (NFPA No. 780, 1995), and Fire Hazard Properties of Flammable Liquids, Gases and Volatile Solids (NFPA No. 325, 1994).

(f) **Fire Fighting:** Stop flow of gas. Use water to keep fire-exposed containers cool. Fire extinguishers and quick drenching facilities must be readily available, and you should know where they are and how to operate them.

(g) **Spill and Leak:** Persons not wearing protective equipment and clothing should be restricted from areas of spills or leaks until clean-up has been completed. If BD is spilled or leaked, the following steps should be taken:

(i) Eliminate all ignition sources.

(ii) Ventilate area of spill or leak.

(iii) If in liquid form, for small quantities, allow to evaporate in a safe manner.

(iv) Stop or control the leak if this can be done without risk. If source of leak is a cylinder and the leak cannot be stopped in place, remove the leaking cylinder to a safe place and repair the leak or allow the cylinder to empty.

(h) **Disposal:** This substance, when discarded or disposed of, is a hazardous waste according to Federal regulations (40 C.F.R. part 261). It is listed as hazardous waste number D001 due to its ignitability. The transportation, storage, treatment, and disposal of this waste material must be conducted in compliance with 40 C.F.R. parts 262, 263, 264, 268 and 270. Disposal can occur only in properly permitted facilities. Check state and local regulation of any additional requirements as these may be more restrictive than federal laws and regulation.

(i) You should not keep food, beverages, or smoking materials in areas where there is BD exposure, nor should you eat or drink in such areas.

(j) Ask your supervisor where BD is used in your work area and ask for any additional plant safety and health rules.

(6) **Medical Requirements.**

Your employer is required to offer you the opportunity to participate in a medical screening and surveillance program if you are exposed to BD at concentrations exceeding the action level (0.5 ppm BD as an 8-hour TWA) on 30 days or more a year, or at or above the 8-hr TWA (1 ppm) or STEL (5 ppm for 15 minutes) on 10 days or more a year. Exposure for any part of a day counts. If you have had exposure to BD in the past, but have been transferred to another job, you may still be eligible to participate in the medical screening and surveillance program.

The WISHA rule specifies the past exposures that would qualify you for participation in the program. These past exposure are work histories that suggest the following:

(a) That you have been exposed at or above the PELs on 30 days a year for 10 or more years;

(b) That you have been exposed at or above the action level on 60 days a year for 10 or more years; or

(c) That you have been exposed above 10 ppm on 30 days in any past year.

Additionally, if you are exposed to BD in an emergency situation, you are eligible for a medical examination within 48 hours. The basic medical screening program includes a health questionnaire, physical examination, and blood test. These medical evaluations must be offered to you at a reasonable time and place, and without cost or loss of pay.

(7) **Observation of Monitoring.**

Your employer is required to perform measurements that are representative of your exposure to BD and you or your designated representative are entitled to observe the monitoring procedure. You are entitled to observe the steps taken in the measurement procedure, and to record the results obtained. When the monitoring procedure is taking place in an area where respirators or personal protective clothing and equipment are required to be worn, you or your representative must also be provided with, and must wear, the protective clothing and equipment.

(8) **Access to Information.**

(a) Each year, your employer is required to inform you of the information contained in this appendix. In addition, your employer must instruct you in the proper work practices for using BD, emergency procedures, and the correct use of protective equipment.

(b) Your employer is required to determine whether you are being exposed to BD. You or your representative has the right to observe employee measurements and to record the results obtained. Your employer is required to inform you of your exposure. If your employer determines that you are being overexposed, he or she is required to inform you of the actions which are being taken to reduce your exposure to within permissible exposure limits and of the schedule to implement these actions.

(c) Your employer is required to keep records of your exposures and medical examinations. These records must be kept by the employer for at least thirty years.

(d) Your employer is required to release your exposure and medical records to you or your representative upon your request.

Appendix B. Substance Technical Guidelines for 1,3-Butadiene (Non-Mandatory)

(1) **Physical and Chemical Data.**

(a) **Substance identification:**

(i) **Synonyms:** 1,3-Butadiene (BD); butadiene; biethylene; bivinyll; divinyl; butadiene-1,3; buta-1,3-diene; erythrene; NCI-C50620; CAS-106-99-0.

(ii) **Formula:** (CH₂)=CH-CH=CH(2)).

(iii) **Molecular weight:** 54.1.

(b) **Physical data:**

(i) **Boiling point (760 mm Hg):** -4.7 deg. C (23.5 deg. F).

(ii) **Specific gravity (water = 1):** 0.62 at 20 deg. C (68 deg. F).

(iii) **Vapor density (air = 1 at boiling point of BD):** 1.87.

(iv) **Vapor pressure at 20 deg. C (68 deg. F):** 910 mm Hg.

(v) **Solubility in water, g/100 g water at 20 deg. C (68 deg. F):** 0.05.

(vi) Appearance and odor: Colorless, flammable gas with a mildly aromatic odor. Liquefied BD is a colorless liquid with a mildly aromatic odor.

(2) Fire, Explosion, and Reactivity Hazard Data.

(a) Fire:

(i) Flash point: -76 deg. C (-105 deg. F) for take out; liquefied BD; Not applicable to BD gas.

(ii) Stability: A stabilizer is added to the monomer to inhibit formation of polymer during storage. Forms explosive peroxides in air in absence of inhibitor.

(iii) Flammable limits in air, percent by volume: Lower: 2.0; Upper: 11.5.

(iv) Extinguishing media: Carbon dioxide for small fires, polymer or alcohol foams for large fires.

(v) Special fire fighting procedures: Fight fire from protected location or maximum possible distance. Stop flow of gas before extinguishing fire. Use water spray to keep fire-exposed cylinders cool.

(vi) Unusual fire and explosion hazards: BD vapors are heavier than air and may travel to a source of ignition and flash back. Closed containers may rupture violently when heated.

(vii) For purposes of compliance with the requirements of WAC 296-24-330, BD is classified as a flammable gas. For example, 7,500 ppm, approximately one-fourth of the lower flammable limit, would be considered to pose a potential fire and explosion hazard.

(viii) For purposes of compliance with WAC 296-24-585, BD is classified as a Class B fire hazard.

(ix) For purposes of compliance with WAC 296-24-956 and 296-800-280, locations classified as hazardous due to the presence of BD shall be Class I.

(b) Reactivity:

(i) Conditions contributing to instability: Heat. Peroxides are formed when inhibitor concentration is not maintained at proper level. At elevated temperatures, such as in fire conditions, polymerization may take place.

(ii) Incompatibilities: Contact with strong oxidizing agents may cause fires and explosions. The contacting of crude BD (not BD monomer) with copper and copper alloys may cause formations of explosive copper compounds.

(iii) Hazardous decomposition products: Toxic gases (such as carbon monoxide) may be released in a fire involving BD.

(iv) Special precautions: BD will attack some forms of plastics, rubber, and coatings. BD in storage should be checked for proper inhibitor content, for self-polymerization, and for formation of peroxides when in contact with air and iron. Piping carrying BD may become plugged by formation of rubbery polymer.

(c) Warning Properties:

(i) Odor Threshold: An odor threshold of 0.45 ppm has been reported in The American Industrial Hygiene Association (AIHA) Report, Odor Thresholds for Chemicals with Established Occupational Health Standards. (Ex. 32-28C).

(ii) Eye Irritation Level: Workers exposed to vapors of BD (concentration or purity unspecified) have complained of irritation of eyes, nasal passages, throat, and lungs. Dogs and rabbits exposed experimentally to as much as 6700 ppm for 7

1/2 hours a day for 8 months have developed no histologically demonstrable abnormality of the eyes.

(ii) Evaluation of Warning Properties: Since the mean odor threshold is about half of the 1 ppm PEL, and more than 10-fold below the 5 ppm STEL, most wearers of air purifying respirators should still be able to detect breakthrough before a significant overexposure to BD occurs.

(3) Spill, Leak, and Disposal Procedures.

(a) Persons not wearing protective equipment and clothing should be restricted from areas of spills or leaks until cleanup has been completed. If BD is spilled or leaked, the following steps should be taken:

(i) Eliminate all ignition sources.

(ii) Ventilate areas of spill or leak.

(iii) If in liquid form, for small quantities, allow to evaporate in a safe manner.

(iv) Stop or control the leak if this can be done without risk. If source of leak is a cylinder and the leak cannot be stopped in place, remove the leaking cylinder to a safe place and repair the leak or allow the cylinder to empty.

(b) Disposal: This substance, when discarded or disposed of, is a hazardous waste according to Federal regulations (40 C.F.R. part 261). It is listed by the EPA as hazardous waste number D001 due to its ignitability. The transportation, storage, treatment, and disposal of this waste material must be conducted in compliance with 40 C.F.R. parts 262, 263, 264, 268 and 270. Disposal can occur only in properly permitted facilities. Check state and local regulations for any additional requirements because these may be more restrictive than federal laws and regulations.

(4) Monitoring and Measurement Procedures.

(a) Exposure above the Permissible Exposure Limit (8-hr TWA) or Short-Term Exposure Limit (STEL):

(i) 8-hr TWA exposure evaluation: Measurements taken for the purpose of determining employee exposure under this standard are best taken with consecutive samples covering the full shift. Air samples must be taken in the employee's breathing zone (air that would most nearly represent that inhaled by the employee).

(ii) STEL exposure evaluation: Measurements must represent 15 minute exposures associated with operations most likely to exceed the STEL in each job and on each shift.

(iii) Monitoring frequencies: Table 1 gives various exposure scenarios and their required monitoring frequencies, as required by the final standard for occupational exposure to butadiene.

Table 1. — Five Exposure Scenarios and Their Associated Monitoring Frequencies

Action Level	8-hr TWA	STEL	Required Monitoring Activity
*	—	—	No 8-hour TWA or STEL monitoring required.
+	—	—	No STEL monitoring required. Monitor 8-hr TWA annually.

Action Level	8-hr TWA	STEL	Required Monitoring Activity
+	—	—	No STEL monitoring required. Periodic monitoring 8-hour TWA, in accordance with (4)(c)(iii).**
+	+	+	Periodic monitoring 8-hour TWA, in accordance with (4)(c)(iii)**. Periodic monitoring STEL in accordance with (4)(c)(iii).
+	—	+	Periodic monitoring STEL, in accordance with (4)(c)(iii). Monitor 8-hour TWA annually.

Footnote (*) Exposure Scenario, Limit Exceeded: + = Yes, - = No.
 Footnote (**) The employer may decrease the frequency of exposure monitoring to annually when at least 2 consecutive measurements taken at least 7 days apart show exposures to be below the 8-hour TWA, but at or above the action level.

(iv) Monitoring techniques: Appendix D describes the validated method of sampling and analysis which has been tested by OSHA for use with BD. The employer has the obligation of selecting a monitoring method which meets the accuracy and precision requirements of the standard under his or her unique field conditions. The standard requires that the method of monitoring must be accurate, to a 95 percent confidence level, to plus or minus 25 percent for concentrations of BD at or above 1 ppm, and to plus or minus 35 percent for concentrations below 1 ppm.

(5) Personal Protective Equipment.

(a) Employees should be provided with and required to use impervious clothing, gloves, face shields (eight-inch minimum), and other appropriate protective clothing necessary to prevent the skin from becoming frozen from contact with liquid BD.

(b) Any clothing which becomes wet with liquid BD should be removed immediately and not reworn until the butadiene has evaporated.

(c) Employees should be provided with and required to use splash proof safety goggles where liquid BD may contact the eyes.

(6) Housekeeping and Hygiene Facilities.

For purposes of complying with WAC 296-800-220 and 296-800-230, the following items should be emphasized:

(a) The workplace should be kept clean, orderly, and in a sanitary condition.

(b) Adequate washing facilities with hot and cold water are to be provided and maintained in a sanitary condition.

(7) Additional Precautions.

(a) Store BD in tightly closed containers in a cool, well-ventilated area and take all necessary precautions to avoid any explosion hazard.

(b) Nonsparking tools must be used to open and close metal containers. These containers must be effectively grounded.

(c) Do not incinerate BD cartridges, tanks or other containers.

(d) Employers must advise employees of all areas and operations where exposure to BD might occur.

Appendix C. Medical Screening and Surveillance for 1,3-Butadiene (Nonmandatory)

(1) Basis for Medical Screening and Surveillance Requirements.

(a) Route of Entry Inhalation.

(b) Toxicology.

Inhalation of BD has been linked to an increased risk of cancer, damage to the reproductive organs, and fetotoxicity. Butadiene can be converted via oxidation to epoxybutene and diepoxybutane, two genotoxic metabolites that may play a role in the expression of BD's toxic effects. BD has been tested for carcinogenicity in mice and rats. Both species responded to BD exposure by developing cancer at multiple primary organ sites. Early deaths in mice were caused by malignant lymphomas, primarily lymphocytic type, originating in the thymus.

Mice exposed to BD have developed ovarian or testicular atrophy. Sperm head morphology tests also revealed abnormal sperm in mice exposed to BD; lethal mutations were found in a dominant lethal test. In light of these results in animals, the possibility that BD may adversely affect the reproductive systems of male and female workers must be considered.

Additionally, anemia has been observed in animals exposed to butadiene. In some cases, this anemia appeared to be a primary response to exposure; in other cases, it may have been secondary to a neoplastic response.

(c) Epidemiology.

Epidemiologic evidence demonstrates that BD exposure poses an increased risk of leukemia. Mild alterations of hematologic parameters have also been observed in synthetic rubber workers exposed to BD.

(2) Potential Adverse Health Effects.

(a) Acute.

Skin contact with liquid BD causes characteristic burns or frostbite. BD in gaseous form can irritate the eyes, nasal passages, throat, and lungs. Blurred vision, coughing, and drowsiness may also occur. Effects are mild at 2,000 ppm and pronounced at 8,000 ppm for exposures occurring over the full workshift.

At very high concentrations in air, BD is an anesthetic, causing narcosis, respiratory paralysis, unconsciousness, and death. Such concentrations are unlikely, however, except in an extreme emergency because BD poses an explosion hazard at these levels.

(b) Chronic.

The principal adverse health effects of concern are BD-induced lymphoma, leukemia and potential reproductive toxicity. Anemia and other changes in the peripheral blood cells may be indicators of excessive exposure to BD.

(c) Reproductive.

Workers may be concerned about the possibility that their BD exposure may be affecting their ability to procreate a healthy child. For workers with high exposures to BD, especially those who have experienced difficulties in conceiving, miscarriages, or stillbirths, appropriate medical and labora-

tory evaluation of fertility may be necessary to determine if BD is having any adverse effect on the reproductive system or on the health of the fetus.

(3) Medical Screening Components At-A-Glance.

(a) Health Questionnaire.

The most important goal of the health questionnaire is to elicit information from the worker regarding potential signs or symptoms generally related to leukemia or other blood abnormalities. Therefore, physicians or other licensed health care professionals should be aware of the presenting symptoms and signs of lymphohematopoietic disorders and cancers, as well as the procedures necessary to confirm or exclude such diagnoses. Additionally, the health questionnaire will assist with the identification of workers at greatest risk of developing leukemia or adverse reproductive effects from their exposures to BD.

Workers with a history of reproductive difficulties or a personal or family history of immune deficiency syndromes, blood dyscrasias, lymphoma, or leukemia, and those who are or have been exposed to medicinal drugs or chemicals known to affect the hematopoietic or lymphatic systems may be at higher risk from their exposure to BD. After the initial administration, the health questionnaire must be updated annually.

(b) Complete Blood Count (CBC).

The medical screening and surveillance program requires an annual CBC, with differential and platelet count, to be provided for each employee with BD exposure. This test is to be performed on a blood sample obtained by phlebotomy of the venous system or, if technically feasible, from a fingerstick sample of capillary blood. The sample is to be analyzed by an accredited laboratory.

Abnormalities in a CBC may be due to a number of different etiologies. The concern for workers exposed to BD includes, but is not limited to, timely identification of lymphohematopoietic cancers, such as leukemia and non-Hodgkin's lymphoma. Abnormalities of portions of the CBC are identified by comparing an individual's results to those of an established range of normal values for males and females. A substantial change in any individual employee's CBC may also be viewed as "abnormal" for that individual even if all measurements fall within the population-based range of normal values. It is suggested that a flowsheet for laboratory values be included in each employee's medical record so that comparisons and trends in annual CBCs can be easily made.

A determination of the clinical significance of an abnormal CBC shall be the responsibility of the examining physician, other licensed health care professional, or medical specialist to whom the employee is referred. Ideally, an abnormal CBC should be compared to previous CBC measurements for the same employee, when available. Clinical common sense may dictate that a CBC value that is very slightly outside the normal range does not warrant medical concern. A CBC abnormality may also be the result of a temporary physical stressor, such as a transient viral illness, blood donation, or menorrhagia, or laboratory error. In these cases, the CBC should be repeated in a timely fashion, i.e., within 6 weeks, to verify that return to the normal range has occurred. A clinically significant abnormal CBC should result in removal of the employee from further exposure to

BD. Transfer of the employee to other work duties in a BD-free environment would be the preferred recommendation.

(c) Physical Examination.

The medical screening and surveillance program requires an initial physical examination for workers exposed to BD; this examination is repeated once every three years. The initial physical examination should assess each worker's baseline general health and rule out clinical signs of medical conditions that may be caused by or aggravated by occupational BD exposure. The physical examination should be directed at identification of signs of lymphohematopoietic disorders, including lymph node enlargement, splenomegaly, and hepatomegaly.

Repeated physical examinations should update objective clinical findings that could be indicative of interim development of a lymphohematopoietic disorder, such as lymphoma, leukemia, or other blood abnormality. Physical examinations may also be provided on an as needed basis in order to follow up on a positive answer on the health questionnaire, or in response to an abnormal CBC. Physical examination of workers who will no longer be working in jobs with BD exposure are intended to rule out lymphohematopoietic disorders.

The need for physical examinations for workers concerned about adverse reproductive effects from their exposure to BD should be identified by the physician or other licensed health care professional and provided accordingly. For these workers, such consultations and examinations may relate to developmental toxicity and reproductive capacity.

Physical examination of workers acutely exposed to significant levels of BD should be especially directed at the respiratory system, eyes, sinuses, skin, nervous system, and any region associated with particular complaints. If the worker has received a severe acute exposure, hospitalization may be required to assure proper medical management. Since this type of exposure may place workers at greater risk of blood abnormalities, a CBC must be obtained within 48 hours and repeated at one, two, and three months.

Appendix D: Sampling and Analytical Method for 1,3-Butadiene (Nonmandatory)

OSHA Method No.: 56.

Matrix: Air.

Target concentration: 1 ppm (2.21 mg/m(3)).

Procedure: Air samples are collected by drawing known volumes of air through sampling tubes containing charcoal adsorbent which has been coated with 4-tert-butylcatechol. The samples are desorbed with carbon disulfide and then analyzed by gas chromatography using a flame ionization detector.

Recommended sampling rate and air volume: 0.05 L/min and 3 L.

Detection limit of the overall procedure: 90 ppb (200 ug/m(3)) (based on 3 L air volume).

Reliable quantitation limit: 155 ppb (343 ug/m(3)) (based on 3 L air volume).

Standard error of estimate at the target concentration: 6.5%.

Special requirements: The sampling tubes must be coated with 4-tert-butylcatechol. Collected samples should be stored in a freezer.

Status of method: A sampling and analytical method has been subjected to the established evaluation procedures of the Organic Methods Evaluation Branch, OSHA Analytical Laboratory, Salt Lake City, Utah 84165.

(1) Background.

This work was undertaken to develop a sampling and analytical procedure for BD at 1 ppm. The current method recommended by OSHA for collecting BD uses activated coconut shell charcoal as the sampling medium (Ref. 5.2). This method was found to be inadequate for use at low BD levels because of sample instability.

The stability of samples has been significantly improved through the use of a specially cleaned charcoal which is coated with 4-tert-butylcatechol (TBC). TBC is a polymerization inhibitor for BD (Ref. 5.3).

(a) Toxic effects.

Symptoms of human exposure to BD include irritation of the eyes, nose and throat. It can also cause coughing, drowsiness and fatigue. Dermatitis and frostbite can result from skin exposure to liquid BD. (Ref. 5.1)

NIOSH recommends that BD be handled in the workplace as a potential occupational carcinogen. This recommendation is based on two inhalation studies that resulted in cancers at multiple sites in rats and in mice. BD has also demonstrated mutagenic activity in the presence of a liver microsomal activating system. It has also been reported to have adverse reproductive effects. (Ref. 5.1)

(b) Potential workplace exposure.

About 90% of the annual production of BD is used to manufacture styrene-butadiene rubber and Polybutadiene rubber. Other uses include: Polychloroprene rubber, acrylonitrile butadiene-styrene resins, nylon intermediates, styrene-butadiene latexes, butadiene polymers, thermoplastic elastomers, nitrile resins, methyl methacrylate-butadiene styrene resins and chemical intermediates. (Ref. 5.1)

(c) Physical properties (Ref. 5.1).

CAS No.: 106-99-0

Molecular weight: 54.1

Appearance: Colorless gas

Boiling point: -4.41 deg. C (760 mm Hg)

Freezing point: -108.9 deg. C

Vapor pressure: 2 atm (a) 15.3 deg. C; 5 atm (a) 47 deg. C

Explosive limits: 2 to 11.5% (by volume in air)

Odor threshold: 0.45 ppm

Structural formula: H(2)C:CHCH:CH(2)

Synonyms: BD; biethylene; bivinyl; butadiene; divinyl; buta-1,3-diene; alpha-gamma-butadiene; erythrene; NCI-C50602; pyrrolylene; vinyethylene.

(d) Limit defining parameters.

The analyte air concentrations listed throughout this method are based on an air volume of 3 L and a desorption volume of 1 mL. Air concentrations listed in ppm are referenced to 25 deg. C and 760 mm Hg.

(e) Detection limit of the analytical procedure.

The detection limit of the analytical procedure was 304 pg per injection. This was the amount of BD which gave a response relative to the interferences present in a standard.

(f) Detection limit of the overall procedure.

The detection limit of the overall procedure was 0.60 ug per sample (90 ppb or 200 ug/m(3)). This amount was determined graphically. It was the amount of analyte which, when spiked on the sampling device, would allow recovery approximately equal to the detection limit of the analytical procedure.

(g) Reliable quantitation limit.

The reliable quantitation limit was 1.03 ug per sample (155 ppb or 343 ug/m(3)). This was the smallest amount of analyte which could be quantitated within the limits of a recovery of at least 75% and a precision (+/- 1.96 SD) of +/- 25% or better.

(h) Sensitivity.(1)

Footnote (1) The reliable quantitation limit and detection limits reported in the method are based upon optimization of the instrument for the smallest possible amount of analyte. When the target concentration of an analyte is exceptionally higher than these limits, they may not be attainable at the routine operation parameters.

The sensitivity of the analytical procedure over a concentration range representing 0.6 to 2 times the target concentration, based on the recommended air volume, was 387 area units per ug/mL. This value was determined from the slope of the calibration curve. The sensitivity may vary with the particular instrument used in the analysis.

(i) Recovery.

The recovery of BD from samples used in storage tests remained above 77% when the samples were stored at ambient temperature and above 94% when the samples were stored at refrigerated temperature. These values were determined from regression lines which were calculated from the storage data. The recovery of the analyte from the collection device must be at least 75% following storage.

(j) Precision (analytical method only).

The pooled coefficient of variation obtained from replicate determinations of analytical standards over the range of 0.6 to 2 times the target concentration was 0.011.

(k) Precision (overall procedure).

The precision at the 95% confidence level for the refrigerated temperature storage test was +/- 12.7%. This value includes an additional +/- 5% for sampling error. The overall procedure must provide results at the target concentrations that are +/- 25% at the 95% confidence level.

(l) Reproducibility.

Samples collected from a controlled test atmosphere and a draft copy of this procedure were given to a chemist unassociated with this evaluation. The average recovery was 97.2% and the standard deviation was 6.2%.

(2) Sampling procedure.

(a) Apparatus. Samples are collected by use of a personal sampling pump that can be calibrated to within +/- 5% of the recommended 0.05 L/min sampling rate with the sampling tube in line.

(b) Samples are collected with laboratory prepared sampling tubes. The sampling tube is constructed of silane-treated glass and is about 5-cm long. The ID is 4 mm and the OD is 6 mm. One end of the tube is tapered so that a glass wool end plug will hold the contents of the tube in place during sampling. The opening in the tapered end of the sampling tube is at least one-half the ID of the tube (2 mm). The

other end of the sampling tube is open to its full 4-mm ID to facilitate packing of the tube. Both ends of the tube are fire-polished for safety. The tube is packed with 2 sections of pre-treated charcoal which has been coated with TBC. The tube is packed with a 50-mg backup section, located nearest the tapered end, and with a 100-mg sampling section of charcoal. The two sections of coated adsorbent are separated and retained with small plugs of silanized glass wool. Following packing, the sampling tubes are sealed with two 7/32 inch OD plastic end caps. Instructions for the pretreatment and coating of the charcoal are presented in Section 4.1 of this method.

(c) Reagents.

None required.

(d) Technique.

(i) Properly label the sampling tube before sampling and then remove the plastic end caps.

(ii) Attach the sampling tube to the pump using a section of flexible plastic tubing such that the larger front section of the sampling tube is exposed directly to the atmosphere. Do not place any tubing ahead of the sampling tube. The sampling tube should be attached in the worker's breathing zone in a vertical manner such that it does not impede work performance.

(iii) After sampling for the appropriate time, remove the sampling tube from the pump and then seal the tube with plastic end caps. Wrap the tube lengthwise.

(iv) Include at least one blank for each sampling set. The blank should be handled in the same manner as the samples with the exception that air is not drawn through it.

(v) List any potential interferences on the sample data sheet.

(vi) The samples require no special shipping precautions under normal conditions. The samples should be refrigerated if they are to be exposed to higher than normal ambient temperatures. If the samples are to be stored before they are shipped to the laboratory, they should be kept in a freezer. The samples should be placed in a freezer upon receipt at the laboratory.

(e) Breakthrough.

(Breakthrough was defined as the relative amount of analyte found on the backup section of the tube in relation to the total amount of analyte collected on the sampling tube. Five-percent breakthrough occurred after sampling a test atmosphere containing 2.0 ppm BD for 90 min. at 0.05 L/min. At the end of this time 4.5 L of air had been sampled and 20.1 ug of the analyte was collected. The relative humidity of the sampled air was 80% at 23 deg. C.)

Breakthrough studies have shown that the recommended sampling procedure can be used at air concentrations higher than the target concentration. The sampling time, however, should be reduced to 45 min. if both the expected BD level and the relative humidity of the sampled air are high.

(f) Desorption efficiency.

The average desorption efficiency for BD from TBC coated charcoal over the range from 0.6 to 2 times the target concentration was 96.4%. The efficiency was essentially constant over the range studied.

(g) Recommended air volume and sampling rate.

(h) The recommended air volume is 3 L.

(i) The recommended sampling rate is 0.05 L/min. for 1 hour.

(j) Interferences.

There are no known interferences to the sampling method.

(k) Safety precautions.

(i) Attach the sampling equipment to the worker in such a manner that it will not interfere with work performance or safety.

(ii) Follow all safety practices that apply to the work area being sampled.

(3) Analytical procedure.

(a) Apparatus.

(i) A gas chromatograph (GC), equipped with a flame ionization detector (FID).(2)

Footnote (2) A Hewlett-Packard Model 5840A GC was used for this evaluation. Injections were performed using a Hewlett-Packard Model 7671A automatic sampler.

(ii) A GC column capable of resolving the analytes from any interference.(3)

Footnote (3) A 20-ft x 1/8-inch OD stainless steel GC column containing 20% FFAP on 80/100 mesh Chromabsorb W-AW-DMCS was used for this evaluation.

(iii) Vials, glass 2-mL with Teflon-lined caps.

(iv) Disposable Pasteur-type pipets, volumetric flasks, pipets and syringes for preparing samples and standards, making dilutions and performing injections.

(b) Reagents.

(i) Carbon disulfide.(4)

Footnote (4) Fisher Scientific Company A.C.S. Reagent Grade solvent was used in this evaluation.

The benzene contaminant that was present in the carbon disulfide was used as an internal standard (ISTD) in this evaluation.

(ii) Nitrogen, hydrogen and air, GC grade.

(iii) BD of known high purity.(5)

Footnote (5) Matheson Gas Products, CP Grade 1,3-butadiene was used in this study.

(c) Standard preparation.

(i) Prepare standards by diluting known volumes of BD gas with carbon disulfide. This can be accomplished by injecting the appropriate volume of BD into the headspace above the 1-mL of carbon disulfide contained in sealed 2-mL vial. Shake the vial after the needle is removed from the septum.(6)

Footnote (6) A standard containing 7.71 ug/mL (at ambient temperature and pressure) was prepared by diluting 4 uL of the gas with 1-mL of carbon disulfide.

(ii) The mass of BD gas used to prepare standards can be determined by use of the following equations:

$$MV = (760/BP)(273+t)/(273)(22.41)$$

Where:

MV = ambient molar volume

BP = ambient barometric pressure

T = ambient temperature

ug/uL = 54.09/MV

$\text{ug/standard} = (\text{ug/uL})(\text{uL})$ BD used to prepare the standard

(d) Sample preparation.

(i) Transfer the 100-mg section of the sampling tube to a 2-mL vial. Place the 50-mg section in a separate vial. If the glass wool plugs contain a significant amount of charcoal, place them with the appropriate sampling tube section.

(ii) Add 1-mL of carbon disulfide to each vial.

(iii) Seal the vials with Teflon-lined caps and then allow them to desorb for one hour. Shake the vials by hand vigorously several times during the desorption period.

(iv) If it is not possible to analyze the samples within 4 hours, separate the carbon disulfide from the charcoal, using a disposable Pasteur-type pipet, following the one hour. This separation will improve the stability of desorbed samples.

(v) Save the used sampling tubes to be cleaned and repacked with fresh adsorbent.

(e) Analysis.

(i) GC Conditions.

Column temperature: 95 deg. C

Injector temperature: 180 deg. C

Detector temperature: 275 deg. C

Carrier gas flow rate: 30 mL/min.

Injection volume: 0.80 uL

GC column: 20-ft x 1/8-in OD stainless steel GC column containing 20%

FFAP on 80/100 Chromabsorb W-AW-DMCS.

(ii) Chromatogram. See Section 4.2.

(iii) Use a suitable method, such as electronic or peak heights, to measure detector response.

(iv) Prepare a calibration curve using several standard solutions of different concentrations. Prepare the calibration curve daily. Program the integrator to report the results in ug/mL.

(v) Bracket sample concentrations with standards.

(f) Interferences (analytical).

(i) Any compound with the same general retention time as the analyte and which also gives a detector response is a potential interference. Possible interferences should be reported by the industrial hygienist to the laboratory with submitted samples.

(ii) GC parameters (temperature, column, etc.) may be changed to circumvent interferences.

(iii) A useful means of structure designation is GC/MS. It is recommended that this procedure be used to confirm samples whenever possible.

(g) Calculations.

(i) Results are obtained by use of calibration curves. Calibration curves are prepared by plotting detector response against concentration for each standard. The best line through the data points is determined by curve fitting.

(ii) The concentration, in ug/mL, for a particular sample is determined by comparing its detector response to the calibration curve. If any analyte is found on the backup section, this amount is added to the amount found on the front section. Blank corrections should be performed before adding the results together.

(iii) The BD air concentration can be expressed using the following equation:

$$\text{mg/m}^3 = (\text{A})(\text{B})/(\text{C})(\text{D})$$

Where:

A = ug/mL from Section 3.7.2

B = volume

C = L of air sampled

D = efficiency

(iv) The following equation can be used to convert results in mg/m³ to ppm:

$$\text{ppm} = (\text{mg/m}^3)(24.46)/54.09$$

Where:

mg/m³ = result from Section 3.7.3.

24.46 = molar volume of an ideal gas at 760 mm Hg and 25 deg. C.

(h) Safety precautions (analytical).

(i) Avoid skin contact and inhalation of all chemicals.

(ii) Restrict the use of all chemicals to a fume hood whenever possible.

(iii) Wear safety glasses and a lab coat in all laboratory areas.

(4) Additional Information.

(a) A procedure to prepare specially cleaned charcoal coated with TBC.

(i) Apparatus.

(A) Magnetic stirrer and stir bar.

(B) Tube furnace capable of maintaining a temperature of 700 deg. C and equipped with a quartz tube that can hold 30 g of charcoal.(8)

Footnote (8) A Lindberg Type 55035 Tube furnace was used in this evaluation.

(C) A means to purge nitrogen gas through the charcoal inside the quartz tube.

(D) Water bath capable of maintaining a temperature of 60 deg. C.

(E) Miscellaneous laboratory equipment: One-liter vacuum flask, 1-L Erlenmeyer flask, 350-M1 Buchner funnel with a coarse fitted disc, 4-oz brown bottle, rubber stopper, Teflon tape etc.

(ii) Reagents.

(A) Phosphoric acid, 10% by weight, in water.(9)

Footnote (9) Baker Analyzed Reagent grade was diluted with water for use in this evaluation.

(B) 4-tert-Butylcatechol (TBC).(10)

Footnote (10) The Aldrich Chemical Company 99% grade was used in this evaluation.

(C) Specially cleaned coconut shell charcoal, 20/40 mesh.(11)

Footnote (11) Specially cleaned charcoal was obtained from Supelco, Inc. for use in this evaluation. The cleaning process used by Supelco is proprietary.

(D) Nitrogen gas, GC grade.

(iii) Procedure.

Weigh 30g of charcoal into a 500-mL Erlenmeyer flask. Add about 250 mL of 10% phosphoric acid to the flask and then swirl the mixture. Stir the mixture for 1 hour using a magnetic stirrer. Filter the mixture using a fitted Buchner funnel. Wash the charcoal several times with 250-mL portions of deionized water to remove all traces of the acid.

Transfer the washed charcoal to the tube furnace quartz tube. Place the quartz tube in the furnace and then connect the nitrogen gas purge to the tube. Fire the charcoal to 700 deg. C. Maintain that temperature for at least 1 hour. After the charcoal has cooled to room temperature, transfer it to a tared beaker. Determine the weight of the charcoal and then add an amount of TBC which is 10% of the charcoal, by weight.

CAUTION-TBC is toxic and should only be handled in a fume hood while wearing gloves.

Carefully mix the contents of the beaker and then transfer the mixture to a 4-oz bottle. Stopper the bottle with a clean rubber stopper which has been wrapped with Teflon tape. Clamp the bottle in a water bath so that the water level is above the charcoal level. Gently heat the bath to 60 deg. C and then maintain that temperature for 1 hour. Cool the charcoal to room temperature and then transfer the coated charcoal to a suitable container.

The coated charcoal is now ready to be packed into sampling tubes. The sampling tubes should be stored in a sealed container to prevent contamination. Sampling tubes should be stored in the dark at room temperature. The sampling tubes should be segregated by coated adsorbent lot number.

(b) Chromatograms.

The chromatograms were obtained using the recommended analytical method. The chart speed was set at 1 cm/min. for the first three min. and then at 0.2 cm/min. for the time remaining in the analysis.

The peak which elutes just before BD is a reaction product between an impurity on the charcoal and TBC. This peak is always present, but it is easily resolved from the analyte. The peak which elutes immediately before benzene is an oxidation product of TBC.

(5) References.

(a) "Current Intelligence Bulletin 41, 1,3-Butadiene," U.S. Dept. of Health and Human Services, Public Health Service, Center for Disease Control, NIOSH.

(b) "NIOSH Manual of Analytical Methods," 2nd ed.; U.S. Dept. of Health Education and Welfare, National Institute for Occupational Safety and Health: Cincinnati, OH. 1977, Vol. 2, Method No. S91 DHEW (NIOSH) Publ. (U.S.), No. 77-157-B.

(c) Hawley, G.C., Ed. "The Condensed Chemical Dictionary," 8th ed.; Van Nostrand Rienhold Company: New York, 1971; 139.5.4. Chem. Eng. News (June 10, 1985), (63), 22-66.

Appendix E: Reserved.

APPENDIX F, MEDICAL QUESTIONNAIRES, (Non-mandatory)

1,3-Butadiene (BD) Initial Health Questionnaire

DIRECTIONS:

You have been asked to answer the questions on this form because you work with BD (butadiene). These questions are about your work, medical history, and health concerns. Please do your best to answer all of the questions. If you need help, please tell the doctor or health care professional who reviews this form.

This form is a confidential medical record. Only information directly related to your health and safety on the job may be

given to your employer. Personal health information will not be given to anyone without your consent.

Date: _____
Name: _____ SSN ___ / ___ / ___
Last First MI
Job Title: _____
Company's Name: _____
Supervisor's Name: _____
Supervisor's Phone No.: () ___ - _____

Work History

1. Please list all jobs you have had in the past, starting with the job you have now and moving back in time to your first job. (For more space, write on the back of this page.)

Main Job Duty
Year
Company Name
City, State

Chemicals

- 1.
2.
3.
4.
5.
6.
7.
8.

2. Please describe what you do during a typical work day. Be sure to tell about your work with BD.

3. Please check any of these chemicals that you work with now or have worked with in the past:

- benzene _____
glues _____
toluene _____
inks, dyes _____
other solvents, grease cutters _____
insecticides (like DDT, lindane, etc.) _____
paints, varnishes, thinners, strippers _____
dusts _____
carbon tetrachloride ("carbon tet") _____
arsine _____
carbon disulfide _____
lead _____
cement _____

petroleum products _____
nitrites _____

4. Please check the protective clothing or equipment you use at the job you have now:

gloves _____
coveralls _____
respirator _____
dust mask _____
safety glasses, goggles _____

Please circle your answer.

5. Does your protective clothing or equipment fit you properly? yes no

6. Have you ever made changes in your protective clothing or equipment to make it fit better? yes no

7. Have you been exposed to BD when you were not wearing protective clothing or equipment? yes no

8. Where do you eat, drink and/or smoke when you are at work? (Please check all that apply.)

Cafeteria/restaurant/snack bar _____
Break room/employee lounge _____
Smoking lounge _____
At my work station _____

Please circle your answer.

9. Have you been exposed to radiation (like x-rays or nuclear material) at the job you have now or at past jobs? yes no

10. Do you have any hobbies that expose you to dusts or chemicals (including paints, glues, etc.)? yes no

11. Do you have any second or side jobs? yes no

If yes, what are your duties there?

12. Were you in the military? yes no

If yes, what did you do in the military? _____

Family Health History

1. In the FAMILY MEMBER column, across from the disease name, write which family member, if any, had the disease.

DISEASE FAMILY MEMBER

Cancer _____
Lymphoma _____
Sickle Cell Disease or Trait _____

Immune Disease _____
Leukemia _____
Anemia _____

2. Please fill in the following information about family health

Relative _____
Alive? _____
Age at Death? _____
Cause of Death? _____
Father _____
Mother _____
Brother/Sister _____
Brother/Sister _____
Brother/Sister _____

Personal Health History

Birth Date __/__/__ Age __ Sex __ Height __ Weight __

Please circle your answer.

1. Do you smoke any tobacco products? yes no

2. Have you ever had any kind of surgery or operation? yes no

If yes, what type of surgery:

3. Have you ever been in the hospital for any other reasons? yes no

If yes, please describe the reason _____

4. Do you have any on-going or current medical problems or conditions? yes no

If yes, please describe: _____

5. Do you now have or have you ever had any of the following? Please check all that apply to you.

unexplained fever _____
anemia ("low blood") _____
HIV/AIDS _____
weakness _____
sickle cell _____
miscarriage _____
skin rash _____
bloody stools _____
leukemia/lymphoma _____

- neck mass/swelling _____
- wheezing _____
- yellowing of skin _____
- bruising easily _____
- lupus _____
- weight loss _____
- kidney problems _____
- enlarged lymph nodes _____
- liver disease _____
- cancer _____
- infertility _____
- drinking problems _____
- thyroid problems _____
- night sweats _____
- chest pain _____
- still birth _____
- eye redness _____
- lumps you can feel _____
- child with birth defect _____
- autoimmune disease _____
- overly tired _____
- lung problems _____
- rheumatoid arthritis _____
- mononucleosis ("mono") _____
- nagging cough _____

Please circle your answer.

6. Do you have any symptoms or health problems that you think may be related to your work with BD? yes no

If yes, please describe: _____

7. Have any of your co-workers had similar symptoms or problems? yes no don't know

If yes, please describe: _____

8. Do you notice any irritation of your eyes, nose, throat, lungs, or skin when working with BD? yes no

9. Do you notice any blurred vision, coughing, drowsiness, nausea, or headache when working with BD? yes no

10. Do you take any medications (including birth control or over-the-counter)? yes no

If yes, please list: _____

11. Are you allergic to any medication, food, or chemicals? yes no

If yes, please list: _____

12. Do you have any health conditions not covered by this questionnaire that you think are affected by your work with BD? yes no

If yes, please explain: _____

13. Did you understand all the questions? yes no

Signature _____

1,3-Butadiene (BD) Health Update Questionnaire

DIRECTIONS:

You have been asked to answer the questions on this form because you work with BD (butadiene). These questions are about your work, medical history, and health concerns. Please do your best to answer all of the questions. If you need help, please tell the doctor or health care professional who reviews this form.

This form is a confidential medical record. Only information directly related to your health and safety on the job may be given to your employer. Personal health information will not be given to anyone without your consent.

Date: _____
Name: _____ SSN ___/___/___
Last First MI

Job Title: _____

Company's Name: _____

Supervisor's Name: _____

Supervisor's Phone No.: () ___ - _____

1. Please describe any NEW duties that you have at your job. _____

2. Please describe any additional job duties you have:

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Please circle your answer.

3. Are you exposed to any other chemicals in your work since the last time you were evaluated for exposure to BD? yes no

If yes, please list what they are: _____

4. Does your personal protective equipment and clothing fit you properly? yes no

5. Have you made changes in this equipment or clothing to make it fit better? yes no

6. Have you been exposed to BD when you were not wearing protective clothing or equipment? yes no

7. Are you exposed to any NEW chemicals at home or while working on hobbies? yes no

If yes, please list what they are: _____

8. Since your last BD health evaluation, have you started working any new second or side jobs? yes no

If yes, what are your duties there? _____

Personal Health History

1. What is your current weight? _____ pounds

2. Have you been diagnosed with any new medical conditions or illness since your last evaluation? yes no

If yes, please tell what they are: _____

3. Since your last evaluation, have you been in the hospital for any illnesses, injuries, or surgery? yes no

If yes, please describe: _____

4. Do you have any of the following? Please place a check for all that apply to you.

- unexplained fever _____
- anemia ("low blood") _____
- HIV/AIDS _____
- weakness _____
- sickle cell _____
- miscarriage _____
- skin rash _____
- bloody stools _____
- leukemia/lymphoma _____
- neck mass/swelling _____
- wheezing _____
- yellowing of skin _____

- bruising easily _____
- lupus _____
- weight loss _____
- kidney problems _____
- enlarged lymph nodes _____
- liver disease _____
- cancer _____
- infertility _____
- drinking problems _____
- thyroid problems _____
- night sweats _____
- chest pain _____
- still birth _____
- eye redness _____
- lumps you can feel _____
- child with birth defect _____
- autoimmune disease _____
- overly tired _____
- lung problems _____
- rheumatoid arthritis _____
- mononucleosis ("mono") _____
- nagging cough _____

Please circle your answer.

5. Do you have any symptoms or health problems that you think may be related to your work with BD? yes no

If yes, please describe: _____

6. Have any of your co-workers had similar symptoms or problems? yes no don't know

If yes, please describe: _____

7. Do you notice any irritation of your eyes, nose, throat, lungs, or skin when working with BD? yes no

8. Do you notice any blurred vision, coughing, drowsiness, nausea, or headache when working with BD? yes no

9. Have you been taking any NEW medications (including birth control or over-the-counter)? yes no

If yes, please list:

10. Have you developed any new allergies to medications, foods, or chemicals? yes no

If yes, please list:

11. Do you have any health conditions not covered by this questionnaire that you think are affected by your work with BD? yes no

If yes, please describe: _____

12. Do you understand all the questions? yes no

Signature _____

AMENDATORY SECTION (Amending WSR 14-07-086, filed 3/18/14, effective 5/1/14)

WAC 296-62-07470 Methylene chloride. This occupational health standard establishes requirements for employers to control occupational exposure to methylene chloride (MC). Employees exposed to MC are at increased risk of developing cancer, adverse effects on the heart, central nervous system and liver, and skin or eye irritation. Exposure may occur through inhalation, by absorption through the skin, or through contact with the skin. MC is a solvent which is used in many different types of work activities, such as paint stripping, polyurethane foam manufacturing, and cleaning and degreasing. Under the requirements of subsection (4) of this section, each covered employer must make an initial determination of each employee's exposure to MC. If the employer determines that employees are exposed below the action level, the only other provisions of this section that apply are that a record must be made of the determination, the employees must receive information and training under subsection (12) of this section and, where appropriate, employees must be protected from contact with liquid MC under subsection (8) of this section.

The provisions of the MC standard are as follows:

(1) Scope and application. This section applies to all occupational exposures to methylene chloride (MC), Chemical Abstracts Service Registry Number 75-09-2, in general industry, construction and shipyard employment.

(2) Definitions. For the purposes of this section, the following definitions shall apply:

~~("Action level" means)~~ **Action level.** A concentration of airborne MC of 12.5 parts per million (ppm) calculated as an eight-hour time-weighted average (TWA).

~~("Authorized person" means)~~ **Authorized person.** Any person specifically authorized by the employer and required by work duties to be present in regulated areas, or any person entering such an area as a designated representative of employees for the purpose of exercising the right to observe monitoring and measuring procedures under subsection (4) of this section, or any other person authorized by the WISH Act or regulations issued under the act.

~~("Director" means)~~ **Director.** The director of the department of labor and industries, or designee.

~~("Emergency" means)~~ **Emergency.** Any occurrence, such as, but not limited to, equipment failure, rupture of containers, or failure of control equipment, which results, or is likely to result in an uncontrolled release of MC. If an incidental release of MC can be controlled by employees such as maintenance personnel at the time of release and in accordance with the leak/spill provisions required by subsection (6) of this section, it is not considered an emergency as defined by this standard.

~~("Employee exposure" means)~~ **Employee exposure.** Exposure to airborne MC which occurs or would occur if the employee were not using respiratory protection.

~~("Methylene chloride (MC)" means)~~ **Methylene chloride (MC).** An organic compound with chemical formula, CH₂Cl₂. Its Chemical Abstracts Service Registry Number is 75-09-2. Its molecular weight is 84.9 g/mole.

~~("Physician or other licensed health care professional" is)~~ **Physician or other licensed health care professional.** An individual whose legally permitted scope of practice (i.e., license, registration, or certification) allows ~~(him or her)~~ them to independently provide or be delegated the responsibility to provide some or all of the health care services required by subsection (10) of this section.

~~("Regulated area" means)~~ **Regulated area.** An area, demarcated by the employer, where an employee's exposure to airborne concentrations of MC exceeds or can reasonably be expected to exceed either the eight-hour TWA PEL or the STEL.

~~("Symptom" means)~~ **Symptom.** Central nervous system effects such as headaches, disorientation, dizziness, fatigue, and decreased attention span; skin effects such as chapping, erythema, cracked skin, or skin burns; and cardiac effects such as chest pain or shortness of breath.

~~("This section" means)~~ **This section.** This methylene chloride standard.

(3) Permissible exposure limits (PELs).

(a) Eight-hour time-weighted average (TWA) PEL. The employer ~~(shall)~~ must ensure that no employee is exposed to an airborne concentration of MC in excess of twenty-five parts of MC per million parts of air (25 ppm) as an eight-hour TWA.

(b) Short-term exposure limit (STEL). The employer ~~(shall)~~ must ensure that no employee is exposed to an airborne concentration of MC in excess of one hundred and twenty-five parts of MC per million parts of air (125 ppm) as determined over a sampling period of fifteen minutes.

(4) Exposure monitoring.

(a) Characterization of employee exposure.

(i) Where MC is present in the workplace, the employer ~~(shall)~~ must determine each employee's exposure by either:

(A) Taking a personal breathing zone air sample of each employee's exposure; or

(B) Taking personal breathing zone air samples that are representative of each employee's exposure.

(ii) Representative samples. The employer may consider personal breathing zone air samples to be representative of employee exposures when they are taken as follows:

(A) Eight-hour TWA PEL. The employer has taken one or more personal breathing zone air samples for at least one employee in each job classification in a work area during

every work shift, and the employee sampled is expected to have the highest MC exposure.

(B) Short-term exposure limits. The employer has taken one or more personal breathing zone air samples which indicate the highest likely fifteen-minute exposures during such operations for at least one employee in each job classification in the work area during every work shift, and the employee sampled is expected to have the highest MC exposure.

(C) Exception. Personal breathing zone air samples taken during one work shift may be used to represent employee exposures on other work shifts where the employer can document that the tasks performed and conditions in the workplace are similar across shifts.

(iii) Accuracy of monitoring. The employer ~~((shall))~~ must ensure that the methods used to perform exposure monitoring produce results that are accurate to a confidence level of ninety-five percent, and are:

(A) Within plus or minus twenty-five percent for airborne concentrations of MC above the eight-hour TWA PEL or the STEL; or

(B) Within plus or minus thirty-five percent for airborne concentrations of MC at or above the action level but at or below the eight-hour TWA PEL.

(b) Initial determination. Each employer whose employees are exposed to MC ~~((shall))~~ must perform initial exposure monitoring to determine each affected employee's exposure, except under the following conditions:

(i) Where objective data demonstrate that MC cannot be released in the workplace in airborne concentrations at or above the action level or above the STEL. The objective data ~~((shall))~~ must represent the highest MC exposures likely to occur under reasonably foreseeable conditions of processing, use, or handling. The employer ~~((shall))~~ must document the objective data exemption as specified in subsection (13) of this section;

(ii) Where the employer has performed exposure monitoring within ~~((+2))~~ twelve months prior to December 1, and that exposure monitoring meets all other requirements of this section, and was conducted under conditions substantially equivalent to existing conditions; or

(iii) Where employees are exposed to MC on fewer than thirty days per year (e.g., on a construction site), and the employer has measurements by direct reading instruments which give immediate results (such as a detector tube) and which provide sufficient information regarding employee exposures to determine what control measures are necessary to reduce exposures to acceptable levels.

(c) Periodic monitoring. Where the initial determination shows employee exposures at or above the action level or above the STEL, the employer shall establish an exposure monitoring program for periodic monitoring of employee exposure to MC in accordance with Table 1:

Table 1

Six Initial Determination Exposure Scenarios and Their Associated Monitoring Frequencies

<u>Exposure scenario</u>	<u>Required monitoring activity</u>
Below the action level and at or below the STEL.	No eight-hour TWA or STEL monitoring required.

<u>Exposure scenario</u>	<u>Required monitoring activity</u>
Below the action level and above the STEL.	No eight-hour TWA monitoring required; monitor STEL exposures every three months.
At or above the action level, at or below the TWA, and at or below the STEL.	Monitor eight-hour TWA exposures every six months.
At or above the action level, at or below the TWA, and above the STEL.	Monitor eight-hour TWA exposures every six months and monitor STEL exposures every three months.
Above the TWA and at or below the STEL.	Monitor eight-hour TWA exposures every three months. In addition, without regard to the last sentence of the note to subsection (3) of this section, the following employers must monitor STEL exposures every three months until either the date by which they must achieve the eight-hour TWAs PEL under subsection (3) of this section or the date by which they in fact achieve the eight-hour TWA PEL, whichever comes first: <ul style="list-style-type: none"> • Employers engaged in polyurethane foam manufacturing; • Foam fabrication; • Furniture refinishing; • General aviation aircraft stripping; • Product formulation; • Use of MC-based adhesives for boat building and repair; • Recreational vehicle manufacture, van conversion, or upholstery; and use of MC in construction work for restoration and preservation of buildings, painting and paint removal, cabinet making, or floor refinishing and resurfacing.
Above the TWA and above the STEL.	Monitor both eight-hour TWA exposures and STEL exposures every three months.

(Note to subsection (4)(c) of this section: The employer may decrease the frequency of exposure monitoring to every six months when at least two consecutive measurements taken at least seven days apart show exposures to be at or

below the eight-hour TWA PEL. The employer may discontinue the periodic eight-hour TWA monitoring for employees where at least two consecutive measurements taken at least seven days apart are below the action level. The employer may discontinue the periodic STEL monitoring for employees where at least two consecutive measurements taken at least seven days apart are at or below the STEL.)

(d) Additional monitoring.

(i) The employer ~~((shall))~~ must perform exposure monitoring when a change in workplace conditions indicates that employee exposure may have increased. Examples of situations that may require additional monitoring include changes in production, process, control equipment, or work practices, or a leak, rupture, or other breakdown.

(ii) Where exposure monitoring is performed due to a spill, leak, rupture or equipment breakdown, the employer ~~((shall))~~ must clean up the MC and perform the appropriate repairs before monitoring.

(e) Employee notification of monitoring results.

(i) The employer ~~((shall))~~ must, within fifteen working days after the receipt of the results of any monitoring performed under this section, notify each affected employee of these results in writing, either individually or by posting of results in an appropriate location that is accessible to affected employees.

(ii) Whenever monitoring results indicate that employee exposure is above the eight-hour TWA PEL or the STEL, the employer ~~((shall))~~ must describe in the written notification the corrective action being taken to reduce employee exposure to or below the eight-hour TWA PEL or STEL and the schedule for completion of this action.

(f) Observation of monitoring.

(i) Employee observation. The employer ~~((shall))~~ must provide affected employees or their designated representatives an opportunity to observe any monitoring of employee exposure to MC conducted in accordance with this section.

(ii) Observation procedures. When observation of the monitoring of employee exposure to MC requires entry into an area where the use of protective clothing or equipment is required, the employer ~~((shall))~~ must provide, at no cost to the observer(s), and the observer(s) ~~((shall be required to))~~ must use such clothing and equipment and ~~((shall))~~ must comply with all other applicable safety and health procedures.

(5) Regulated areas.

(a) The employer ~~((shall))~~ must establish a regulated area wherever an employee's exposure to airborne concentrations of MC exceeds or can reasonably be expected to exceed either the eight-hour TWA PEL or the STEL.

(b) The employer ~~((shall))~~ must limit access to regulated areas to authorized persons.

(c) The employer ~~((shall))~~ must supply a respirator, selected in accordance with subsection (7)(c) of this section, to each person who enters a regulated area and ~~((shall))~~ must require each affected employee to use that respirator whenever MC exposures are likely to exceed the eight-hour TWA PEL or STEL.

(Note to subsection (5)(c) of this section: An employer who has implemented all feasible engineering, work practice and administrative controls (as required in subsection (6) of

this section), and who has established a regulated area (as required by subsection (5)(a) of this section) where MC exposure can be reliably predicted to exceed the eight-hour TWA PEL or the STEL only on certain days (for example, because of work or process schedule) would need to have affected employees use respirators in that regulated area only on those days.)

(d) The employer ~~((shall))~~ must ensure that, within a regulated area, employees do not engage in nonwork activities which may increase dermal or oral MC exposure.

(e) The employer ~~((shall))~~ must ensure that while employees are wearing respirators, they do not engage in activities (such as taking medication or chewing gum or tobacco) which interfere with respirator seal or performance.

(f) The employer ~~((shall))~~ must demarcate regulated areas from the rest of the workplace in any manner that adequately establishes and alerts employees to the boundaries of the area and minimizes the number of authorized employees exposed to MC within the regulated area.

(g) An employer at a multiemployer worksite who establishes a regulated area ~~((shall))~~ must communicate the access restrictions and locations of these areas to all other employers with work operations at that worksite.

(6) Methods of compliance.

(a) Engineering and work practice controls. The employer ~~((shall))~~ must institute and maintain the effectiveness of engineering controls and work practices to reduce employee exposure to or below the PELs except to the extent that the employer can demonstrate that such controls are not feasible.

(b) Wherever the feasible engineering controls and work practices which can be instituted are not sufficient to reduce employee exposure to or below the 8-TWA PEL or STEL, the employer ~~((shall))~~ must use them to reduce employee exposure to the lowest levels achievable by these controls and ~~((shall))~~ must supplement them by the use of respiratory protection that complies with the requirements of subsection (7) of this section.

(c) Prohibition of rotation. The employer ~~((shall))~~ must not implement a schedule of employee rotation as a means of compliance with the PELs.

(d) Leak and spill detection.

(i) The employer ~~((shall))~~ must implement procedures to detect leaks of MC in the workplace. In work areas where spills may occur, the employer ~~((shall))~~ must make provisions to contain any spills and to safely dispose of any MC-contaminated waste materials.

(ii) The employer ~~((shall))~~ must ensure that all incidental leaks are repaired and that incidental spills are cleaned promptly by employees who use the appropriate personal protective equipment and are trained in proper methods of cleanup.

(Note to subsection (6)(d)(ii) of this section: See Appendix A of this section for examples of procedures that satisfy this requirement. Employers covered by this standard may also be subject to the hazardous waste and emergency response provisions contained in ~~((WAC 296-62-3112))~~ chapter 296-843 WAC.)

(7) Respiratory protection.

(a) General requirements. For employees who use respirators required by this section, the employer must provide each employee an appropriate respirator that complies with the requirements of this subsection. Respirators must be used during:

(i) Periods when an employee's exposure to MC exceeds or can reasonably be expected to exceed the eight-hour TWA PEL or the STEL (for example, when an employee is using MC in a regulated area);

(ii) Periods necessary to install or implement feasible engineering and work-practice controls;

(iii) In a few work operations, such as some maintenance operations and repair activities, for which the employer demonstrates that engineering and work practice controls are infeasible;

(iv) Work operations for which feasible engineering and work practice controls are not sufficient to reduce exposures to or below the PELs;

(v) Emergencies.

(b) Respirator program.

(i) The employer must develop, implement and maintain a respiratory protection program as required by chapter 296-842 WAC, Respirators, which covers each employee required by this chapter to use a respirator, except for the requirements in Table 5 of WAC 296-842-13005 that address gas or vapor cartridge change schedules and end-of-service-life indicators (ESLIs).

(ii) Employers who provide employees with gas masks with organic-vapor canisters for the purpose of emergency escape must replace the canisters after any emergency use and before the gas masks are returned to service.

(c) Respirator selection. The employer must:

(i) Select and provide to employees appropriate respirators according to this section and WAC 296-842-13005, found in the respirator rule.

(ii) Make sure half-facepiece respirators are not selected or used for protection against MC. This is necessary to prevent eye irritation or damage from MC exposure.

(iii) Provide to employees, for emergency escape, one of the following respirator options:

(A) A self-contained breathing apparatus operated in the continuous-flow or pressure demand mode; or

(B) A gas mask equipped with an organic vapor canister.

(d) Medical evaluation. Before having an employee use a supplied-air respirator in the negative-pressure mode, or a gas mask with an organic-vapor canister for emergency escape, the employer must:

(i) Have a physician or other licensed health care professional (PLHCP) evaluate the employee's ability to use such respiratory protection;

(ii) Ensure that the PLHCP provides their findings in a written opinion to the employee and the employer.

Note: See WAC ((296-62-07150 through 296-62-07156)) 296-842-14005 for medical evaluation requirements for employees using respirators.

(8) Protective work clothing and equipment.

(a) Where needed to prevent MC-induced skin or eye irritation, the employer ((shall)) must provide clean protective clothing and equipment which is resistant to MC, at no

cost to the employee, and ((shall)) must ensure that each affected employee uses it. Eye and face protection shall meet the requirements of WAC 296-800-160, as applicable.

(b) The employer ((shall)) must clean, launder, repair and replace all protective clothing and equipment required by this subsection as needed to maintain their effectiveness.

(c) The employer ((shall)) must be responsible for the safe disposal of such clothing and equipment.

(Note to subsection (8)(c) of this section: See Appendix A for examples of disposal procedures that will satisfy this requirement.)

(9) Hygiene facilities.

(a) If it is reasonably foreseeable that employees' skin may contact solutions containing 0.1 percent or greater MC (for example, through splashes, spills or improper work practices), the employer ((shall)) must provide conveniently located washing facilities capable of removing the MC, and ((shall)) must ensure that affected employees use these facilities as needed.

(b) If it is reasonably foreseeable that an employee's eyes may contact solutions containing 0.1 percent or greater MC (for example through splashes, spills or improper work practices), the employer ((shall)) must provide appropriate eye-wash facilities within the immediate work area for emergency use, and ((shall)) must ensure that affected employees use those facilities when necessary.

(10) Medical surveillance.

(a) Affected employees. The employer ((shall)) must make medical surveillance available for employees who are or may be exposed to MC as follows:

(i) At or above the action level on thirty or more days per year, or above the eight-hour TWA PEL or the STEL on ten or more days per year;

(ii) Above the 8-TWA PEL or STEL for any time period where an employee has been identified by a physician or other licensed health care professional as being at risk from cardiac disease or from some other serious MC-related health condition and such employee requests inclusion in the medical surveillance program;

(iii) During an emergency.

(b) Costs. The employer ((shall)) must provide all required medical surveillance at no cost to affected employees, without loss of pay and at a reasonable time and place.

(c) Medical personnel. The employer ((shall)) must ensure that all medical surveillance procedures are performed by a physician or other licensed health care professional, as defined in subsection (2) of this section.

(d) Frequency of medical surveillance. The employer ((shall)) must make medical surveillance available to each affected employee as follows:

(i) Initial surveillance. The employer ((shall)) must provide initial medical surveillance under the schedule provided by subsection (14)(b)(iii) of this section, or before the time of initial assignment of the employee, whichever is later. ~~((The employer need not provide the initial surveillance if medical records show that an affected employee has been provided with medical surveillance that complies with this section within twelve months before December 1.))~~

(ii) Periodic medical surveillance. The employer ((shall)) must update the medical and work history for each

affected employee annually. The employer ((shall)) must provide periodic physical examinations, including appropriate laboratory surveillance, as follows:

(A) For employees forty-five years of age or older, within twelve months of the initial surveillance or any subsequent medical surveillance; and

(B) For employees younger than forty-five years of age, within thirty-six months of the initial surveillance or any subsequent medical surveillance.

(iii) Termination of employment or reassignment. When an employee leaves the employer's workplace, or is reassigned to an area where exposure to MC is consistently at or below the action level and STEL, medical surveillance ((shall)) must be made available if six months or more have elapsed since the last medical surveillance.

(iv) Additional surveillance. The employer ((shall)) must provide additional medical surveillance at frequencies other than those listed above when recommended in the written medical opinion. (For example, the physician or other licensed health care professional may determine an examination is warranted in less than thirty-six months for employees younger than forty-five years of age based upon evaluation of the results of the annual medical and work history.)

(e) Content of medical surveillance.

(i) Medical and work history. The comprehensive medical and work history ((shall)) must emphasize neurological symptoms, skin conditions, history of hematologic or liver disease, signs or symptoms suggestive of heart disease (angina, coronary artery disease), risk factors for cardiac disease, MC exposures, and work practices and personal protective equipment used during such exposures.

(Note to subsection (10)(e)(i) of this section: See Appendix B of this section for an example of a medical and work history format that would satisfy this requirement.)

(ii) Physical examination. Where physical examinations are provided as required above, the physician or other licensed health care professional ((shall)) must accord particular attention to the lungs, cardiovascular system (including blood pressure and pulse), liver, nervous system, and skin. The physician or other licensed health care professional ((shall)) must determine the extent and nature of the physical examination based on the health status of the employee and analysis of the medical and work history.

(iii) Laboratory surveillance. The physician or other licensed health care professional ((shall)) must determine the extent of any required laboratory surveillance based on the employee's observed health status and the medical and work history.

(Note to subsection (10)(e)(iii) of this section: See Appendix B of this section for information regarding medical tests. Laboratory surveillance may include before-and after-shift carboxyhemoglobin determinations, resting ECG, hematocrit, liver function tests and cholesterol levels.)

(iv) Other information or reports. The medical surveillance ((shall)) must also include any other information or reports the physician or other licensed health care professional determines are necessary to assess the employee's health in relation to MC exposure.

(f) Content of emergency medical surveillance. The employer ((shall)) must ensure that medical surveillance

made available when an employee has been exposed to MC in emergency situations includes, at a minimum:

(i) Appropriate emergency treatment and decontamination of the exposed employee;

(ii) Comprehensive physical examination with special emphasis on the nervous system, cardiovascular system, lungs, liver and skin, including blood pressure and pulse;

(iii) Updated medical and work history, as appropriate for the medical condition of the employee; and

(iv) Laboratory surveillance, as indicated by the employee's health status.

(Note to subsection (10)(f)(iv) of this section: See Appendix B for examples of tests which may be appropriate.)

(g) Additional examinations and referrals. Where the physician or other licensed health care professional determines it is necessary, the scope of the medical examination ((shall)) must be expanded and the appropriate additional medical surveillance, such as referrals for consultation or examination, shall be provided.

(h) Information provided to the physician or other licensed health care professional. The employer ((shall)) must provide the following information to a physician or other licensed health care professional who is involved in the diagnosis of MC-induced health effects:

(i) A copy of this section including its applicable appendices;

(ii) A description of the affected employee's past, current and anticipated future duties as they relate to the employee's MC exposure;

(iii) The employee's former or current exposure levels or, for employees not yet occupationally exposed to MC, the employee's anticipated exposure levels and the frequency and exposure levels anticipated to be associated with emergencies;

(iv) A description of any personal protective equipment, such as respirators, used or to be used; and

(v) Information from previous employment-related medical surveillance of the affected employee which is not otherwise available to the physician or other licensed health care professional.

(i) Written medical opinions.

(i) For each physical examination required by this section, the employer ((shall)) must ensure that the physician or other licensed health care professional provides to the employer and to the affected employee a written opinion regarding the results of that examination within fifteen days of completion of the evaluation of medical and laboratory findings, but not more than thirty days after the examination. The written medical opinion ((shall)) must be limited to the following information:

(A) The physician's or other licensed health care professional's opinion concerning whether exposure to MC may contribute to or aggravate the employee's existing cardiac, hepatic, neurological (including stroke) or dermal disease or whether the employee has any other medical condition(s) that would place the employee's health at increased risk of material impairment from exposure to MC;

(B) Any recommended limitations upon the employee's exposure to MC, removal from MC exposure, or upon the

employee's use of protective clothing or equipment and respirators;

(C) A statement that the employee has been informed by the physician or other licensed health care professional that MC is a potential occupational carcinogen, of risk factors for heart disease, and the potential for exacerbation of underlying heart disease by exposure to MC through its metabolism to carbon monoxide; and

(D) A statement that the employee has been informed by the physician or other licensed health care professional of the results of the medical examination and any medical conditions resulting from MC exposure which require further explanation or treatment.

(ii) The employer (~~shall~~) must instruct the physician or other licensed health care professional not to reveal to the employer, orally or in the written opinion, any specific records, findings, and diagnoses that have no bearing on occupational exposure to MC.

(Note to subsection (10)(h)(ii) of this section: The written medical opinion may also include information and opinions generated to comply with other OSHA health standards.)

(j) Medical presumption. For purposes of this subsection (10), the physician or other licensed health care professional (~~shall~~) must presume, unless medical evidence indicates to the contrary, that a medical condition is unlikely to require medical removal from MC exposure if the employee is not exposed to MC above the eight-hour TWA PEL. If the physician or other licensed health care professional recommends removal for an employee exposed below the eight-hour TWA PEL, the physician or other licensed health care professional (~~shall~~) must cite specific medical evidence, sufficient to rebut the presumption that exposure below the eight-hour TWA PEL is unlikely to require removal, to support the recommendation. If such evidence is cited by the physician or other licensed health care professional, the employer must remove the employee. If such evidence is not cited by the physician or other licensed health care professional, the employer is not required to remove the employee.

(k) Medical removal protection (MRP).

(i) Temporary medical removal and return of an employee.

(A) Except as provided in (j) of this subsection, when a medical determination recommends removal because the employee's exposure to MC may contribute to or aggravate the employee's existing cardiac, hepatic, neurological (including stroke), or skin disease, the employer must provide medical removal protection benefits to the employee and either:

(I) Transfer the employee to comparable work where methylene chloride exposure is below the action level; or

(II) Remove the employee from MC exposure.

(B) If comparable work is not available and the employer is able to demonstrate that removal and the costs of extending MRP benefits to an additional employee, considering feasibility in relation to the size of the employer's business and the other requirements of this standard, make further reliance on MRP an inappropriate remedy, the employer may retain the additional employee in the existing job until transfer or removal becomes appropriate, provided:

(I) The employer ensures that the employee receives additional medical surveillance, including a physical examination at least every sixty days until transfer or removal occurs; and

(II) The employer or PLHCP informs the employee of the risk to the employee's health from continued MC exposure.

(C) The employer (~~shall~~) must maintain in effect any job-related protective measures or limitations, other than removal, for as long as a medical determination recommends them to be necessary.

(ii) End of MRP benefits and return of the employee to former job status.

(A) The employer may cease providing MRP benefits at the earliest of the following:

(I) Six months;

(II) Return of the employee to the employee's former job status following receipt of a medical determination concluding that the employee's exposure to MC no longer will aggravate any cardiac, hepatic, neurological (including stroke), or dermal disease;

(III) Receipt of a medical determination concluding that the employee can never return to MC exposure.

(B) For the purposes of this subsection (10), the requirement that an employer return an employee to the employee's former job status is not intended to expand upon or restrict any rights an employee has or would have had, absent temporary medical removal, to a specific job classification or position under the terms of a collective bargaining agreement.

(I) Medical removal protection benefits.

(i) For purposes of this subsection (10), the term medical removal protection benefits means that, for each removal, an employer must maintain for up to six months the earnings, seniority, and other employment rights and benefits of the employee as though the employee had not been removed from MC exposure or transferred to a comparable job.

(ii) During the period of time that an employee is removed from exposure to MC, the employer may condition the provision of medical removal protection benefits upon the employee's participation in follow-up medical surveillance made available pursuant to this section.

(iii) If a removed employee files a workers' compensation claim for a MC-related disability, the employer (~~shall~~) must continue the MRP benefits required by this section until either the claim is resolved or the six-month period for payment of MRP benefits has passed, whichever occurs first. To the extent the employee is entitled to indemnity payments for earnings lost during the period of removal, the employer's obligation to provide medical removal protection benefits to the employee shall be reduced by the amount of such indemnity payments.

(iv) The employer's obligation to provide medical removal protection benefits to a removed employee (~~shall~~) must be reduced to the extent that the employee receives compensation for earnings lost during the period of removal from either a publicly or an employer-funded compensation program, or receives income from employment with another employer made possible by virtue of the employee's removal.

(m) Voluntary removal or restriction of an employee. Where an employer, although not required by this section to

do so, removes an employee from exposure to MC or otherwise places any limitation on an employee due to the effects of MC exposure on the employee's medical condition, the employer ((shall)) must provide medical removal protection benefits to the employee equal to those required by (l) of this subsection.

(n) Multiple health care professional review mechanism.

(i) If the employer selects the initial physician or licensed health care professional (PLHCP) to conduct any medical examination or consultation provided to an employee under (k) of this subsection, the employer ((shall)) must notify the employee of the right to seek a second medical opinion each time the employer provides the employee with a copy of the written opinion of that PLHCP.

(ii) If the employee does not agree with the opinion of the employer-selected PLHCP, notifies the employer of that fact, and takes steps to make an appointment with a second PLHCP within fifteen days of receiving a copy of the written opinion of the initial PLHCP, the employer ((shall)) must pay for the PLHCP chosen by the employee to perform at least the following:

(A) Review any findings, determinations or recommendations of the initial PLHCP; and

(B) Conduct such examinations, consultations, and laboratory tests as the PLHCP deems necessary to facilitate this review.

(iii) If the findings, determinations or recommendations of the second PLHCP differ from those of the initial PLHCP, then the employer and the employee ((shall)) must instruct the two health care professionals to resolve the disagreement.

(iv) If the two health care professionals are unable to resolve their disagreement within fifteen days, then those two health care professionals ((shall)) must jointly designate a PLHCP who is a specialist in the field at issue. The employer ((shall)) must pay for the specialist to perform at least the following:

(A) Review the findings, determinations, and recommendations of the first two PLHCPs; and

(B) Conduct such examinations, consultations, laboratory tests and discussions with the prior PLHCPs as the specialist deems necessary to resolve the disagreements of the prior health care professionals.

(v) The written opinion of the specialist ((shall)) must be the definitive medical determination. The employer ((shall)) must act consistent with the definitive medical determination, unless the employer and employee agree that the written opinion of one of the other two PLHCPs shall be the definitive medical determination.

(vi) The employer and the employee or authorized employee representative may agree upon the use of any expeditious alternate health care professional determination mechanism in lieu of the multiple health care professional review mechanism provided by this section so long as the alternate mechanism otherwise satisfies the requirements contained in this section.

(11) Hazard communication - General.

(a) Chemical manufacturers, importers, distributors, and employers ((shall)) must comply with all requirements of the Hazard Communication Standard (HCS), WAC 296-901-140 for MC.

(b) In classifying the hazards of MC at least the following hazards are to be addressed: Cancer, cardiac effects (including elevation of carboxyhemoglobin), central nervous system effects, liver effects, and skin and eye irritation.

(c) Employers ((shall)) must include MC in the hazard communication program established to comply with the HCS, WAC 296-901-140. Employers ((shall)) must ensure that each employee has access to labels on containers of MC and to safety data sheets, and is trained in accordance with the requirements of HCS and subsection (12) of this section.

(12) Employee information and training.

(a) The employer ((shall)) must provide information and training for each affected employee prior to or at the time of initial assignment to a job involving potential exposure to MC.

(b) The employer ((shall)) must ensure that information and training is presented in a manner that is understandable to the employees.

(c) In addition to the information required under the Hazard Communication Standard at WAC 296-901-140:

(i) The employer ((shall)) must inform each affected employee of the requirements of this section and information available in its appendices, as well as how to access or obtain a copy of it in the workplace;

(ii) Wherever an employee's exposure to airborne concentrations of MC exceeds or can reasonably be expected to exceed the action level, the employer ((shall)) must inform each affected employee of the quantity, location, manner of use, release, and storage of MC and the specific operations in the workplace that could result in exposure to MC, particularly noting where exposures may be above the eight-hour TWA PEL or STEL;

(d) The employer ((shall)) must train each affected employee as required under the Hazard Communication Standard at WAC 296-901-140, as appropriate.

(e) The employer ((shall)) must retrain each affected employee as necessary to ensure that each employee exposed above the action level or the STEL maintains the requisite understanding of the principles of safe use and handling of MC in the workplace.

(f) Whenever there are workplace changes, such as modifications of tasks or procedures or the institution of new tasks or procedures, which increase employee exposure, and where those exposures exceed or can reasonably be expected to exceed the action level, the employer ((shall)) must update the training as necessary to ensure that each affected employee has the requisite proficiency.

(g) An employer whose employees are exposed to MC at a multiemployer worksite ((shall)) must notify the other employers with work operations at that site in accordance with the requirements of the Hazard Communication Standard, WAC 296-901-140, as appropriate.

(h) The employer ((shall)) must provide to the director, upon request, all available materials relating to employee information and training.

(13) Recordkeeping.

(a) Objective data.

(i) Where an employer seeks to demonstrate that initial monitoring is unnecessary through reasonable reliance on objective data showing that any materials in the workplace

containing MC will not release MC at levels which exceed the action level or the STEL under foreseeable conditions of exposure, the employer ((shall)) must establish and maintain an accurate record of the objective data relied upon in support of the exemption.

(ii) This record ((shall)) must include at least the following information:

- (A) The MC-containing material in question;
- (B) The source of the objective data;
- (C) The testing protocol, results of testing, and/or analysis of the material for the release of MC;
- (D) A description of the operation exempted under subsection (4)(b)(i) of this section and how the data support the exemption; and
- (E) Other data relevant to the operations, materials, processing, or employee exposures covered by the exemption.

(iii) The employer ((shall)) must maintain this record for the duration of the employer's reliance upon such objective data.

(b) Exposure measurements.

(i) The employer ((shall)) must establish and keep an accurate record of all measurements taken to monitor employee exposure to MC as prescribed in subsection (4) of this section.

(ii) Where the employer has twenty or more employees, this record ((shall)) must include at least the following information:

- (A) The date of measurement for each sample taken;
- (B) The operation involving exposure to MC which is being monitored;
- (C) Sampling and analytical methods used and evidence of their accuracy;
- (D) Number, duration, and results of samples taken;
- (E) Type of personal protective equipment, such as respiratory protective devices, worn, if any; and
- (F) Name, Social Security number, job classification and exposure of all of the employees represented by monitoring, indicating which employees were actually monitored.

(iii) Where the employer has fewer than twenty employees, the record ((shall)) must include at least the following information:

- (A) The date of measurement for each sample taken;
- (B) Number, duration, and results of samples taken; and
- (C) Name, Social Security number, job classification and exposure of all of the employees represented by monitoring, indicating which employees were actually monitored.

(iv) The employer ((shall)) must maintain this record for at least thirty (30) years, in accordance with chapter 296-802 WAC.

(c) Medical surveillance.

(i) The employer ((shall)) must establish and maintain an accurate record for each employee subject to medical surveillance under subsection (10) of this section.

(ii) The record ((shall)) must include at least the following information:

- (A) The name, Social Security number and description of the duties of the employee;
- (B) Written medical opinions; and
- (C) Any employee medical conditions related to exposure to MC.

(iii) The employer ((shall)) must ensure that this record is maintained for the duration of employment plus thirty years, in accordance with chapter 296-802 WAC.

(d) Availability.

(i) The employer, upon written request, ((shall)) must make all records required to be maintained by this section available to the director for examination and copying in accordance with chapter 296-802 WAC.

(Note to subsection (13)(d)(i) of this section: All records required to be maintained by this section may be kept in the most administratively convenient form (for example, electronic or computer records would satisfy this requirement).)

(ii) The employer, upon request, ((shall)) must make any employee exposure and objective data records required by this section available for examination and copying by affected employees, former employees, and designated representatives in accordance with chapter 296-802 WAC.

(iii) The employer, upon request, ((shall)) must make employee medical records required to be kept by this section available for examination and copying by the subject employee and by anyone having the specific written consent of the subject employee in accordance with chapter 296-802 WAC.

(e) Transfer of records. The employer ((shall)) must comply with the requirements concerning transfer of records set forth in WAC ((296-62-05215)) 296-802-600 Transfer and disposal of employee records.

(14) Dates.

(a) Engineering controls required under subsection (6)(a) of this section ((shall)) must be implemented according to the following schedule:

(i) For employers with fewer than twenty employees, no later than April 10, 2000.

(ii) For employers with fewer than one hundred fifty employees engaged in foam fabrication; for employers with fewer than fifty employees engaged in furniture refinishing, general aviation aircraft stripping, and product formulation; for employers with fewer than fifty employees using MC-based adhesives for boat building and repair, recreational vehicle manufacture, van conversion, and upholstery; for employers with fewer than fifty employees using MC in construction work for restoration and preservation of buildings, painting and paint removal, cabinet making and/or floor refinishing and resurfacing, no later than April 10, 2000.

(iii) For employers engaged in polyurethane foam manufacturing with twenty or more employees, no later than October 10, 1999.

(b) Use of respiratory protection whenever an employee's exposure to MC exceeds or can reasonably be expected to exceed the eight-hour TWA PEL, in accordance with subsections (3)(a), (5)(c), (6)(a) and (7)(a) of this section, ((shall)) must be implemented according to the following schedule:

(i) For employers with fewer than one hundred fifty employees engaged in foam fabrication; for employers with fewer than fifty employees engaged in furniture refinishing, general aviation aircraft stripping, and product formulation; for employers with fewer than fifty employees using MC-based adhesives for boat building and repair, recreational vehicle manufacture, van conversion, and upholstery; for

employers with fewer than fifty employees using MC in construction work for restoration and preservation of buildings, painting and paint removal, cabinet making and/or floor refinishing and resurfacing, no later than April 10, 2000.

(ii) For employers engaged in polyurethane foam manufacturing with twenty or more employees, no later than October 10, 1999.

(c) Notification of corrective action under subsection (4)(e)(ii) of this section, no later than ninety days before the compliance date applicable to such corrective action.

(d) Transitional dates. The exposure limits for MC specified in WAC ((~~296-62-07515~~) 296-307-62610) Table 1, (~~shall~~) must remain in effect until the start up dates for the exposure limits specified in subsection (14) of this section, or if the exposure limits in this section are stayed or vacated.

(e) Unless otherwise specified in this subsection, all other requirements of this section (~~shall~~) must be complied with immediately.

(15) Appendices. The information contained in the appendices does not, by itself, create any additional obligations not otherwise imposed or detract from any existing obligation.

AMENDATORY SECTION (Amending WSR 14-07-086, filed 3/18/14, effective 5/1/14)

WAC 296-62-07473 Appendix A. Substance Safety Data Sheet and Technical Guidelines for Methylene Chloride

I. Substance Identification

A. Substance: Methylene chloride (CH₂Cl₂).

B. Synonyms: MC, Dichloromethane (DCM); Methylene dichloride; Methylene bichloride; Methane dichloride; CAS: 75-09-2; NCI-C50102.

C. Physical data:

1. Molecular weight: 84.9.
2. Boiling point (760 mm Hg): 39.8 deg. C (104 deg. F).
3. Specific gravity (water = 1): 1.3.
4. Vapor density (air = 1 at boiling point): 2.9.
5. Vapor pressure at 20 deg. C (68 deg. F): 350 mm Hg.
6. Solubility in water, g/100 g water at 20 deg. C (68 deg. F) = 1.32.

7. Appearance and odor: colorless liquid with a chloroform-like odor.

D. Uses: MC is used as a solvent, especially where high volatility is required. It is a good solvent for oils, fats, waxes, resins, bitumen, rubber and cellulose acetate and is a useful paint stripper and degreaser. It is used in paint removers, in propellant mixtures for aerosol containers, as a solvent for plastics, as a degreasing agent, as an extracting agent in the pharmaceutical industry and as a blowing agent in polyurethane foams. Its solvent property is sometimes increased by mixing with methanol, petroleum naphtha or tetrachloroethylene.

E. Appearance and odor: MC is a clear colorless liquid with a chloroform-like odor. It is slightly soluble in water and completely miscible with most organic solvents.

F. Permissible exposure: Exposure may not exceed 25 parts MC per million parts of air (25 ppm) as an eight-hour time-weighted average (eight-hour TWA PEL) or 125 parts

of MC per million parts of air (125 ppm) averaged over a fifteen-minute period (STEL).

II. Health Hazard Data

A. MC can affect the body if it is inhaled or if the liquid comes in contact with the eyes or skin. It can also affect the body if it is swallowed.

B. Effects of overexposure:

1. Short-term Exposure: MC is an anesthetic. Inhaling the vapor may cause mental confusion, light-headedness, nausea, vomiting, and headache. Continued exposure may cause increased light-headedness, staggering, unconsciousness, and even death. High vapor concentrations may also cause irritation of the eyes and respiratory tract. Exposure to MC may make the symptoms of angina (chest pains) worse. Skin exposure to liquid MC may cause irritation. If liquid MC remains on the skin, it may cause skin burns. Splashes of the liquid into the eyes may cause irritation.

2. Long-term (chronic) exposure: The best evidence that MC causes cancer is from laboratory studies in which rats, mice and hamsters inhaled MC six hours per day, five days per week for two years. MC exposure produced lung and liver tumors in mice and mammary tumors in rats. No carcinogenic effects of MC were found in hamsters. There are also some human epidemiological studies which show an association between occupational exposure to MC and increases in biliary (bile duct) cancer and a type of brain cancer. Other epidemiological studies have not observed a relationship between MC exposure and cancer. WISHA interprets these results to mean that there is suggestive (but not absolute) evidence that MC is a human carcinogen.

C. Reporting signs and symptoms: You should inform your employer if you develop any signs or symptoms and suspect that they are caused by exposure to MC.

D. Warning Properties:

1. Odor Threshold: Different authors have reported varying odor thresholds for MC. Kirk-Othmer and Sax both reported 25 to 50 ppm; Summer and May both reported 150 ppm; Spector reports 320 ppm. Patty, however, states that since one can become adapted to the odor, MC should not be considered to have adequate warning properties.

2. Eye Irritation Level: Kirk-Othmer reports that "MC vapor is seriously damaging to the eyes." Sax agrees with Kirk-Othmer's statement. The ACGIH Documentation of TLVs states that irritation of the eyes has been observed in workers exposed to concentrations up to 5000 ppm.

3. Evaluation of Warning Properties: Since a wide range of MC odor thresholds are reported (25-320 ppm), and human adaptation to the odor occurs, MC is considered to be a material with poor warning properties.

III. Emergency First-Aid Procedures

In the event of emergency, institute first-aid procedures and send for first-aid or medical assistance.

A. Eye and Skin Exposures: If there is a potential for liquid MC to come in contact with eye or skin, face shields and skin protective equipment must be provided and used. If liquid MC comes in contact with the eye, get medical attention. Contact lenses should not be worn when working with this chemical.

B. Breathing: If a person breathes in large amounts of MC, move the exposed person to fresh air at once. If breath-

ing has stopped, perform cardiopulmonary resuscitation. Keep the affected person warm and at rest. Get medical attention as soon as possible.

C. Rescue: Move the affected person from the hazardous exposure immediately. If the exposed person has been overcome, notify someone else and put into effect the established emergency rescue procedures. Understand the facility's emergency rescue procedures and know the locations of rescue equipment before the need arises. Do not become a casualty yourself.

IV. Respirators, Protective Clothing, and Eye Protection

A. Respirators: Good industrial hygiene practices recommend that engineering controls be used to reduce environmental concentrations to the permissible exposure level. However, there are some exceptions where respirators may be used to control exposure. Respirators may be used when engineering and work practice controls are not feasible, when such controls are in the process of being installed, or when these controls fail and need to be supplemented. Respirators may also be used for operations which require entry into tanks or closed vessels, and in emergency situations. If the use of respirators is necessary, the only respirators permitted are those that have been approved by the National Institute for Occupational Safety and Health (NIOSH). Supplied-air respirators are required because air-purifying respirators do not provide adequate respiratory protection against MC. In addition to respirator selection, a complete written respiratory protection program should be instituted which includes regular training, maintenance, inspection, cleaning, and evaluation. If you can smell MC while wearing a respirator, proceed immediately to fresh air. If you experience difficulty in breathing while wearing a respirator, tell your employer.

B. Protective Clothing: Employees must be provided with and required to use impervious clothing, gloves, face shields (eight-inch minimum), and other appropriate protective clothing necessary to prevent repeated or prolonged skin contact with liquid MC or contact with vessels containing liquid MC. Any clothing which becomes wet with liquid MC should be removed immediately and not reworn until the employer has ensured that the protective clothing is fit for reuse. Contaminated protective clothing should be placed in a regulated area designated by the employer for removal of MC before the clothing is laundered or disposed of. Clothing and equipment should remain in the regulated area until all of the MC contamination has evaporated; clothing and equipment should then be laundered or disposed of as appropriate.

C. Eye Protection: Employees should be provided with and required to use splash-proof safety goggles where liquid MC may contact the eyes.

V. Housekeeping and Hygiene Facilities

For purposes of complying with WAC ((296-24-120,)) 296-800-220 and 296-800-230, the following items should be emphasized:

A. The workplace should be kept clean, orderly, and in a sanitary condition. The employer should institute a leak and spill detection program for operations involving liquid MC in order to detect sources of fugitive MC emissions.

B. Emergency drench showers and eyewash facilities are recommended. These should be maintained in a sanitary con-

dition. Suitable cleansing agents should also be provided to assure the effective removal of MC from the skin.

C. Because of the hazardous nature of MC, contaminated protective clothing should be placed in a regulated area designated by the employer for removal of MC before the clothing is laundered or disposed of.

VI. Precautions for Safe Use, Handling, and Storage

A. Fire and Explosion Hazards: MC has no flash point in a conventional closed tester, but it forms flammable vapor-air mixtures at approximately 100 deg. C (212 deg. F), or higher. It has a lower explosion limit of 12%, and an upper explosion limit of 19% in air. It has an autoignition temperature of 556.1 deg. C (1033 deg. F), and a boiling point of 39.8 deg. C (104 deg. F). It is heavier than water with a specific gravity of 1.3. It is slightly soluble in water.

B. Reactivity Hazards: Conditions contributing to the instability of MC are heat and moisture. Contact with strong oxidizers, caustics, and chemically active metals such as aluminum or magnesium powder, sodium and potassium may cause fires and explosions. Special precautions: Liquid MC will attack some forms of plastics, rubber, and coatings.

C. Toxicity: Liquid MC is painful and irritating if splashed in the eyes or if confined on the skin by gloves, clothing, or shoes. Vapors in high concentrations may cause narcosis and death. Prolonged exposure to vapors may cause cancer or exacerbate cardiac disease.

D. Storage: Protect against physical damage. Because of its corrosive properties, and its high vapor pressure, MC should be stored in plain, galvanized or lead lined, mild steel containers in a cool, dry, well ventilated area away from direct sunlight, heat source and acute fire hazards.

E. Piping Material: All piping and valves at the loading or unloading station should be of material that is resistant to MC and should be carefully inspected prior to connection to the transport vehicle and periodically during the operation.

F. Usual Shipping Containers: Glass bottles, 5- and 55-gallon steel drums, tank cars, and tank trucks.

Note: This section addresses MC exposure in marine terminal and longshore employment only where leaking or broken packages allow MC exposure that is not addressed through compliance with WAC 296-56.

G. Electrical Equipment: Electrical installations in Class I hazardous locations as defined in Article 500 of the National Electrical Code, should be installed according to Article 501 of the code; and electrical equipment should be suitable for use in atmospheres containing MC vapors. See Flammable and Combustible Liquids Code (NFPA No. 325M), Chemical Safety Data Sheet SD-86 (Manufacturing Chemists' Association, Inc.).

H. Firefighting: When involved in fire, MC emits highly toxic and irritating fumes such as phosgene, hydrogen chloride and carbon monoxide. Wear breathing apparatus and use water spray to keep fire-exposed containers cool. Water spray may be used to flush spills away from exposures. Extinguishing media are dry chemical, carbon dioxide, foam. For purposes of compliance with WAC ((296-24-956)) 296-24-957, locations classified as hazardous due to the presence of MC shall be Class I.

I. Spills and Leaks: Persons not wearing protective equipment and clothing should be restricted from areas of

spills or leaks until cleanup has been completed. If MC has spilled or leaked, the following steps should be taken:

1. Remove all ignition sources.
2. Ventilate area of spill or leak.
3. Collect for reclamation or absorb in vermiculite, dry sand, earth, or a similar material.

J. Methods of Waste Disposal: Small spills should be absorbed onto sand and taken to a safe area for atmospheric evaporation. Incineration is the preferred method for disposal of large quantities by mixing with a combustible solvent and spraying into an incinerator equipped with acid scrubbers to remove hydrogen chloride gases formed. Complete combustion will convert carbon monoxide to carbon dioxide. Care should be taken for the presence of phosgene.

K. You should not keep food, beverage, or smoking materials, or eat or smoke in regulated areas where MC concentrations are above the permissible exposure limits.

L. Portable heating units should not be used in confined areas where MC is used.

M. Ask your supervisor where MC is used in your work area and for any additional plant safety and health rules.

VII. Medical Requirements

Your employer is required to offer you the opportunity to participate in a medical surveillance program if you are exposed to MC at concentrations at or above the action level (12.5 ppm eight-hour TWA) for more than thirty days a year or at concentrations exceeding the PELs (25 ppm eight-hour TWA or 125 ppm fifteen-minute STEL) for more than ten days a year. If you are exposed to MC at concentrations over either of the PELs, your employer will also be required to have a physician or other licensed health care professional ensure that you are able to wear the respirator that you are assigned. Your employer must provide all medical examinations relating to your MC exposure at a reasonable time and place and at no cost to you.

VIII. Monitoring and Measurement Procedures

A. Exposure above the Permissible Exposure Limit:

1. Eight-hour exposure evaluation: Measurements taken for the purpose of determining employee exposure under this section are best taken with consecutive samples covering the full shift. Air samples must be taken in the employee's breathing zone.

2. Monitoring techniques: The sampling and analysis under this section may be performed by collection of the MC vapor on two charcoal adsorption tubes in series or other composition adsorption tubes, with subsequent chemical analysis. Sampling and analysis may also be performed by instruments such as real-time continuous monitoring systems, portable direct reading instruments, or passive dosimeters as long as measurements taken using these methods accurately evaluate the concentration of MC in employees' breathing zones. OSHA method 80 is an example of a validated method of sampling and analysis of MC. Copies of this method are available from OSHA or can be downloaded from the internet at <http://www.osha.gov>. The employer has the obligation of selecting a monitoring method which meets the accuracy and precision requirements of the standard under his or her unique field conditions. The standard requires that the method of monitoring must be accurate, to a ninety-five percent confidence level, to plus or minus twenty-five per-

cent for concentrations of MC at or above 25 ppm, and to plus or minus thirty-five percent for concentrations at or below 25 ppm. In addition to OSHA method 80, there are numerous other methods available for monitoring for MC in the workplace.

B. Since many of the duties relating to employee exposure are dependent on the results of measurement procedures, employers must assure that the evaluation of employee exposure is performed by a technically qualified person.

IX. Observation of Monitoring

Your employer is required to perform measurements that are representative of your exposure to MC and you or your designated representative are entitled to observe the monitoring procedure. You are entitled to observe the steps taken in the measurement procedure, and to record the results obtained. When the monitoring procedure is taking place in an area where respirators or personal protective clothing and equipment are required to be worn, you or your representative must also be provided with, and must wear, protective clothing and equipment.

Access To Information

A. Your employer is required to inform you of the information contained in this Appendix. In addition, your employer must instruct you in the proper work practices for using MC, emergency procedures, and the correct use of protective equipment.

B. Your employer is required to determine whether you are being exposed to MC. You or your representative has the right to observe employee measurements and to record the results obtained. Your employer is required to inform you of your exposure. If your employer determines that you are being over exposed, he or she is required to inform you of the actions which are being taken to reduce your exposure to within permissible exposure limits.

C. Your employer is required to keep records of your exposures and medical examinations. These records must be kept by the employer for at least thirty years.

D. Your employer is required to release your exposure and medical records to you or your representative upon your request.

E. Your employer is required to provide labels and safety data sheets (SDS) for all materials, mixtures or solutions composed of greater than 0.1 percent MC. These materials, mixtures or solutions would be classified and labeled in accordance with WAC 296-901-140.

X. Common Operations and Controls

The following list includes some common operations in which exposure to MC may occur and control methods which may be effective in each case:

Operations	Controls
Use as solvent in paint and varnish removers cold cleaning and ultrasonic cleaning, and as a solvent in furniture stripping.	General dilution ventilation; local; manufacture of aerosols; cold cleaning exhaust ventilation; personal protective equipment; substitution.
Use as solvent in vapor degreasing.	Process enclosure; local exhaust ventilation; chilling coils; substitution.
Use as a secondary refrigerant in air scientific testing.	General dilution ventilation; local conditioning and exhaust ventilation; personal protective equipment.

AMENDATORY SECTION (Amending WSR 01-11-038, filed 5/9/01, effective 9/1/01)

WAC 296-62-07519 Thiram. (1) Scope and application. This section applies to occupational exposure to thiram (tetramethylthiuram disulfide), in addition to those requirements listed in (~~WAC 296-62-07515~~) chapter 296-841 WAC, Airborne contaminants. Nothing in this section shall preclude the application of other appropriate standards and regulations to minimize worker exposure to thiram.

(2) Definitions. The following definitions are applicable to this section:

(a) (~~Clean~~) **Clean.** The absence of dirt or materials which may be harmful to a worker's health.

(b) (~~Large seedlings~~) **Large seedlings.** Those seedlings of such size, either by length or breadth, that it is difficult to avoid contact of the thiram treated plant with the mouth or face during planting operations.

(3) General requirements.

(a) Workers should not be allowed to work more than five days in any seven day period with or around the application of thiram or thiram treated seedlings.

(b) Washing and worker hygiene.

(i) Workers (~~shall~~) must wash their hands prior to eating or smoking at the close of work.

(ii) Warm (at least 85°F, 29.4°C) wash water and single use hand wiping materials (~~shall~~) must be provided for washing.

(iii) The warm water and hand wiping materials (~~shall~~) must be at fixed work locations or at the planting unit.

(iv) Where warm water is not available within (~~45~~) fifteen minutes travel time, nonalcoholic based waterless hand cleaner (~~shall~~) must be provided.

(v) Every planter or nursery worker (~~shall~~) must be advised to bathe or shower daily.

(vi) The inside of worker carrying vehicles (~~shall~~) must be washed or vacuumed and wiped down at least weekly during the period of thiram use.

(c) Personal protective measures.

(i) Clothing (~~shall~~) must be worn by workers to reduce skin contact with thiram to the legs, arms and torso.

(ii) For those workers who have thiram skin irritations, exposed areas of the body (~~shall~~) must be protected by a suitable barrier cream.

(iii) Clothing worn by workers (~~shall~~) must be washed or changed at least every other day.

(iv) Only impervious gloves may be worn by workers.

(v) Workers hands should be clean of thiram before placing them into gloves.

(vi) Thiram applicators (~~shall~~) must be provided with and use respiratory protection in accordance with (~~WAC 296-62-074~~) chapter 296-842 WAC, Respirators, disposable coveralls or rubber slickers or other impervious clothing, rubberized boots, head covers and rubberized gloves.

(vii) Nursery workers, other than applicators, who are likely to be exposed to thiram (~~shall~~) must be provided with and use disposable coveralls or rubber slickers or other impervious clothing, impervious footwear and gloves, and head covers in accordance with WAC 296-800-160, unless showers have been provided and are used.

(viii) Eye protection according to WAC 296-800-160, (~~shall~~) must be provided and worn by workers who may be exposed to splashes of thiram during spraying, plug bundling, belt line grading and plugging or other operations.

(ix) Item (viii) of this subdivision need not be complied with where pressurized emergency eye wash fountains are within 10 seconds travel time of the work location. (Approved respirator - See (~~WAC 296-62-074~~) chapter 296-842 WAC, Respirators.)

(x) A dust mask (~~shall~~) must be worn, when planting large seedlings, to avoid mouth and face contact with the thiram treated plant unless equally effective measures or planting practices have been established.

(d) Food handling.

(i) Food snacks, beverages, smoking materials, or any other item which is consumed (~~shall~~) must not be stored or consumed in the packing area of the nursery.

(ii) Worker carrying vehicles (~~shall~~) must have a clean area for carrying lunches.

(iii) The clean area of the vehicle (~~shall~~) must be elevated from the floor and not used to carry other than food or other consumable items.

(iv) The carrying of lunches, food or other consumable items in tree planting bags is prohibited.

(v) Care (~~shall~~) must be taken to (~~insure~~) ensure that worker exposure to thiram spray, including downwind drifts, is minimized or eliminated.

(vi) When bags that contained thiram or thiram treated seedlings are burned, prevent worker exposure to the smoke.

- (e) Thiram use and handling.
- (i) Thiram treated seedlings (~~(shall)~~) must be allowed to dry or stabilize prior to packing.
- (ii) Seedlings (~~(shall)~~) must be kept moist during packing and whenever possible during planting operations.
- (iii) Floors, where thiram is used, (~~(shall)~~) must not be dry swept but instead vacuumed, washed or otherwise cleaned at least daily.
- (iv) Silica chips used to cover thiram treated seedling plugs (~~(shall)~~) must be removed at the nursery.
- (f) Training.
 - (i) Each worker engaged in operations where exposure to thiram may occur (~~(shall)~~) must be provided training on the hazards of thiram, as well as the necessary precautions for its safe use and handling.
 - (ii) The training (~~(shall)~~) must include instruction in:
 - (A) The nature of the health hazard(s) from exposure to thiram including specifically the potential for alcohol intolerance, drug interaction, and skin irritation;
 - (B) The specific nature of operations which could result in exposure to thiram and the necessary protective steps;
 - (C) The purpose for, proper use, and limitations of protective devices including respirators and clothing;
 - (D) The necessity for and requirements of good personal hygiene; and
 - (E) A review of the thiram rules at the worker's first training and indoctrination, and annually thereafter.
- (4) Effective date. This standard (~~(shall)~~) must become effective (~~(30)~~) thirty days after being filed with the code reviser.

AMENDATORY SECTION (Amending WSR 14-07-086, filed 3/18/14, effective 5/1/14)

WAC 296-62-07521 Lead. (1) Scope and application.

- (a) This section applies to all occupational exposure to lead, except as provided in subdivision (1)(b).
- (b) This section does not apply to the construction industry or to agricultural operations covered by chapter 296-307 WAC.
 - (2) Definitions as applicable to this part.
 - (a) (~~("Action level"–)~~) **Action level.** Employee exposure, without regard to the use of respirators, to an airborne concentration of lead of thirty micrograms per cubic meter of air (30 $\mu\text{g}/\text{m}^3$) averaged over an eight-hour period.
 - (b) (~~("Director"–)~~) **Director.** The director of the department of labor and industries.
 - (c) (~~("Lead"–)~~) **Lead.** Metallic lead, all inorganic lead compounds, and organic lead soaps. Excluded from this definition are all other organic lead compounds.
- (3) General requirements.
 - (a) Employers will assess the hazards of lead in the work place and provide information to the employees about the hazards of the lead exposures to which they may be exposed.
 - (b) Information provided (~~(shall)~~) must include:
 - (i) Exposure monitoring (including employee notification);
 - (ii) Written compliance programs;
 - (iii) Respiratory protection programs;
 - (iv) Personnel protective equipment and housekeeping;

- (v) Medical surveillance and examinations;
- (vi) Training requirements;
- (vii) Recordkeeping requirements.
- (4) Permissible exposure limit (PEL).
 - (a) The employer (~~(shall assure)~~) must ensure that no employee is exposed to lead at concentrations greater than fifty micrograms per cubic meter of air (50 $\mu\text{g}/\text{m}^3$) averaged over an eight-hour period.
 - (b) If an employee is exposed to lead for more than eight hours in any work day, the permissible exposure limit, as a time weighted average (TWA) for that day, (~~(shall)~~) must be reduced according to the following formula:

Maximum permissible limit (in $\mu\text{g}/\text{m}^3$) = $400 \div$ hours worked in the day.

- (c) When respirators are used to supplement engineering and work practice controls to comply with the PEL and all the requirements of subsection (7) have been met, employee exposure, for the purpose of determining whether the employer has complied with the PEL, may be considered to be at the level provided by the protection factor of the respirator for those periods the respirator is worn. Those periods may be averaged with exposure levels during periods when respirators are not worn to determine the employee's daily TWA exposure.
 - (5) Exposure monitoring.
 - (a) General.
 - (i) For the purposes of subsection (5), employee exposure is that exposure which would occur if the employee were not using a respirator.
 - (ii) With the exception of monitoring under subdivision (5)(c), the employer (~~(shall)~~) must collect full shift (for at least seven continuous hours) personal samples including at least one sample for each shift for each job classification in each work area.
 - (iii) Full shift personal samples (~~(shall)~~) must be representative of the monitored employee's regular, daily exposure to lead.
 - (b) Initial determination. Each employer who has a workplace or work operation covered by this standard (~~(shall)~~) must determine if any employee may be exposed to lead at or above the action level.
 - (c) Basis of initial determination.
 - (i) The employer (~~(shall)~~) must monitor employee exposures and (~~(shall)~~) must base initial determinations on the employee exposure monitoring results and any of the following, relevant considerations:
 - (A) Any information, observations, or calculations which would indicate employee exposure to lead;
 - (B) Any previous measurements of airborne lead; and
 - (C) Any employee complaints of symptoms which may be attributable to exposure to lead.
 - (ii) Monitoring for the initial determination may be limited to a representative sample of the exposed employees who the employer reasonably believes are exposed to the greatest airborne concentrations of lead in the workplace.
 - (iii) Measurements of airborne lead made in the preceding twelve months may be used to satisfy the requirement to monitor under item (5)(c)(i) if the sampling and analytical

methods used meet the accuracy and confidence levels of subdivision (5)(i) of this section.

(d) Positive initial determination and initial monitoring.

(i) Where a determination conducted under subdivisions (5)(b) and (5)(c) of this section shows the possibility of any employee exposure at or above the action level, the employer ~~((shall))~~ must conduct monitoring which is representative of the exposure for each employee in the workplace who is exposed to lead.

(ii) Measurements of airborne lead made in the preceding twelve months may be used to satisfy this requirement if the sampling and analytical methods used meet the accuracy and confidence levels of subdivision (5)(i) of this section.

(e) Negative initial determination. Where a determination, conducted under subdivisions (5)(b) and (5)(c) of this section is made that no employee is exposed to airborne concentrations of lead at or above the action level, the employer ~~((shall))~~ must make a written record of such determination. The record ~~((shall))~~ must include at least the information specified in subdivision (5)(c) of this section and ~~((shall))~~ must also include the date of determination, location within the worksite, and the name and Social Security number of each employee monitored.

(f) Frequency.

(i) If the initial monitoring reveals employee exposure to be below the action level the measurements need not be repeated except as otherwise provided in subdivision (5)(g) of this section.

(ii) If the initial determination or subsequent monitoring reveals employee exposure to be at or above the action level but below the permissible exposure limit the employer ~~((shall))~~ must repeat monitoring in accordance with this subsection at least every six months. The employer ~~((shall))~~ must continue monitoring at the required frequency until at least two consecutive measurements, taken at least seven days apart, are below the action level at which time the employer may discontinue monitoring for that employee except as otherwise provided in subdivision (5)(g) of this section.

(iii) If the initial monitoring reveals that employee exposure is above the permissible exposure limit the employer ~~((shall))~~ must repeat monitoring quarterly. The employer ~~((shall))~~ must continue monitoring at the required frequency until at least two consecutive measurements, taken at least seven days apart, are below the PEL but at or above the action level at which time the employer ~~((shall))~~ must repeat monitoring for that employee at the frequency specified in item (5)(f)(ii), except as otherwise provided in subdivision (5)(g) of this section.

(g) Additional monitoring. Whenever there has been a production, process, control or personnel change which may result in new or additional exposure to lead, or whenever the employer has any other reason to suspect a change which may result in new or additional exposures to lead, additional monitoring in accordance with this subsection shall be conducted.

(h) Employee notification.

(i) Within five working days after the receipt of monitoring results, the employer ~~((shall))~~ must notify each employee in writing of the results which represent that employee's exposure.

(ii) Whenever the results indicate that the representative employee exposure, without regard to respirators, exceeds the permissible exposure limit, the employer ~~((shall))~~ must include in the written notice a statement that the permissible exposure limit was exceeded and a description of the corrective action taken or to be taken to reduce exposure to or below the permissible exposure limit.

(i) Reserved.

(j) Accuracy of measurement. The employer ~~((shall))~~ must use a method of monitoring and analysis which has an accuracy (to a confidence level of ninety-five percent) of not less than plus or minus twenty percent for airborne concentrations of lead equal to or greater than 30 µg/m³.

(6) Methods of compliance.

(a) Engineering and work practice controls.

(i) Where any employee is exposed to lead above the permissible exposure limit for more than thirty days per year, the employer ~~((shall))~~ must implement engineering and work practice controls (including administrative controls) to reduce and maintain employee exposure to lead in accordance with the implementation schedule in Table I below, except to the extent that the employer can demonstrate that such controls are not feasible. Wherever the engineering and work practice controls which can be instituted are not sufficient to reduce employee exposure to or below the permissible exposure limit, the employer ~~((shall))~~ must nonetheless use them to reduce exposures to the lowest feasible level and ~~((shall))~~ must supplement them by the use of respiratory protection which complies with the requirements of subsection (7) of this section.

(ii) Where any employee is exposed to lead above the permissible exposure limit, but for thirty days or less per year, the employer ~~((shall))~~ must implement engineering controls to reduce exposures to 200 µg/m³, but thereafter may implement any combination of engineering, work practice (including administrative controls), and respiratory controls to reduce and maintain employee exposure to lead to or below 50 µg/m³.

TABLE 1

Industry	Compliance dates: ¹ (50 µg/m ³)
Lead chemicals, secondary copper smelting.	July 19, 1996
Nonferrous foundries	July 19, 1996. ²
Brass and bronze ingot manufacture.	6 years. ³

1 Calculated by counting from the date the stay on implementation of subsection (6)(a) was lifted by the U.S. Court of Appeals for the District of Columbia, the number of years specified in the 1978 lead standard and subsequent amendments for compliance with the PEL of 50 µg/m³ for exposure to airborne concentrations of lead levels for the particular industry.

2 Large nonferrous foundries (20 or more employees) are required to achieve the PEL of 50 µg/m³ by means of engineering and work practice controls. Small nonferrous foundries (fewer than 20 employees) are required to achieve an 8-hour TWA of 75 µg/m³ by such controls.

³ Expressed as the number of years from the date on which the Court lifts the stay on the implementation of subsection (6)(a) for this industry for employers to achieve a lead in air concentration of 75 µg/m³. Compliance with subsection (6) in this industry is determined by a compliance directive that incorporates elements from the settlement agreement between OSHA and representatives of the industry.

(b) Respiratory protection. Where engineering and work practice controls do not reduce employee exposure to or below the 50 µg/m³ permissible exposure limit, the employer ~~((shall))~~ must supplement these controls with respirators in accordance with subsection (7).

(c) Compliance program.

(i) Each employer ~~((shall))~~ must establish and implement a written compliance program to reduce exposures to or below the permissible exposure limit, and interim levels if applicable, solely by means of engineering and work practice controls in accordance with the implementation schedule in subdivision (6)(a).

(ii) Written plans for these compliance programs ~~((shall))~~ must include at least the following:

(A) A description of each operation in which lead is emitted; e.g., machinery used, material processed, controls in place, crew size, employee job responsibilities, operating procedures and maintenance practices;

(B) A description of the specific means that will be employed to achieve compliance, including engineering plans and studies used to determine methods selected for controlling exposure to lead;

(C) A report of the technology considered in meeting the permissible exposure limit;

(D) Air monitoring data which documents the source of lead emissions;

(E) A detailed schedule for implementation of the program, including documentation such as copies of purchase orders for equipment, construction contracts, etc.;

(F) A work practice program which includes items required under subsections (8), (9) and (10) of this regulation;

(G) An administrative control schedule required by subdivision (6)(f), if applicable; and

(H) Other relevant information.

(iii) Written programs ~~((shall))~~ must be submitted upon request to the director, and ~~((shall))~~ must be available at the worksite for examination and copying by the director, any affected employee or authorized employee representatives.

(iv) Written programs ~~((shall))~~ must be revised and updated at least every six months to reflect the current status of the program.

(d) Mechanical ventilation.

(i) When ventilation is used to control exposure, measurements which demonstrate the effectiveness of the system in controlling exposure, such as capture velocity, duct velocity, or static pressure ~~((shall))~~ must be made at least every three months. Measurements of the system's effectiveness in controlling exposure ~~((shall))~~ must be made within five days of any change in production, process, or control which might result in a change in employee exposure to lead.

(ii) Recirculation of air. If air from exhaust ventilation is recirculated into the workplace, the employer ~~((shall assure))~~ must ensure that (A) the system has a high efficiency filter with reliable back-up filter; and (B) controls to monitor the

concentration of lead in the return air and to bypass the recirculation system automatically if it fails are installed, operating, and maintained.

(e) Administrative controls. If administrative controls are used as a means of reducing employees TWA exposure to lead, the employer ~~((shall))~~ must establish and implement a job rotation schedule which includes:

(i) Name or identification number of each affected employee;

(ii) Duration and exposure levels at each job or work station where each affected employee is located; and

(iii) Any other information which may be useful in assessing the reliability of administrative controls to reduce exposure to lead.

(7) Respiratory protection.

(a) General. For employees who use respirators required by this section, the employer must provide each employee an appropriate respirator that complies with the requirements of this subsection. Respirators must be used during:

(i) Period necessary to install or implement engineering or work-practice controls;

(ii) Work operations for which engineering and work-practice controls are not sufficient to reduce exposures to or below the permissible exposure limit;

(iii) Periods when an employee requests a respirator.

(b) Respirator program.

(i) The employer must develop, implement and maintain a respiratory protection program as required by chapter 296-842 WAC, Respirators, which covers each employee required by this chapter to use a respirator.

(ii) If an employee has breathing difficulty during fit testing or respirator use, the employer must provide the employee with a medical examination as required by subsection (11)(c)(ii)(C) of this section to determine whether or not the employee can use a respirator while performing the required duty.

(c) Respirator selection. The employer must:

(i) Select and provide to employees appropriate respirators according to this section and WAC 296-842-13005, found in the respirator rule.

(ii) Provide employees with a powered air-purifying respirator (PAPR) instead of a negative-pressure respirator selected when an employee chooses to use a PAPR and it provides adequate protection to the employee.

(iii) Provide employees with full-facepiece respirators instead of half-facepiece respirators for protection against lead aerosols that cause eye or skin irritation at the use concentration.

(iv) Provide HEPA filters or N-, R-, or P-100 filters for powered air-purifying respirators (PAPRs) and negative-pressure air-purifying respirators.

(8) Protective work clothing and equipment.

(a) Provision and use. If an employee is exposed to lead above the PEL, without regard to the use of respirators or where the possibility of skin or eye irritation exists, the employer ~~((shall))~~ must provide at no cost to the employee and ~~((assure))~~ ensure that the employee uses appropriate protective work clothing and equipment such as, but not limited to:

(i) Coveralls or similar full-body work clothing;

(ii) Gloves, hats, and shoes or disposable shoe coverlets; and

(iii) Face shields, vented goggles, or other appropriate protective equipment which complies with WAC 296-800-160.

(b) Cleaning and replacement.

(i) The employer (~~(shall)~~) must provide the protective clothing required in subdivision (8)(a) of this section in a clean and dry condition at least weekly, and daily to employees whose exposure levels without regard to a respirator are over 200 µg/m³ of lead as an eight-hour TWA.

(ii) The employer (~~(shall)~~) must provide for the cleaning, laundering, or disposal of protective clothing and equipment required by subdivision (8)(a) of this section.

(iii) The employer (~~(shall)~~) must repair or replace required protective clothing and equipment as needed to maintain their effectiveness.

(iv) The employer (~~(shall-assure)~~) must ensure that all protective clothing is removed at the completion of a work shift only in change rooms provided for that purpose as prescribed in subdivision (10)(b) of this section.

(v) The employer (~~(shall-assure)~~) must ensure that contaminated protective clothing which is to be cleaned, laundered, or disposed of, is placed in a closed container in the change-room which prevents dispersion of lead outside the container.

(vi) The employer (~~(shall)~~) must inform in writing any person who cleans or launders protective clothing or equipment of the potentially harmful effects of exposure to lead.

(vii) The employer (~~(shall)~~) must ensure that the containers of contaminated protective clothing and equipment required by subdivision (8)(b)(v) are labeled as follows:

DANGER: CLOTHING AND EQUIPMENT CONTAMINATED WITH LEAD. MAY DAMAGE FERTILITY OR THE UNBORN CHILD. CAUSES DAMAGE TO THE CENTRAL NERVOUS SYSTEM. DO NOT EAT, DRINK OR SMOKE WHEN HANDLING. DO NOT REMOVE DUST BY BLOWING OR SHAKING. DISPOSE OF LEAD CONTAMINATED WASH WATER IN ACCORDANCE WITH APPLICABLE LOCAL, STATE, OR FEDERAL REGULATIONS.

(viii) (~~Prior to June 1, 2015, employers may include the following information on bags or containers of contaminated protective clothing and equipment in lieu of the labeling requirements in (b)(vii) of this subsection:~~

CAUTION: CLOTHING CONTAMINATED WITH LEAD. DO NOT REMOVE DUST BY BLOWING OR SHAKING. DISPOSE OF LEAD CONTAMINATED WASH WATER IN ACCORDANCE WITH APPLICABLE LOCAL, STATE, OR FEDERAL REGULATIONS.

(~~ix~~) The employer (~~(shall)~~) must prohibit the removal of lead from protective clothing or equipment by blowing, shaking, or any other means which disperses lead into the air.

(9) Housekeeping.

(a) Surfaces. All surfaces (~~(shall)~~) must be maintained as free as practicable of accumulations of lead.

(b) Cleaning floors.

(i) Floors and other surfaces where lead accumulates may not be cleaned by the use of compressed air.

(ii) Shoveling, dry or wet sweeping, and brushing may be used only where vacuuming or other equally effective methods have been tried and found not to be effective.

(c) Vacuuming. Where vacuuming methods are selected, the vacuums (~~(shall)~~) must be used and emptied in a manner which minimizes the reentry of lead into the workplace.

(10) Hygiene facilities and practices.

(a) The employer (~~(shall-assure)~~) must ensure that in areas where employees are exposed to lead above the PEL, without regard to the use of respirators, food or beverage is not present or consumed, tobacco products are not present or used, and cosmetics are not applied, except in change rooms, lunchrooms, and showers required under subdivision (10)(b) through (10)(d) of this section.

(b) Change rooms.

(i) The employer (~~(shall)~~) must provide clean change rooms for employees who work in areas where their airborne exposure to lead is above the PEL, without regard to the use of respirators.

(ii) The employer (~~(shall-assure)~~) must ensure that change rooms are equipped with separate storage facilities for protective work clothing and equipment and for street clothes which prevent cross-contamination.

(c) Showers.

(i) The employer (~~(shall-assure)~~) must ensure that employees who work in areas where their airborne exposure to lead is above the PEL, without regard to the use of respirators, shower at the end of the work shift.

(ii) The employer (~~(shall)~~) must provide shower facilities in accordance with WAC 296-800-230.

(iii) The employer (~~(shall-assure)~~) must ensure that employees who are required to shower pursuant to item (10)(c)(i) do not leave the workplace wearing any clothing or equipment worn during the work shift.

(d) Lunchrooms.

(i) The employer (~~(shall)~~) must provide lunchroom facilities for employees who work in areas where their airborne exposure to lead is above the PEL, without regard to the use of respirators.

(ii) The employer (~~(shall-assure)~~) must ensure that lunchroom facilities have a temperature controlled, positive pressure, filtered air supply, and are readily accessible to employees.

(iii) The employer (~~(shall-assure)~~) must ensure that employees who work in areas where their airborne exposure to lead is above the PEL without regard to the use of a respirator wash their hands and face prior to eating, drinking, smoking or applying cosmetics.

(iv) The employer (~~(shall-assure)~~) must ensure that employees do not enter lunchroom facilities with protective work clothing or equipment unless surface lead dust has been removed by vacuuming, downdraft booth, or other cleaning method.

(e) Lavatories. The employer (~~(shall)~~) must provide an adequate number of lavatory facilities which comply with WAC 296-800-230.

(11) Medical surveillance.

(a) General.

(i) The employer (~~(shall)~~) must institute a medical surveillance program for all employees who are or may be exposed at or above the action level for more than thirty days per year.

(ii) The employer (~~(shall assure)~~) must ensure that all medical examinations and procedures are performed by or under the supervision of a licensed physician.

(iii) The employer (~~(shall)~~) must provide the required medical surveillance including multiple physician review under item (11)(c)(iii) without cost to employees and at a reasonable time and place.

(b) Biological monitoring.

(i) Blood lead and ZPP level sampling and analysis. The employer (~~(shall)~~) must make available biological monitoring in the form of blood sampling and analysis for lead and zinc protoporphyrin levels to each employee covered under item (11)(a)(i) of this section on the following schedule:

(A) At least every six months to each employee covered under item (11)(a)(i) of this section;

(B) At least every two months for each employee whose last blood sampling and analysis indicated a blood lead level at or above 40 µg/100 g of whole blood. This frequency (~~(shall)~~) must continue until two consecutive blood samples and analyses indicate a blood lead level below 40 µg/100 g of whole blood; and

(C) At least monthly during the removal period of each employee removed from exposure to lead due to an elevated blood lead level.

(ii) Follow-up blood sampling tests. Whenever the results of a blood lead level test indicate that an employee's blood lead level is at or above the numerical criterion for medical removal under item (12)(a)(i)(A), the employer (~~(shall)~~) must provide a second (follow-up) blood sampling test within two weeks after the employer receives the results of the first blood sampling test.

(iii) Accuracy of blood lead level sampling and analysis. Blood lead level sampling and analysis provided pursuant to this section (~~(shall)~~) must have an accuracy (to a confidence level of ninety-five percent) within plus or minus fifteen percent or 6 µg/100 ml, whichever is greater, and (~~(shall)~~) must be conducted by a laboratory licensed by the Center for Disease Control (CDC), United States Department of Health, Education and Welfare or which has received a satisfactory grade in blood lead proficiency testing from CDC in the prior twelve months.

(iv) Employee notification. Within five working days after the receipt of biological monitoring results, the employer (~~(shall)~~) must notify in writing each employee whose blood lead level is at or above 40 µg/100g: (A) of that employee's blood lead level and (B) that the standard requires temporary medical removal with medical removal protection benefits when an employee's blood lead level exceeds the numerical criterion for medical removal under item (12)(a)(i) of this section.

(c) Medical examinations and consultations.

(i) Frequency. The employer (~~(shall)~~) must make available medical examinations and consultations to each employee covered under item (11)(a)(i) of this section on the following schedule:

(A) At least annually for each employee for whom a blood sampling test conducted at any time during the preceding twelve months indicated a blood lead level at or above 40 µg/100 g;

(B) Prior to assignment for each employee being assigned for the first time to an area in which airborne concentrations of lead are at or above the action level;

(C) As soon as possible, upon notification by an employee either that the employee has developed signs or symptoms commonly associated with lead intoxication, that the employee desires medical advice concerning the effects of current or past exposure to lead on the employee's ability to procreate a healthy child, or that the employee has demonstrated difficulty in breathing during a respirator fitting test or during use; and

(D) As medically appropriate for each employee either removed from exposure to lead due to a risk of sustaining material impairment to health, or otherwise limited pursuant to a final medical determination.

(ii) Content. Medical examinations made available pursuant to subitems (11)(c)(i)(A) through (B) of this section (~~(shall)~~) must include the following elements:

(A) A detailed work history and a medical history, with particular attention to past lead exposure (occupational and nonoccupational), personal habits (smoking, hygiene), and past gastrointestinal, hematologic, renal, cardiovascular, reproductive and neurological problems;

(B) A thorough physical examination, with particular attention to teeth, gums, hematologic, gastrointestinal, renal, cardiovascular, and neurological systems. Pulmonary status should be evaluated if respiratory protection will be used;

(C) A blood pressure measurement;

(D) A blood sample and analysis which determines:

(I) Blood lead level;

(II) Hemoglobin and hematocrit determinations, red cell indices, and examination of peripheral smear morphology;

(III) Zinc protoporphyrin;

(IV) Blood urea nitrogen; and

(V) Serum creatinine;

(E) A routine urinalysis with microscopic examination; and

(F) Any laboratory or other test which the examining physician deems necessary by sound medical practice.

The content of medical examinations made available pursuant to subitems (11)(c)(i)(C) through (D) of this section (~~(shall)~~) must be determined by an examining physician and, if requested by an employee, shall include pregnancy testing or laboratory evaluation of male fertility.

(iii) Multiple physician review mechanism.

(A) If the employer selects the initial physician who conducts any medical examination or consultation provided to an employee under this section, the employee may designate a second physician:

(I) To review any findings, determinations or recommendations of the initial physician; and

(II) To conduct such examinations, consultations, and laboratory tests as the second physician deems necessary to facilitate this review.

(B) The employer (~~(shall)~~) must promptly notify an employee of the right to seek a second medical opinion after each occasion that an initial physician conducts a medical examination or consultation pursuant to this section. The employer may condition its participation in, and payment for, the multiple physician review mechanism upon the employee

doing the following within fifteen days after receipt of the foregoing notification, or receipt of the initial physician's written opinion, whichever is later:

(I) The employee informing the employer that (~~he or she~~) they intend(~~s~~) to seek a second medical opinion, and

(II) The employee initiating steps to make an appointment with a second physician.

(C) If the findings, determinations or recommendations of the second physician differ from those of the initial physician, then the employer and the employee (~~shall assure~~) must ensure that efforts are made for the two physicians to resolve any disagreement.

(D) If the two physicians have been unable to quickly resolve their disagreement, then the employer and the employee through their respective physicians (~~shall~~) must designate a third physician:

(I) To review any findings, determinations or recommendations of the prior physicians; and

(II) To conduct such examinations, consultations, laboratory tests and discussions with the prior physicians as the third physician deems necessary to resolve the disagreement of the prior physicians.

(E) The employer (~~shall~~) must act consistent with the findings, determinations and recommendations of the third physician, unless the employer and the employee reach an agreement which is otherwise consistent with the recommendations of at least one of the three physicians.

(iv) Information provided to examining and consulting physicians.

(A) The employer (~~shall~~) must provide an initial physician conducting a medical examination or consultation under this section with the following information:

(I) A copy of this regulation for lead including all appendices;

(II) A description of the affected employee's duties as they relate to the employee's exposure;

(III) The employee's exposure level or anticipated exposure level to lead and to any other toxic substance (if applicable);

(IV) A description of any personal protective equipment used or to be used;

(V) Prior blood lead determinations; and

(VI) All prior written medical opinions concerning the employee in the employer's possession or control.

(B) The employer (~~shall~~) must provide the foregoing information to a second or third physician conducting a medical examination or consultation under this section upon request either by the second or third physician, or by the employee.

(v) Written medical opinions.

(A) The employer (~~shall~~) must obtain and furnish the employee with a copy of a written medical opinion from each examining or consulting physician which contains the following information:

(I) The physician's opinion as to whether the employee has any detected medical condition which would place the employee at increased risk of material impairment of the employee's health from exposure to lead;

(II) Any recommended special protective measures to be provided to the employee, or limitations to be placed upon the employee's exposure to lead;

(III) Any recommended limitation upon the employee's use of respirators, including a determination of whether the employee can wear a powered air purifying respirator if a physician determines that the employee cannot wear a negative pressure respirator; and

(IV) The results of the blood lead determinations.

(B) The employer (~~shall~~) must instruct each examining and consulting physician to:

(I) Not reveal either in the written opinion, or in any other means of communication with the employer, findings, including laboratory results, or diagnoses unrelated to an employee's occupational exposure to lead; and

(II) Advise the employee of any medical condition, occupational or nonoccupational, which dictates further medical examination or treatment.

(vi) Alternate physician determination mechanisms. The employer and an employee or authorized employee representative may agree upon the use of any expeditious alternate physician determination mechanism in lieu of the multiple physician review mechanism provided by this subsection so long as the alternate mechanism otherwise satisfies the requirements contained in this subsection.

(d) Chelation.

(i) The employer (~~shall assure~~) must ensure that any person whom he retains, employs, supervises or controls does not engage in prophylactic chelation of any employee at any time.

(ii) If therapeutic or diagnostic chelation is to be performed by any person in item (11)(d)(i), the employer (~~shall assure~~) must ensure that it be done under the supervision of a licensed physician in a clinical setting with thorough and appropriate medical monitoring and that the employee is notified in writing prior to its occurrence.

(12) Medical removal protection.

(a) Temporary medical removal and return of an employee.

(i) Temporary removal due to elevated blood lead levels.

(A) The employer (~~shall~~) must remove an employee from work having an exposure to lead at or above the action level on each occasion that a periodic and a follow-up blood sampling test conducted pursuant to this section indicate that the employee's blood lead level is at or above 60 µg/100g of whole blood; and

(B) The employer (~~shall~~) must remove an employee from work having an exposure to lead at or above the action level on each occasion that the average of the last three blood sampling tests conducted pursuant to this section (or the average of all blood sampling tests conducted over the previous six months, whichever is longer) indicates that the employee's blood lead level is at or above 50 µg/100g of whole blood; provided, however, that an employee need not be removed if the last blood sampling test indicates a blood lead level below 40 µg/100g of whole blood.

(ii) Temporary removal due to a final medical determination.

(A) The employer (~~shall~~) must remove an employee from work having an exposure to lead at or above the action

level on each occasion that a final medical determination results in a medical finding, determination, or opinion that the employee has a detected medical condition which places the employee at increased risk of material impairment to health from exposure to lead.

(B) For the purposes of this section, the phrase "final medical determination" shall mean the outcome of the multiple physician review mechanism or alternate medical determination mechanism used pursuant to the medical surveillance provisions of this section.

(C) Where a final medical determination results in any recommended special protective measures for an employee, or limitations on an employee's exposure to lead, the employer ~~((shall))~~ must implement and act consistent with the recommendation.

(iii) Return of the employee to former job status.

(A) The employer ~~((shall))~~ must return an employee to ~~((his or her))~~ their former job status:

(I) For an employee removed due to a blood lead level at or above 60 µg/100g, or due to an average blood lead level at or above 50 µg/100g, when two consecutive blood sampling tests indicate that the employee's blood lead level is below 40 µg/100g of whole blood;

(II) For an employee removed due to a final medical determination, when a subsequent final medical determination results in a medical finding, determination, or opinion that the employee no longer has a detected medical condition which places the employee at increased risk of material impairment to health from exposure to lead.

(B) For the purposes of this section, the requirement that an employer return an employee to ~~((his or her))~~ their former job status is not intended to expand upon or restrict any rights an employee has or would have had, absent temporary medical removal, to a specific job classification or position under the terms of a collective bargaining agreement.

(iv) Removal of other employee special protective measure or limitations. The employer ~~((shall))~~ must remove any limitations placed on an employee or end any special protective measures provided to an employee pursuant to a final medical determination when a subsequent final medical determination indicates that the limitations or special protective measures are no longer necessary.

(v) Employer options pending a final medical determination. Where the multiple physician review mechanism, or alternate medical determination mechanism used pursuant to the medical surveillance provisions of this section, has not yet resulted in a final medical determination with respect to an employee, the employer ~~((shall))~~ must act as follows:

(A) Removal. The employer may remove the employee from exposure to lead, provide special protective measures to the employee, or place limitations upon the employee, consistent with the medical findings, determinations, or recommendations of any of the physicians who have reviewed the employee's health status.

(B) Return. The employer may return the employee to ~~((his or her))~~ their former job status, end any special protective measures provided to the employee, and remove any limitations placed upon the employee, consistent with the medical findings, determinations, or recommendations of any of

the physicians who have reviewed the employee's health status, with two exceptions. If:

(I) The initial removal, special protection, or limitation of the employee resulted from a final medical determination which differed from the findings, determinations, or recommendations of the initial physician; or

(II) The employee has been on removal status for the preceding eighteen months due to an elevated blood lead level, then the employer ~~((shall))~~ must await a final medical determination.

(b) Medical removal protection benefits.

(i) Provision of medical removal protection benefits. The employer ~~((shall))~~ must provide to an employee up to eighteen months of medical removal protection benefits on each occasion that an employee is removed from exposure to lead or otherwise limited pursuant to this section.

(ii) Definition of medical removal protection benefits. For the purposes of this section, the requirement that an employer provide medical removal protection benefits means that the employer ~~((shall))~~ must maintain the earnings, seniority and other employment rights and benefits of an employee as though the employee had not been removed from normal exposure to lead or otherwise limited.

(iii) Follow-up medical surveillance during the period of employee removal or limitation. During the period of time that an employee is removed from normal exposure to lead or otherwise limited, the employer may condition the provision of medical removal protection benefits upon the employee's participation in follow-up medical surveillance made available pursuant to this section.

(iv) Workers' compensation claims. If a removed employee files a claim for workers' compensation payments for a lead-related disability, then the employer ~~((shall))~~ must continue to provide medical removal protection benefits pending disposition of the claim. To the extent that an award is made to the employee for earnings lost during the period of removal, the employer's medical removal protection obligation ~~((shall))~~ must be reduced by such amount. The employer ~~((shall))~~ must not receive ~~((no))~~ credit for workers' compensation payments received by the employee for treatment related expenses.

(v) Other credits. The employer's obligation to provide medical removal protection benefits to a removed employee shall be reduced to the extent that the employee receives compensation for earnings lost during the period of removal either from a publicly or employer-funded compensation program, or receives income from employment with another employer made possible by virtue of the employee's removal.

(vi) Employees whose blood lead levels do not adequately decline within eighteen months of removal. The employer ~~((shall))~~ must take the following measures with respect to any employee removed from exposure to lead due to an elevated blood lead level whose blood lead level has not declined within the past eighteen months of removal so that the employee has been returned to ~~((his or her))~~ their former job status:

(A) The employer ~~((shall))~~ must make available to the employee a medical examination pursuant to this section to obtain a final medical determination with respect to the employee;

(B) The employer (~~((shall assure))~~) must ensure that the final medical determination obtained indicates whether or not the employee may be returned to (~~((his or her))~~) their former job status, and if not, what steps should be taken to protect the employee's health;

(C) Where the final medical determination has not yet been obtained, or once obtained indicates that the employee may not yet be returned to (~~((his or her))~~) their former job status, the employer (~~((shall))~~) must continue to provide medical removal protection benefits to the employee until either the employee is returned to former job status, or a final medical determination is made that the employee is incapable of ever safely returning to (~~((his or her))~~) their former job status;

(D) Where the employer acts pursuant to a final medical determination which permits the return of the employee to (~~((his or her))~~) their former job status despite what would otherwise be an unacceptable blood lead level, later questions concerning removing the employee again (~~((shall))~~) must be decided by a final medical determination. The employer need not automatically remove such an employee pursuant to the blood lead level removal criteria provided by this section.

(vii) Voluntary removal or restriction of an employee. Where an employer, although not required by this section to do so, removes an employee from exposure to lead or otherwise places limitations on an employee due to the effects of lead exposure on the employee's medical condition, the employer (~~((shall))~~) must provide medical removal protection benefits to the employee equal to that required by item (12)(b)(i) of this section.

(13) Employee information and training.

(a) Training program.

(i) Each employer who has a workplace in which there is a potential exposure to airborne lead at any level (~~((shall))~~) must inform employees of the content of Appendices A and B of this regulation.

(ii) The employer (~~((shall))~~) must train each employee who is subject to exposure to lead at or above the action level or for whom the possibility of skin or eye irritation exists, in accordance with the requirements of this section. The employer (~~((shall))~~) must institute a training program for and (~~((assure))~~) ensure the participation of all employees.

(iii) The employer (~~((shall))~~) must provide initial training by one hundred eighty days from the effective date for those employees covered by item (13)(a)(ii) on the standard's effective date and prior to the time of initial job assignment for those employees subsequently covered by this subsection.

(iv) The training program (~~((shall))~~) must be repeated at least annually for each employee.

(v) The employer (~~((shall assure))~~) must ensure that each employee is informed of the following:

(A) The content of this standard and its appendices;

(B) The specific nature of the operations which could result in exposure to lead above the action level;

(C) The purpose, proper use, limitations, and other training requirements for respiratory protection as required by chapter (~~((296-62 WAC, Part E))~~) 296-842 WAC;

(D) The purpose and a description of the medical surveillance program, and the medical removal protection program including information concerning the adverse health effects associated with excessive exposure to lead (with particular

attention to the adverse reproductive effects on both males and females);

(E) The engineering controls and work practices associated with the employee's job assignment;

(F) The contents of any compliance plan in effect; and

(G) Instructions to employees that chelating agents should not routinely be used to remove lead from their bodies and should not be used at all except under the direction of a licensed physician.

(b) Access to information and training materials.

(i) The employer (~~((shall))~~) must make readily available to all affected employees a copy of this standard and its appendices.

(ii) The employer (~~((shall))~~) must provide, upon request, all materials relating to the employee information and training program to the director.

(iii) In addition to the information required by item (13)(a)(v), the employer (~~((shall))~~) must include as part of the training program, and (~~((shall))~~) must distribute to employees, any materials pertaining to the Occupational Safety and Health Act, the regulations issued pursuant to the act, and this lead standard, which are made available to the employer by the director.

(14) Communication of hazards.

(a) Hazard communication - General.

(i) Chemical manufacturers, importers, distributors and employers (~~((shall))~~) must comply with all requirements of the Hazard Communication Standard (HCS), WAC 296-901-140 for lead.

(ii) In classifying the hazards of lead at least the following hazards are to be addressed: Reproductive/developmental toxicity; central nervous system effects; kidney effects; blood effects; and acute toxicity effects.

(iii) Employers (~~((shall))~~) must include lead in the hazard communication program established to comply with the HCS, WAC 296-901-140. Employers (~~((shall))~~) must ensure that each employee has access to labels on containers of lead and to safety data sheets, and is trained in accordance with the requirements of HCS and subsection (13) of this section.

(b) Signs.

(i) The employer (~~((shall))~~) must post the following warning signs in each work area where the PEL is exceeded:

DANGER
LEAD
MAY DAMAGE FERTILITY OR THE UNBORN CHILD
CAUSES DAMAGE TO THE CENTRAL NERVOUS SYSTEM
DO NOT EAT, DRINK OR SMOKE IN THIS AREA

(ii) The employer (~~((shall))~~) must ensure that no statement appears on or near any sign required by this section which contradicts or detracts from the meaning of the required sign.

(iii) The employer (~~((shall))~~) must ensure that signs required by this subsection are illuminated and cleaned as necessary so that the legend is readily visible.

(iv) The employer may use signs required by other statutes, regulations or ordinances in addition to, or in combination with, signs required by this subsection.

~~((v) Prior to June 1, 2016, employers may use the following legend in lieu of that specified in (b)(i) of this subsection:~~

WARNING
LEAD WORK AREA
POISON
NO SMOKING OR EATING))

(15) Recordkeeping.

(a) Exposure monitoring.

(i) The employer ~~((shall))~~ must establish and maintain an accurate record of all monitoring required in subsection (5) of this section.

(ii) This record ~~((shall))~~ must include:

(A) The date(s), number, duration, location and results of each of the samples taken, including a description of the sampling procedure used to determine representative employee exposure where applicable;

(B) A description of the sampling and analytical methods used and evidence of their accuracy;

(C) The type of respiratory protective devices worn, if any;

(D) Name, Social Security number, and job classification of the employee monitored and of all other employees whose exposure the measurement is intended to represent; and

(E) The environmental variables that could affect the measurement of employee exposure.

(iii) The employer ~~((shall))~~ must maintain these monitoring records for at least forty years or for the duration of employment plus twenty years, whichever is longer.

(b) Medical surveillance.

(i) The employer ~~((shall))~~ must establish and maintain an accurate record for each employee subject to medical surveillance as required by subsection (11) of this section.

(ii) This record ~~((shall))~~ must include:

(A) The name, Social Security number, and description of the duties of the employee;

(B) A copy of the physician's written opinions;

(C) Results of any airborne exposure monitoring done for that employee and the representative exposure levels supplied to the physician; and

(D) Any employee medical complaints related to exposure to lead.

(iii) The employer ~~((shall))~~ must keep, or ~~((assure))~~ ensure that the examining physician keeps, the following medical records:

(A) A copy of the medical examination results including medical and work history required under subsection (11) of this section;

(B) A description of the laboratory procedures and a copy of any standards or guidelines used to interpret the test results or references to that information; and

(C) A copy of the results of biological monitoring.

(iv) The employer ~~((shall))~~ must maintain or ~~((assure))~~ ensure that the physician maintains those medical records for at least forty years, or for the duration of employment plus twenty years, whichever is longer.

(c) Medical removals.

(i) The employer ~~((shall))~~ must establish and maintain an accurate record for each employee removed from current exposure to lead pursuant to subsection (12) of this section.

(ii) Each record ~~((shall))~~ must include:

(A) The name and Social Security number of the employee;

(B) The date on each occasion that the employee was removed from current exposure to lead as well as the corresponding date on which the employee was returned to his or her former job status;

(C) A brief explanation of how each removal was or is being accomplished; and

(D) A statement with respect to each removal indicating whether or not the reason for the removal was an elevated blood lead level.

(iii) The employer ~~((shall))~~ must maintain each medical removal record for at least the duration of an employee's employment.

(d) Availability.

(i) The employer ~~((shall))~~ must make available upon request all records required to be maintained by subsection (15) of this section to the director for examination and copying.

(ii) Environmental monitoring, medical removal, and medical records required by this subsection ~~((shall))~~ must be provided upon request to employees, designated representatives, and the assistant director in accordance with chapter 296-802 WAC. Medical removal records ~~((shall))~~ must be provided in the same manner as environmental monitoring records.

(iii) Upon request, the employer ~~((shall))~~ must make an employee's medical records required to be maintained by this section available to the affected employee or former employee or to a physician or other individual designated by such affected employee or former employees for examination and copying.

(e) Transfer of records.

The employer ~~((shall))~~ must comply with any additional requirements involving transfer of records set forth in WAC 296-802-60005.

(16) Observation of monitoring.

(a) Employee observation. The employer ~~((shall))~~ must provide affected employees or their designated representatives an opportunity to observe any monitoring of employee exposure to lead conducted pursuant to subsection (5) of this section.

(b) Observation procedures.

(i) Whenever observation of the monitoring of employee exposure to lead requires entry into an area where the use of respirators, protective clothing or equipment is required, the employer ~~((shall))~~ must provide the observer with and ~~((assure))~~ ensure the use of such respirators, clothing and such equipment, and ~~((shall))~~ must require the observer to comply with all other applicable safety and health procedures.

(ii) Without interfering with the monitoring, observers ~~((shall))~~ must be entitled to:

(A) Receive an explanation of the measurement procedures;

(B) Observe all steps related to the monitoring of lead performed at the place of exposure; and

(C) Record the results obtained or receive copies of the results when returned by the laboratory.

(17) Appendices. The information contained in the appendices to this section is not intended by itself, to create any additional obligations not otherwise imposed by this standard nor detract from any existing obligation.

(a) Appendix A. Substance Data Sheet for Occupational Exposure to Lead.

(i) Substance identification.

(A) Substance. Pure lead (Pb) is a heavy metal at room temperature and pressure and is a basic chemical element. It can combine with various other substances to form numerous lead compounds.

(B) Compounds covered by the standard. The word "lead" when used in this standard means elemental lead, all inorganic lead compounds (except those which are not biologically available due to either solubility or specific chemical interaction), and a class of organic lead compounds called lead soaps. This standard does not apply to other organic lead compounds.

(C) Uses. Exposure to lead occurs in at least one hundred twenty different occupations, including primary and secondary lead smelting, lead storage battery manufacturing, lead pigment manufacturing and use, solder manufacturing and use, shipbuilding and ship repairing, auto manufacturing, and printing.

(D) Permissible exposure. The Permissible Exposure Limit (PEL) set by the standard is 50 micrograms of lead per cubic meter of air ($50 \mu\text{g}/\text{m}^3$), averaged over an eight-hour work day.

(E) Action level. The standard establishes an action level of 30 micrograms per cubic meter of air ($30 \mu\text{g}/\text{m}^3$) time weighted average, based on an eight-hour work day. The action level initiates several requirements of the standard, such as exposure monitoring, medical surveillance, and training and education.

(ii) Health hazard data.

(A) Ways in which lead enters your body.

(I) When absorbed into your body in certain doses lead is a toxic substance. The object of the lead standard is to prevent absorption of harmful quantities of lead. The standard is intended to protect you not only from the immediate toxic effects of lead, but also from the serious toxic effects that may not become apparent until years of exposure have passed.

(II) Lead can be absorbed into your body by inhalation (breathing) and ingestion (eating). Lead (except for certain organic lead compounds not covered by the standard, such as tetraethyl lead) is not absorbed through your skin. When lead is scattered in the air as a dust, fume or mist, it can be inhaled and absorbed through your lungs and upper respiratory tract. Inhalation of airborne lead is generally the most important source of occupational lead absorption. You can also absorb lead through your digestive system if lead gets into your mouth and is swallowed. If you handle food, cigarettes, chewing tobacco, or make-up which have lead on them or handle them with hands contaminated with lead, this will contribute to ingestion.

(III) A significant portion of the lead that you inhale or ingest gets into your blood stream. Once in your blood stream lead is circulated throughout your body and stored in various organs and body tissues. Some of this lead is quickly filtered

out of your body and excreted, but some remains in your blood and other tissue. As exposure to lead continues, the amount stored in your body will increase if you are absorbing more lead than your body is excreting. Even though you may not be aware of any immediate symptoms of disease, this lead stored in your tissues can be slowly causing irreversible damage, first to individual cells, then to your organs and whole body systems.

(B) Effects of overexposure to lead.

(I) Short-term (acute) overexposure. Lead is a potent, systemic poison that serves no known useful function once absorbed by your body. Taken in large enough doses, lead can kill you in a matter of days. A condition affecting the brain called acute encephalopathy may arise which develops quickly to seizures, coma, and death from cardiorespiratory arrest. A short-term dose of lead can lead to acute encephalopathy. Short-term occupational exposures of this magnitude are highly unusual, but not impossible. Similar forms of encephalopathy may, however arise from extended, chronic exposure to lower doses of lead. There is no sharp dividing line between rapidly developing acute effects of lead, and chronic effects which take longer to acquire. Lead adversely affects numerous body systems, and causes forms of health impairment and disease which arise after periods of exposure as short as days or as long as several years.

(II) Long-term (chronic) overexposure.

a) Chronic overexposure to lead may result in severe damage to your blood-forming, nervous, urinary and reproductive systems. Some common symptoms of chronic overexposure include loss of appetite, metallic taste in the mouth, anxiety, constipation, nausea, pallor, excessive tiredness, weakness, insomnia, headache, nervous irritability, muscle and joint pain or soreness, fine tremors, numbness, dizziness, hyperactivity and colic. In lead colic there may be severe abdominal pain.

b) Damage to the central nervous system in general and the brain (encephalopathy) in particular is one of the most severe forms of lead poisoning. The most severe, often fatal, form of encephalopathy may be preceded by vomiting, a feeling of dullness progressing to drowsiness and stupor, poor memory, restlessness, irritability, tremor, and convulsions. It may arise suddenly with the onset of seizures, followed by coma, and death. There is a tendency for muscular weakness to develop at the same time. This weakness may progress to paralysis often observed as a characteristic "wrist drop" or "foot drop" and is a manifestation of a disease to the nervous system called peripheral neuropathy.

c) Chronic overexposure to lead also results in kidney disease with few, if any, symptoms appearing until extensive and most likely permanent kidney damage has occurred. Routine laboratory tests reveal the presence of this kidney disease only after about two-thirds of kidney function is lost. When overt symptoms of urinary dysfunction arise, it is often too late to correct or prevent worsening conditions, and progression of kidney dialysis or death is possible.

d) Chronic overexposure to lead impairs the reproductive systems of both men and women. Overexposure to lead may result in decreased sex drive, impotence and sterility in men. Lead can alter the structure of sperm cells raising the risk of birth defects. There is evidence of miscarriage and

stillbirth in women whose husbands were exposed to lead or who were exposed to lead themselves. Lead exposure also may result in decreased fertility, and abnormal menstrual cycles in women. The course of pregnancy may be adversely affected by exposure to lead since lead crosses the placental barrier and poses risks to developing fetuses. Children born of parents either one of whom were exposed to excess lead levels are more likely to have birth defects, mental retardation, behavioral disorders or die during the first year of childhood.

e) Overexposure to lead also disrupts the blood-forming system resulting in decreased hemoglobin (the substance in the blood that carries oxygen to the cells) and ultimately anemia. Anemia is characterized by weakness, pallor and fatigability as a result of decreased oxygen carrying capacity in the blood.

(III) Health protection goals of the standard.

a) Prevention of adverse health effects for most workers from exposure to lead throughout a working lifetime requires that worker blood lead (PbB) levels be maintained at or below forty micrograms per one hundred grams of whole blood (40 $\mu\text{g}/100\text{g}$). The blood lead levels of workers (both male and female workers) who intend to have children should be maintained below 30 $\mu\text{g}/100\text{g}$ to minimize adverse reproductive health effects to the parents and to the developing fetus.

b) The measurement of your blood lead level is the most useful indicator of the amount of lead absorbed by your body. Blood lead levels (PbB) are most often reported in units of milligrams (mg) or micrograms (μg) of lead (1 mg = 1000 μg) per 100 grams (100g), 100 milliliters (100 ml) or deciliter (dl) of blood. These three units are essentially the same. Sometimes PbB's are expressed in the form of mg% or $\mu\text{g}\%$. This is a shorthand notation for 100g, 100ml, or dl.

c) PbB measurements show the amount of lead circulating in your blood stream, but do not give any information about the amount of lead stored in your various tissues. PbB measurements merely show current absorption of lead, not the effect that lead is having on your body or the effects that past lead exposure may have already caused. Past research into lead-related diseases, however, has focused heavily on associations between PbBs and various diseases. As a result, your PbB is an important indicator of the likelihood that you will gradually acquire a lead-related health impairment or disease.

d) Once your blood lead level climbs above 40 $\mu\text{g}/100\text{g}$, your risk of disease increases. There is a wide variability of individual response to lead, thus it is difficult to say that a particular PbB in a given person will cause a particular effect. Studies have associated fatal encephalopathy with PbBs as low as 150 $\mu\text{g}/100\text{g}$. Other studies have shown other forms of disease in some workers with PbBs well below 80 $\mu\text{g}/100\text{g}$. Your PbB is a crucial indicator of the risks to your health, but one other factor is extremely important. This factor is the length of time you have had elevated PbBs. The longer you have an elevated PbB, the greater the risk that large quantities of lead are being gradually stored in your organs and tissues (body burden). The greater your overall body burden, the greater the chances of substantial permanent damage.

e) The best way to prevent all forms of lead-related impairments and diseases—both short-term and long-term—is to maintain your PbB below 40 $\mu\text{g}/100\text{g}$. The provisions of the standard are designed with this end in mind. Your employer has prime responsibility to (~~assure~~) ensure that the provisions of the standard are complied with both by the company and by individual workers. You as a worker, however, also have a responsibility to assist your employer in complying with the standard. You can play a key role in protecting your own health by learning about the lead hazards and their control, learning what the standard requires, following the standard where it governs your own action, and seeing that your employer complies with the provisions governing his actions.

(IV) Reporting signs and symptoms of health problems. You should immediately notify your employer if you develop signs or symptoms associated with lead poisoning or if you desire medical advice concerning the effects of current or past exposure to lead on your ability to have a healthy child. You should also notify your employer if you have difficulty breathing during a respirator fit test or while wearing a respirator. In each of these cases your employer must make available to you appropriate medical examinations or consultations. These must be provided at no cost to you and at a reasonable time and place.

(b) Appendix B. Employee Standard Summary. This appendix summarizes key provisions of the standard that you as a worker should become familiar with. The appendix discusses the entire standard.

(i) Permissible exposure limit (PEL). The standard sets a permissible exposure limit (PEL) of fifty micrograms of lead per cubic meter of air (50 $\mu\text{g}/\text{m}^3$), averaged over an eight-hour workday. This is the highest level of lead in air to which you may be permissibly exposed over an eight-hour workday. Since it is an eight-hour average it permits short exposures above the PEL so long as for each eight-hour workday your average exposure does not exceed the PEL.

(ii) Exposure monitoring.

(A) If lead is present in the work place where you work in any quantity, your employer is required to make an initial determination of whether the action level is exceeded for any employee. The initial determination must include instrument monitoring of the air for the presence of lead and must cover the exposure of a representative number of employees who are reasonably believed to have the highest exposure levels. If your employer has conducted appropriate air sampling for lead in the past year he may use these results. If there have been any employee complaints of symptoms which may be attributable to exposure to lead or if there is any other information or observations which would indicate employee exposure to lead, this must also be considered as part of the initial determination. If this initial determination shows that a reasonable possibility exists that any employee may be exposed, without regard to respirators, over the action level (30 $\mu\text{g}/\text{m}^3$) your employer must set up an air monitoring program to determine the exposure level of every employee exposed to lead at your work place.

(B) In carrying out this air monitoring program, your employer is not required to monitor the exposure of every employee, but (~~he or she~~) they must monitor a representa-

tive number of employees and job types. Enough sampling must be done to enable each employee's exposure level to be reasonably represented by at least one full shift (at least seven hours) air sample. In addition, these air samples must be taken under conditions which represent each employee's regular, daily exposure to lead.

(C) If you are exposed to lead and air sampling is performed, your employer is required to quickly notify you in writing of air monitoring results which represent your exposure. If the results indicate your exposure exceeds the PEL (without regard to your use of respirators), then your employer must also notify you of this in writing, and provide you with a description of the corrective action that will be taken to reduce your exposure.

(D) Your exposure must be rechecked by monitoring every six months if your exposure is over the action level but below the PEL. Air monitoring must be repeated every three months if you are exposed over the PEL. Your employer may discontinue monitoring for you if two consecutive measurements, taken at least two weeks apart, are below the action level. However, whenever there is a production, process, control, or personnel change at your work place which may result in new or additional exposure to lead, or whenever there is any other reason to suspect a change which may result in new or additional exposure to lead, your employer must perform additional monitoring.

(iii) Methods of compliance. Your employer is required to ~~((assure))~~ ensure that no employee is exposed to lead in excess of the PEL. The standard establishes a priority of methods to be used to meet the PEL.

(iv) Respiratory protection.

(A) Your employer is required to provide and ~~((assure))~~ ensure your use of respirators when your exposure to lead is not controlled below the PEL by other means. The employer must pay the cost of the respirator. Whenever you request one, your employer is also required to provide you a respirator even if your air exposure level does not exceed the PEL. You might desire a respirator when, for example, you have received medical advice that your lead absorption should be decreased. Or, you may intend to have children in the near future, and want to reduce the level of lead in your body to minimize adverse reproductive effects. While respirators are the least satisfactory means of controlling your exposure, they are capable of providing significant protection if properly chosen, fitted, worn, cleaned, maintained, and replaced when they stop providing adequate protection.

(B) Your employer is required to select respirators from the seven types listed in Table II of the respiratory protection section of this standard (see subsection (7)(c) of this section). Any respirator chosen must be certified by the National Institute for Occupational Safety and Health (NIOSH) under the provisions of 42 C.F.R. part 84. This respirator selection table will enable your employer to choose a type of respirator which will give you a proper amount of protection based on your airborne lead exposure. Your employer may select a type of respirator that provides greater protection than that required by the standard; that is, one recommended for a higher concentration of lead than is present in your work place. For example, a powered air purifying respirator (PAPR) is much more protective than a typical negative-pres-

sure respirator, and may also be more comfortable to wear. A PAPR has a filter, cartridge or canister to clean the air, and a power source which continuously blows filtered air into your breathing zone. Your employer might make a PAPR available to you to ease the burden of having to wear a respirator for long periods of time. The standard provides that you can obtain a PAPR upon request.

(C) Your employer must also start a respiratory protection program. This program must include written procedures for the proper selection, use, cleaning, storage, and maintenance of respirators.

(D) Your employer must ~~((assure))~~ ensure that your respirator facepiece fits properly. Proper fit of a respirator facepiece is critical to your protection against air borne lead. Obtaining a proper fit on each employee may require your employer to make available several different types of respirator masks. To ensure that your respirator fits properly and that facepiece leakage is minimal, your employer must give you either a qualitative or quantitative fit test as required in chapter 296-842 WAC.

(E) You must also receive from your employer proper training in the use of respirators. Your employer is required to teach you how to wear a respirator, to know why it is needed, and to understand its limitations.

(F) The standard provides that if your respirator uses filter elements, you must be given an opportunity to change the filter elements whenever an increase in breathing resistance is detected. You also must be permitted to periodically leave your work area to wash your face and respirator facepiece whenever necessary to prevent skin irritation. If you ever have difficulty breathing during a fit test or while using a respirator, your employer must make a medical examination available to you to determine whether you can safely wear a respirator. The result of this examination may be to give you a positive pressure respirator (which reduces breathing resistance) or to provide alternative means of protection.

(v) Protective work clothing and equipment. If you are exposed to lead above the PEL, or if you are exposed to lead compounds such as lead arsenate or lead azide which can cause skin and eye irritation, your employer must provide you with protective work clothing and equipment appropriate for the hazard. If work clothing is provided, it must be provided in a clean and dry condition at least weekly, and daily if your airborne exposure to lead is greater than 200 $\mu\text{g}/\text{m}^3$. Appropriate protective work clothing and equipment can include coveralls or similar full-body work clothing, gloves, hats, shoes or disposable shoe coverlets, and face shields or vented goggles. Your employer is required to provide all such equipment at no cost to you. ~~((He or she is))~~ They are responsible for providing repairs and replacement as necessary and also is responsible for the cleaning, laundering or disposal of protective clothing and equipment. Contaminated work clothing or equipment must be removed in change rooms and not worn home or you will extend your exposure and expose your family since lead from your clothing can accumulate in your house, car, etc. Contaminated clothing which is to be cleaned, laundered or disposed of must be placed in closed containers in the change room. At no time may lead be removed from protective clothing or equipment by any means which disperses lead into the work room air.

(vi) Housekeeping. Your employer must establish a housekeeping program sufficient to maintain all surfaces as free as practicable of accumulations of lead dust. Vacuuming is the preferred method of meeting this requirement, and the use of compressed air to clean floors and other surfaces is absolutely prohibited. Dry or wet sweeping, shoveling, or brushing may not be used except where vacuuming or other equally effective methods have been tried and do not work. Vacuums must be used and emptied in a manner which minimizes the reentry of lead into the work place.

(vii) Hygiene facilities and practices.

(A) The standard requires that change rooms, showers and filtered air lunchrooms be constructed and made available to workers exposed to lead above the PEL. When the PEL is exceeded, the employer must ~~((assure))~~ ensure that food and beverage is not present or consumed, tobacco products are not present or used, and cosmetics are not applied, except in these facilities. Change rooms, showers and lunchrooms, must be used by workers exposed in excess of the PEL. After showering, no clothing or equipment worn during the shift may be worn home and this includes shoes and underwear. Your own clothing worn during the shift should be carried home and cleaned carefully so that it does not contaminate your home. Lunchrooms may not be entered with protective clothing or equipment unless surface dust has been removed by vacuuming, downdraft booth or other cleaning methods. Finally, workers exposed above the PEL must wash both their hands and faces prior to eating, drinking, smoking or applying cosmetics.

(B) All of the facilities and hygiene practices just discussed are essential to minimize additional sources of lead absorption from inhalation or ingestion of lead that may accumulate on you, your clothes or your possessions. Strict compliance with these provisions can virtually eliminate several sources of lead exposure which significantly contribute to excessive lead absorption.

(viii) Medical surveillance.

(A) The medical surveillance program is part of the standard's comprehensive approach to the prevention of lead-related disease. Its purpose is to supplement the main thrust of the standard which is aimed at minimizing airborne concentrations of lead and sources of ingestion. Only medical surveillance can determine if the other provisions of the standard have effectively protected you as an individual. Compliance with the standard's provision will protect most workers from the adverse effects of lead exposure, but may not be satisfactory to protect individual workers (I) who have high body burdens of lead acquired over past years, (II) who have additional uncontrolled sources of nonoccupational lead exposure, (III) who exhibit unusual variations in lead absorption rates, or (IV) who have specific nonwork related medical conditions which could be aggravated by lead exposure (e.g., renal disease, anemia). In addition, control systems may fail, or hygiene and respirator programs may be inadequate. Periodic medical surveillance of individual workers will help detect those failures. Medical surveillance will also be important to protect your reproductive ability - regardless of whether you are a man or a woman.

(B) All medical surveillance required by the standard must be performed by or under the supervision of a licensed

physician. The employer must provide required medical surveillance without cost to employees and at a reasonable time and place. The standard's medical surveillance program has two parts - Periodic biological monitoring, and medical examinations.

(C) Your employer's obligation to offer medical surveillance is triggered by the results of the air monitoring program. Medical surveillance must be made available to all employees who are exposed in excess of the action level for more than thirty days a year. The initial phase of the medical surveillance program, which included blood lead level tests and medical examinations, must be completed for all covered employees no later than one hundred eighty days from the effective date of this standard. Priority within this first round of medical surveillance must be given to employees whom the employer believes to be at greatest risk from continued exposure (for example, those with the longest prior exposure to lead, or those with the highest current exposure). Thereafter, the employer must periodically make medical surveillance - both biological monitoring and medical examinations - available to all covered employees.

(D) Biological monitoring under the standard consists of blood lead level (PbB) and zinc protoporphyrin tests at least every six months after the initial PbB test. A zinc protoporphyrin (ZPP) test is a very useful blood test which measures an effect of lead on your body. If a worker's PbB exceeds 40 $\mu\text{g}/100\text{g}$, the monitoring frequency must be increased from every six months to at least every two months and not reduced until two consecutive PbBs indicate a blood lead level below 40 $\mu\text{g}/100\text{g}$. Each time your PbB is determined to be over 40 $\mu\text{g}/100\text{g}$, your employer must notify you of this in writing within five working days of the receipt of the test results. The employer must also inform you that the standard requires temporary medical removal with economic protection when your PbB exceeds certain criteria (see Discussion of Medical Removal Protection - subsection (12)). During the first year of the standard, this removal criterion is 80 $\mu\text{g}/100\text{g}$. Anytime your PbB exceeds 80 $\mu\text{g}/100\text{g}$ your employer must make available to you a prompt follow-up PbB test to ascertain your PbB. If the two tests both exceed 80 $\mu\text{g}/100\text{g}$ and you are temporarily removed, then your employer must make successive PbB tests available to you on a monthly basis during the period of your removal.

(E) Medical examinations beyond the initial one must be made available on an annual basis if your blood lead levels exceeds 40 $\mu\text{g}/100\text{g}$ at any time during the preceding year. The initial examination will provide information to establish a baseline to which subsequent data can be compared. An initial medical examination must also be made available (prior to assignment) for each employee being assigned for the first time to an area where the airborne concentration of lead equals or exceeds the action level. In addition, a medical examination or consultation must be made available as soon as possible if you notify your employer that you are experiencing signs or symptoms commonly associated with lead poisoning or that you have difficulty breathing while wearing a respirator or during a respirator fit test. You must also be provided a medical examination or consultation if you notify your employer that you desire medical advice concerning the

effects of current or past exposure to lead on your ability to procreate a healthy child.

(F) Finally, appropriate follow-up medical examinations or consultations may also be provided for employees who have been temporarily removed from exposure under the medical removal protection provisions of the standard (see item (ix) below).

(G) The standard specifies the minimum content of pre-assignment and annual medical examinations. The content of other types of medical examinations and consultations is left up to the sound discretion of the examining physician. Pre-assignment and annual medical examinations must include (I) a detailed work history and medical history, (II) a thorough physical examination, and (III) a series of laboratory tests designed to check your blood chemistry and your kidney function. In addition, at any time upon your request, a laboratory evaluation of male fertility will be made (microscopic examination of a sperm sample), or a pregnancy test will be given.

(H) The standard does not require that you participate in any of the medical procedures, tests, etc., which your employer is required to make available to you. Medical surveillance can, however, play a very important role in protecting your health. You are strongly encouraged, therefore, to participate in a meaningful fashion. Generally, your employer will choose the physician who conducts medical surveillance under the lead standard - unless you and your employer can agree on the choice of a physician or physicians. Some companies and unions have agreed in advance, for example, to use certain independent medical laboratories or panels of physicians. Any of these arrangements are acceptable so long as required medical surveillance is made available to workers.

(I) The standard requires your employer to provide certain information to a physician to aid in ~~((his or her))~~ their examination of you. This information includes (I) the standard and its appendices, (II) a description of your duties as they relate to lead exposure, (III) your exposure level, (IV) a description of personal protective equipment you wear, (V) prior blood level results, and (VI) prior written medical opinions concerning you that the employer has. After a medical examination or consultation the physician must prepare a written report which must contain (I) the physician's opinion as to whether you have any medical conditions which places you at increased risk of material impairment to health from exposure to lead, (II) any recommended special protective measures to be provided to you, (III) any blood lead level determinations, and (IV) any recommended limitation on your use of respirators. This last element must include a determination of whether you can wear a powered air purifying respirator (PAPR) if you are found unable to wear a negative pressure respirator.

(J) The medical surveillance program of the lead standard may at some point in time serve to notify certain workers that they have acquired a disease or other adverse medical condition as a result of occupational lead exposure. If this is true these workers might have legal rights to compensation from public agencies, their employers, firms that supply hazardous products to their employers, or other persons. Some states have laws, including worker compensation laws, that

disallow a worker to learn of a job-related health impairment to sue, unless the worker sues within a short period of time after learning of the impairment. (This period of time may be a matter of months or years.) An attorney can be consulted about these possibilities. It should be stressed that WISHA is in no way trying to either encourage or discourage claims or lawsuits. However, since results of the standard's medical surveillance program can significantly affect the legal remedies of a worker who has acquired a job-related disease or impairment, it is proper for WISHA to make you aware of this.

(K) The medical surveillance section of the standard also contains provisions dealing with chelation. Chelation is the use of certain drugs (administered in pill form or injected into the body) to reduce the amount of lead absorbed in body tissues. Experience accumulated by the medical and scientific communities has largely confirmed the effectiveness of this type of therapy for the treatment of very severe lead poisoning. On the other hand it has also been established that there can be a long list of extremely harmful side effects associated with the use of chelating agents. The medical community has balanced the advantages and disadvantages resulting from the use of chelating agents in various circumstances and has established when the use of these agents is acceptable. The standard includes these accepted limitations due to a history of abuse of chelation therapy by some lead companies. The most widely used chelating agents are calcium disodium EDTA, (Ca Na₂EDTA), Calcium Disodium Versenate (Versenate), and d-penicillamine (penicillamine or Cupramine).

(L) The standard prohibits "prophylactic chelation" of any employee by any person the employer retains, supervises or controls. "Prophylactic chelation" is the routine use of chelating or similarly acting drugs to prevent elevated blood levels in workers who are occupationally exposed to lead, or the use of these drugs to routinely lower blood lead levels to pre-designated concentrations believed to be safe. It should be emphasized that where an employer takes a worker who has no symptoms of lead poisoning and has chelation carried out by a physician (either inside or outside of a hospital) solely to reduce the worker's blood lead level, that will generally be considered prophylactic chelation. The use of a hospital and a physician does not mean that prophylactic chelation is not being performed. Routine chelation to prevent increased or reduce current blood lead levels is unacceptable whatever the setting.

(M) The standard allows the use of "therapeutic" or "diagnostic" chelation if administered under the supervision of a licensed physician in a clinical setting with thorough and appropriate medical monitoring. Therapeutic chelation responds to severe lead poisoning where there are marked symptoms. Diagnostic chelation, involves giving a patient a dose of the drug then collecting all urine excreted for some period of time as an aid to the diagnosis of lead poisoning.

(N) In cases where the examining physician determines that chelation is appropriate, you must be notified in writing of this fact before such treatment. This will inform you of a potentially harmful treatment, and allow you to obtain a second opinion.

(ix) Medical removal protection.

(A) Excessive lead absorption subjects you to increased risk of disease. Medical removal protection (MRP) is a means of protecting you when for whatever reasons, other methods, such as engineering controls, work practices, and respirators, have failed to provide the protection you need. MRP involves the temporary removal of a worker from his or her regular job to a place of significantly lower exposure without any loss of earnings, seniority, or other employment rights of benefits. The purpose of this program is to cease further lead absorption and allow your body to naturally excrete lead which has previously been absorbed. Temporary medical removal can result from an elevated blood lead level, or a medical opinion. Up to eighteen months of protection is provided as a result of either form of removal. The vast majority of removed workers, however, will return to their former jobs long before this eighteen month period expires. The standard contains special provisions to deal with the extraordinary but possible case where a long-term worker's blood lead level does not adequately decline during eighteen months of removal.

(B) During the first year of the standard, if your blood lead level is 80 µg/100g or above you must be removed from any exposure where your air lead level without a respirator would be 100 µg/m³ or above. If you are removed from your normal job you may not be returned until your blood lead level declines to at least 60 µg/100g. These criteria for removal and return will change according to the following schedule:

TABLE 1

Effective Date	Removal Blood Level (µg/100g)	Air Lead (µg/m ³)	Return Blood Lead (µg/100g)
9/6/81	At or above 70	50 or above	At or below 50
9/6/82	At or above 60	30 or above	At or below 40
9/6/84	At or above 50 averaged over six months	30 or above	At or below 40

(C) You may also be removed from exposure even if your blood lead levels are below these criteria if a final medical determination indicates that you temporarily need reduced lead exposure for medical reasons. If the physician who is implementing your employer's medical program makes a final written opinion recommending your removal or other special protective measures, your employer must implement the physician's recommendation. If you are removed in this manner, you may only be returned when the physician indicates it is safe for you to do so.

(D) The standard does not give specific instructions dealing with what an employer must do with a removed worker. Your job assignment upon removal is a matter for you, your employer and your union (if any) to work out consistent with existing procedures for job assignments. Each removal must be accomplished in a manner consistent with existing collec-

tive bargaining relationships. Your employer is given broad discretion to implement temporary removals so long as no attempt is made to override existing agreements. Similarly, a removed worker is provided no right to veto an employer's choice which satisfies the standard.

(E) In most cases, employers will likely transfer removed employees to other jobs with sufficiently low lead exposure. Alternatively, a worker's hours may be reduced so that the time weighted average exposure is reduced, or he or she may be temporarily laid off if no other alternative is feasible.

(F) In all of these situations, MRP benefits must be provided during the period of removal - i.e., you continue to receive the same earnings, seniority, and other rights and benefits you would have had if you had not been removed. Earnings include more than just your base wage; it includes overtime, shift differentials, incentives, and other compensation you would have earned if you had not been removed. During the period of removal you must also be provided with appropriate follow-up medical surveillance. If you were removed because your blood lead level was too high, you must be provided with a monthly blood test. If a medical opinion caused your removal, you must be provided medical tests or examinations that the physician believes to be appropriate. If you do not participate in this follow-up medical surveillance, you may lose your eligibility for MRP benefits.

(G) When you are medically eligible to return to your former job, your employer must return you to your "former job status." This means that you are entitled to the position, wages, benefits, etc., you would have had if you had not been removed. If you would still be in your old job if no removal had occurred, that is where you go back. If not, you are returned consistent with whatever job assignment discretion your employer would have had if no removal had occurred. MRP only seeks to maintain your rights, not expand them or diminish them.

(H) If you are removed under MRP and you are also eligible for worker compensation or other compensation for lost wages, your employer's MRP benefits obligation is reduced by the amount that you actually receive from these other sources. This is also true if you obtain other employment during the time you are laid off with MRP benefits.

(I) The standard also covers situations where an employer voluntarily removes a worker from exposure to lead due to the effects of lead on the employee's medical condition, even though the standard does not require removal. In these situations MRP benefits must still be provided as though the standard required removal. Finally, it is important to note that in all cases where removal is required, respirators cannot be used as a substitute. Respirators may be used before removal becomes necessary, but not as an alternative to a transfer to a low exposure job, or to a lay-off with MRP benefits.

(x) Employee information and training.

(A) Your employer is required to provide an information and training program for all employees exposed to lead above the action level or who may suffer skin or eye irritation from lead. This program must inform these employees of the specific hazards associated with their work environment, protective measures which can be taken, the danger of lead to their

bodies (including their reproductive systems), and their rights under the standard. In addition, your employer must make readily available to all employees, including those exposed below the action level, a copy of the standard and its appendices and must distribute to all employees any materials provided to the employer under the Washington Industrial Safety and Health Act (WISHA).

(B) Your employer is required to complete this training for all employees by March 4, 1981. After this date, all new employees must be trained prior to initial assignment to areas where there is possibility of exposure over the action level. This training program must also be provided at least annually thereafter.

(xi) Signs. The standard requires that the following warning sign be posted in work areas where the exposure to lead exceeds the PEL:

DANGER LEAD
MAY DAMAGE FERTILITY OR THE UNBORN CHILD
CAUSES DAMAGE TO THE CENTRAL NERVOUS SYSTEM
DO NOT EAT, DRINK OR SMOKE IN THIS AREA

((However, prior to June 1, 2016, employers may use the following legend in lieu of that specified above:

~~WARNING
LEAD WORK AREA
NO SMOKING OR EATING~~

(xii) Recordkeeping.

(A) Your employer is required to keep all records of exposure monitoring for airborne lead. These records must include the name and job classification of employees measured, details of the sampling and analytic techniques, the results of this sampling and the type of respiratory protection being worn by the person sampled. Your employer is also required to keep all records of biological monitoring and medical examination results. These must include the names of the employees, the physician's written opinion and a copy of the results of the examination. All of the above kinds of records must be kept for forty years, or for at least twenty years after your termination of employment, whichever is longer.

(B) Recordkeeping is also required if you are temporarily removed from your job under the MRP program. This record must include your name and Social Security number, the date of your removal and return, how the removal was or is being accomplished, and whether or not the reason for the removal was an elevated blood lead level. Your employer is required to keep each medical removal record only for as long as the duration of an employee's employment.

(C) The standard requires that if you request to see or copy environmental monitoring, blood lead level monitoring, or medical removal records, they must be made available to you or to a representative that you authorize. Your union also has access to these records. Medical records other than PbBs must also be provided to you upon request, to your physician or to any other person whom you may specifically designate. Your union does not have access to your personal medical records unless you authorize their access.

(xiii) Observations of monitoring. When air monitoring for lead is performed at your work place as required by this standard, your employer must allow you or someone you des-

ignate to act as an observer of the monitoring. Observers are entitled to an explanation of the measurement procedure, and to record the results obtained. Since results will not normally be available at the time of the monitoring, observers are entitled to record or receive the results of the monitoring when returned by the laboratory. Your employer is required to provide the observer with any personal protective devices required to be worn by employees working in the areas that is being monitored. The employer must require the observer to wear all such equipment and to comply with all other applicable safety and health procedures.

(xiv) Effective date. The standard's effective date is September 6, 1980, and the employer's obligation under the standard begin to come into effect as of that date. The standard was originally adopted as WAC 296-62-07349 and later recodified to WAC 296-62-07521.

(c) Appendix C. Medical Surveillance Guidelines.

(i) Introduction.

(A) The primary purpose of the Washington Industrial Safety and Health Act of 1973 is to ((~~assure~~)) ensure, so far as possible, safe and healthful working conditions for every working man and woman. The occupational health standard for inorganic lead* was promulgated to protect workers exposed to inorganic lead including metallic lead, all inorganic lead compounds and organic lead soaps.

*The term inorganic lead used throughout the medical surveillance appendices is meant to be synonymous with the definition of lead set forth in the standard.

(B) Under this final standard in effect as of September 6, 1980, occupational exposure to inorganic lead is to be limited to 50 µg/m³ (micrograms per cubic meter) based on an eight-hour time-weighted average (TWA). This level of exposure eventually must be achieved through a combination of engineering, work practice and other administrative controls. Periods of time ranging from one to ten years are provided for different industries to implement these controls which are based on individual industry considerations. Until these controls are in place, respirators must be used to meet the 50 µg/m³ exposure limit.

(C) The standard also provides for a program of biological monitoring and medical surveillance for all employees exposed to levels of inorganic lead above the action level of 30 µg/m³ for more than thirty days per year.

(D) The purpose of this document is to outline the medical surveillance provisions of the standard for inorganic lead, and to provide further information to the physician regarding the examination and evaluation of workers exposed to inorganic lead.

(E) Item (ii) provides a detailed description of the monitoring procedure including the required frequency of blood testing for exposed workers, provisions for medical removal protection (MRP), the recommended right of the employee to a second medical opinion, and notification and recordkeeping requirements of the employer. A discussion of the requirements for respirator use and respirator monitoring and WISHA's position on prophylactic chelation therapy are also included in this section.

(F) Item (iii) discusses the toxic effects and clinical manifestations of lead poisoning and effects of lead intoxication on enzymatic pathways in heme synthesis. The adverse

effects on both male and female reproductive capacity and on the fetus are also discussed.

(G) Item (iv) outlines the recommended medical evaluation of the worker exposed to inorganic lead including details of the medical history, physical examination, and recommended laboratory tests, which are based on the toxic effects of lead as discussed in item (ii).

(H) Item (v) provides detailed information concerning the laboratory tests available for the monitoring of exposed workers. Included also is a discussion of the relative value of each test and the limitations and precautions which are necessary in the interpretation of the laboratory results.

(I) Airborne levels to be achieved without reliance on respirator protection through a combination of engineering and work practice or other administrative controls are illustrated in the following table:

Industry	Permissible Lead Level/Compliance Date		
	200µg/m ³	100µg/m ³	50µg/m ³
Primary Lead Production	1973	06/29/84	06/29/91
Secondary Lead Production	1973	06/29/84	06/29/91
Lead Acid Battery Manufacturing	1973	06/29/83	06/29/91
Automobile Mfg./Solder, Grinding	1973	N/A	03/08/97
Electronics, Gray Iron Foundries, Ink Mfg., Paints and Coatings Mfg., Can Mfg., Wallpaper Mfg., and Printing.	1973	N/A	06/29/91
Lead Chemical Mfg., Nonferrous Foundries, Leaded Steel Mfg., Battery Breaking in the Collection and Processing of Scrap (when not a part of secondary lead smelter)			
Secondary Copper Smelter, Brass and Bronze Ingot Production.	1973	N/A	N/A ^{1*}
All Other Industries	1973	N/A	09/08/92

* Feasibility of achieving the PEL by engineering and work practice controls for these industries has yet to be resolved in court, therefore no date has been scheduled.

(ii) Medical surveillance and monitoring requirements for workers exposed to inorganic lead.

(A) Under the occupational health standard for inorganic lead, a program of biological monitoring and medical surveillance is to be made available to all employees exposed to lead above the action level of 30 µg/m³ TWA for more than thirty days each year. This program consists of periodic blood sampling and medical evaluation to be performed on a schedule which is defined by previous laboratory results, worker complaints or concerns, and the clinical assessment of the examining physician.

(B) Under this program, the blood lead level of all employees who are exposed to lead above the action level of 30 µg/m³ is to be determined at least every six months. The frequency is increased to every two months for employees

whose last blood lead level was between 40 µg/100g whole blood and the level requiring employee medical removal to be discussed below. For employees who are removed from exposure to lead due to an elevated blood lead, a new blood lead level must be measured monthly. Zinc protoporphyrin (ZPP) measurement is required on each occasion that a blood lead level measurement is made.

(C) An annual medical examination and consultation performed under the guidelines discussed in item (iv) is to be made available to each employee for whom a blood test conducted at any time during the preceding twelve months indicated a blood lead level at or above 40 µg/100g. Also, an examination is to be given to all employees prior to their assignment to an area in which airborne lead concentrations reach or exceed the action level. In addition, a medical examination must be provided as soon as possible after notification by an employee that the employee has developed signs or symptoms commonly associated with lead intoxication, that the employee desires medical advice regarding lead exposure and the ability to procreate a healthy child, or that the employee has demonstrated difficulty in breathing during a respirator fitting test or during respirator use. An examination is also to be made available to each employee removed from exposure to lead due to a risk of sustaining material impairment to health, or otherwise limited or specially protected pursuant to medical recommendations.

(D) Results of biological monitoring or the recommendations of an examining physician may necessitate removal of an employee from further lead exposure pursuant to the standard's medical removal program (MRP). The object of the MRP program is to provide temporary medical removals to workers either with substantially elevated blood lead levels or otherwise at risk of sustaining material health impairment from continued substantial exposure to lead. The following guidelines which are summarized in Table 10 were created under the standard for the temporary removal of an exposed employee and ~~((his or her))~~ their subsequent return to work in an exposure area.

TABLE 10

EFFECTIVE DATE

	Sept. 6, 1980	Sept. 6, 1981	Sept. 6, 1982	Sept. 6, 1983	Sept. 6, 1984
A. Blood lead level requiring employee medical removal (level must be confirmed with second follow-up blood lead level within two weeks of first report).	>80 µg/100g.	>70 µg/100g.	>60 µg/100g.	>60 µg/100g.	>60 µg/100g or average of last three blood samples or all blood samples over previous 6 months (whichever is over a longer time period) is 50 µg/100g. or greater unless last sample is 40 µg/100g or less.
B. Frequency which employees exposed is action level of lead (30 µg/m ⁸ TWA) must have blood lead level checked. (ZPP is also required in each occasion that a blood test is obtained):					
1. Last blood lead level less than 40 µg/100g	Every 6 months.	Every 6 months.	Every 6 months.	Every 6 months.	Every 6 months.
2. Last blood lead level between 40 µg/100g and level requiring medical removal (see A above)	Every 2 months.	Every 2 months.	Every 2 months.	Every 2 months.	Every 2 months.
3. Employees removed from exposure to lead because of an elevated blood lead level	Every 1 month.	Every 1 month.	Every 1 month.	Every 1 month.	Every 1 month.
C. Permissible airborne exposure limit for workers removed from work due to an elevated blood lead level (without regard to respirator protection).	100 µg/m ³ 8 hr TWA	50 µg/m ³ 8 hr TWA	30 µg/m ³ 8 hr TWA	30 µg/m ³ 8 hr TWA	30 µg/m ³ 8 hr TWA
D. Blood lead level confirmed with a second blood analysis, at which employee may return to work. Permissible exposure without regard to respirator protection is listed by industry in Table 1.	60 µg/100g	50 µg/100g	40 µg/100g	40 µg/100g	40 µg/100g

Note: Where medical opinion indicates that an employee is at risk of material impairment from exposure to lead, the physician can remove an employee from exposure exceeding the action level (or less) or recommend special protective measures as deemed appropriate and necessary. Medical monitoring during the medical removal period can be more stringent than noted in the table above if the physician so specifies. Return to work or removal of limitations and special protections is permitted when the physician indicates that the worker is no longer at risk of material impairment.

(E) Under the standard's ultimate worker removal criteria, a worker is to be removed from any work having any eight-hour TWA exposure to lead of $30 \mu\text{g}/\text{m}^3$ or more whenever either of the following circumstances apply. (I) a blood lead level of $60 \mu\text{g}/100\text{g}$ or greater is obtained and confirmed by a second follow-up blood lead level performed within two weeks after the employer receives the results of the first blood sample test, or (II) the average of the previous three blood lead determinations or the average of all blood lead determinations conducted during the previous six months, whichever encompasses the longest time period, equals or exceeds $50 \mu\text{g}/100\text{g}$, unless the last blood sample indicates a blood lead level at or below $40 \mu\text{g}/100\text{g}$, in which case the employee need not be removed. Medical removal is to continue until two consecutive blood lead levels are $40 \mu\text{g}/100\text{g}$ or less.

(F) During the first two years that the ultimate removal criteria are being phased in, the return criteria have been set to ~~((assure))~~ ensure that a worker's blood lead level has substantially declined during the period of removal. From March 1, 1979, to March 1, 1980, the blood lead level requiring employee medical removal is $80 \mu\text{g}/100\text{g}$. Workers found to have a confirmed blood lead at this level or greater need only be removed from work having a daily eight hour TWA exposure to lead at or above $100 \mu\text{g}/\text{m}^3$. Workers so removed are to be returned to work when their blood lead levels are at or below $60 \mu\text{g}/100\text{g}$ of whole blood. From March 1, 1980, to March 1, 1981, the blood lead level requiring medical removal is $70 \mu\text{g}/100\text{g}$. During this period workers need only be removed from jobs having a daily eight hour TWA exposure to lead at or above $50 \mu\text{g}/\text{m}^3$ and are to be returned to work when a level of $50 \mu\text{g}/100\text{g}$ is achieved. Beginning March 1, 1981, return depends on the worker's blood lead level declining to $40 \mu\text{g}/100\text{g}$ of whole blood.

(G) As part of the standard, the employer is required to notify in writing each employee whose whole blood lead level exceeds $40 \mu\text{g}/100\text{g}$. In addition, each such employee is to be informed that the standard requires medical removal with MRP benefits, discussed below, when an employee's blood lead level exceeds the above defined limits.

(H) In addition to the above blood lead level criteria, temporary worker removal may also take place as a result of medical determinations and recommendations. Written medical opinions must be prepared after each examination pursuant to the standard. If the examining physician includes medical finding, determination or opinion that the employee has a medical condition which places the employee at increased risk of material health impairment from exposure to lead, then the employee must be removed from exposure to lead at or above the action level. Alternatively, if the examining physician recommends special protective measures for an

employee (e.g., use of a powered air purifying respirator) or recommends limitations on an employee's exposure to lead, then the employer must implement these recommendations. Recommendations may be more stringent than the specific provisions of the standard. The examining physician, therefore, is given broad flexibility to tailor special protective procedures to the needs of individual employees. This flexibility extends to the evaluation and management of pregnant workers and male and female workers who are planning to conceive children. Based on the history, physical examination, and laboratory studies, the physician might recommend special protective measures or medical removal for an employee who is pregnant or who is planning to conceive a child when, in the physician's judgment, continued exposure to lead at the current job would pose a significant risk. The return of the employee to his or her former job status, or the removal of special protections or limitations, depends upon the examining physician determining that the employee is no longer at increased risk of material impairment or that the special measures are no longer needed.

(I) During the period of any form of special protection or removal, the employer must maintain the worker's earnings, seniority, and other employment rights and benefits (as though the worker has not been removed) for a period of up to eighteen months. This economic protection will maximize meaningful worker participation in the medical surveillance program, and is appropriate as part of the employer's overall obligation to provide a safe and healthful work place. The provisions of MRP benefits during the employee's removal period may, however, be conditioned upon participation in medical surveillance.

(J) On rare occasions, an employee's blood lead level may not acceptably decline within eighteen months of removal. This situation will arise only in unusual circumstances, thus the standard relies on an individual medical examination to determine how to protect such an employee. This medical determination is to be based on both laboratory values, including lead levels, zinc protoporphyrin levels, blood counts, and other tests felt to be warranted, as well as the physician's judgment that any symptoms or findings on physical examination are a result of lead toxicity. The medical determination may be that the employee is incapable of ever safely returning to ~~((his or her))~~ their former job status. The medical determination may provide additional removal time past eighteen months for some employees or specify special protective measures to be implemented.

(K) The lead standard provides for a multiple physician review in cases where the employee wishes a second opinion concerning potential lead poisoning or toxicity. If an employee wishes a second opinion, ~~((he or she))~~ they can make an appointment with a physician of ~~((his or her))~~ their choice. This second physician will review the findings, recommendations or determinations of the first physician and conduct any examinations, consultations or tests deemed necessary in an attempt to make a final medical determination. If the first and second physicians do not agree in their assessment they must try to resolve their differences. If they cannot reach an agreement then they must designate a third physician to resolve the dispute.

(L) The employer must provide examining and consulting physicians with the following specific information: A copy of the lead regulations and all appendices, a description of the employee's duties as related to exposure, the exposure level to lead and any other toxic substances (if applicable), a description of personal protective equipment used, blood lead levels, and all prior written medical opinions regarding the employee in the employer's possession or control. The employer must also obtain from the physician and provide the employee with a written medical opinion containing blood lead levels, the physician's opinion as to whether the employee is at risk of material impairment to health, any recommended protective measures for the employee if further exposure is permitted, as well as any recommended limitations upon an employee's use of respirators.

(M) Employers must instruct each physician not to reveal to the employer in writing or in any other way (~~(his or her)~~) their findings, laboratory results, or diagnoses which are felt to be unrelated to occupational lead exposure. They must also instruct each physician to advise the employee of any occupationally or nonoccupationally related medical condition requiring further treatment or evaluation.

(N) The standard provides for the use of respirators when engineering and other primary controls have not been fully implemented. However, the use of respirator protection (~~(shall)~~) must not be used in lieu of temporary medical removal due to elevated blood lead levels or findings that an employee is at risk of material health impairment. This is based on the numerous inadequacies of respirators including skin rash where the facepiece makes contact with the skin, unacceptable stress to breathing in some workers with underlying cardiopulmonary impairment, difficulty in providing adequate fit, the tendency for respirators to create additional hazards by interfering with vision, hearing, and mobility, and the difficulties of (~~(assuring)~~) ensuring the maximum effectiveness of a complicated work practice program involving respirators. Respirators do, however, serve a useful function where engineering and work practice are inadequate by providing interim or short-term protection, provided they are properly selected for the environment in which the employee will be working, properly fitted to the employee, maintained and cleaned periodically, and worn by the employee when required.

(O) In its final standard on occupational exposure to inorganic lead, WISHA has prohibited prophylactic chelation. Diagnostic and therapeutic chelation are permitted only under the supervision of a licensed physician with appropriate medical monitoring in an acceptable clinical setting. The decision to initiate chelation therapy must be made on an individual basis and take into account the severity of symptoms felt to be a result of lead toxicity along with blood lead levels, ZPP levels and other laboratory tests as appropriate. EDTA and penicillamine, which are the primary chelating agents used in the therapy of occupational lead poisoning, have significant potential side effects and their use must be justified on the basis of expected benefits to the worker.

(P) Unless frank and severe symptoms are present, therapeutic chelation is not recommended given the opportunity to remove a worker from exposure and allow the body to naturally excrete accumulated lead. As a diagnostic aid, the che-

lation mobilization test using CA-EDTA has limited applicability. According to some investigators, the tests can differentiate between lead-induced and other nephropathies. The test may also provide an estimation of the mobile fraction of the total body lead burden.

(Q) Employers are required to (~~(assure)~~) ensure that accurate records are maintained on exposure monitoring, medical surveillance, and medical removal for each employee. Exposure monitoring and medical surveillance records must be kept for forty years or the duration of employment plus twenty years, whichever is longer, while medical removal records must be maintained for the duration of employment. All records required under the standard must be made available upon request to representatives of the director of the department of labor and industries. Employers must also make environmental and biological monitoring and medical removal records available to affected employees and to former employees or their authorized employee representatives. Employees or their specifically designated representatives have access to their entire medical surveillance records.

(R) In addition, the standard requires that the employer inform all workers exposed to lead at or above the action level of the provisions of the standard and all its appendices, the purpose and description of medical surveillance and provisions for medical removal protection if temporary removal is required. An understanding of the potential health effects of lead exposure by all exposed employees along with full understanding of their rights under the lead standard is essential for an effective monitoring program.

(iii) Adverse health effects of inorganic lead.

(A) Although the toxicity of lead has been known for 2,000 years, the knowledge of the complex relationship between lead exposure and human response is still being refined. Significant research into the toxic properties of lead continues throughout the world, and it should be anticipated that our understanding of thresholds of effects and margins of safety will be improved in future years. The provisions of the lead standard are founded on two prime medical judgments; first, the prevention of adverse health effects from exposure to lead throughout a working lifetime requires that worker blood lead levels be maintained at or below 40 µg/100g, and second, the blood lead levels of workers, male or female, who intend to parent in the near future should be maintained below 30 µg/100g to minimize adverse reproduction health effects to the parent and developing fetus. The adverse effects of lead on reproduction are being actively researched and WISHA encourages the physician to remain abreast of recent developments in the area to best advise pregnant workers or workers planning to conceive children.

(B) The spectrum of health effects caused by lead exposure can be subdivided into five developmental states; normal, physiological changes of uncertain significance, pathophysiological changes, overt symptoms (morbidity), and mortality. Within this process there are no sharp distinctions, but rather a continuum of effects. Boundaries between categories overlap due to the wide variation of individual responses and exposures in the working population. WISHA's development of the lead standard focused on pathophysiological changes as well as later stages of disease.

(I) Heme synthesis inhibition.

a) The earliest demonstrated effect of lead involves its ability to inhibit at least two enzymes of the heme synthesis pathway at very low blood levels. Inhibition of delta aminolevulinic acid dehydrase (ALA-D) which catalyzes the conversion of delta-aminolevulinic acid (ALA) to protoporphyrin is observed at a blood lead level below 20 μ g/100g whole blood. At a blood lead level of 40 μ g/100g, more than twenty percent of the population would have seventy percent inhibition of ALA-D. There is an exponential increase in ALA excretion at blood lead levels greater than 40 μ g/100g.

b) Another enzyme, ferrochelatase, is also inhibited at low blood lead levels. Inhibition of ferrochelatase leads to increased free erythrocyte protoporphyrin (FEP) in the blood which can then bind to zinc to yield zinc protoporphyrin. At a blood lead level of 50 μ g/100g or greater, nearly one hundred percent of the population will have an increase FEP. There is also an exponential relationship between blood lead levels greater than 40 μ g/100g and the associated ZPP level, which has led to the development of the ZPP screening test for lead exposure.

c) While the significance of these effects is subject to debate, it is WISHA's position that these enzyme disturbances are early stages of a disease process which may eventually result in the clinical symptoms of lead poisoning. Whether or not the effects do progress to the later stages of clinical disease, disruption of these enzyme processes over a working lifetime is considered to be a material impairment of health.

d) One of the eventual results of lead-induced inhibition of enzymes in the heme synthesis pathway is anemia which can be asymptomatic if mild but associated with a wide array of symptoms including dizziness, fatigue, and tachycardia when more severe. Studies have indicated that lead levels as low as 50 μ g/100g can be associated with a definite decreased hemoglobin, although most cases of lead-induced anemia, as well as shortened red-cell survival times, occur at lead levels exceeding 80 μ g/100g. Inhibited hemoglobin synthesis is more common in chronic cases whereas shortened erythrocyte life span is more common in acute cases.

e) In lead-induced anemias, there is usually a reticulocytosis along with the presence of basophilic stippling, and ringed sideroblasts, although none of the above are pathognomonic for lead-induced anemia.

(II) Neurological effects.

a) Inorganic lead had been found to have toxic effects on both the central and peripheral nervous systems. The earliest stage of lead-induced central nervous system effects first manifest themselves in the form of behavioral disturbances and central nervous system symptoms including irritability, restlessness, insomnia and other sleep disturbances, fatigue, vertigo, headache, poor memory, tremor, depression, and apathy. With more severe exposure, symptoms can progress to drowsiness, stupor, hallucinations, delirium, convulsions and coma.

b) The most severe and acute form of lead poisoning which usually follows ingestion or inhalation of large amounts of lead is acute encephalopathy which may arise precipitously with the onset of intractable seizures, coma, cardiorespiratory arrest, and death within 48 hours.

c) While there is disagreement about what exposure levels are needed to produce the earliest symptoms, most experts agree that symptoms definitely can occur at blood lead levels of 60 μ g/100g whole blood and therefore recommend a 40 μ g/100g maximum. The central nervous system effects frequently are not reversible following discontinued exposure or chelation therapy and when improvement does occur, it is almost always only partial.

d) The peripheral neuropathy resulting from lead exposure characteristically involves only motor function with minimal sensory damage and has a marked predilection for the extensor muscles of the most active extremity. The peripheral neuropathy can occur with varying degrees of severity. The earliest and mildest form which can be detected in workers with blood lead levels as low as 50 μ g/100g is manifested by slowing or motor nerve conduction velocity often without clinical symptoms. With progression of the neuropathy there is development of painless extensor muscle weakness usually involving the extensor muscles of the fingers and hand in the most active upper extremity, followed in severe cases by wrist drop, much less commonly, foot drop.

e) In addition to slowing of nerve conduction, electromyographical studies in patients with blood lead levels greater than 50 μ g/100g have demonstrated a decrease in the number of acting motor unit potentials, an increase in the duration of motor unit potentials, and spontaneous pathological activity including fibrillations and fasciculation. Whether these effects occur at levels of 40 μ g/100g is undetermined.

f) While the peripheral neuropathies can occasionally be reversed with therapy, again such recovery is not (~~assured~~) ensured particularly in the more severe neuropathies and often improvement is only partial. The lack of reversibility is felt to be due in part to segmental demyelination.

(III) Gastrointestinal. Lead may also effect the gastrointestinal system producing abdominal colic or diffuse abdominal pain, constipation, obstipation, diarrhea, anorexia, nausea and vomiting. Lead colic rarely develops at blood lead levels below 80 μ g/100g.

(IV) Renal.

a) Renal toxicity represents one of the most serious health effects of lead poisoning. In the early stages of disease nuclear inclusion bodies can frequently be identified in proximal renal tubular cells. Renal functions remain normal and the changes in this stage are probably reversible. With more advanced disease there is progressive interstitial fibrosis and impaired renal function. Eventually extensive interstitial fibrosis ensues with sclerotic glomeruli and dilated and atrophied proximal tubules; all represent end stage kidney disease. Azotemia can be progressive, eventually resulting in frank uremia necessitating dialysis. There is occasionally associated hypertension and hyperuricemia with or without gout.

b) Early kidney disease is difficult to detect. The urinalysis is normal in early lead nephropathy and the blood urea nitrogen and serum creatinine increase only when two-thirds of kidney function is lost. Measurement of creatinine clearance can often detect earlier disease as can other methods of measurement of glomerular filtration rate. An abnormal Ca-EDTA mobilization test has been used to differentiate between lead-induced and other nephropathies, but this pro-

cedure is not widely accepted. A form of Fanconi syndrome with aminoaciduria, glycosuria, and hyperphosphaturia indicating severe injury to the proximal renal tubules is occasionally seen in children.

(V) Reproductive effects.

a) Exposure to lead can have serious effects on reproductive function in both males and females. In male workers exposed to lead there can be a decrease in sexual drive, impotence, decreased ability to produce healthy sperm, and sterility. Malformed sperm (teratospermia), decreased number of sperm (hypospermia), and sperm with decreased motility (asthenospermia) can occur. Teratospermia has been noted at mean blood lead levels of 53 $\mu\text{g}/100\text{g}$ and hypospermia and asthenospermia at 41 $\mu\text{g}/100\text{g}$. Furthermore, there appears to be a dose-response relationship for teratospermia in lead exposed workers.

b) Women exposed to lead may experience menstrual disturbances including dysmenorrhea, menorrhagia and amenorrhea. Following exposure to lead, women have a higher frequency of sterility, premature births, spontaneous miscarriages, and stillbirths.

c) Germ cells can be affected by lead and cause genetic damage in the egg or sperm cells before conception and result in failure to implant, miscarriage, stillbirth, or birth defects.

d) Infants of mothers with lead poisoning have a higher mortality during the first year and suffer from lowered birth weights, slower growth, and nervous system disorders.

e) Lead can pass through the placental barrier and lead levels in the mother's blood are comparable to concentrations of lead in the umbilical cord at birth. Transplacental passage becomes detectable at twelve-fourteen weeks of gestation and increases until birth.

f) There is little direct data on damage to the fetus from exposure to lead but it is generally assumed that the fetus and newborn would be at least as susceptible to neurological damage as young children. Blood lead levels of 50-60 $\mu\text{g}/100\text{g}$ in children can cause significant neurobehavioral impairments, and there is evidence of hyperactivity at blood levels as low as 25 $\mu\text{g}/100\text{g}$. Given the overall body of literature concerning the adverse health effects of lead in children, WISHA feels that the blood lead level in children should be maintained below 30 $\mu\text{g}/100\text{g}$ with a population mean of 15 $\mu\text{g}/100\text{g}$. Blood lead levels in the fetus and newborn likewise should not exceed 30 $\mu\text{g}/100\text{g}$.

g) Because of lead's ability to pass through the placental barrier and also because of the demonstrated adverse effects of lead on reproductive function in both males and females as well as the risk of genetic damage of lead on both the ovum and sperm, WISHA recommends a 30 $\mu\text{g}/100\text{g}$ maximum permissible blood lead level in both males and females who wish to bear children.

(VI) Other toxic effects.

a) Debate and research continue on the effects of lead on the human body. Hypertension has frequently been noted in occupationally exposed individuals although it is difficult to assess whether this is due to lead's adverse effects on the kidneys or if some other mechanism is involved.

b) Vascular and electrocardiographic changes have been detected but have not been well characterized. Lead is thought to impair thyroid function and interfere with the pitu-

itary-adrenal axis, but again these effects have not been well defined.

(iv) Medical evaluation.

(A) The most important principle in evaluating a worker for any occupational disease including lead poisoning is a high index of suspicion on the part of the examining physician. As discussed in Section (ii), lead can affect numerous organ systems and produce a wide array of signs and symptoms, most of which are nonspecific and subtle in nature at least in the early stages of disease. Unless serious concern for lead toxicity is present, many of the early clues to diagnosis may easily be overlooked.

(B) The crucial initial step in the medical evaluation is recognizing that a worker's employment can result in exposure to lead. The worker will frequently be able to define exposures to lead and lead-containing materials but often will not volunteer this information unless specifically asked. In other situations the worker may not know of any exposures to lead but the suspicion might be raised on the part of the physician because of the industry or occupation of the worker. Potential occupational exposure to lead and its compounds occur in at least one twenty occupations, including lead smelting, the manufacture of lead storage batteries, the manufacture of lead pigments and products containing pigments, solder manufacture, shipbuilding and ship repair, auto manufacturing, construction, and painting.

(C) Once the possibility for lead exposure is raised, the focus can then be directed toward eliciting information from the medical history, physical exam, and finally from laboratory data to evaluate the worker for potential lead toxicity.

(D) A complete and detailed work history is important in the initial evaluation. A listing of all previous employment with information on work processes, exposure to fumes or dust, known exposures to lead or other toxic substances, respiratory protection used, and previous medical surveillance should all be included in the worker's record. Where exposure to lead is suspected, information concerning on-the-job personal hygiene, smoking or eating habits in work areas, laundry procedures, and use of any protective clothing or respiratory protection equipment should be noted. A complete work history is essential in the medical evaluation of a worker with suspected lead toxicity, especially when long-term effects such as neurotoxicity and nephrotoxicity are considered.

(E) The medical history is also of fundamental importance and should include a listing of all past and current medical conditions, current medications including proprietary drug intake, previous surgeries and hospitalizations, allergies, smoking history, alcohol consumption, and also nonoccupational lead exposures such as hobbies (hunting, riflery). Also known childhood exposures should be elicited. Any previous history of hematological, neurological, gastrointestinal, renal, psychological, gynecological, genetic, or reproductive problems should be specifically noted.

(F) A careful and complete review of systems must be performed to assess both recognized complaints and subtle or slowly acquired symptoms which the worker might not appreciate as being significant. The review of symptoms should include the following:

General	- Weight loss, fatigue, decreased appetite.
Head, Eyes, Ears, Nose, Throat (HEENT)	- Headaches, visual disturbance or decreased visual acuity, hearing deficits or tinnitus, pigmentation of the oral mucosa, or metallic taste in mouth.
Cardiopulmonary	- Shortness of breath, cough, chest pains, palpitations, or orthopnea.
Gastrointestinal	- Nausea, vomiting, heartburn, abdominal pain, constipation or diarrhea.
Neurologic	- Irritability, insomnia, weakness (fatigue), dizziness, loss of memory, confusion, hallucinations, incoordination, ataxia, decreased strength in hands or feet, disturbance in gait, difficulty in climbing stairs, or seizures.
Hematologic	- Pallor, easy fatigability, abnormal blood loss, melena.
Reproductive (male or female and spouse where relevant)	- History of infertility, impotence, loss of libido, abnormal menstrual periods, history of miscarriages, stillbirths, or children with birth defects.
Musculoskeletal	- Muscle and joint pains.

(G) The physical examination should emphasize the neurological, gastrointestinal, and cardiovascular systems. The worker's weight and blood pressure should be recorded and the oral mucosa checked for pigmentation characteristic of a possible Burtonian or lead line on the gingiva. It should be noted, however, that the lead line may not be present even in severe lead poisoning if good oral hygiene is practiced.

(H) The presence of pallor on skin examination may indicate an anemia, which if severe might also be associated with a tachycardia. If an anemia is suspected, an active search for blood loss should be undertaken including potential blood loss through the gastrointestinal tract.

(I) A complete neurological examination should include an adequate mental status evaluation including a search for behavioral and psychological disturbances, memory testing, evaluation for irritability, insomnia, hallucinations, and mental clouding. Gait and coordination should be examined along with close observation for tremor. A detailed evaluation of peripheral nerve function including careful sensory and motor function testing is warranted. Strength testing particularly of extensor muscle groups of all extremities is of fundamental importance.

(J) Cranial nerve evaluation should also be included in the routine examination.

(K) The abdominal examination should include auscultation for bowel sounds and abnormal bruits and palpation for organomegaly, masses, and diffuse abdominal tenderness.

(L) Cardiovascular examination should evaluate possible early signs of congestive heart failure. Pulmonary status should be addressed particularly if respirator protection is contemplated.

(M) As part of the medical evaluation, the lead standard requires the following laboratory studies.

(I) Blood lead level.

(II) Hemoglobin and hematocrit determinations, red cell indices, and examination of the peripheral blood smear to evaluate red blood cell morphology.

(III) Blood urea nitrogen.

(IV) Serum creatinine.

(V) Routine urinalysis with microscopic examination.

(VI) A zinc protoporphyrin level.

(N) In addition to the above, the physician is authorized to order any further laboratory or other tests which (~~he or she deems~~) they deem necessary in accordance with sound medical practice. The evaluation must also include pregnancy testing or laboratory evaluation of male fertility if requested by the employee.

(O) Additional tests which are probably not warranted on a routine basis but may be appropriate when blood lead and ZPP levels are equivocal include delta aminolevulinic acid and coproporphyrin concentrations in the urine, and dark-field illumination for detection of basophilic stippling in red blood cells.

(P) If an anemia is detected further studies including a careful examination of the peripheral smear, reticulocyte count, stool for occult blood, serum iron, total iron binding capacity, bilirubin, and, if appropriate vitamin B12 and folate may be of value in attempting to identify the cause of the anemia.

(Q) If a peripheral neuropathy is suspected, nerve conduction studies are warranted both for diagnosis and as a basis to monitor any therapy.

(R) If renal disease is questioned, a twenty-four-hour urine collection for creatinine clearance, protein, and electrolytes may be indicated. Elevated uric acid levels may result from lead-induced renal disease and a serum uric acid level might be performed.

(S) An electrocardiogram and chest X-ray may be obtained as deemed appropriate.

(T) Sophisticated and highly specialized testing should not be done routinely and where indicated should be under the direction of a specialist.

(v) Laboratory evaluation.

(A) The blood level at present remains the single most important test to monitor lead exposure and is the test used in the medical surveillance program under the lead standard to guide employee medical removal. The ZPP has several advantages over the blood lead level. Because of its relatively recent development and the lack of extensive data concerning its interpretation, the ZPP currently remains an ancillary test.

(B) This section will discuss the blood lead level and ZPP in detail and will outline their relative advantages and disadvantages. Other blood tests currently available to evaluate lead exposure will also be reviewed.

(C) The blood lead level is a good index of current or recent lead absorption when there is no anemia present and when the worker has not taken any chelating agents. However, blood lead levels along with urinary lead levels do not necessarily indicate the total body burden of lead and are not adequate measures of past exposure. One reason for this is that lead has a high affinity for bone and up to ninety percent of the body's total lead is deposited there. A very important component of the total lead body burden is lead in soft tissue (liver, kidneys, and brain). This fraction of the lead body burden, the biologically active lead, is not entirely reflected by blood lead levels since it is a function of the dynamics of lead absorption, distribution, deposition in bone and excretion. Following discontinuation of exposure to lead, the excess body burden is only slowly mobilized from bone and other relatively stable stores and excreted. Consequently, a high blood lead level may only represent recent heavy exposure to lead without a significant total body excess and likewise a low blood lead level does not exclude an elevated total body burden of lead.

(D) Also due to its correlation with recent exposures, the blood lead level may vary considerably over short time intervals.

(E) To minimize laboratory error and erroneous results due to contamination, blood specimens must be carefully collected after thorough cleaning of the skin with appropriate methods using lead-free containers and analyzed by a reliable laboratory. Under the standard, samples must be analyzed in laboratories which are approved by the Center for Disease Control (CDC) or which have received satisfactory grades in proficiency testing by the CDC in the previous year. Analysis is to be made using atomic absorption spectrophotometry anodic stripping; voltammetry or any method which meets the accuracy requirements set forth by the standard.

(F) The determination of lead in urine is generally considered a less reliable monitoring technique than analysis of whole blood primarily due to individual variability in urinary excretion capacity as well as the technical difficulty of obtaining accurate twenty-four hour urine collections. In addition, workers with renal insufficiency, whether due to lead or some other cause, may have decreased lead clearance and consequently urine lead levels may underestimate the true lead burden. Therefore, urine lead levels should not be used as a routine test.

(G) The zinc protoporphyrin test, unlike the blood lead determination, measures an adverse metabolic effect of lead and as such is a better indicator of lead toxicity than the level of blood lead itself. The level of ZPP reflects lead absorption over the preceding three to four months, and therefore is a better indicator of lead body burden. The ZPP requires more time than the blood lead to read significantly elevated levels; the return to normal after discontinuing lead exposure is also slower. Furthermore, the ZPP test is simpler, faster, and less expensive to perform and no contamination is possible. Many investigators believe it is the most reliable means of monitoring chronic lead absorption.

(H) Zinc protoporphyrin results from the inhibition of the enzyme ferrochelatase which catalyzes the insertion of an iron molecule into the protoporphyrin molecule, which then becomes heme. If iron is not inserted into the molecule then

zinc, having a greater affinity for protoporphyrin, takes place in the iron, forming ZPP.

(I) An elevation in the level of circulating ZPP may occur at blood lead levels as low as 20-30 $\mu\text{g}/100\text{g}$ in some workers. Once the blood lead level has reached 40 $\mu\text{g}/100\text{g}$ there is more marked rise in the ZPP value from its normal range of less than 100 $\mu\text{g}/100\text{ml}$. Increases in blood lead levels beyond 40 $\mu\text{g}/100\text{g}$ are associated with exponential increases in ZPP.

(J) Whereas blood lead levels fluctuate over short time spans, ZPP levels remain relatively stable. ZPP is measured directly in red blood cells and is present for the cell's entire one hundred twenty day lifespan. Therefore, the ZPP level in blood reflects the average ZPP production over the previous three to four months and consequently the average lead exposure during that time interval.

(K) It is recommended that a hematocrit be determined whenever a confirmed ZPP of 50 $\mu\text{g}/100\text{ml}$ whole blood is obtained to rule out a significant underlying anemia. If the ZPP is in excess of 100 $\mu\text{g}/100\text{ml}$ and not associated with abnormal elevations in blood lead levels, the laboratory should be checked to be sure the blood leads were determined using atomic absorption spectrophotometry, anodic stripping voltammetry or any method which meets the accuracy requirements set forth by the standard, by a CDC approved laboratory which is experienced in lead level determinations. Repeat periodic blood lead studies should be obtained in all individuals with elevated ZPP levels to be certain that an associated elevated blood lead level has not been missed due to transient fluctuations in blood leads.

(L) ZPP has characteristic fluorescence spectrum with a peak at 594nm which is detectable with a hematofluorimeter. The hematofluorimeter is accurate and portable and can provide on-site, instantaneous results for workers who can be frequently tested via a finger prick.

(M) However, careful attention must be given to calibration and quality control procedures. Limited data on blood lead -ZPP correlations and the ZPP levels which are associated with the adverse health effects discussed in item (ii) are the major limitations of the test. Also it is difficult to correlate ZPP levels with environmental exposure and there is some variation of response with age and sex. Nevertheless, the ZPP promises to be an important diagnostic test for the early detection of lead toxicity and its value will increase as more data is collected regarding its relationship to other manifestations of lead poisoning.

(N) Levels of delta-aminolevulinic acid (ALA) in the urine are also used as a measure of lead exposure. Increasing concentrations of ALA are believed to result from the inhibition of the enzyme delta-aminolevulinic acid dehydrase (ALA-D). Although the test is relatively easy to perform, inexpensive, and rapid, the disadvantages include variability in results, the necessity to collect a complete twenty-four hour urine sample which has a specific gravity greater than 1.010, and also the fact that ALA decomposes in the presence of light.

(O) The pattern of porphyrin excretion in the urine can also be helpful in identifying lead intoxication. With lead poisoning, the urine concentrations of coproporphyrins I and II, porphobilinogen and uroporphyrin I rise. The most important

increase, however, is that of coproporphyrin III; levels may exceed 5,000 µg/l in the urine in lead poisoned individuals, but its correlation with blood lead levels and ZPP are not as good as those of ALA. Increases in urinary porphyrins are not diagnostic of lead toxicity and may be seen in porphyria, some liver diseases, and in patients with high reticulocyte counts.

(vi) Summary.

(A) The WISHA standard for inorganic lead places significant emphasis on the medical surveillance of all workers exposed to levels of inorganic lead above the action level of 30 µg/m³ TWA. The physician has a fundamental role in this surveillance program, and in the operation of the medical removal protection program.

(B) Even with adequate worker education on the adverse health effects of lead and appropriate training in work practices, personal hygiene and other control measures, the physician has a primary responsibility for evaluating potential lead toxicity in the worker. It is only through a careful and detailed medical and work history, a complete physical examination and appropriate laboratory testing that an accurate assessment can be made. Many of the adverse health effects of lead toxicity are either irreversible or only partially reversible and therefore early detection of disease is very important.

(C) This document outlines the medical monitoring program as defined by the occupational safety and health standard for inorganic lead. It reviews the adverse health effects of lead poisoning and describes the important elements of the history and physical examinations as they relate to these adverse effects.

(D) It is hoped that this review and discussion will give the physician a better understanding of the WISHA standard with the ultimate goal of protecting the health and well-being of the worker exposed to lead under his or her care.

(d) Appendix D. Recommendations to employers concerning high-risk tasks (nonmandatory).

The department advises employers that the following tasks have a high risk for lead overexposure (this list is not complete; other tasks also can result in lead over-exposure):

- Any open flame operation involving lead-containing solder in a manner producing molten solder, including the manufacture or repair of motor vehicle radiators;
- Sanding, cutting or grinding of lead-containing solder;
- Breaking, recycling or manufacture of lead-containing batteries;
- Casting objects using lead, brass, or lead-containing alloys;
- Where lead-containing coatings or paints are present:
 - abrasive blasting
 - welding
 - cutting
 - torch burning
 - manual demolition of structures
 - manual scraping
 - manual sanding
 - heat gun applications
 - power tool cleaning

- rivet busting
- clean-up activities where dry expendable abrasives are used
- abrasive blasting enclosure movement and removal;
- Spray-painting with lead-containing paint;
- Using lead-containing mortar;
- Lead burning;
- Operation or cleaning of shooting facilities where lead bullets are used;
- Formulation or processing of lead-containing pigments or paints;
- Cutting, burning, or melting of lead-containing materials.

The department recommends that annual blood lead testing be offered to all employees potentially overexposed to lead, including those performing the tasks listed above, regardless of air lead levels. Research has shown that air lead levels often do not accurately predict workers' lead overexposure. The blood lead testing will provide the most information if performed during a period of peak lead exposure.

Employers should be aware that the United States Public Health Service has set a goal of eliminating occupational exposures which result in whole blood lead levels of 25 µg/dl or greater. This goal should guide whether employees' blood lead levels indicate lead overexposure.

If blood lead levels are elevated in an employee performing a task associated with lead overexposure, employers should assess the maintenance and effectiveness of exposure controls, hygiene facilities, respiratory protection program, the employee's work practices and personal hygiene, and the employee's respirator use, if any. If a deficiency exists in any of these areas, the employer should correct the problem.

AMENDATORY SECTION (Amending WSR 14-07-086, filed 3/18/14, effective 5/1/14)

WAC 296-62-07540 Formaldehyde.

Note: The requirements in this chapter apply only to agriculture. The general industry requirements relating to formaldehyde have been moved to chapter 296-856 WAC, Formaldehyde.

(1) Scope and application. This standard applies to all occupational exposures to formaldehyde, i.e., from formaldehyde gas, its solutions, and materials that release formaldehyde.

(2) Definitions. For purposes of this standard, the following definitions shall apply:

(a) (~~("Action level" means)~~) **Action level.** A concentration of 0.5 part formaldehyde per million parts of air (0.5 ppm) calculated as an 8-hour time-weighted average (TWA) concentration.

(b) (~~("Approved" means)~~) **Approved.** Approved by the director of the department of labor and industries or (~~(his/her)~~) their authorized representative: Provided, however, That should a provision of this chapter state that approval by an agency or organization other than the department of labor and industries is required, such as Underwriters' Laboratories or the Mine Safety and Health Administra-

tion and the National Institute for Occupational Safety and Health, the provision of WAC 296-800-370 shall apply.

(c) (~~"Authorized person" means~~) **Authorized person.** Any person required by work duties to be present in regulated work areas, or authorized to do so by the employer, by this section of the standard, or by the WISHA Act.

(d) (~~"Director" means~~) **Director.** The director of the department of labor and industries, or (~~his/her~~) their designated representative.

(e) (~~"Emergency" is~~) **Emergency.** Any occurrence, such as but not limited to equipment failure, rupture of containers, or failure of control equipment that results in an uncontrolled release of a significant amount of formaldehyde.

(f) (~~"Employee exposure" means~~) **Employee exposure.** The exposure to airborne formaldehyde which would occur without corrections for protection provided by any respirator that is in use.

(g) (~~"Formaldehyde" means~~) **Formaldehyde.** The chemical substance, HCHO, Chemical Abstracts Service Registry No. 50-00-0.

(3) Permissible exposure limit (PEL).

(a) TWA: The employer (~~shall assure~~) must ensure that no employee is exposed to an airborne concentration of formaldehyde which exceeds 0.75 part formaldehyde per million parts of air as an 8-hour TWA.

(b) Short term exposure limit (STEL): The employer (~~shall assure~~) must ensure that no employee is exposed to an airborne concentration of formaldehyde which exceeds two parts formaldehyde per million parts of air (2 ppm) as a fifteen-minute STEL.

(4) Exposure monitoring.

(a) General.

(i) Each employer who has a workplace covered by this standard (~~shall~~) must monitor employees to determine their exposure to formaldehyde.

(ii) Exception. Where the employer documents, using objective data, that the presence of formaldehyde or formaldehyde-releasing products in the workplace cannot result in airborne concentrations of formaldehyde that would cause any employee to be exposed at or above the action level or the STEL under foreseeable conditions of use, the employer will not be required to measure employee exposure to formaldehyde.

(iii) When an employee's exposure is determined from representative sampling, the measurements used (~~shall~~) must be representative of the employee's full shift or short-term exposure to formaldehyde, as appropriate.

(iv) Representative samples for each job classification in each work area (~~shall~~) must be taken for each shift unless the employer can document with objective data that exposure levels for a given job classification are equivalent for different workshifts.

(b) Initial monitoring. The employer (~~shall~~) must identify all employees who may be exposed at or above the action level or at or above the STEL and accurately determine the exposure of each employee so identified.

(i) Unless the employer chooses to measure the exposure of each employee potentially exposed to formaldehyde, the employer (~~shall~~) must develop a representative sampling

strategy and measure sufficient exposures within each job classification for each workshift to correctly characterize and not underestimate the exposure of any employee within each exposure group.

(ii) The initial monitoring process (~~shall~~) must be repeated each time there is a change in production, equipment, process, personnel, or control measures which may result in new or additional exposure to formaldehyde.

(iii) If the employer receives reports or signs or symptoms of respiratory or dermal conditions associated with formaldehyde exposure, the employer (~~shall~~) must promptly monitor the affected employee's exposure.

(c) Periodic monitoring.

(i) The employer (~~shall~~) must periodically measure and accurately determine exposure to formaldehyde for employees shown by the initial monitoring to be exposed at or above the action level or at or above the STEL.

(ii) If the last monitoring results reveal employee exposure at or above the action level, the employer (~~shall~~) must repeat monitoring of the employees at least every six months.

(iii) If the last monitoring results reveal employee exposure at or above the STEL, the employer (~~shall~~) must repeat monitoring of the employees at least once a year under worst conditions.

(d) Termination of monitoring. The employer may discontinue periodic monitoring for employees if results from two consecutive sampling periods taken at least seven days apart show that employee exposure is below the action level and the STEL. The results must be statistically representative and consistent with the employer's knowledge of the job and work operation.

(e) Accuracy of monitoring. Monitoring (~~shall~~) must be accurate, at the ninety-five percent confidence level, to within plus or minus twenty-five percent for airborne concentrations of formaldehyde at the TWA and the STEL and to within plus or minus thirty-five percent for airborne concentrations of formaldehyde at the action level.

(f) Employee notification of monitoring results. Within fifteen days of receiving the results of exposure monitoring conducted under this standard, the employer (~~shall~~) must notify the affected employees of these results. Notification (~~shall~~) must be in writing, either by distributing copies of the results to the employees or by posting the results. If the employee exposure is over either PEL, the employer (~~shall~~) must develop and implement a written plan to reduce employee exposure to or below both PELs, and give written notice to employees. The written notice (~~shall~~) must contain a description of the corrective action being taken by the employer to decrease exposure.

(g) Observation of monitoring.

(i) The employer (~~shall~~) must provide affected employees or their designated representatives an opportunity to observe any monitoring of employee exposure to formaldehyde required by this standard.

(ii) When observation of the monitoring of employee exposure to formaldehyde requires entry into an area where the use of protective clothing or equipment is required, the employer (~~shall~~) must provide the clothing and equipment to the observer, require the observer to use such clothing and

equipment, and ~~((assure))~~ ensure that the observer complies with all other applicable safety and health procedures.

(5) Regulated areas.

(a) The employer ~~((shall))~~ must establish regulated areas where the concentration of airborne formaldehyde exceeds either the TWA or the STEL and post all entrances and accessways with signs bearing the following information:

DANGER
FORMALDEHYDE
IRRITANT AND POTENTIAL CANCER HAZARD
AUTHORIZED PERSONNEL ONLY

(b) The employer ~~((shall))~~ must limit access to regulated areas to authorized persons who have been trained to recognize the hazards of formaldehyde.

(c) An employer at a multiemployer worksite who establishes a regulated area ~~((shall))~~ must communicate the access restrictions and locations of these areas to other employers with work operations at that worksite.

(6) Methods of compliance.

(a) Engineering controls and work practices. The employer ~~((shall))~~ must institute engineering and work practice controls to reduce and maintain employee exposures to formaldehyde at or below the TWA and the STEL.

(b) Exception. Whenever the employer has established that feasible engineering and work practice controls cannot reduce employee exposure to or below either of the PELs, the employer ~~((shall))~~ must apply these controls to reduce employee exposures to the extent feasible and ~~((shall))~~ must supplement them with respirators which satisfy this standard.

(7) Respiratory protection.

(a) General. For employees who use respirators required by this section, the employer must provide respirators that comply with the requirements of this subsection. Respirators must be used during:

(i) Periods necessary to install or implement feasible engineering and work-practice controls;

(ii) Work operations, such as maintenance and repair activities or vessel cleaning, for which the employer establishes that engineering and work-practice controls are not feasible;

(iii) Work operations for which feasible engineering and work-practice controls are not yet sufficient to reduce exposure to or below the PELs;

(iv) Emergencies.

(b) Respirator program.

(i) The employer must implement a respiratory protection program as required by chapter 296-842 WAC, except WAC 296-842-13005 and 296-842-14005.

(ii) If air-purifying chemical-cartridge respirators are used, the employer must:

(A) Replace the cartridge after three hours of use or at the end of the workshift, whichever occurs first, unless the cartridge contains a NIOSH-certified end-of-service-life indicator (ESLI) to show when breakthrough occurs.

(B) Unless the canister contains a NIOSH-certified ESLI to show when breakthrough occurs, replace canisters used in atmospheres up to 7.5 ppm (10 x PEL) every four hours and industrial-sized canisters used in atmospheres up to 75 ppm (100 x PEL) every two hours, or at the end of the workshift, whichever occurs first.

(c) Respirator selection.

(i) The employer must select appropriate respirators from Table 1 of this section.

TABLE 1
MINIMUM REQUIREMENTS FOR RESPIRATORY PROTECTION
AGAINST FORMALDEHYDE

Condition of use or formaldehyde concentration (ppm)	Minimum respirator required ¹
Up to 7.5 ppm (10 x PEL)	Full facepiece with cartridges or canisters specifically approved for protection against formaldehyde ² .
Up to 75 ppm (100 x PEL)	Full-face mask with chin style or chest or back mounted type industrial size canister specifically approved for protection against formaldehyde. Type C supplied-air respirator pressure demand or continuous flow type, with full facepiece, hood, or helmet.
Above 75 ppm or unknown (emergen- cies) (100 x PEL)	Self-contained breathing apparatus (SCBA) with positive-pressure full facepiece. Combination supplied-air, full facepiece positive-pressure respirator with auxiliary self-contained air supply.
Firefighting	SCBA with positive-pressure in full facepiece.
Escape	SCBA in demand or pressure demand mode. Full-face mask with chin style or front or back mounted type industrial size canister specifically approved for protection against formaldehyde.

¹ Respirators specified for use at higher concentrations may be used at lower concentrations.

² A half-mask respirator with cartridges specifically approved for protection against formaldehyde can be substituted for the full facepiece respirator providing that effective gas-proof goggles are provided and used in combination with the half-mask respirator.

(ii) The employer must provide a powered air-purifying respirator adequate to protect against formaldehyde exposure to any employee who has difficulty using a negative-pressure respirator.

(8) Protective equipment and clothing. Employers ~~((shall))~~ must comply with the provisions of WAC 296-800-

160. When protective equipment or clothing is provided under these provisions, the employer ((~~shall~~)) must provide these protective devices at no cost to the employee and ((~~assure~~)) ensure that the employee wears them.

(a) Selection. The employer ((~~shall~~)) must select protective clothing and equipment based upon the form of formaldehyde to be encountered, the conditions of use, and the hazard to be prevented.

(i) All contact of the eyes and skin with liquids containing one percent or more formaldehyde ((~~shall~~)) must be prevented by the use of chemical protective clothing made of material impervious to formaldehyde and the use of other personal protective equipment, such as goggles and face shields, as appropriate to the operation.

(ii) Contact with irritating or sensitizing materials ((~~shall~~)) must be prevented to the extent necessary to eliminate the hazard.

(iii) Where a face shield is worn, chemical safety goggles are also required if there is a danger of formaldehyde reaching the area of the eye.

(iv) Full body protection ((~~shall~~)) must be worn for entry into areas where concentrations exceed 100 ppm and for emergency reentry into areas of unknown concentration.

(b) Maintenance of protective equipment and clothing.

(i) The employer ((~~shall assure~~)) must ensure that protective equipment and clothing that has become contaminated with formaldehyde is cleaned or laundered before its reuse.

(ii) When ventilating formaldehyde-contaminated clothing and equipment, the employer ((~~shall~~)) must establish a storage area so that employee exposure is minimized. Containers for contaminated clothing and equipment and storage areas ((~~shall~~)) must have labels and signs containing the following information:

DANGER

FORMALDEHYDE-CONTAMINATED (CLOTHING) EQUIPMENT
AVOID INHALATION AND SKIN CONTACT

(iii) The employer ((~~shall assure~~)) must ensure that only persons trained to recognize the hazards of formaldehyde remove the contaminated material from the storage area for purposes of cleaning, laundering, or disposal.

(iv) The employer ((~~shall assure~~)) must ensure that no employee takes home equipment or clothing that is contaminated with formaldehyde.

(v) The employer ((~~shall~~)) must repair or replace all required protective clothing and equipment for each affected employee as necessary to assure its effectiveness.

(vi) The employer ((~~shall~~)) must inform any person who launders, cleans, or repairs such clothing or equipment of formaldehyde's potentially harmful effects and of procedures to safely handle the clothing and equipment.

(9) Hygiene protection.

(a) The employer shall provide change rooms, as described in WAC ((296-24-120)) 296-800-230 for employees who are required to change from work clothing into protective clothing to prevent skin contact with formaldehyde.

(b) If employees' skin may become splashed with solutions containing one percent or greater formaldehyde, for example because of equipment failure or improper work practices, the employer ((~~shall~~)) must provide conveniently

located quick drench showers and ((~~assure~~)) ensure that affected employees use these facilities immediately.

(c) If there is any possibility that an employee's eyes may be splashed with solutions containing 0.1 percent or greater formaldehyde, the employer ((~~shall~~)) must provide acceptable eyewash facilities within the immediate work area for emergency use.

(10) Housekeeping. For operations involving formaldehyde liquids or gas, the employer ((~~shall~~)) must conduct a program to detect leaks and spills, including regular visual inspections.

(a) Preventative maintenance of equipment, including surveys for leaks, shall be undertaken at regular intervals.

(b) In work areas where spillage may occur, the employer ((~~shall~~)) must make provisions to contain the spill, to decontaminate the work area, and to dispose of the waste.

(c) The employer ((~~shall assure~~)) must ensure that all leaks are repaired and spills are cleaned promptly by employees wearing suitable protective equipment and trained in proper methods for cleanup and decontamination.

(d) Formaldehyde-contaminated waste and debris resulting from leaks or spills ((~~shall~~)) must be placed for disposal in sealed containers bearing a label warning of formaldehyde's presence and of the hazards associated with formaldehyde.

(11) Emergencies. For each workplace where there is the possibility of an emergency involving formaldehyde, the employer ((~~shall assure~~)) must ensure appropriate procedures are adopted to minimize injury and loss of life. Appropriate procedures ((~~shall~~)) must be implemented in the event of an emergency.

(12) Medical surveillance.

(a) Employees covered.

(i) The employer ((~~shall~~)) must institute medical surveillance programs for all employees exposed to formaldehyde at concentrations at or exceeding the action level or exceeding the STEL.

(ii) The employer ((~~shall~~)) must make medical surveillance available for employees who develop signs and symptoms of overexposure to formaldehyde and for all employees exposed to formaldehyde in emergencies. When determining whether an employee may be experiencing signs and symptoms of possible overexposure to formaldehyde, the employer may rely on the evidence that signs and symptoms associated with formaldehyde exposure will occur only in exceptional circumstances when airborne exposure is less than 0.1 ppm and when formaldehyde is present in materials in concentrations less than 0.1 percent.

(b) Examination by a physician. All medical procedures, including administration of medical disease questionnaires, ((~~shall~~)) must be performed by or under the supervision of a licensed physician and shall be provided without cost to the employee, without loss of pay, and at a reasonable time and place.

(c) Medical disease questionnaire. The employer ((~~shall~~)) must make the following medical surveillance available to employees prior to assignment to a job where formaldehyde exposure is at or above the action level or above the STEL and annually thereafter. The employer ((~~shall~~)) must also make the following medical surveillance available

promptly upon determining that an employee is experiencing signs and symptoms indicative of possible overexposure to formaldehyde.

(i) Administration of a medical disease questionnaire, such as in Appendix D, which is designed to elicit information on work history, smoking history, any evidence of eye, nose, or throat irritation; chronic airway problems or hyperreactive airway disease; allergic skin conditions or dermatitis; and upper or lower respiratory problems.

(ii) A determination by the physician, based on evaluation of the medical disease questionnaire, of whether a medical examination is necessary for employees not required to wear respirators to reduce exposure to formaldehyde.

(d) Medical examinations. Medical examinations ~~((shall))~~ must be given to any employee who the physician feels, based on information in the medical disease questionnaire, may be at increased risk from exposure to formaldehyde and at the time of initial assignment and at least annually thereafter to all employees required to wear a respirator to reduce exposure to formaldehyde. The medical examination ~~((shall))~~ must include:

(i) A physical examination with emphasis on evidence of irritation or sensitization of the skin and respiratory system, shortness of breath, or irritation of the eyes.

(ii) Laboratory examinations for respirator wearers consisting of baseline and annual pulmonary function tests. As a minimum, these tests ~~((shall))~~ must consist of forced vital capacity (FVC), forced expiratory volume in one second (FEV1), and forced expiratory flow (FEF).

(iii) Any other test which the examining physician deems necessary to complete the written opinion.

(iv) Counseling of employees having medical conditions that would be directly or indirectly aggravated by exposure to formaldehyde on the increased risk of impairment of their health.

(e) Examinations for employees exposed in an emergency. The employer ~~((shall))~~ must make medical examinations available as soon as possible to all employees who have been exposed to formaldehyde in an emergency.

(i) The examination ~~((shall))~~ must include a medical and work history with emphasis on any evidence of upper or lower respiratory problems, allergic conditions, skin reaction or hypersensitivity, and any evidence of eye, nose, or throat irritation.

(ii) Other examinations ~~((shall))~~ must consist of those elements considered appropriate by the examining physician.

(f) Information provided to the physician. The employer ~~((shall))~~ must provide the following information to the examining physician:

(i) A copy of this standard and Appendices A, C, D, and E;

(ii) A description of the affected employee's job duties as they relate to the employee's exposure to formaldehyde;

(iii) The representative exposure level for the employee's job assignment;

(iv) Information concerning any personal protective equipment and respiratory protection used or to be used by the employee; and

(v) Information from previous medical examinations of the affected employee within the control of the employer.

(vi) In the event of a nonroutine examination because of an emergency, the employer ~~((shall))~~ must provide to the physician as soon as possible: A description of how the emergency occurred and the exposure the victim may have received.

(g) Physician's written opinion.

(i) For each examination required under this standard, the employer shall obtain a written opinion from the examining physician. This written opinion ~~((shall))~~ must contain the results of the medical examination except that it ~~((shall))~~ must not reveal specific findings or diagnoses unrelated to occupational exposure to formaldehyde. The written opinion ~~((shall))~~ must include:

(A) The physician's opinion as to whether the employee has any medical condition that would place the employee at an increased risk of material impairment of health from exposure to formaldehyde;

(B) Any recommended limitations on the employee's exposure or changes in the use of personal protective equipment, including respirators;

(C) A statement that the employee has been informed by the physician of any medical conditions which would be aggravated by exposure to formaldehyde, whether these conditions may have resulted from past formaldehyde exposure or from exposure in an emergency, and whether there is a need for further examination or treatment.

(ii) The employer ~~((shall))~~ must provide for retention of the results of the medical examination and tests conducted by the physician.

(iii) The employer ~~((shall))~~ must provide a copy of the physician's written opinion to the affected employee within fifteen days of its receipt.

(h) Medical removal.

(i) The provisions of this subdivision apply when an employee reports significant irritation of the mucosa of the eyes or of the upper airways, respiratory sensitization, dermal irritation, or dermal sensitization attributed to workplace formaldehyde exposure. Medical removal provisions do not apply in case of dermal irritation or dermal sensitization when the product suspected of causing the dermal condition contains less than 0.05% formaldehyde.

(ii) An employee's report of signs or symptoms of possible overexposure to formaldehyde ~~((shall))~~ must be evaluated by a physician selected by the employer pursuant to (c) of this subsection. If the physician determines that a medical examination is not necessary under (c)(ii) of this subsection, there ~~((shall))~~ must be a two-week evaluation and remediation period to permit the employer to ascertain whether the signs or symptoms subside untreated or with the use of creams, gloves, first-aid treatment, or personal protective equipment. Industrial hygiene measures that limit the employee's exposure to formaldehyde may also be implemented during this period. The employee ~~((shall))~~ must be referred immediately to a physician prior to expiration of the two-week period if the signs or symptoms worsen. Earnings, seniority, and benefits may not be altered during the two-week period by virtue of the report.

(iii) If the signs or symptoms have not subsided or been remedied by the end of the two-week period, or earlier if signs or symptoms warrant, the employee ~~((shall))~~ must be

examined by a physician selected by the employer. The physician ((~~shall~~)) must presume, absent contrary evidence, that observed dermal irritation or dermal sensitization are not attributable to formaldehyde when products to which the affected employee is exposed contain less than 0.1% formaldehyde.

(iv) Medical examinations ((~~shall~~)) must be conducted in compliance with the requirements of (c)(i) and (ii) of this subsection. Additional guidelines for conducting medical exams are contained in WAC 296-62-07546, Appendix C.

(v) If the physician finds that significant irritation of the mucosa of the eyes or the upper airways, respiratory sensitization, dermal irritation, or dermal sensitization result from workplace formaldehyde exposure and recommends restrictions or removal. The employer ((~~shall~~)) must promptly comply with the restrictions or recommendations of removal. In the event of a recommendation of removal, the employer ((~~shall~~)) must remove the affected employee from the current formaldehyde exposure and if possible, transfer the employee to work having no or significantly less exposure to formaldehyde.

(vi) When an employee is removed pursuant to item (v) of this subdivision, the employer ((~~shall~~)) must transfer the employee to comparable work for which the employee is qualified or can be trained in a short period (up to six months), where the formaldehyde exposures are as low as possible, but not higher than the action level. The employer ((~~shall~~)) must maintain the employee's current earnings, seniority, and other benefits. If there is no such work available, the employer ((~~shall~~)) must maintain the employee's current earnings, seniority, and other benefits until such work becomes available, until the employee is determined to be unable to return to workplace formaldehyde exposure, until the employee is determined to be able to return to the original job status, or for six months, whichever comes first.

(vii) The employer ((~~shall~~)) must arrange for a follow-up medical examination to take place within six months after the employee is removed pursuant to this subsection. This examination ((~~shall~~)) must determine if the employee can return to the original job status, or if the removal is to be permanent. The physician ((~~shall~~)) must make a decision within six months of the date the employee was removed as to whether the employee can be returned to the original job status, or if the removal is to be permanent.

(viii) An employer's obligation to provide earnings, seniority, and other benefits to a removed employee may be reduced to the extent that the employee receives compensation for earnings lost during the period of removal either from a publicly or employer-funded compensation program or from employment with another employer made possible by virtue of the employee's removal.

(ix) In making determinations of the formaldehyde content of materials under this subsection the employer may rely on objective data.

(i) Multiple physician review.

(i) After the employer selects the initial physician who conducts any medical examination or consultation to determine whether medical removal or restriction is appropriate, the employee may designate a second physician to review any findings, determinations, or recommendations of the ini-

tial physician and to conduct such examinations, consultations, and laboratory tests as the second physician deems necessary and appropriate to evaluate the effects of formaldehyde exposure and to facilitate this review.

(ii) The employer ((~~shall~~)) must promptly notify an employee of the right to seek a second medical opinion after each occasion that an initial physician conducts a medical examination or consultation for the purpose of medical removal or restriction.

(iii) The employer may condition its participation in, and payment for, the multiple physician review mechanism upon the employee doing the following within fifteen days after receipt of the notification of the right to seek a second medical opinion, or receipt of the initial physician's written opinion, whichever is later:

(A) The employee informs the employer of the intention to seek a second medical opinion; and

(B) The employee initiates steps to make an appointment with a second physician.

(iv) If the findings, determinations, or recommendations of the second physician differ from those of the initial physician, then the employer and the employee ((~~shall assure~~)) must ensure that efforts are made for the two physicians to resolve the disagreement. If the two physicians are unable to quickly resolve their disagreement, then the employer and the employee through their respective physicians ((~~shall~~)) must designate a third physician who ((~~shall~~)) must be a specialist in the field at issue:

(A) To review the findings, determinations, or recommendations of the prior physicians; and

(B) To conduct such examinations, consultations, laboratory tests, and discussions with prior physicians as the third physician deems necessary to resolve the disagreement of the prior physicians.

(v) In the alternative, the employer and the employee or authorized employee representative may jointly designate such third physician.

(vi) The employer ((~~shall~~)) must act consistent with the findings, determinations, and recommendations of the third physician, unless the employer and the employee reach an agreement which is otherwise consistent with the recommendations of at least one of the three physicians.

(13) Hazard communication.

(a) General. Notwithstanding any exemption granted in WAC 296-901-140 for wood products, each employer who has a workplace covered by this standard ((~~shall~~)) must comply with the requirements of WAC 296-901-140. The definitions of the hazard communication standard shall apply under this standard.

(i) The following shall be subject to the hazard communication requirements of this section: Formaldehyde gas, all mixtures or solutions composed of greater than 0.1 percent formaldehyde, and materials capable of releasing formaldehyde into the air under reasonably foreseeable concentrations reaching or exceeding 0.1 ppm.

(ii) As a minimum, specific health hazards that the employer ((~~shall~~)) must address are: Cancer, irritation and sensitization of the skin and respiratory system, eye and throat irritation, and acute toxicity.

(b) Manufacturers and importers who produce or import formaldehyde or formaldehyde-containing products ~~((shall))~~ must provide downstream employers using or handling these products with an objective determination through the required labels and SDSs as required by WAC 296-901-140.

(c) Labels.

(i) The employer ~~((shall assure))~~ must ensure that hazard warning labels complying with the requirements of WAC 296-901-140 are affixed to all containers of materials listed in (a)(i) of this subsection, except to the extent that (a)(i) of this subsection is inconsistent with this item.

(ii) Information on labels. As a minimum, for all materials listed in (a)(i) of this subsection, capable of releasing formaldehyde at levels of 0.1 ppm to 0.5 ppm, labels ~~((shall))~~ must identify that the product contains formaldehyde: List the name and address of the responsible party; and state that physical and health hazard information is readily available from the employer and from safety data sheets.

(iii) For materials listed in (a)(i) of this subsection, capable of releasing formaldehyde at levels above 0.5 ppm, labels shall appropriately address all the hazards as defined in WAC 296-901-140, and Appendices A and B, including respiratory sensitization, and ~~((shall))~~ must contain the words "Potential Cancer Hazard."

(iv) In making the determinations of anticipated levels of formaldehyde release, the employer may rely on objective data indicating the extent of potential formaldehyde release under reasonably foreseeable conditions of use.

(v) Substitute warning labels. The employer may use warning labels required by other statutes, regulations, or ordinances which impart the same information as the warning statements required by this subitem.

(d) Safety data sheets.

(i) Any employer who uses formaldehyde-containing materials listed in (a)(i) of this subsection ~~((shall))~~ must comply with the requirements of WAC 296-901-140 with regard to the development and updating of safety data sheets.

(ii) Manufacturers, importers, and distributors of formaldehyde containing materials listed in (a)(i) of this subsection ~~((shall assure))~~ must ensure that safety data sheets and updated information are provided to all employers purchasing such materials at the time of the initial shipment and at the time of the first shipment after a safety data sheet is updated.

(e) Written hazard communication program. The employer ~~((shall))~~ must develop, implement, and maintain at the workplace, a written hazard communication program for formaldehyde exposures in the workplace, which at a minimum describes how the requirements specified in this section for labels and other forms of warning and safety data sheets, and subsection (14) of this section for employee information and training, will be met. Employees in multi-employer workplaces ~~((shall))~~ must comply with the requirements of WAC 296-901-140.

(14) Employee information and training.

(a) Participation. The employer ~~((shall assure))~~ must ensure that all employees who are assigned to workplaces where there is a health hazard from formaldehyde participate in a training program, except that where the employer can show, using objective data, that employees are not exposed to

formaldehyde at or above 0.1 ppm, the employer is not required to provide training.

(b) Frequency. Employers ~~((shall))~~ must provide such information and training to employees at the time of their initial assignment and whenever a new exposure to formaldehyde is introduced into their work area. The training ~~((shall))~~ must be repeated at least annually.

(c) Training program. The training program ~~((shall))~~ must be conducted in a manner which the employee is able to understand and ~~((shall))~~ must include:

(i) A discussion of the contents of this regulation and the contents of the safety data sheet;

(ii) The purpose for and a description of the medical surveillance program required by this standard, including:

(A) A description of the potential health hazards associated with exposure to formaldehyde and a description of the signs and symptoms of exposure to formaldehyde.

(B) Instructions to immediately report to the employer the development of any adverse signs or symptoms that the employee suspects is attributable to formaldehyde exposure.

(iii) Description of operations in the work area where formaldehyde is present and an explanation of the safe work practices appropriate for limiting exposure to formaldehyde in each job;

(iv) The purpose for, proper use of, and limitations of personal protective clothing;

(v) Instructions for the handling of spills, emergencies, and clean-up procedures;

(vi) An explanation of the importance of engineering and work practice controls for employee protection and any necessary instruction in the use of these controls;

(vii) A review of emergency procedures including the specific duties or assignments of each employee in the event of an emergency; and

(viii) The purpose, proper use, limitations, and other training requirements for respiratory protection as required by chapter 296-842 WAC.

(d) Access to training materials.

(i) The employer ~~((shall))~~ must inform all affected employees of the location of written training materials and ~~((shall))~~ must make these materials readily available, without cost, to the affected employees.

(ii) The employer ~~((shall))~~ must provide, upon request, all training materials relating to the employee training program to the director of labor and industries, or his/her designated representative.

(15) Recordkeeping.

(a) Exposure measurements. The employer ~~((shall))~~ must establish and maintain an accurate record of all measurements taken to monitor employee exposure to formaldehyde. This record ~~((shall))~~ must include:

(i) The date of measurement;

(ii) The operation being monitored;

(iii) The methods of sampling and analysis and evidence of their accuracy and precision;

(iv) The number, durations, time, and results of samples taken;

(v) The types of protective devices worn; and

(vi) The names, job classifications, Social Security numbers, and exposure estimates of the employees whose exposures are represented by the actual monitoring results.

(b) Exposure determinations. Where the employer has determined that no monitoring is required under this standard, the employer ~~((shall))~~ must maintain a record of the objective data relied upon to support the determination that no employee is exposed to formaldehyde at or above the action level.

(c) Medical surveillance. The employer ~~((shall))~~ must establish and maintain an accurate record for each employee subject to medical surveillance under this standard. This record ~~((shall))~~ must include:

(i) The name and Social Security number of the employee;

(ii) The physician's written opinion;

(iii) A list of any employee health complaints that may be related to exposure to formaldehyde; and

(iv) A copy of the medical examination results, including medical disease questionnaires and results of any medical tests required by the standard or mandated by the examining physician.

(d) Record retention. The employer ~~((shall))~~ must retain records required by this standard for at least the following periods:

(i) Exposure records and determinations ~~((shall))~~ must be kept for at least thirty years; and

(ii) Medical records ~~((shall))~~ must be kept for the duration of employment plus thirty years.

(e) Availability of records.

(i) Upon request, the employer ~~((shall))~~ must make all records maintained as a requirement of this standard available for examination and copying to the director of labor and industries, or ~~((his/her))~~ their designated representative.

(ii) The employer ~~((shall))~~ must make employee exposure records, including estimates made from representative monitoring and available upon request for examination and copying, to the subject employee, or former employee, and employee representatives in accordance with chapter 296-802 WAC.

(iii) Employee medical records required by this standard ~~((shall))~~ must be provided upon request for examination and copying, to the subject employee, or former employee, or to anyone having the specific written consent of the subject employee or former employee in accordance with chapter 296-802 WAC.

AMENDATORY SECTION (Amending WSR 14-07-086, filed 3/18/14, effective 5/1/14)

WAC 296-62-07544 Appendix B—Sampling strategy and analytical methods for formaldehyde. (1) To protect the health of employees, exposure measurements must be unbiased and representative of employee exposure. The proper measurement of employee exposure requires more than a token commitment on the part of the employer. WISHA's mandatory requirements establish a baseline; under the best of circumstances all questions regarding employee exposure will be answered. Many employers, however, will wish to conduct more extensive monitoring before undertak-

ing expensive commitments, such as engineering controls, to ~~((assure))~~ ensure that the modifications are truly necessary. The following sampling strategy, which was developed at NIOSH by Nelson A. Leidel, Kenneth A. Busch, and Jeremiah R. Lynch and described in NIOSH publication No. 77-173 (Occupational Exposure Sampling Strategy Manual) will assist the employer in developing a strategy for determining the exposure of his or her employees.

(2) There is no one correct way to determine employee exposure. Obviously, measuring the exposure of every employee exposed to formaldehyde will provide the most information on any given day. Where few employees are exposed, this may be a practical solution. For most employers, however, use of the following strategy will give just as much information at less cost.

(3) Exposure data collected on a single day will not automatically guarantee the employer that ~~((his or her))~~ their workplace is always in compliance with the formaldehyde standard. This does not imply, however, that it is impossible for an employer to be sure that ~~((his or her))~~ their worksite is in compliance with the standard. Indeed, a properly designed sampling strategy showing that all employees are exposed below the PELs, at least with a ninety-five percent certainty, is compelling evidence that the exposure limits are being achieved provided that measurements are conducted using valid sampling strategy and approved analytical methods.

(4) There are two PELs, the TWA concentration and the STEL.

(a) Most employers will find that one of these two limits is more critical in the control of their operations, and WISHA expects that the employer will concentrate monitoring efforts on the critical component.

(b) If the more difficult exposure is controlled, this information, along with calculations to support the assumptions, should be adequate to show that the other exposure limit is also being achieved.

(5) Sampling strategy.

(a) Determination of the need for exposure measurements.

(b) The employer must determine whether employees may be exposed to concentrations in excess of the action level. This determination becomes the first step in an employee exposure monitoring program that minimizes employer sampling burdens while providing adequate employee protection.

(c) If employees may be exposed above the action level, the employer must measure exposure. Otherwise, an objective determination that employee exposure is low provides adequate evidence that exposure potential has been examined.

(d) The employer should examine all available relevant information, e.g., insurance company and trade association data and information from suppliers or exposure data collected from similar operations.

(e) The employer may also use previously-conducted sampling including area monitoring. The employer must make a determination relevant to each operation although this need not be on a separate piece of paper.

(f) If the employer can demonstrate conclusively that no employee is exposed above the action level or the STEL

through the use of objective data, the employer need proceed no further on employee exposure monitoring until such time that conditions have changed and the determination is no longer valid.

(g) If the employer cannot determine that employee exposure is less than the action level and the STEL, employee exposure monitoring will have to be conducted.

(6) Workplace material survey.

(a) The primary purpose of a survey of raw material is to determine if formaldehyde is being used in the work environment and if so, the conditions under which formaldehyde is being used.

(b) The first step is to tabulate all situations where formaldehyde is used in a manner such that it may be released into the workplace atmosphere or contaminate the skin. This information should be available through analysis of company records and information on the SDS available through provisions of this standard and the hazard communication standard.

(c) If there is an indication from materials handling records and accompanying SDS that formaldehyde is being used in the following types of processes or work operations, there may be a potential for releasing formaldehyde into the workplace atmosphere:

(i) Any operation that involves grinding, sanding, sawing, cutting, crushing, screening, sieving, or any other manipulation of material that generates formaldehyde-bearing dust.

(ii) Any processes where there have been employee complaints or symptoms indicative of exposure to formaldehyde.

(iii) Any liquid or spray process involving formaldehyde.

(iv) Any process that uses formaldehyde in preserved tissue.

(v) Any process that involves the heating of a formaldehyde-bearing resin.

Processes and work operations that use formaldehyde in these manners will probably require further investigation at the worksite to determine the extent of employee monitoring that should be conducted.

(7) Workplace observations.

(a) To this point, the only intention has been to provide an indication as to the existence of potentially exposed employees. With this information, a visit to the workplace is needed to observe work operations, to identify potential health hazards, and to determine whether any employees may be exposed to hazardous concentrations of formaldehyde.

(b) In many circumstances, sources of formaldehyde can be identified through the sense of smell. However, this method of detection should be used with caution because of olfactory fatigue.

(c) Employee location in relation to source of formaldehyde is important in determining if an employee may be significantly exposed to formaldehyde. In most instances, the closer a worker is to the source, the higher the probability that a significant exposure will occur.

(d) Other characteristics should be considered. Certain high temperature operations give rise to higher evaporation rates. Locations of open doors and windows provide natural ventilation that tend to dilute formaldehyde emissions. General room ventilation also provides a measure of control.

(8) Calculation of potential exposure concentrations.

(a) By knowing the ventilation rate in a workplace and the quantity of formaldehyde generated, the employer may be able to determine by calculation if the PELs might be exceeded.

(b) To account for poor mixing of formaldehyde into the entire room, locations of fans and proximity of employees to the work operation, the employer must include a safety factor.

(c) If an employee is relatively close to a source, particularly if ~~((he or she is))~~ they are located downwind, a safety factor of one hundred may be necessary.

(d) For other situations, a factor of ten may be acceptable. If the employer can demonstrate through such calculations that employee exposure does not exceed the action level or the STEL, the employer may use this information as objective data to demonstrate compliance with the standard.

(9) Sampling strategy.

(a) Once the employer determines that there is a possibility of substantial employee exposure to formaldehyde, the employer is obligated to measure employee exposure.

(b) The next step is selection of a maximum risk employee. When there are different processes where employees may be exposed to formaldehyde, a maximum risk employee should be selected for each work operation.

(c) Selection of the maximum risk employee requires professional judgment. The best procedure for selecting the maximum risk employee is to observe employees and select the person closest to the source of formaldehyde. Employee mobility may affect this selection; e.g., if the closest employee is mobile in ~~((his))~~ their tasks, ~~((he))~~ they may not be the maximum risk employee. Air movement patterns and differences in work habits will also affect selection of the maximum risk employee.

(d) When many employees perform essentially the same task, a maximum risk employee cannot be selected. In this circumstance, it is necessary to resort to random sampling of the group of workers. The objective is to select a subgroup of adequate size so that there is a high probability that the random sample will contain at least one worker with high exposure if one exists. The number of persons in the group influences the number that need to be sampled to ensure that at least one individual from the highest ten percent exposure group is contained in the sample. For example, to have ninety percent confidence in the results, if the group size is ten, nine should be sampled; for fifty, only eighteen need to be sampled.

(e) If measurement shows exposure to formaldehyde at or above the action level or the STEL, the employer needs to identify all other employees who may be exposed at or above the action level or STEL and measure or otherwise accurately characterize the exposure of these employees.

(f) Whether representative monitoring or random sampling are conducted, the purpose remains the same to determine if the exposure of any employee is above the action level. If the exposure of the most exposed employee is less than the action level and the STEL, regardless of how the employee is identified, then it is reasonable to assume that measurements of exposure of the other employees in that operation would be below the action level and the STEL.

(10) Exposure measurements.

(a) There is no "best" measurement strategy for all situations. Some elements to consider in developing a strategy are:

- (i) Availability and cost of sampling equipment;
- (ii) Availability and cost of analytic facilities;
- (iii) Availability and cost of personnel to take samples;
- (iv) Location of employees and work operations;
- (v) Intraday and interday variations in the process;
- (vi) Precision and accuracy of sampling and analytic methods; and

(vii) Number of samples needed.

(b) Samples taken for determining compliance with the STEL differ from those that measure the TWA concentration in important ways. STEL samples are best taken in a nonrandom fashion using all available knowledge relating to the area, the individual, and the process to obtain samples during periods of maximum expected concentrations. At least three measurements on a shift are generally needed to spot gross errors or mistakes; however, only the highest value represents the STEL.

(c) If an operation remains constant throughout the workshift, a much greater number of samples would need to be taken over the thirty-two discrete nonoverlapping periods in an 8-hour workshift to verify compliance with a STEL. If employee exposure is truly uniform throughout the workshift, however, an employer in compliance with the 1 ppm TWA would be in compliance with the 2 ppm STEL, and this determination can probably be made using objective data.

(11) Need to repeat the monitoring strategy.

(a) Interday and intraday fluctuations in employee exposure are mostly influenced by the physical processes that generate formaldehyde and the work habits of the employee. Hence, in-plant process variations influence the employer's determination of whether or not additional controls need to be imposed. Measurements that employee exposure is low on a day that is not representative of worst conditions may not provide sufficient information to determine whether or not additional engineering controls should be installed to achieve the PELs.

(b) The person responsible for conducting sampling must be aware of systematic changes which will negate the validity of the sampling results. Systematic changes in formaldehyde exposure concentration for an employee can occur due to:

(i) The employee changing patterns of movement in the workplace;

(ii) Closing of plant doors and windows;

(iii) Changes in ventilation from season to season;

(iv) Decreases in ventilation efficiency or abrupt failure of engineering control equipment; and

(v) Changes in the production process or work habits of the employee.

(c) Any of these changes, if they may result in additional exposure that reaches the next level of action (i.e., 0.5 or 1.0 ppm as an 8-hour average or 2 ppm over fifteen minutes) require the employer to perform additional monitoring to reassess employee exposure.

(d) A number of methods are suitable for measuring employee exposure to formaldehyde or for characterizing emissions within the worksite. The preamble to this standard

describes some methods that have been widely used or subjected to validation testing. A detailed analytical procedure derived from the WISHA Method A.C.R.O. for acrolein and formaldehyde is presented below for informational purposes.

(e) Inclusion of WISHA's method in this appendix in no way implies that it is the only acceptable way to measure employee exposure to formaldehyde. Other methods that are free from significant interferences and that can determine formaldehyde at the permissible exposure limits within ± 25 percent of the "true" value at the ninety-five percent confidence level are also acceptable. Where applicable, the method should also be capable of measuring formaldehyde at the action level to ± 35 percent of the "true" value with a ninety-five percent confidence level. WISHA encourages employers to choose methods that will be best for their individual needs. The employer must exercise caution, however, in choosing an appropriate method since some techniques suffer from interferences that are likely to be present in workplaces of certain industry sectors where formaldehyde is used.

(12) WISHA's analytical laboratory method.

A.C.R.O. (also use methods F.O.R.M. and F.O.R.M. 2 when applicable).

(a) Matrix: Air.

(b) Target concentration: 1 ppm (1.2 mg/m³).

(c) Procedures: Air samples are collected by drawing known volumes of air through sampling tubes containing XAD-2 adsorbent which have been coated with 2-(hydroxymethyl) piperidine. The samples are desorbed with toluene and then analyzed by gas chromatography using a nitrogen selective detector.

(d) Recommended sampling rate and air volumes: 0.1 L/min and 24 L.

(e) Reliable quantitation limit: 16 ppb (20 ug/m³).

(f) Standard error of estimate at the target concentration: 7.3%.

(g) Status of the method: A sampling and analytical method that has been subjected to the established evaluation procedures of the organic methods evaluation branch.

(h) Date: March, 1985.

(13) General discussion.

(a) Background: The current WISHA method for collecting acrolein vapor recommends the use of activated 13X molecular sieves. The samples must be stored in an ice bath during and after sampling and also they must be analyzed within forty-eight hours of collection. The current WISHA method for collecting formaldehyde vapor recommends the use of bubblers containing ten percent methanol in water as the trapping solution.

(b) This work was undertaken to resolve the sample stability problems associated with acrolein and also to eliminate the need to use bubblers to sample formaldehyde. A goal of this work was to develop and/or to evaluate a common sampling and analytical procedure for acrolein and formaldehyde.

(c) NIOSH has developed independent methodologies for acrolein and formaldehyde which recommend the use of reagent-coated adsorbent tubes to collect the aldehydes as stable derivatives. The formaldehyde sampling tubes contain Chromosorb 102 adsorbent coated with N-benzylethanol-

amine (BEA) which reacts with formaldehyde vapor to form a stable oxazolidine compound. The acrolein sampling tubes contain XAD-2 adsorbent coated with 2-(hydroxymethyl) piperidine (2-HMP) which reacts with acrolein vapor to form a different, stable oxazolidine derivative. Acrolein does not appear to react with BEA to give a suitable reaction product. Therefore, the formaldehyde procedure cannot provide a common method for both aldehydes. However, formaldehyde does react with 2-HMP to form a very suitable reaction product. It is the quantitative reaction of acrolein and formaldehyde with 2-HMP that provides the basis for this evaluation.

(d) This sampling and analytical procedure is very similar to the method recommended by NIOSH for acrolein. Some changes in the NIOSH methodology were necessary to permit the simultaneous determination of both aldehydes and also to accommodate WISHA laboratory equipment and analytical techniques.

(14) Limit-defining parameters: The analyte air concentrations reported in this method are based on the recommended air volume for each analyte collected separately and a desorption volume of 1 mL. The amounts are presented as acrolein and/or formaldehyde, even though the derivatives are the actual species analyzed.

(15) Detection limits of the analytical procedure: The detection limit of the analytical procedure was 386 pg per injection for formaldehyde. This was the amount of analyte which gave a peak whose height was about five times the height of the peak given by the residual formaldehyde derivative in a typical blank front section of the recommended sampling tube.

(16) Detection limits of the overall procedure: The detection limits of the overall procedure were 482 ng per sample (16 ppb or 20 ug/m³ for formaldehyde). This was the amount of analyte spiked on the sampling device which allowed recoveries approximately equal to the detection limit of the analytical procedure.

(17) Reliable quantitation limits:

(a) The reliable quantitation limit was 482 ng per sample (16 ppb or 20 ug/m³) for formaldehyde. These were the smallest amounts of analyte which could be quantitated within the limits of a recovery of at least seventy-five percent and a precision (± 1.96 SD) of $\pm 25\%$ or better.

(b) The reliable quantitation limit and detection limits reported in the method are based upon optimization of the instrument for the smallest possible amount of analyte. When the target concentration of an analyte is exceptionally higher than these limits, they may not be attainable at the routine operating parameters.

(18) Sensitivity: The sensitivity of the analytical procedure over concentration ranges representing 0.4 to 2 times the target concentration, based on the recommended air volumes, was seven thousand five hundred eighty-nine area units per ug/mL for formaldehyde. This value was determined from the slope of the calibration curve. The sensitivity may vary with the particular instrument used in the analysis.

(19) Recovery: The recovery of formaldehyde from samples used in an eighteen-day storage test remained above ninety-two percent when the samples were stored at ambient temperature. These values were determined from regression

lines which were calculated from the storage data. The recovery of the analyte from the collection device must be at least seventy-five percent following storage.

(20) Precision (analytical method only): The pooled coefficient of variation obtained from replicate determinations of analytical standards over the range of 0.4 to 2 times the target concentration was 0.0052 for formaldehyde ((d)(C)(iii) of this subsection).

(21) Precision (overall procedure): The precision at the ninety-five percent confidence level for the ambient temperature storage tests was $\pm 14.3\%$ for formaldehyde. These values each include an additional $\pm 5\%$ for sampling error. The overall procedure must provide results at the target concentrations that are $\pm 25\%$ at the ninety-five percent confidence level.

(22) Reproducibility: Samples collected from controlled test atmospheres and a draft copy of this procedure were given to a chemist unassociated with this evaluation. The formaldehyde samples were analyzed following fifteen days storage. The average recovery was 96.3% and the standard deviation was 1.7%.

(23) Advantages:

(a) The sampling and analytical procedures permit the simultaneous determination of acrolein and formaldehyde.

(b) Samples are stable following storage at ambient temperature for at least eighteen days.

(24) Disadvantages: None.

(25) Sampling procedure.

(a) Apparatus:

(i) Samples are collected by use of a personal sampling pump that can be calibrated to within $\pm 5\%$ of the recommended 0.1 L/min sampling rate with the sampling tube in line.

(ii) Samples are collected with laboratory prepared sampling tubes. The sampling tube is constructed of silane treated glass and is about 8-cm long. The ID is 4 mm and the OD is 6 mm. One end of the tube is tapered so that a glass wool end plug will hold the contents of the tube in place during sampling. The other end of the sampling tube is open to its full 4-mm ID to facilitate packing of the tube. Both ends of the tube are fire-polished for safety. The tube is packed with a 75-mg backup section, located nearest the tapered end and a 150-mg sampling section of pretreated XAD-2 adsorbent which has been coated with 2-HMP. The two sections of coated adsorbent are separated and retained with small plugs of silanized glass wool. Following packing, the sampling tubes are sealed with two 7/32 inch OD plastic end caps. Instructions for the pretreatment and the coating of XAD-2 adsorbent are presented in (d) of this subsection.

(b) Sampling tubes, similar to those recommended in this method, are marketed by Supelco, Inc. These tubes were not available when this work was initiated; therefore, they were not evaluated.

(26) Reagents: None required.

(27) Technique:

(a) Properly label the sampling tube before sampling and then remove the plastic end caps.

(b) Attach the sampling tube to the pump using a section of flexible plastic tubing such that the large, front section of the sampling tube is exposed directly to the atmosphere. Do

not place any tubing ahead of the sampling tube. The sampling tube should be attached in the worker's breathing zone in a vertical manner such that it does not impede work performance.

(c) After sampling for the appropriate time, remove the sampling tube from the pump and then seal the tube with plastic end caps.

(d) Include at least one blank for each sampling set. The blank should be handled in the same manner as the samples with the exception that air is not drawn through it.

(e) List any potential interferences on the sample data sheet.

(28) Breakthrough:

(a) Breakthrough was defined as the relative amount of analyte found on a backup sample in relation to the total amount of analyte collected on the sampling train.

(b) For formaldehyde collected from test atmospheres containing six times the PEL, the average five percent breakthrough air volume was 41 L. The sampling rate was 0.1 L/min and the average mass of formaldehyde collected was 250 ug.

(29) Desorption efficiency: No desorption efficiency corrections are necessary to compute air sample results because analytical standards are prepared using coated adsorbent. Desorption efficiencies were determined, however, to investigate the recoveries of the analytes from the sampling device. The average recovery over the range of 0.4 to 2 times the target concentration, based on the recommended air volumes, was 96.2% for formaldehyde. Desorption efficiencies were essentially constant over the ranges studied.

(30) Recommended air volume and sampling rate:

(a) The recommended air volume for formaldehyde is 24 L.

(b) The recommended sampling rate is 0.1 L/min.

(31) Interferences:

(a) Any collected substance that is capable of reacting with 2-HMP and thereby depleting the derivatizing agent is a potential interference. Chemicals which contain a carbonyl group, such as acetone, may be capable of reacting with 2-HMP.

(b) There are no other known interferences to the sampling method.

(32) Safety precautions:

(a) Attach the sampling equipment to the worker in such a manner that it will not interfere with work performance or safety.

(b) Follow all safety practices that apply to the work area being sampled.

(33) Analytical procedure.

(a) Apparatus:

(i) A gas chromatograph (GC), equipped with a nitrogen selective detector. A Hewlett-Packard model 5840A GC fitted with a nitrogen phosphorus flame ionization detector (NPD) was used for this evaluation. Injections were performed using a Hewlett-Packard model 7671A automatic sampler.

(ii) A GC column capable of resolving the analytes from any interference. A 6 ft x 1/4 in OD (2mm ID) glass GC column containing 10% UCON 50-HB-5100+ 2% KOH on

80/100 mesh Chromosorb W-AW was used for the evaluation. Injections were performed on-column.

(iii) Vials, glass 2-mL with Teflon-lined caps.

(iv) Volumetric flasks, pipets, and syringes for preparing standards, making dilutions, and performing injections.

(b) Reagents:

(i) Toluene and dimethylformamide. Burdick and Jackson solvents were used in this evaluation.

(ii) Helium, hydrogen, and air, GC grade.

(iii) Formaldehyde, thirty-seven percent by weight, in water. Aldrich Chemical, ACS Reagent Grade formaldehyde was used in this evaluation.

(iv) Amberlite XAD-2 adsorbent coated with 2-(hydroxymethyl) piperidine (2-HMP), 10% by weight ((d) of this subsection).

(v) Desorbing solution with internal standard. This solution was prepared by adding 20 uL of dimethylformamide to 100 mL of toluene.

(c) Standard preparation:

(i) Formaldehyde: Prepare stock standards by diluting known volumes of thirty-seven percent formaldehyde solution with methanol. A procedure to determine the formaldehyde content of these standards is presented in (d) of this subsection. A standard containing 7.7 mg/mL formaldehyde was prepared by diluting 1 mL of the thirty-seven percent reagent to 50 mL with methanol.

(ii) It is recommended that analytical standards be prepared about sixteen hours before the air samples are to be analyzed in order to ensure the complete reaction of the analytes with 2-HMP. However, rate studies have shown the reaction to be greater than ninety-five percent complete after four hours. Therefore, one or two standards can be analyzed after this reduced time if sample results are outside the concentration range of the prepared standards.

(iii) Place 150-mg portions of coated XAD-2 adsorbent, from the same lot number as used to collect the air samples, into each of several glass 2-mL vials. Seal each vial with a Teflon-lined cap.

(iv) Prepare fresh analytical standards each day by injecting appropriate amounts of the diluted analyte directly onto 150-mg portions of coated adsorbent. It is permissible to inject both acrolein and formaldehyde on the same adsorbent portion. Allow the standards to stand at room temperature. A standard, approximately the target levels, was prepared by injecting 11 uL of the acrolein and 12 uL of the formaldehyde stock standards onto a single coated XAD-2 adsorbent portion.

(v) Prepare a sufficient number of standards to generate the calibration curves. Analytical standard concentrations should bracket sample concentrations. Thus, if samples are not in the concentration range of the prepared standards, additional standards must be prepared to determine detector response.

(vi) Desorb the standards in the same manner as the samples following the sixteen-hour reaction time.

(d) Sample preparation:

(i) Transfer the 150-mg section of the sampling tube to a 2-mL vial. Place the 75-mg section in a separate vial. If the glass wool plugs contain a significant number of adsorbent beads, place them with the appropriate sampling tube section.

Discard the glass wool plugs if they do not contain a significant number of adsorbent beads.

- (ii) Add 1 mL of desorbing solution to each vial.
- (iii) Seal the vials with Teflon-lined caps and then allow them to desorb for one hour. Shake the vials by hand with vigorous force several times during the desorption time.
- (iv) Save the used sampling tubes to be cleaned and recycled.
- (e) Analysis:
- (f) GC conditions.
- (34) Column temperature:
- (a) Bi-level temperature program.
- (i) First level: 100°C to 140°C at 4°C/min following completion of the first level.
- (ii) Second level: 140°C to 180°C at 20°C/min following completion of the first level.
- (b) Isothermal period: Hold column at 180°C until the recorder pen returns to baseline (usually about twenty-five minutes after injection).
- (c) Injector temperature: 180°C.
- (d) Helium flow rate: 30 mL/min (detector response will be reduced if nitrogen is substituted for helium carrier gas).
- (e) Injection volume: 51 0.8 uL.
- (f) GC column: Six-ft x 1/4-in OD (2 mm ID) glass GC column containing 10% UCON 50-HB-5100NZG651+512% KOH on 80/100 Chromosorb W-AW.
- (g) NPD conditions:
- (i) Hydrogen flow rate: 3 mL/min.
- (ii) Air flow rate: 50 mL/min.
- (h) Detector temperature: 275 5151C.
- (i) Use a suitable method, such as electronic integration, to measure detector response.
- (ii) Use an internal standard method to prepare the calibration curve with several standard solutions of different concentrations. Prepare the calibration curve daily. Program the integrator to report results in ug/mL.
- (iii) Bracket sample concentrations with standards.
- (iv) Interferences (analytical).
- (A) Any compound with the same general retention time as the analytes and which also gives a detector response is a potential interference. Possible interferences should be reported to the laboratory with submitted samples by the industrial hygienist.
- (B) GC parameters (temperature, column, etc.), may be changed to circumvent interferences.
- (C) A useful means of structure designation is GC/MS. It is recommended this procedure be used to confirm samples whenever possible.
- (D) The coated adsorbent usually contains a very small amount of residual formaldehyde derivative.
- (i) Calculations:
- (i) Results are obtained by use of calibration curves. Calibration curves are prepared by plotting detector response against concentration for each standard. The best line through the data points is determined by curve fitting.
- (ii) The concentration, in ug/mL, for a particular sample is determined by comparing its detector response to the calibration curve. If either of the analytes is found on the backup section, it is added to the amount found on the front section.

Blank corrections should be performed before adding the results together.

- (iii) The acrolein and/or formaldehyde air concentration can be expressed using the following equation:

$$\text{Mg/m}^3 = (\text{A})(\text{B})/\text{C}$$

where A=ug/mL from 3.7.2, B=desorption volume, and C=L of air sampled.

No desorption efficiency corrections are required.

- (iv) The following equation can be used to convert results in mg/m³ to ppm.

$$\text{ppm} = (\text{mg/m}^3)(24.45)/\text{MW}$$

where mg/m³=result from 3.7.3, 24.45=molar volume of an ideal gas at 760 mm Hg and 25 5151C, MW=molecular weight (Formaldehyde=30.0).

(j) Backup data. Backup data on detection limits, reliable quantitation limits, sensitivity and precision of the analytical method, breakthrough, desorption efficiency, storage, reproducibility, and generation of test atmospheres are available in OSHA Method 52, developed by the Organics Methods Evaluation Branch, OSHA Analytical Laboratory, Salt Lake City, Utah.

- (k) Procedure to coat XAD-2 adsorbent with 2-HMP:

(i) Apparatus: Soxhlet extraction apparatus, rotary evaporation apparatus, vacuum desiccator, 1-L vacuum flask, 1-L round-bottomed evaporative flask, 1-L Erlenmeyer flask, 250-mL Buchner funnel with a coarse fritted disc, etc.

- (ii) Reagents:

(A) Methanol, isooctane, and toluene.

(B) (Hydroxymethyl) piperidine.

(C) Amberlite XAD-2 nonionic polymeric adsorbent, twenty to sixty mesh, Aldrich Chemical XAD-2 was used in this evaluation.

(l) Procedure: Weigh 125 g of crude XAD-2 adsorbent into a 1-L Erlenmeyer flask. Add about 200 mL of water to the flask and then swirl the mixture to wash the adsorbent. Discard any adsorbent that floats to the top of the water and then filter the mixture using a fritted Buchner funnel. Air dry the adsorbent for two minutes. Transfer the adsorbent back to the Erlenmeyer flask and then add about 200 mL of methanol to the flask. Swirl and then filter the mixture as before. Transfer the washed adsorbent back to the Erlenmeyer flask and then add about 200 mL of methanol to the flask. Swirl and then filter the mixture as before. Transfer the washed adsorbent to a 1-L round-bottomed evaporative flask, add 13 g of 2-HMP and then 200 mL of methanol, swirl the mixture and then allow it to stand for one hour. Remove the methanol at about 40°C and reduced pressure using a rotary evaporation apparatus. Transfer the coated adsorbent to a suitable container and store it in a vacuum desiccator at room temperature overnight. Transfer the coated adsorbent to a Soxhlet extractor and then extract the material with toluene for about twenty-four hours. Discard the contaminated toluene, add methanol in its place and then continue the Soxhlet extraction for an additional four hours. Transfer the adsorbent to a weighted 1-L round-bottom evaporative flask and remove the methanol using the rotary evaporation apparatus. Determine the weight of the adsorbent and then add an amount of 2-HMP, which is ten percent by weight of the adsorbent. Add

200 mL of methanol and then swirl the mixture. Allow the mixture to stand for one hour. Remove the methanol by rotary evaporation. Transfer the coated adsorbent to a suitable container and store it in a vacuum desiccator until all traces of solvents are gone. Typically, this will take two to three days. The coated adsorbent should be protected from contamination. XAD-2 adsorbent treated in this manner will probably not contain residual acrolein derivative. However, this adsorbent will often contain residual formaldehyde derivative levels of about 0.1 ug per 150 mg of adsorbent. If the blank values for a batch of coated adsorbent are too high, then the batch should be returned to the Soxhlet extractor, extracted with toluene again and then recoated. This process can be repeated until the desired blank levels are attained.

The coated adsorbent is now ready to be packed into sampling tubes. The sampling tubes should be stored in a sealed container to prevent contamination. Sampling tubes should be stored in the dark at room temperature. The sampling tubes should be segregated by coated adsorbent lot number. A sufficient amount of each lot number of coated adsorbent should be retained to prepare analytical standards for use with air samples from that lot number.

(m) A procedure to determine formaldehyde by acid titration:

(i) Standardize the 0.1 N HCl solution using sodium carbonate and methyl orange indicator.

(ii) Place 50 mL of 0.1 M sodium sulfite and three drops of thymophthalein indicator into a 250-mL Erlenmeyer flask. Titrate the contents of the flask to a colorless endpoint with 0.1 N HCl (usually one or two drops is sufficient). Transfer 10 mL of the formaldehyde/methanol solution ((b)(iii)(A) of this subsection) into the same flask and titrate the mixture with 0.1 N HCl, again, to a colorless endpoint. The formaldehyde concentration of the standard may be calculated by the following equation:

$$\text{Formaldehyde, mg/mL} = \frac{\text{acid titer} \times \text{acid normality} \times 30.0}{\text{mL of Sample}}$$

(iii) This method is based on the quantitative liberation of sodium hydroxide when formaldehyde reacts with sodium sulfite to form the formaldehyde-bisulfite addition product. The volume of sample may be varied depending on the formaldehyde content but the solution to be titrated must contain excess sodium sulfite. Formaldehyde solutions containing substantial amounts of acid or base must be neutralized before analysis.

AMENDATORY SECTION (Amending WSR 88-21-002, filed 10/6/88, effective 11/7/88)

WAC 296-62-07546 Appendix C medical surveillance—Formaldehyde. (1) Health hazards. The occupational health hazards of formaldehyde are primarily due to its toxic effects after inhalation, after direct contact with the skin or eyes by formaldehyde in liquid or vapor form, and after ingestion.

(2) Toxicology.

(a) Acute effects of exposure.

(i) Inhalation (breathing): Formaldehyde is highly irritating to the upper airways. The concentration of formaldehyde

that is immediately dangerous to life and health is 100 ppm. Concentrations above 50 ppm can cause severe pulmonary reactions within minutes. These include pulmonary edema, pneumonia, and bronchial irritation which can result in death. Concentrations above 5 ppm readily cause lower airway irritation characterized by cough, chest tightness, and wheezing. There is some controversy regarding whether formaldehyde gas is a pulmonary sensitizer which can cause occupational asthma in a previously normal individual. Formaldehyde can produce symptoms of bronchial asthma in humans. The mechanism may be either sensitization of the individual by exposure to formaldehyde or direct irritation by formaldehyde in persons with preexisting asthma. Upper airway irritation is the most common respiratory effect reported by workers and can occur over a wide range of concentrations, most frequently above 1 ppm. However, airway irritation has occurred in some workers with exposures to formaldehyde as low as 0.1 ppm. Symptoms of upper airway irritation include dry or sore throat, itching and burning sensations of the nose, and nasal congestion. Tolerance to this level of exposure may develop within one to two hours. This tolerance can permit workers remaining in an environment of gradually increasing formaldehyde concentrations to be unaware of their increasingly hazardous exposure.

(ii) Eye contact: Concentrations of formaldehyde between 0.05 ppm and 0.5 ppm produce a sensation of irritation in the eyes with burning, itching, redness, and tearing. Increased rate of blinking and eye closure generally protects the eye from damage at these low levels, but these protective mechanisms may interfere with some workers' work abilities. Tolerance can occur in workers continuously exposed to concentrations of formaldehyde in this range. Accidental splash injuries of human eyes to aqueous solutions of formaldehyde (formalin) have resulted in a wide range of ocular injuries including corneal opacities and blindness. The severity of the reactions have been directly dependent on the concentration of formaldehyde in solution and the amount of time lapsed before emergency and medical intervention.

(iii) Skin contact: Exposure to formaldehyde solutions can cause irritation of the skin and allergic contact dermatitis. These skin diseases and disorders can occur at levels well below those encountered by many formaldehyde workers. Symptoms include erythema, edema, and vesiculation or hives. Exposure to liquid formalin or formaldehyde vapor can provoke skin reactions in sensitized individuals even when airborne concentrations of formaldehyde are well below 1 ppm.

(iv) Ingestion: Ingestion of as little as 30 ml of a thirty-seven percent solution of formaldehyde (formalin) can result in death. Gastrointestinal toxicity after ingestion is most severe in the stomach and results in symptoms which can include nausea, vomiting, and severe abdominal pain. Diverse damage to other organ systems including the liver, kidney, spleen, pancreas, brain, and central nervous systems can occur from the acute response to ingestion of formaldehyde.

(b) Chronic effects of exposure. Long-term exposure to formaldehyde has been shown to be associated with an increased risk of cancer of the nose and accessory sinuses, nasopharyngeal and oropharyngeal cancer, and lung cancer

in humans. Animal experiments provide conclusive evidence of a causal relationship between nasal cancer in rats and formaldehyde exposure. Concordant evidence of carcinogenicity includes DNA binding, genotoxicity in short-term tests, and cytotoxic changes in the cells of the target organ suggesting both preneoplastic changes and a dose-rate effect. Formaldehyde is a complete carcinogen and appears to exert an effect on at least two stages of the carcinogenic process.

(3) Surveillance considerations.

(a) History.

(i) Medical and occupational history: Along with its acute irritative effects, formaldehyde can cause allergic sensitization and cancer. One of the goals of the work history should be to elicit information on any prior or additional exposure to formaldehyde in either the occupational or the nonoccupational setting.

(ii) Respiratory history: As noted above, formaldehyde has recognized properties as an airway irritant and has been reported by some authors as a cause of occupational asthma. In addition, formaldehyde has been associated with cancer of the entire respiratory system of humans. For these reasons, it is appropriate to include a comprehensive review of the respiratory system in the medical history. Components of this history might include questions regarding dyspnea on exertion, shortness of breath, chronic airway complaints, hyperreactive airway disease, rhinitis, bronchitis, bronchiolitis, asthma, emphysema, respiratory allergic reaction, or other preexisting pulmonary disease.

In addition, generalized airway hypersensitivity can result from exposures to a single sensitizing agent. The examiner should, therefore, elicit any prior history of exposure to pulmonary irritants, and any short-term or long-term effects of that exposure.

Smoking is known to decrease mucociliary clearance of materials deposited during respiration in the nose and upper airways. This may increase a worker's exposure to inhaled materials such as formaldehyde vapor. In addition, smoking is a potential confounding factor in the investigation of any chronic respiratory disease, including cancer. For these reasons, a complete smoking history should be obtained.

(iii) Skin disorders: Because of the dermal irritant and sensitizing effects of formaldehyde, a history of skin disorders should be obtained. Such a history might include the existence of skin irritation, previously documented skin sensitivity, and other dermatologic disorders. Previous exposure to formaldehyde and other dermal sensitizers should be recorded.

(iv) History of atopic or allergic diseases: Since formaldehyde can cause allergic sensitization of the skin and airways, it might be useful to identify individuals with prior allergen sensitization. A history of atopic disease and allergies to formaldehyde or any other substances should also be obtained. It is not definitely known at this time whether atopic diseases and allergies to formaldehyde or any other substances should also be obtained. Also it is not definitely known at this time whether atopic individuals have a greater propensity to develop formaldehyde sensitivity than the general population, but identification of these individuals may be useful for ongoing surveillance.

(v) Use of disease questionnaires: Comparison of the results from previous years with present results provides the best method for detecting a general deterioration in health when toxic signs and symptoms are measured subjectively. In this way recall bias does not affect the results of the analysis. Consequently, WISHA has determined that the findings of the medical and work histories should be kept in a standardized form for comparison of the year-to-year results.

(b) Physical examination.

(i) Mucosa of eyes and airways: Because of the irritant effects of formaldehyde, the examining physician should be alert to evidence of this irritation. A speculum examination of the nasal mucosa may be helpful in assessing possible irritation and cytotoxic changes, as may be indirect inspection of the posterior pharynx by mirror.

(ii) Pulmonary system: A conventional respiratory examination, including inspection of the thorax and auscultation and percussion of the lung fields should be performed as part of the periodic medical examination. Although routine pulmonary function testing is only required by the standard once every year for persons who are exposed over the TWA concentration limit, these tests have an obvious value in investigating possible respiratory dysfunction and should be used wherever deemed appropriate by the physician. In cases of alleged formaldehyde-induced airway disease, other possible causes of pulmonary dysfunction (including exposures to other substances) should be ruled out. A chest radiograph may be useful in these circumstances. In cases of suspected airway hypersensitivity or allergy, it may be appropriate to use bronchial challenge testing with formaldehyde or methacholine to determine the nature of the disorder. Such testing should be performed by or under the supervision of a physician experienced in the procedures involved.

(iii) Skin: The physician should be alert to evidence of dermal irritation of sensitization, including reddening and inflammation, urticaria, blistering, scaling, formation of skin fissures, or other symptoms. Since the integrity of the skin barrier is compromised by other dermal diseases, the presence of such disease should be noted. Skin sensitivity testing carries with it some risk of inducing sensitivity, and therefore, skin testing for formaldehyde sensitivity should not be used as a routine screening test. Sensitivity testing may be indicated in the investigation of a suspected existing sensitivity. Guidelines for such testing have been prepared by the North American Contact Dermatitis Group.

(4) Additional examinations or tests. The physician may deem it necessary to perform other medical examinations or tests as indicated. The standard provides a mechanism whereby these additional investigations are covered under the standard for occupational exposure to formaldehyde.

(5) Emergencies. The examination of workers exposed in an emergency should be directed at the organ systems most likely to be affected. Much of the content of the examination will be similar to the periodic examination unless the patient has received a severe acute exposure requiring immediate attention to prevent serious consequences. If a severe overexposure requiring medical intervention or hospitalization has occurred, the physician must be alert to the possibility of delayed symptoms. Followup nonroutine examinations may be necessary to ~~((assure))~~ ensure the patient's well-being.

(6) Employer obligations. The employer is required to provide the physician with the following information: A copy of this standard and appendices A, C, D, and E; a description of the affected employee's duties as they relate to his or her exposure concentration; an estimate of the employee's exposure including duration (e.g., fifteen hr./wk., three eight-hour shifts, full-time); a description of any personal protective equipment, including respirators, used by the employee; and the results of any previous medical determinations for the affected employee related to formaldehyde exposure to the extent that this information is within the employer's control.

(7) Physician's obligations. The standard requires the employer to obtain a written statement from the physician. This statement must contain the physician's opinion as to whether the employee has any medical condition which would place ~~(him or her)~~ them at increased risk of impaired health from exposure to formaldehyde or use of respirators, as appropriate. The physician must also state his opinion regarding any restrictions that should be placed on the employee's exposure to formaldehyde or upon the use of protective clothing or equipment such as respirators. If the employee wears a respirator as a result of his or her exposure to formaldehyde, the physician's opinion must also contain a statement regarding the suitability of the employee to wear the type of respirator assigned. Finally, the physician must inform the employer that the employee has been told the results of the medical examination and of any medical conditions which require further explanation or treatment. This written opinion is not to contain any information on specific findings or diagnoses unrelated to occupational exposure to formaldehyde.

The purpose in requiring the examining physician to supply the employer with a written opinion is to provide the employer with a medical basis to assist the employer in placing employees initially, in ~~(assuring)~~ ensuring that their health is not being impaired by formaldehyde, and to assess the employee's ability to use any required protective equipment.

AMENDATORY SECTION (Amending WSR 14-07-086, filed 3/18/14, effective 5/1/14)

WAC 296-62-07601 Scope and application. (1) WAC 296-62-076 applies to all occupational exposures to MDA, Chemical Abstracts Service Registry No. 101-77-9, except as provided in subsections (2) through (7) of this section.

(2) Except as provided in subsection (8) of this section and WAC 296-62-07609(5), this section does not apply to the processing, use, and handling of products containing MDA where initial monitoring indicates that the product is not capable of releasing MDA in excess of the action level under the expected conditions of processing, use, and handling which will cause the greatest possible release; and where no "dermal exposure to MDA" can occur.

(3) Except as provided in subsection (8) of this section, WAC 296-62-076 does not apply to the processing, use, and handling of products containing MDA where objective data are reasonably relied upon which demonstrate the product is not capable of releasing MDA under the expected conditions of processing, use, and handling which will cause the greatest

possible release; and where no "dermal exposure to MDA" can occur.

(4) WAC 296-62-076 does not apply to the storage, transportation, distribution, or sale of MDA in intact containers sealed in such a manner as to contain the MDA dusts, vapors, or liquids, except for the provisions of WAC ~~((296-62-054,))~~ 296-62-07607 and 296-901-140.

(5) WAC 296-62-076 does not apply to the construction industry as defined in WAC 296-155-012~~((6))~~. (Exposure to MDA in the construction industry is covered by WAC 296-155-173.)

(6) Except as provided in subsection (8) of this section, WAC 296-62-076 does not apply to materials in any form which contain less than 0.1% MDA by weight or volume.

(7) Except as provided in subsection (8) of this section, WAC 296-62-076 does not apply to "finished articles containing MDA."

(8) Where products containing MDA are exempted under subsections (2) through (7) of this section, the employer ~~((shall))~~ must maintain records of the initial monitoring results or objective data supporting that exemption and the basis for the employer's reliance on the data, as provided in the recordkeeping provision of WAC 296-62-07631.

AMENDATORY SECTION (Amending WSR 93-04-111, filed 2/3/93, effective 3/15/93)

WAC 296-62-07603 Definitions. For the purpose of WAC 296-62-076, the following definitions shall apply:

~~((1))~~ "Action level" means) **Action level.** A concentration of airborne MDA of 5 ppb as an 8-hour time-weighted average.

~~((2))~~ "Authorized person" means) **Authorized person.** Any person specifically authorized by the employer whose duties require the person to enter a regulated area, or any person entering such an area as a designated representative of employees, for the purpose of exercising the right to observe monitoring and measuring procedures under WAC 296-62-07633 of WAC 296-62-076, or any other person authorized by WISHA or regulations issued by WISHA.

~~((3))~~ "Container" means) **Container.** Any barrel, bottle, can, cylinder, drum, reaction vessel, storage tank, commercial packaging, or the like, but does not include piping systems.

~~((4))~~ "Dermal exposure to MDA" means) **Dermal exposure to MDA.** Occurs where employees are engaged in the handling, application, or use of mixtures or materials containing MDA, with any of the following nonairborne forms of MDA:

(a) Liquid, powdered, granular, or flaked mixtures containing MDA in concentrations greater than 0.1% by weight or volume; and

(b) Materials other than "finished articles" containing MDA in concentrations greater than 0.1% by weight or volume.

~~((5))~~ "Director" means) **Director.** The director of the department of labor and industries, or ~~((his/her))~~ their designated representative.

~~((6))~~ "Emergency" means) **Emergency.** Any occurrence such as, but not limited to, equipment failure, rupture of

containers, or failure of control equipment which results in an unexpected and potentially hazardous release of MDA.

~~((7) "Employee exposure" means))~~ **Employee exposure.** Exposure to MDA which would occur if the employee were not using respirators or protective work clothing and equipment.

~~((8) "Finished article containing MDA" is defined as))~~ **Finished article containing MDA.** Is a manufactured item:

(a) Which is formed to a specific shape or design during manufacture;

(b) Which has end use function(s) dependent in whole or part upon its shape or design during end use; and

(c) Where applicable, is an item which is fully cured by virtue of having been subjected to the conditions (temperature, time) necessary to complete the desired chemical reaction.

~~((9) "4,4' methylenedianiline" or "MDA" means))~~ **4,4' methylenedianiline or MDA.** The chemical 4,4'-diaminodiphenylmethane, Chemical Abstract Service Registry number 101-77-9, in the form of a vapor, liquid, or solid. The definition also includes the salts of MDA.

~~((10) "Regulated areas" means))~~ **Regulated areas.** Areas where airborne concentrations of MDA exceed or can reasonably be expected to exceed, the permissible exposure limits, or where dermal exposure to MDA can occur.

~~((11) "STEL" means))~~ **STEL.** Short-term exposure limit as determined by any 15 minute sample period.

AMENDATORY SECTION (Amending WSR 93-04-111, filed 2/3/93, effective 3/15/93)

WAC 296-62-07605 Permissible exposure limits (PEL). The employer (~~((shall assure))~~) must ensure that no employee is exposed to an airborne concentration of MDA in excess of ten parts per billion (10 ppb) as an 8-hour time-weighted average or a STEL of 100 ppb.

AMENDATORY SECTION (Amending WSR 93-04-111, filed 2/3/93, effective 3/15/93)

WAC 296-62-07607 Emergency situations. (1) Written plan.

(a) A written plan for emergency situations (~~((shall))~~) must be developed for each workplace where there is a possibility of an emergency. Appropriate portions of the plan (~~((shall))~~) must be implemented in the event of an emergency.

(b) The plan (~~((shall))~~) must specifically provide that employees engaged in correcting emergency conditions (~~((shall))~~) must be equipped with the appropriate personal protective equipment and clothing as required in WAC 296-62-07615 and 296-62-07617 until the emergency is abated.

(c) The plan (~~((shall))~~) must specifically include provisions for alerting and evacuating affected employees as well as the elements prescribed in chapter 296-24 WAC, Part G-1, "Employee emergency plans and fire prevention plans."

(2) Alerting employees. Where there is the possibility of employee exposure to MDA due to an emergency, means (~~((shall))~~) must be developed to alert promptly those employees who have the potential to be directly exposed. Affected employees not engaged in correcting emergency conditions (~~((shall))~~) must be evacuated immediately in the event that an

emergency occurs. Means (~~((shall))~~) must also be developed and implemented for alerting other employees who may be exposed as a result of the emergency.

AMENDATORY SECTION (Amending WSR 93-04-111, filed 2/3/93, effective 3/15/93)

WAC 296-62-07609 Exposure monitoring. (1) General.

(a) Determinations of employee exposure (~~((shall))~~) must be made from breathing zone air samples that are representative of each employee's exposure to airborne MDA over an eight-hour period. Determination of employee exposure to the STEL (~~((shall))~~) must be made from breathing zone air samples collected over a fifteen minute sampling period.

(b) Representative employee exposure (~~((shall))~~) must be determined on the basis of one or more samples representing full shift exposure for each shift for each job classification in each work area where exposure to MDA may occur.

(c) Where the employer can document that exposure levels are equivalent for similar operations in different work shifts, the employer shall only be required to determine representative employee exposure for that operation during one shift.

(2) Initial monitoring. Each employer who has a workplace or work operation covered by this standard (~~((shall))~~) must perform initial monitoring to determine accurately the airborne concentrations of MDA to which employees may be exposed.

(3) Periodic monitoring and monitoring frequency.

(a) If the monitoring required by subsection (2) of this section reveals employee exposure at or above the action level, but at or below the PELs, the employer (~~((shall))~~) must repeat such representative monitoring for each such employee at least every six months.

(b) If the monitoring required by subsection (2) of this section reveals employee exposure above the PELs, the employer (~~((shall))~~) must repeat such monitoring for each such employee at least every three months.

(c) The employer may alter the monitoring schedule from every three months to every six months for any employee for whom two consecutive measurements taken at least seven days apart indicate that the employee exposure has decreased to below the TWA but above the action level.

(4) Termination of monitoring.

(a) If the initial monitoring required by subsection (2) of this section reveals employee exposure to be below the action level, the employer may discontinue the monitoring for that employee, except as otherwise required by subsection (5) of this section.

(b) If the periodic monitoring required by subsection (3) of this section reveals that employee exposures, as indicated by at least two consecutive measurements taken at least seven days apart, are below the action level the employer may discontinue the monitoring for that employee, except as otherwise required by subsection (5) of this section.

(5) Additional monitoring. The employer (~~((shall))~~) must institute the exposure monitoring required under subsections (2) and (3) of this section when there has been a change in production process, chemicals present, control equipment,

personnel, or work practices which may result in new or additional exposures to MDA, or when the employer has any reason to suspect a change which may result in new or additional exposures.

(6) Accuracy of monitoring. Monitoring ~~((shall))~~ must be accurate, to a confidence level of ninety-five percent, to within plus or minus twenty-five percent for airborne concentrations of MDA.

(7) Employee notification of monitoring results.

(a) The employer ~~((shall))~~ must, within fifteen working days after the receipt of the results of any monitoring performed under this standard, notify each employee of these results, in writing, either individually or by posting of results in an appropriate location that is accessible to affected employees.

(b) The written notification required by subdivision (a) of this subsection ~~((shall))~~ must contain the corrective action being taken by the employer to reduce the employee exposure to or below the PELs, wherever the PELs are exceeded.

(8) Visual monitoring. The employer ~~((shall))~~ must make routine inspections of employee hands, face, and forearms potentially exposed to MDA. Other potential dermal exposures reported by the employee must be referred to the appropriate medical personnel for observation. If the employer determines that the employee has been exposed to MDA the employer ~~((shall))~~ must:

(a) Determine the source of exposure;

(b) Implement protective measures to correct the hazard; and

(c) Maintain records of the corrective actions in accordance with WAC 296-62-07631.

AMENDATORY SECTION (Amending WSR 93-04-111, filed 2/3/93, effective 3/15/93)

WAC 296-62-07611 Regulated areas. (1) Establishment.

(a) Airborne exposures. The employer ~~((shall))~~ must establish regulated areas where airborne concentrations of MDA exceed or can reasonably be expected to exceed, the permissible exposure limits.

(b) Dermal exposures. Where employees are subject to dermal exposure to MDA the employer ~~((shall))~~ must establish those work areas as regulated areas.

(2) Demarcation. Regulated areas ~~((shall))~~ must be demarcated from the rest of the workplace in a manner that minimizes the number of persons potentially exposed.

(3) Access. Access to regulated areas ~~((shall))~~ must be limited to authorized persons.

(4) Personal protective equipment and clothing. Each person entering a regulated area ~~((shall))~~ must be supplied with, and required to use, the appropriate personal protective clothing and equipment in accordance with WAC 296-62-07615 and 296-62-07617.

(5) Prohibited activities. The employer ~~((shall))~~ must ensure that employees do not eat, drink, smoke, chew tobacco or gum, or apply cosmetics in regulated areas.

AMENDATORY SECTION (Amending WSR 93-04-111, filed 2/3/93, effective 3/15/93)

WAC 296-62-07613 Methods of compliance. (1) Engineering controls and work practices.

(a) The employer ~~((shall))~~ must institute engineering controls and work practices to reduce and maintain employee exposure to MDA at or below the PELs except to the extent that the employer can establish that these controls are not feasible or where the provisions of subdivision (b) of this subsection or WAC 296-62-07615(1) apply.

(b) Wherever the feasible engineering controls and work practices which can be instituted are not sufficient to reduce employee exposure to or below the PELs, the employer ~~((shall))~~ must use them to reduce employee exposure to the lowest levels achievable by these controls and ~~((shall))~~ must supplement them by the use of respiratory protective devices which comply with the requirements of WAC 296-62-07615.

(2) Compliance program.

(a) The employer ~~((shall))~~ must establish and implement a written program to reduce employee exposure to or below the PELs by means of engineering and work practice controls, as required by subsection (1) of this section, and by use of respiratory protection where permitted under WAC 296-62-076. The program ~~((shall))~~ must include a schedule for periodic maintenance (e.g., leak detection) and ~~((shall))~~ must include the written plan for emergency situations as specified in WAC 296-62-07607.

(b) Upon request this written program ~~((shall))~~ must be furnished for examination and copying to the director, affected employees, and designated employee representatives. The employer ~~((shall))~~ must review and, as necessary, update such plans at least once every twelve months to make certain they reflect the current status of the program.

(3) Employee rotation. Employee rotation ~~((shall))~~ must not be permitted as a means of reducing exposure.

AMENDATORY SECTION (Amending WSR 09-15-145, filed 7/21/09, effective 9/1/09)

WAC 296-62-07615 Respiratory protection. (1) General. For employees who use respirators required by this section, the employer must provide each employee an appropriate respirator that complies with the requirements of this subsection. Respirators must be used during:

(a) Periods necessary to install or implement feasible engineering and work-practice controls;

(b) Work operations for which the employer establishes that engineering and work-practice controls are not feasible;

(c) Work operations for which feasible engineering and work-practice controls are not yet sufficient to reduce exposure to or below the PEL;

(d) Emergencies.

(2) Respirator program. The employer must develop, implement and maintain a respiratory protection program as required by chapter 296-842 WAC, Respirators, which covers each employee required by this chapter to use a respirator.

(3) Respirator selection.

(a) The employer must select and provide to employees appropriate respirators as specified in this section and WAC 296-842-13005 in the respirator rule.

(b) Any employee who cannot use a negative-pressure respirator must be given the option of using a positive-pressure respirator, or a supplied-air respirator operated in the continuous-flow or pressure-demand mode.

(c) Provide HEPA filters or N-, R-, or P-100 filters for powered air-purifying respirators (PAPRs) and negative-pressure air-purifying respirators.

(d) Provide to employees, for escape, one of the following respirator options:

(i) Any self-contained breathing apparatus with a full-facepiece or hood, operated in the positive-pressure or continuous-flow mode; or

(ii) A full-facepiece air-purifying respirator.

(e) Provide a combination HEPA filter (or N-, R-, or P-100 filter) and organic vapor canister or cartridge with air-purifying respirators when MDA is in liquid form or used as part of a process requiring heat.

AMENDATORY SECTION (Amending WSR 01-11-038, filed 5/9/01, effective 9/1/01)

WAC 296-62-07617 Protective work clothing and equipment. (1) Provision and use. Where employees are subject to dermal exposure to MDA, where liquids containing MDA can be splashed into the eyes, or where airborne concentrations of MDA are in excess of the PEL, the employer ~~((shall))~~ **must** provide, at no cost to the employee, and ensure that the employee uses, appropriate protective work clothing and equipment which prevent contact with MDA such as, but not limited to:

(a) Aprons, coveralls, or other full-body work clothing;

(b) Gloves, head coverings, and foot coverings; and

(c) Face shields, chemical goggles; or

(d) Other appropriate protective equipment which comply with WAC 296-800-160.

(2) Removal and storage.

(a) The employer ~~((shall))~~ **must** ensure that, at the end of their work shift, employees remove MDA-contaminated protective work clothing and equipment that is not routinely removed throughout the day in change rooms provided in accordance with the provisions established for change rooms.

(b) The employer ~~((shall))~~ **must** ensure that, during their work shift, employees remove all other MDA-contaminated protective work clothing or equipment before leaving a regulated area.

(c) The employer ~~((shall))~~ **must** ensure that no employee takes MDA-contaminated work clothing or equipment out of the change room, except those employees authorized to do so for the purpose of laundering, maintenance, or disposal.

(d) MDA-contaminated work clothing or equipment ~~((shall))~~ **must** be placed and stored in closed containers which prevent dispersion of the MDA outside the container.

(e) Containers of MDA-contaminated protective work clothing or equipment which are to be taken out of change rooms or the workplace for cleaning, maintenance, or disposal ~~((shall))~~ **must** bear labels warning of the hazards of MDA.

(3) Cleaning and replacement.

(a) The employer ~~((shall))~~ **must** provide the employee with clean protective clothing and equipment. The employer

~~((shall))~~ **must** ensure that protective work clothing or equipment required by this paragraph is cleaned, laundered, repaired, or replaced at intervals appropriate to maintain its effectiveness.

(b) The employer ~~((shall))~~ **must** prohibit the removal of MDA from protective work clothing or equipment by blowing, shaking, or any methods which allow MDA to reenter the workplace.

(c) The employer ~~((shall))~~ **must** ensure that laundering of MDA-contaminated clothing shall be done so as to prevent the release of MDA in the workplace.

(d) Any employer who gives MDA-contaminated clothing to another person for laundering ~~((shall))~~ **must** inform such person of the requirement to prevent the release of MDA.

(e) The employer ~~((shall))~~ **must** inform any person who launders or cleans protective clothing or equipment contaminated with MDA of the potentially harmful effects of exposure.

(f) MDA-contaminated clothing ~~((shall))~~ **must** be transported in properly labeled, sealed, impermeable bags or containers.

AMENDATORY SECTION (Amending WSR 01-17-033, filed 8/8/01, effective 9/1/01)

WAC 296-62-07619 Hygiene facilities and practices.

(1) Change rooms.

(a) The employer ~~((shall))~~ **must** provide clean change rooms for employees, who must wear protective clothing, or who must use protective equipment because of their exposure to MDA.

(b) Change rooms must be equipped with separate storage for protective clothing and equipment and for street clothes which prevents MDA contamination of street clothes.

(2) Showers.

(a) The employer ~~((shall))~~ **must** ensure that employees, who work in areas where there is the potential for exposure resulting from airborne MDA (e.g., particulates or vapors) above the action level, shower at the end of the work shift.

(i) Shower facilities required by this section ~~((shall))~~ **must** comply with WAC ~~((296-24-12010))~~ **296-800-23065**.

(ii) The employer ~~((shall))~~ **must** ensure that employees who are required to shower pursuant to the provisions contained herein do not leave the workplace wearing any protective clothing or equipment worn during the work shift.

(b) Where dermal exposure to MDA occurs, the employer ~~((shall))~~ **must** ensure that materials spilled or deposited on the skin are removed as soon as possible by methods which do not facilitate the dermal absorption of MDA.

(3) Lunch facilities.

(a) Availability and construction.

(i) Whenever food or beverages are consumed at the worksite and employees are exposed to MDA at or above the PEL or are subject to dermal exposure to MDA the employer ~~((shall))~~ **must** provide readily accessible lunch areas.

(ii) Lunch areas located within the workplace and in areas where there is the potential for airborne exposure to

MDA at or above the PEL ((shall)) must have a positive pressure, temperature controlled, filtered air supply.

(iii) Lunch areas may not be located in areas within the workplace where the potential for dermal exposure to MDA exists.

(b) The employer ((shall)) must ensure that employees who have been subjected to dermal exposure to MDA or who have been exposed to MDA above the PEL wash their hands and faces with soap and water prior to eating, drinking, smoking, or applying cosmetics.

(c) The employer ((shall)) must ensure that employees exposed to MDA do not enter lunch facilities with MDA-contaminated protective work clothing or equipment.

AMENDATORY SECTION (Amending WSR 14-07-086, filed 3/18/14, effective 5/1/14)

WAC 296-62-07621 Communication of hazards. (1) Hazard communication - General.

(a) Chemical manufacturers, importers, distributors, and employers ((shall)) must comply with all requirements of the Hazard Communication Standard (HCS), WAC 296-901-140 for MDA.

(b) In classifying the hazards of MDA at least the following hazards are to be addressed: Cancer; liver effects; and skin sensitization.

(c) Employers ((shall)) must include MDA in the hazard communication program established to comply with the HCS, WAC 296-901-140. Employers shall ensure that each employee has access to labels on containers of MDA and to safety data sheets, and is trained in accordance with the requirements of HCS and subsection (4) of this section.

(2) Signs and labels.

~~((a) Signs-~~

~~((i))~~ The employer ((shall)) must post and maintain legible signs demarcating regulated areas and entrances or accessways to regulated areas that bear the following legend:

DANGER MDA MAY CAUSE CANCER
CAUSES DAMAGE TO THE LIVER

RESPIRATORY PROTECTION AND PROTECTIVE CLOTHING
MAY BE REQUIRED TO BE WORN IN THIS AREA

~~((ii) Prior to June 1, 2016, employers may use the following legend in lieu of that specified in (a)(i) of this subsection:~~

~~DANGER MDA MAY CAUSE CANCER LIVER TOXIN
AUTHORIZED PERSONNEL ONLY
RESPIRATORS AND PROTECTIVE CLOTHING
MAY BE REQUIRED TO BE WORN IN THIS AREA~~

~~(b) Labels. Prior to June 1, 2015, employers may include the following information workplace labels in lieu of the labeling requirements in subsection (1) of this section:~~

~~(i) For pure MDA:~~

~~DANGER CONTAINS MDA MAY CAUSE CANCER LIVER TOXIN~~

~~(ii) For mixtures containing MDA:~~

~~DANGER CONTAINS MDA CONTAINS MATERIALS
WHICH MAY CAUSE CANCER LIVER TOXIN))~~

(3) Safety data sheets (SDS). In meeting the obligation to provide safety data sheets, employers ((shall)) must make appropriate use of the information found in Appendices A and B to WAC 296-62-076.

(4) Information and training.

(a) The employer ((shall)) must provide employees with information and training on MDA, in accordance with WAC 296-901-14016, at the time of initial assignment and at least annually thereafter.

(b) In addition to the information required under WAC 296-901-140, the employer ((shall)) must:

(i) Provide an explanation of the contents of WAC 296-62-076, including Appendices A and B, and indicate to employees where a copy of the standard is available;

(ii) Describe the medical surveillance program required under WAC 296-62-07625, and explain the information contained in Appendix C; and

(iii) Describe the medical removal provision required under WAC ~~((296-62-07625))~~ 296-62-07627 and 296-62-07629.

(5) Access to training materials.

(a) The employer ((shall)) must make readily available to all affected employees, without cost, all written materials relating to the employee training program, including a copy of this regulation.

(b) The employer ((shall)) must provide to the director, upon request, all information and training materials relating to the employee information and training program.

AMENDATORY SECTION (Amending WSR 93-04-111, filed 2/3/93, effective 3/15/93)

WAC 296-62-07623 Housekeeping. (1) All surfaces ((shall)) must be maintained as free as practicable of visible accumulations of MDA.

(2) The employer ((shall)) must institute a program for detecting MDA leaks, spills, and discharges, including regular visual inspections of operations involving liquid or solid MDA.

(3) All leaks ((shall)) must be repaired and liquid or dust spills cleaned up promptly.

(4) Surfaces contaminated with MDA may not be cleaned by the use of compressed air.

(5) Shoveling, dry sweeping, and other methods of dry clean-up of MDA may be used where HEPA-filtered vacuuming and/or wet cleaning are not feasible or practical.

(6) Waste, scrap, debris, bags, containers, equipment, and clothing contaminated with MDA ((shall)) must be collected and disposed of in a manner to prevent the reentry of MDA into the workplace.

AMENDATORY SECTION (Amending WSR 93-04-111, filed 2/3/93, effective 3/15/93)

WAC 296-62-07625 Medical surveillance. (1) General.

(a) The employer ((shall)) must make available a medical surveillance program for employees exposed to MDA:

(i) Employees exposed at or above the action level for thirty or more days per year;

(ii) Employees who are subject to dermal exposure to MDA for fifteen or more days per year;

(iii) Employees who have been exposed in an emergency situation;

(iv) Employees whom the employer, based on results from compliance with WAC 296-62-07609(8), has reason to believe are being dermally exposed; and

(v) Employees who show signs or symptoms of MDA exposure.

(b) The employer ((~~shall~~)) must ensure that all medical examinations and procedures are performed by, or under the supervision of, a licensed physician, at a reasonable time and place, and provided without cost to the employee.

(2) Initial examinations.

(a) Within one hundred fifty days of the effective date of this standard, or before the time of initial assignment, the employer ((~~shall~~)) must provide each employee covered by subdivision (1)(a) of this section with a medical examination including the following elements:

(i) A detailed history which includes:

(A) Past work exposure to MDA or any other toxic substances;

(B) A history of drugs, alcohol, tobacco, and medication routinely taken (duration and quantity); and

(C) A history of dermatitis, chemical skin sensitization, or previous hepatic disease.

(ii) A physical examination which includes all routine physical examination parameters, skin examination, and signs of liver disease.

(iii) Laboratory tests including:

(A) Liver function tests; and

(B) Urinalysis.

(iv) Additional tests as necessary in the opinion of the physician.

(b) No initial medical examination is required if adequate records show that the employee has been examined in accordance with the requirements of WAC 296-62-076 within the previous six months prior to the effective date of this standard or prior to the date of initial assignment.

(3) Periodic examinations.

(a) The employer ((~~shall~~)) must provide each employee covered by WAC 296-62-076 with a medical examination at least annually following the initial examination. These periodic examinations ((~~shall~~)) must include at least the following elements:

(i) A brief history regarding any new exposure to potential liver toxins, changes in drug, tobacco, and alcohol intake, and the appearance of physical signs relating to the liver and the skin;

(ii) The appropriate tests and examinations including liver function tests and skin examinations; and

(iii) Appropriate additional tests or examinations as deemed necessary by the physician.

(b) If in the physicians' opinion the results of liver function tests indicate an abnormality, the employee ((~~shall~~)) must be removed from further MDA exposure in accordance with WAC 296-62-07627 and 296-62-07629. Repeat liver

function tests ((~~shall~~)) must be conducted on advice of the physician.

(4) Emergency examinations. If the employer determines that the employee has been exposed to a potentially hazardous amount of MDA in an emergency situation as addressed in WAC 296-62-07607, the employer ((~~shall~~)) must provide medical examinations in accordance with subsection (3) of this section. If the results of liver function testing indicate an abnormality, the employee ((~~shall~~)) must be removed in accordance with WAC 296-62-07627 and 296-62-07629. Repeat liver function tests ((~~shall~~)) must be conducted on the advice of the physician. If the results of the tests are normal, tests must be repeated two to three weeks from the initial testing. If the results of the second set of tests are normal and on the advice of the physician, no additional testing is required.

(5) Additional examinations. Where the employee develops signs and symptoms associated with exposure to MDA, the employer shall provide the employee with an additional medical examination including a liver function test. Repeat liver function tests ((~~shall~~)) must be conducted on the advice of the physician. If the results of the tests are normal, tests must be repeated two to three weeks from the initial testing. If the results of the second set of tests are normal and, on the advice of the physician, no additional testing is required.

(6) Multiple physician review mechanism.

(a) If the employer selects the initial physician who conducts any medical examination or consultation provided to an employee under WAC 296-62-076, and the employee has signs or symptoms of occupational exposure to MDA (which could include an abnormal liver function test), and the employee disagrees with the opinion of the examining physician, and this opinion could affect the employee's job status, the employee may designate an appropriate, mutually acceptable second physician:

(i) To review any findings, determinations, or recommendations of the initial physician; and

(ii) To conduct such examinations, consultations, and laboratory tests as the second physician deems necessary to facilitate this review.

(b) The employer ((~~shall~~)) must promptly notify an employee of the right to seek a second medical opinion after each occasion that an initial physician conducts a medical examination or consultation pursuant to WAC 296-62-076. The employer may condition its participation in, and payment for, the multiple physician review mechanism upon the employee doing the following within fifteen days after receipt of the foregoing notification, or receipt of the initial physician's written opinion, whichever is later:

(i) The employee informing the employer that he or she intends to seek a second medical opinion; and

(ii) The employee initiating steps to make an appointment with a second physician.

(c) If the findings, determinations, or recommendations of the second physician differ from those of the initial physician, then the employer and the employee ((~~shall assure~~)) must ensure that efforts are made for the two physicians to resolve any disagreement.

(d) If the two physicians have been unable to resolve quickly their disagreement, then the employer and the

employee through their respective physicians ((~~shall~~)) must designate a third physician:

(i) To review any findings, determinations, or recommendations of the prior physicians; and

(ii) To conduct such examinations, consultations, laboratory tests, and discussions with the prior physicians as the third physician deems necessary to resolve the disagreement of the prior physicians.

(e) The employer ((~~shall~~)) must act consistent with the findings, determinations, and recommendations of the third physician, unless the employer and the employee reach an agreement which is otherwise consistent with the recommendations of at least one of the three physicians.

(7) Information provided to the examining and consulting physicians.

(a) The employer ((~~shall~~)) must provide the following information to the examining physician:

(i) A copy of this regulation and its appendices;

(ii) A description of the affected employee's duties as they relate to the employee's potential exposure to MDA;

(iii) The employee's current actual or representative MDA exposure level;

(iv) A description of any personal protective equipment used or to be used; and

(v) Information from previous employment-related medical examinations of the affected employee.

(b) The employer ((~~shall~~)) must provide the foregoing information to a second physician under this section upon request either by the second physician or by the employee.

(8) Physician's written opinion.

(a) For each examination under WAC 296-62-076, the employer ((~~shall~~)) must obtain, and provide the employee with a copy of, the examining physician's written opinion within fifteen days of its receipt. The written opinion ((~~shall~~)) must include the following:

(i) The occupationally pertinent results of the medical examination and tests;

(ii) The physician's opinion concerning whether the employee has any detected medical conditions which would place the employee at increased risk of material impairment of health from exposure to MDA;

(iii) The physician's recommended limitations upon the employee's exposure to MDA or upon the employee's use of protective clothing or equipment and respirators; and

(iv) A statement that the employee has been informed by the physician of the results of the medical examination and any medical conditions resulting from MDA exposure which require further explanation or treatment.

(b) The written opinion obtained by the employer ((~~shall~~)) must not reveal specific findings or diagnoses unrelated to occupational exposures.

AMENDATORY SECTION (Amending WSR 93-04-111, filed 2/3/93, effective 3/15/93)

WAC 296-62-07627 Medical removal—Temporary medical removal of an employee. Temporary medical removal of an employee.

(1) Temporary removal resulting from occupational exposure. The employee ((~~shall~~)) must be removed from

work environments in which exposure to MDA is at or above the action level or where dermal exposure to MDA may occur, following an initial examination (WAC 296-62-07625(2)), periodic examinations (WAC 296-62-07625(3)), an emergency situation (WAC 296-62-07625(4)), or an additional examination (WAC 296-62-07625(5)) in the following circumstances:

(a) When the employee exhibits signs and/or symptoms indicative of acute exposure to MDA; or

(b) When the examining physician determines that an employee's abnormal liver function tests are not associated with MDA exposure but that the abnormalities may be exacerbated as a result of occupational exposure to MDA.

(c) Temporary removal due to a final medical determination.

(i) The employer ((~~shall~~)) must remove an employee from work environments in which exposure to MDA is at or above the action level or where dermal exposure to MDA may occur, on each occasion that there is a final medical determination or opinion that the employee has a detected medical condition which places the employee at increased risk of material impairment to health from exposure to MDA.

(ii) For the purposes of WAC 296-62-076, the phrase "final medical determination" shall mean the outcome of the physician review mechanism used pursuant to the medical surveillance provisions of this section.

(iii) Where a final medical determination results in any recommended special protective measures for an employee, or limitations on an employee's exposure to MDA, the employer ((~~shall~~)) must implement and act consistent with the recommendation.

(2) Return of the employee to former job status.

(a) The employer ((~~shall~~)) must return an employee to ((~~his or her~~)) their former job status:

(i) When the employee no longer shows signs or symptoms of exposure to MDA or upon the advice of the physician.

(ii) When a subsequent final medical determination results in a medical finding, determination, or opinion that the employee no longer has a detected medical condition which places the employee at increased risk of material impairment to health from exposure to MDA.

(b) For the purposes of this section, the requirement that an employer return an employee to ((~~his or her~~)) their former job status is not intended to expand upon or restrict any rights an employee has or would have had, absent temporary medical removal, to a specific job classification or position under the terms of a collective bargaining agreement.

(3) Removal of other employee special protective measure or limitations. The employer ((~~shall~~)) must remove any limitations placed on an employee, or end any special protective measures provided to an employee, pursuant to a final medical determination, when a subsequent final medical determination indicates that the limitations or special protective measures are no longer necessary.

(4) Employer options pending a final medical determination. Where the physician review mechanism used pursuant to the medical surveillance provisions of WAC 296-62-076, has not yet resulted in a final medical determination with

respect to an employee, the employer ~~((shall))~~ must act as follows:

(a) Removal. The employer may remove the employee from exposure to MDA, provide special protective measures to the employee, or place limitations upon the employee, consistent with the medical findings, determinations, or recommendations of any of the physicians who have reviewed the employee's health status.

(b) Return. The employer may return the employee to ~~((his or her))~~ their former job status, and end any special protective measures provided to the employee, consistent with the medical findings, determinations, or recommendations of any of the physicians who have reviewed the employee's health status, with two exceptions.

(i) If the initial removal, special protection, or limitation of the employee resulted from a final medical determination which differed from the findings, determinations, or recommendations of the initial physician; or

(ii) If the employee has been on removal status for the preceding six months as a result of exposure to MDA, then the employer ~~((shall))~~ must await a final medical determination.

AMENDATORY SECTION (Amending WSR 93-04-111, filed 2/3/93, effective 3/15/93)

WAC 296-62-07629 Medical removal protection benefits. (1) Provisions of medical removal protection benefits. The employer ~~((shall))~~ must provide to an employee up to six months of medical removal protection benefits on each occasion that an employee is removed from exposure to MDA or otherwise limited pursuant to this section.

(2) Definition of medical removal protection benefits. For the purposes of this section, the requirement that an employer provide medical removal protection benefits means that the employer ~~((shall))~~ must maintain the earnings, seniority, and other employment rights and benefits of an employee as though the employee had not been removed from normal exposure to MDA or otherwise limited.

(3) Follow-up medical surveillance during the period of employee removal or limitations. During the period of time that an employee is removed from normal exposure to MDA or otherwise limited, the employer may condition the provision of medical removal protection benefits upon the employee's participation in follow-up medical surveillance made available pursuant to WAC 296-62-076.

(4) Workers' compensation claims. If a removed employee files a claim for workers' compensation payments for an MDA-related disability, then the employer ~~((shall))~~ must continue to provide medical removal protection benefits pending disposition of the claim. To the extent that an award is made to the employee for earnings lost during the period of removal, the employer's medical removal protection obligation ~~((shall))~~ must be reduced by such amount. The employer ~~((shall))~~ must receive no credit for workers' compensation payments received by the employee for treatment-related expenses.

(5) Other credits. The employer's obligation to provide medical removal protection benefits to a removed employee ~~((shall))~~ must be reduced to the extent that the employee

receives compensation for earnings lost during the period of removal either from a publicly or employer-funded compensation program, or receives income from non-MDA-related employment with any employer made possible by virtue of the employee's removal.

(6) Employees who do not recover within the six months of removal. The employer ~~((shall))~~ must take the following measures with respect to any employee removed from exposure to MDA:

(a) The employer ~~((shall))~~ must make available to the employee a medical examination pursuant to this section to obtain a final medical determination with respect to the employee;

(b) The employer ~~((shall assure))~~ must ensure that the final medical determination obtained indicates whether or not the employee may be returned to ~~((his or her))~~ their former job status, and, if not, what steps should be taken to protect the employee's health;

(c) Where the final medical determination has not yet been obtained, or, once obtained indicates that the employee may not yet be returned to ~~((his or her))~~ their former job status, the employer ~~((shall))~~ must continue to provide medical removal protection benefits to the employee until either the employee is returned to former job status, or a final medical determination is made that the employee is incapable of ever safely returning to ~~((his or her))~~ their former job status; and

(d) Where the employer acts pursuant to a final medical determination which permits the return of the employee to ~~((his or her))~~ their former job status, despite what would otherwise be an abnormal liver function test, later questions concerning removing the employee again ~~((shall))~~ must be decided by a final medical determination. The employer need not automatically remove such an employee pursuant to the MDA removal criteria provided by WAC 296-62-076.

(7) Voluntary removal or restriction of an employee. Where an employer, although not required by WAC 296-62-076 to do so, removes an employee from exposure to MDA or otherwise places limitations on an employee due to the effects of MDA exposure on the employee's medical condition, the employer ~~((shall))~~ must provide medical removal protection benefits to the employee equal to that required by this section.

AMENDATORY SECTION (Amending WSR 12-24-071, filed 12/4/12, effective 1/4/13)

WAC 296-62-07631 Recordkeeping. (1) Monitoring data for exempted employers.

(a) Where as a result of the initial monitoring the processing, use, or handling of products made from or containing MDA are exempted from other requirements of this section under WAC 296-62-07601(2), the employer ~~((shall))~~ must establish and maintain an accurate record of monitoring relied on in support of the exemption.

(b) This record shall include at least the following information:

(i) The product qualifying for exemption;

(ii) The source of the monitoring data (e.g., was monitoring performed by the employer or a private contractor);

(iii) The testing protocol, results of testing, and/or analysis of the material for the release of MDA;

(iv) A description of the operation exempted and how the data support the exemption (e.g., are the monitoring data representative of the conditions at the affected facility); and

(v) Other data relevant to the operations, materials, processing, or employee exposures covered by the exemption.

(c) The employer ~~((shall))~~ must maintain this record for the duration of the employer's reliance upon such objective data.

(2) Objective data for exempted employers.

(a) Where the processing, use, or handling of products made from or containing MDA are exempted from other requirements of WAC 296-62-076 under WAC 296-62-07601, the employer ~~((shall))~~ must establish and maintain an accurate record of objective data relied upon in support of the exemption.

(b) This record ~~((shall))~~ must include at least the following information:

(i) The product qualifying for exemption;

(ii) The source of the objective data;

(iii) The testing protocol, results of testing, and/or analysis of the material for the release of MDA;

(iv) A description of the operation exempted and how the data support the exemption; and

(v) Other data relevant to the operations, materials, processing, or employee exposures covered by the exemption.

(c) The employer ~~((shall))~~ must maintain this record for the duration of the employer's reliance upon such objective data.

(3) Exposure measurements.

(a) The employer ~~((shall))~~ must establish and maintain an accurate record of all measurements required by WAC 296-62-07609, in accordance with ~~((Part B of this))~~ chapter 296-802 WAC.

(b) This record shall include:

(i) The dates, number, duration, and results of each of the samples taken, including a description of the procedure used to determine representative employee exposures;

(ii) Identification of the sampling and analytical methods used;

(iii) A description of the type of respiratory protective devices worn, if any; and

(iv) The name, Social Security number, job classification, and exposure levels of the employee monitored and all other employees whose exposure the measurement is intended to represent.

(c) The employer ~~((shall))~~ must maintain this record for at least 30 years, in accordance with ~~((Part B of this chapter))~~ WAC 296-802-20010.

(4) Medical surveillance.

(a) The employer shall establish and maintain an accurate record for each employee subject to medical surveillance required by WAC 296-62-07625, 296-62-07627, and 296-62-07629, in accordance with ~~((Part B of this))~~ chapter 296-802 WAC.

(b) This record ~~((shall))~~ must include:

(i) The name, Social Security number, and description of the duties of the employee;

(ii) The employer's copy of the physician's written opinion on the initial, periodic, and any special examinations, including results of medical examination and all tests, opinions, and recommendations;

(iii) Results of any airborne exposure monitoring done for that employee and the representative exposure levels supplied to the physician; and

(iv) Any employee medical complaints related to exposure to MDA.

(c) The employer ~~((shall))~~ must keep, or assure that the examining physician keeps, the following medical records:

(i) A copy of this standard and its appendices, except that the employer may keep one copy of the standard and its appendices for all employees provided the employer references the standard and its appendices in the medical surveillance record of each employee;

(ii) A copy of the information provided to the physician as required by any sections in the regulatory text;

(iii) A description of the laboratory procedures and a copy of any standards or guidelines used to interpret the test results or references to the information;

(iv) A copy of the employee's medical and work history related to exposure to MDA.

(d) The employer ~~((shall))~~ must maintain this record for at least the duration of employment plus thirty years, in accordance with ~~((Part B of this))~~ chapter 296-802 WAC.

(5) Medical removals.

(a) The employer ~~((shall))~~ must establish and maintain an accurate record for each employee removed from current exposure to MDA pursuant to WAC 296-62-07625, 296-62-07627, and 296-62-07629.

(b) Each record ~~((shall))~~ must include:

(i) The name and Social Security number of the employee;

(ii) The date of each occasion that the employee was removed from current exposure to MDA as well as the corresponding date on which the employee was returned to ~~((his or her))~~ their former job status;

(iii) A brief explanation of how each removal was or is being accomplished; and

(iv) A statement with respect to each removal indicating the reason for the removal.

(c) The employer ~~((shall))~~ must maintain each medical removal record for at least the duration of an employee's employment plus thirty years.

(6) Availability.

(a) The employer ~~((shall assure))~~ must ensure that records required to be maintained by ~~((WAC 296-62-076 shall))~~ chapter 296-802 WAC must be made available, upon request, to the director for examination and copying.

(b) Employee exposure monitoring records required by WAC 296-62-076 ~~((shall))~~ must be provided upon request for examination and copying to employees, employee representatives, and the director in accordance with the applicable sections of ~~((WAC 296-800-170))~~ chapter 296-800 WAC.

(c) Employee medical records required by this section ~~((shall))~~ must be provided upon request for examination and copying, to the subject employee, to anyone having the specific written consent of the subject employee, and to the

director in accordance with (~~Part B of this~~) chapter 296-802 WAC.

(7) Transfer of records. The employer (~~shall~~) must comply with the requirements involving transfer of records set forth in chapter 296-802 WAC.

AMENDATORY SECTION (Amending WSR 93-04-111, filed 2/3/93, effective 3/15/93)

WAC 296-62-07633 Observation of monitoring. (1) Employee observation. The employer (~~shall~~) must provide affected employees, or their designated representatives, an opportunity to observe the measuring or monitoring of employee exposure to MDA conducted pursuant to WAC 296-62-07609.

(2) Observation procedures. When observation of the measuring or monitoring of employee exposure to MDA requires entry into areas where the use of protective clothing and equipment or respirators is required, the employer (~~shall~~) must provide the observer with personal protective clothing and equipment or respirators required to be worn by employees working in the area, (~~assure~~) ensure the use of such clothing and equipment or respirators, and require the observer to comply with all other applicable safety and health procedures.

AMENDATORY SECTION (Amending WSR 93-04-111, filed 2/3/93, effective 3/15/93)

WAC 296-62-07637 Appendices. The information contained in Appendices A, B, C, and D of WAC 296-62-076 is not intended by itself, to create any additional obligations not otherwise imposed by this standard nor detract from any existing obligation. (~~The protocols for respiratory fit testing in Appendix E of WAC 296-62-076 are mandatory.~~)

AMENDATORY SECTION (Amending WSR 99-17-026, filed 8/10/99, effective 11/10/99)

WAC 296-62-07703 Definitions. For the purpose of WAC 296-62-07701 through 296-62-07753:

Accredited inspector (~~means~~), Any person meeting the accreditation requirements of the Federal Toxic Substance Control Act, Section 206(a)(1) and (3). 15 U.S.C. 2646(a)(1) and (3).

Aggressive method (~~means~~), Removal or disturbance of building material by sanding, abrading, grinding or other method that breaks, crumbles, or disintegrates intact ACM.

Amended water (~~means~~), Water to which surfactant (wetting agent) has been added to increase the ability of the liquid to penetrate ACM.

Asbestos, Includes chrysotile, amosite, crocidolite, tremolite asbestos, anthophyllite asbestos, actinolite asbestos, and any of these minerals that have been chemically treated and/or altered.

For purposes of this standard, "asbestos" includes PACM, as defined below.

Asbestos abatement project (~~means~~), An asbestos project involving three square feet or three linear feet, or more, of asbestos-containing material.

Asbestos-containing material (ACM) (~~means~~), Any material containing more than 1% asbestos.

Asbestos project, Includes the construction, demolition, repair, remodeling, maintenance or renovation of any public or private building or structure, mechanical piping equipment or system involving the demolition, removal, encapsulation, salvage, or disposal of material or outdoor activity releasing or likely to release asbestos fibers into the air.

Authorized person (~~means~~), Any person authorized by the employer and required by work duties to be present in regulated areas.

Building/facility/vessel owner (~~means~~), Any legal entity or person who owns any public or private building, vessel, structure, facility, or mechanical system or the remnants thereof, including the agent of such person, but does not include individuals who work on asbestos projects in their own single-family residences, no part of which is used for commercial purposes. Also included is any lessee, who exercises control over management and record keeping functions relating to a building, vessel, and/or facility in which activities covered by this standard takes place.

Certified asbestos supervisor (~~means~~), An individual certified by the department under WAC 296-65-012.

Certified asbestos worker (~~means~~), An individual certified by the department under WAC 296-65-010.

Certified industrial hygienist (CIH) (~~means~~), One certified in the practice of industrial hygiene by the American Board of Industrial Hygiene.

Class I asbestos work (~~means~~), Activities involving the removal of thermal system insulation or surfacing ACM/PACM.

Class II asbestos work (~~means~~), Activities involving the removal of ACM which is not thermal system insulation or surfacing material. This includes, but is not limited to, the removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastics.

Class III asbestos work (~~means~~), Repair and maintenance operations where "ACM," including TSI and surfacing ACM and PACM, may be disturbed.

Class IV asbestos work (~~means~~), Maintenance and custodial activities during which employees contact but do not disturb ACM or PACM and activities to clean up dust, waste and debris resulting from Class I, II, and III activities.

Clean room (~~means~~), An uncontaminated room having facilities for the storage of employees' street clothing and uncontaminated materials and equipment.

Closely resemble (~~means that~~), The major workplace conditions which have contributed to the levels of historic asbestos exposure, are no more protective than conditions of the current workplace.

Competent person (~~means~~), In addition to the definition in WAC 296-62-07728, one who is capable of identifying existing asbestos, hazards in the workplace and selecting the appropriate control strategy for asbestos exposure, who has the authority to take prompt corrective measures to eliminate them as specified in WAC 296-62-07728. The competent person shall be certified as an asbestos supervisor in compliance with WAC 296-65-030(3) and 296-65-012 for Class I and Class II work, and for Class III and Class IV work

involving 3 square feet or 3 linear feet or more of asbestos-containing material. For Class III and Class IV work, involving less than 3 square feet or 3 linear feet, the competent person shall be trained in an operations and maintenance (O&M) course which meets the criteria of EPA (40 C.F.R. 763.92 (a)(2)).

Critical barrier ((means)). One or more layers of plastic sealed over all openings into a work area or any other similarly placed physical barrier sufficient to prevent airborne asbestos in a work area from migrating to an adjacent area.

Decontamination area ((means)). An enclosed area adjacent and connected to the regulated area and consisting of an equipment room, shower area, and clean room, which is used for the decontamination of workers, materials, and equipment contaminated with asbestos.

Demolition ((means)). The wrecking or taking out of any load-supporting structural member and any related razing, removing, or stripping of asbestos products. Where feasible, asbestos-containing materials shall be removed from all structures prior to the commencement of any demolition activity as per WAC 296-155-775(9).

Department ((means)). The department of labor and industries.

Director ((means)). The director of the department of labor and industries or (his/her) their authorized representative.

Director of NIOSH ((means)). The Director, National Institute for Occupational Safety and Health, U.S. Department of Health and Human Services, or designee.

Disturb or disturbance. Refers to activities that disrupt the matrix of ACM or PACM, crumble or pulverize ACM or PACM, or generate visible debris from ACM or PACM. This term includes activities that disrupt the matrix of ACM or PACM, render ACM or PACM friable, or generate visible debris. Disturbance includes cutting away small amounts of ACM or PACM, no greater than the amount that can be contained in one standard size glove bag or waste bag in order to access a building or vessel component. In no event shall the amount of ACM or PACM so disturbed exceed that which can be contained in one glove bag or waste bag which shall not exceed 60 inches in length and width.

Employee exposure ((means that)). Exposure to airborne asbestos that would occur if the employee were not using respiratory protective equipment.

Equipment room (change room) ((means)). A contaminated room located within the decontamination area that is supplied with impermeable bags or containers for the disposal of contaminated protective clothing and equipment.

Fiber ((means)). A particulate form of asbestos, five micrometers or longer, with a length-to-diameter ratio of at least three to one.

Glove bag ((means)). Not more than a 60 x 60 inch impervious plastic bag-like enclosure affixed around an asbestos-containing material, with glove-like appendages through which material and tools may be handled.

High-efficiency particulate air (HEPA) filter ((means)). A filter capable of trapping and retaining at least 99.97 percent of all monodispersed particles of 0.3 micrometers mean aerodynamic diameter or larger.

Homogeneous area ((means)). An area of surfacing material or thermal system insulation that is uniform in color and texture.

Industrial hygienist ((means)). A professional qualified by education, training, and experience to anticipate, recognize, evaluate and develop controls for occupational health hazards.

Intact ((means that)). The ACM has not crumbled, been pulverized, or otherwise deteriorated so that the asbestos is no longer likely to be bound with its matrix. Friable ACM that is disturbed, as defined in this part, is presumed to be no longer intact.

Modification. For the purpose of WAC 296-62-07712, "modification" means a changed or altered procedure, material or component of a control system, which replaces a procedure, material or component of a required system. Omitting a procedure or component, or reducing or diminishing the stringency or strength of a material or component of the control system is not a "modification" for the purposes of WAC 296-62-07712.

Negative initial exposure assessment ((means)). A demonstration by the employer (which complies with the criteria in WAC 296-62-07709) that employee exposure during an operation is expected to be consistently below the PELs.

PACM ((means—)). Presumed asbestos-containing material. (U)

Presumed asbestos-containing material ((means)). Thermal system insulation and surfacing material found in buildings, vessels, and vessel sections constructed no later than 1980. The designation of a material as "PACM" may be rebutted pursuant to WAC 296-62-07721.

Project designer ((means)). A person who has successfully completed the training requirements for an abatement project designer established by 40 U.S.C. 763.90(g).

Regulated area ((means)). An area established by the employer to demarcate areas where Class I, II, and III asbestos work is conducted, and any adjoining area where debris and waste from such asbestos work accumulate; and a work area within which airborne concentrations of asbestos, exceed or can reasonably be expected to exceed the permissible exposure limit. Requirements for regulated areas are set out in WAC 296-62-07711.

Removal ((means)). All operations where ACM and/or PACM is taken out or stripped from structures or substrates, and includes demolition operations.

Renovation ((means)). The modifying of any existing vessel, vessel section, structure, or portion thereof.

Repair ((means)). Overhauling, rebuilding, reconstructing, or reconditioning of vessels, vessel sections, structures or substrates, including encapsulation or other repair of ACM or PACM attached to vessels, vessel sections, structures or substrates.

~~((Surfacing material means material that is sprayed, troweled on or otherwise applied to surfaces (such as acoustical plaster on ceilings and fireproofing materials on structural members, or other materials on surfaces for acoustical, fireproofing, and other purposes:-))~~

Surfacing ACM ((means)). Surfacing material which contains more than 1% asbestos.

Surfacing material. Material that is sprayed, troweled-on or otherwise applied to surfaces (such as acoustical plaster on ceilings and fireproofing materials on structural members, or other materials on surfaces for acoustical, fireproofing, and other purposes).

Thermal system insulation (TSI) ((means)), ACM applied to pipes, fittings, boilers, breaching, tanks, ducts, or other structural components to prevent heat loss or gain.

Thermal system insulation ACM ((is)), Thermal system insulation which contains more than 1% asbestos.

AMENDATORY SECTION (Amending WSR 97-01-079, filed 12/17/96, effective 3/1/97)

WAC 296-62-07705 Permissible exposure limits (PEL). (1) Time weighted average (TWA). The employer ((shall)) must ensure that no employee is exposed to an airborne concentration of asbestos in excess of 0.1 fiber per cubic centimeter (0.1 f/cc) of air as an eight-hour time-weighted average (TWA) as determined by the method prescribed in Appendix A of this part, or by an equivalent method recognized by the department.

(2) Excursion limit. The employer ((shall)) must ensure that no employee is exposed to an airborne concentration of asbestos in excess of 1.0 fiber per cubic centimeter of air (1 f/cc) as averaged over a sampling period of thirty minutes, as determined by the method prescribed in Appendix A of this part, or by an equivalent method recognized by the department.

AMENDATORY SECTION (Amending WSR 97-01-079, filed 12/17/96, effective 3/1/97)

WAC 296-62-07706 Multiemployer worksites. (1) On multiemployer worksites, an employer performing work requiring the establishment of a regulated area ((shall)) must inform other employers on the site of the nature of the employer's work with asbestos and/or PACM, of the existence of and requirements pertaining to regulated areas, and the measures taken to ensure that employees of such other employers are not exposed to asbestos.

(2) Asbestos hazards at a multiemployer worksite ((shall)) must be abated by the employer who created or controls the source of asbestos contamination. For example, if there is a significant breach of an enclosure containing Class I work, the employer responsible for erecting the enclosure ((shall)) must repair the breach immediately.

(3) In addition, all employers of employees exposed to asbestos hazards ((shall)) must comply with applicable protective provisions to protect their employees. For example, if employees working immediately adjacent to a Class I asbestos job are exposed to asbestos due to the inadequate containment of such jobs, their employer ((shall)) must either remove the employees from the area until the enclosure breach is repaired; or perform an initial exposure assessment pursuant to WAC 296-62-07709.

(4) All employers of employees working adjacent to regulated areas established by another employer on a multiemployer worksite, ((shall)) must take steps on a daily basis to ascertain the integrity of the enclosure and/or the effectiveness of the control method relied on by the primary asbestos

contractor to ((assure)) ensure that asbestos fibers do not migrate to such adjacent areas.

(5) All general contractors on a construction project which includes work covered by this standard ((shall)) must be deemed to exercise general supervisory authority over the work covered by this standard, even though the general contractor is not qualified to serve as the asbestos "competent person" as defined by WAC 296-62-07703. As supervisor of the entire project, the general contractor ((shall)) must ascertain whether the asbestos contractor is in compliance with this standard, and ((shall)) must require such contractor to come into compliance with this standard when necessary.

AMENDATORY SECTION (Amending WSR 06-05-027, filed 2/7/06, effective 4/1/06)

WAC 296-62-07709 Exposure assessment and monitoring. (1) General monitoring criteria.

(a) Each employer who has a workplace or work operation where exposure monitoring is required under this part must perform monitoring to determine accurately the airborne concentrations of asbestos to which employees may be exposed.

(b) Determinations of employee exposure must be made from breathing zone air samples that are representative of the eight-hour TWA and thirty minute short-term exposures of each employee.

(c) Representative eight-hour TWA employee exposures must be determined on the basis of one or more samples representing full-shift exposure for each shift for each employee in each job classification in each work area.

(d) Representative thirty minute short-term employee exposures must be determined on the basis of one or more samples representing thirty minute exposures associated with operations that are most likely to produce exposures above the excursion limit for each shift for each job classification in each work area.

(2) Exposure monitoring requirements for all occupational exposures to asbestos in all industries covered by the Washington Industrial Safety and Health Act except construction work, as defined in WAC 296-155-012, and except ship repairing, shipbuilding and shipbreaking employments and related employments as defined in WAC 296-304-01001.

(a) Initial monitoring.

(i) Each employer who has a workplace or work operation covered by this standard, except as provided for in (a)(ii) and (iii) of this subsection, must perform initial monitoring of employees who are, or may reasonably be expected to be exposed to airborne concentrations at or above the TWA permissible exposure limit and/or excursion limit. The initial monitoring must be at the initiation of each asbestos job to accurately determine the airborne concentration of asbestos to which employees may be exposed.

(ii) Where the employer or his/her representative has monitored after March 31, 1992, for the TWA permissible exposure limit and/or excursion limit, and the monitoring satisfies all other requirements of this section, and the monitoring data was obtained during work operations conducted under workplace conditions closely resembling the processes, type of material including percentage of asbestos,

control methods, work practices, and environmental conditions used and prevailing in the employer's current operations, the employer may rely on such earlier monitoring results to satisfy the requirements of (a)(i) of this subsection.

(iii) Where the employer has relied upon objective data that demonstrates that asbestos is not capable of being released in airborne concentrations at or above the TWA permissible exposure limit and/or excursion limit under those work conditions of processing, use, or handling expected to have the greatest potential for releasing asbestos, then no initial monitoring is required.

(b) Monitoring frequency (periodic monitoring) and patterns. After the initial determinations required by subsection (2)(a)(i) of this section, samples must be of such frequency and pattern as to represent with reasonable accuracy the levels of exposure of the employees. Sampling must not be at intervals greater than six months for employees whose exposures may reasonably be foreseen to exceed the TWA permissible exposure limit and/or excursion limit.

(c) Daily monitoring within regulated areas: The employer must conduct daily monitoring that is representative of the exposure of each employee who is assigned to work within a regulated area. Exception: When all employees within a regulated area are equipped with full facepiece supplied-air respirators operated in the pressure-demand mode equipped with either an auxiliary positive pressure self-contained breathing apparatus or a HEPA filter, the employer may dispense with the daily monitoring required by this subsection.

(d) Changes in monitoring frequency. If either the initial or the periodic monitoring required by subsection (2)(a) and (b) of this section statistically indicates that employee exposures are below the TWA permissible exposure limit and/or excursion limit, the employer may discontinue the monitoring for those employees whose exposures are represented by such monitoring.

(e) Additional monitoring. Notwithstanding the provisions of subsection (2)(a)(ii) and (c) of this section, the employer must institute the exposure monitoring required under subsection (2)(a)(i) and (ii) of this section whenever there has been a change in the production, process, control equipment, personnel, or work practices that may result in new or additional exposures above the TWA permissible exposure limit and/or excursion limit, or when the employer has any reason to suspect that a change may result in new or additional exposures above the TWA permissible exposure limit and/or excursion limit.

(3) Exposure assessment monitoring requirements for all construction work as defined in WAC 296-155-012 and for all ship repairing, shipbuilding and shipbreaking employments and related employments as defined in WAC 296-304-01001.

(a) Initial exposure assessment.

(i) Each employer who has a workplace or work operation covered by this standard must ensure that a "competent person" conducts an exposure assessment immediately before or at the initiation of the operation to ascertain expected exposures during that operation or workplace. The assessment must be completed in time to comply with the requirements which are triggered by exposure data or lack of

a "negative exposure assessment," and to provide information necessary to (~~assure~~) ensure that all control systems planned are appropriate for that operation and will work properly.

(ii) Basis of initial exposure assessment: Unless a negative exposure assessment has been made according to (b) of this subsection, the initial exposure assessment must, if feasible, be based on monitoring conducted according to (b) of this subsection. The assessment must take into consideration both the monitoring results and all observations, information or calculations which indicate employee exposure to asbestos, including any previous monitoring conducted in the workplace, or of the operations of the employer which indicate the levels of airborne asbestos likely to be encountered on the job. For Class I asbestos work, until the employer conducts exposure monitoring and documents that employees on that job will not be exposed in excess of the PELs, or otherwise makes a negative exposure assessment according to (b) of this subsection, the employer must presume that employees are exposed in excess of the TWA and excursion limit.

(b) Negative exposure assessment: For any one specific asbestos job which will be performed by employees who have been trained in compliance with the standard, the employer may demonstrate that employee exposures will be below the PELs by data which conform to the following criteria:

(i) Objective data demonstrating that the products or material containing asbestos minerals or the activity involving such product or material cannot release airborne fibers in concentrations exceeding the TWA and excursion limit under those work conditions having the greatest potential for releasing asbestos; or

(ii) Where the employer has monitored prior asbestos jobs for the PEL and the excursion limit within twelve months of the current or projected job, the monitoring and analysis were performed in compliance with the asbestos standard in effect; and the data was obtained during work operations conducted under workplace conditions "closely resembling" the processes, type of material including percentage of asbestos, control methods, work practices, and environmental conditions used and prevailing in the employer's current operations, the operations were conducted by employees whose training and experience are no more extensive than that of employees performing the current job, and these data show that under the conditions prevailing and which will prevail in the current workplace there is a high degree of certainty that employee exposures will not exceed the TWA or excursion limit; or

(iii) The results of initial exposure monitoring of the current job made from breathing zone samples that are representative of the 8-hour TWA and 30-minute short-term exposures of each employee covering operations which are most likely during the performance of the entire asbestos job to result in exposures over the PELs.

(c) Periodic monitoring.

(i) Class I and Class II operations. The employer must conduct daily monitoring that is representative of the exposure of each employee who is assigned to work within a regulated area who is performing Class I or II work, unless the

employer according to (b) of this subsection, has made a negative exposure assessment for the entire operation.

(ii) All operations under the standard other than Class I and II operations. The employer must conduct periodic monitoring of all work where exposures are expected to exceed a PEL, at intervals sufficient to document the validity of the exposure prediction.

(iii) Exception. When all employees required to be monitored daily are equipped with supplied-air respirators operated in the pressure demand mode, the employer may dispense with the daily monitoring required by subsection (2)(c) of this section. However, employees performing Class I work using a control method which is not listed in WAC 296-62-07712 or using a modification of a listed control method, must continue to be monitored daily even if they are equipped with supplied-air respirators.

(d) Termination of monitoring. If the periodic monitoring required by (c) of this subsection reveals that employee exposures, as indicated by statistically reliable measurements, are below the permissible exposure limit and excursion limit the employer may discontinue monitoring for those employees whose exposures are represented by such monitoring.

(e) Monitoring outside negative-pressure enclosures: The employer must conduct representative area monitoring of the airborne fiber levels at least every other day at the HEPA machine exhaust and entrance to the decontamination area.

(f) Additional monitoring. Notwithstanding the provisions of (b), (c), and (d) of this subsection, the employer must institute the exposure monitoring required under (c) of this subsection whenever there has been a change in process, control equipment, personnel or work practices that may result in new or additional exposures above the permissible exposure limit and/or excursion limit or when the employer has any reason to suspect that a change may result in new or additional exposures above the permissible exposure limit and/or excursion limit. Such additional monitoring is required regardless of whether a "negative exposure assessment" was previously produced for a specific job.

(g) Preabatement monitoring. Prior to the start of asbestos work, representative area air monitoring must be conducted for comparison to clearance monitoring as required by subsection (3)(h) of this section. Preabatement air monitoring is not required for outdoor work.

(h) Clearance monitoring. Representative area air monitoring must be taken at the completion of the asbestos work. Air sample results must be obtained before removal or reoccupancy of the regulated area. Clearance air monitoring is not required for outdoor asbestos work. The employer must demonstrate by monitoring that the airborne concentration is below:

(*) (i) The permissible exposure limit; or

(*) (ii) At or below the airborne fiber level existing prior to the start of the asbestos work, whichever level is lower.

(4) Method of monitoring.

(a) All samples taken to satisfy the employee exposure monitoring requirements of this section must be personal

samples collected following the procedures specified in WAC 296-62-07735, Appendix A.

(b) Monitoring must be performed by persons having a thorough understanding of monitoring principles and procedures and who can demonstrate proficiency in sampling techniques.

(c) All samples taken to satisfy the monitoring requirements of this section must be evaluated using the WISHA reference method specified in WAC 296-62-07735, Appendix A, or an equivalent counting method recognized by the department.

(d) If an equivalent method to the WISHA reference method is used, the employer must ensure that the method meets the following criteria:

(i) Replicate exposure data used to establish equivalency are collected in side-by-side field and laboratory comparisons; and

(ii) The comparison indicates that ninety percent of the samples collected in the range 0.5 to 2.0 times the permissible limit have an accuracy range of plus or minus twenty-five percent of the WISHA reference method results at a ninety-five percent confidence level as demonstrated by a statistically valid protocol; and

(iii) The equivalent method is documented and the results of the comparison testing are maintained.

(e) To satisfy the monitoring requirements of this section, employers must use the results of monitoring analysis performed by laboratories which have instituted quality assurance programs that include the elements as prescribed in WAC 296-62-07735, Appendix A.

(5) Employee notification of monitoring results.

(a) The employer must, as soon as possible but no later than within five days for construction and shipyard industries and fifteen working days for other industries, after the receipt of the results of any monitoring performed under the standard, notify the affected employees of these results in writing either individually or by posting of results in an appropriate location that is accessible to affected employees.

(b) The written notification required by (a) of this subsection must contain the corrective action being taken by the employer to reduce employee exposure to or below the TWA and/or excursion exposure limits, wherever monitoring results indicated that the TWA and/or excursion exposure limits had been exceeded.

(6) Observation of monitoring.

(a) The employer must provide affected employees or their designated representatives an opportunity to observe any monitoring of employee exposure to asbestos conducted in accordance with this section.

(b) When observation of the monitoring of employee exposure to asbestos requires entry into an area where the use of protective clothing or equipment is required, the observer must be provided with and be required to use such clothing and equipment and ~~(shall)~~ must comply with all other applicable safety and health procedures.

AMENDATORY SECTION (Amending WSR 97-19-014, filed 9/5/97, effective 11/5/97)

WAC 296-62-07711 Regulated areas. (1) General. The employer ~~((shall))~~ **must** establish a regulated area in work areas where airborne concentrations of asbestos exceed or can reasonably be expected to exceed the permissible exposure limits prescribed in WAC 296-62-07705. All Class I, II and III asbestos work ~~((shall))~~ **must** be conducted within regulated areas. All other operations covered by this standard ~~((shall))~~ **must** be conducted within the regulated area where airborne concentrations of asbestos exceed or can reasonably be expected to exceed permissible exposure limits. Regulated areas ~~((shall))~~ **must** comply with the requirements of subsections (2), (3), (4), (5), (6), (7), and (8) of this section.

(2) Demarcation. The regulated area ~~((shall))~~ **must** be demarcated in any manner that minimizes the number of persons within the area and protects persons outside the area from exposure to airborne asbestos. Where critical barriers or negative pressure enclosures are used, they may demarcate the regulated area. Signs ~~((shall))~~ **must** be provided and displayed pursuant to the requirements of WAC 296-62-07721.

(3) Access. Access to regulated areas ~~((shall))~~ **must** be limited to authorized persons or to persons authorized by the Washington Industrial Safety and Health Act or regulations issued pursuant thereto.

(4) Provision of respirators. Each person entering a regulated area where employees are required in WAC 296-62-07715(1) to wear respirators ~~((shall))~~ **must** be supplied with and required to use a respirator, selected in accordance with WAC 296-62-07715(2).

(5) Protective clothing. All persons entering a regulated area ~~((shall))~~ **must** be supplied with and required to wear protective clothing, selected in accordance with WAC 296-62-07717.

(6) Prohibited activities. The employer ~~((shall))~~ **must** ensure that employees do not eat, drink, smoke, chew tobacco or gum, or apply cosmetics in the regulated areas.

(7) Permit-required confined space. The employer ~~((shall))~~ **must** determine if a permit-required confined space hazard exists and ~~((shall))~~ **must** take any necessary precautions in accordance with chapter ~~((296-62-WAC Part M))~~ 296-809 WAC.

(8) Competent persons. For construction and shipyard work the employer ~~((shall))~~ **must** ensure that all asbestos work performed within regulated areas is supervised by a competent person, as defined in WAC 296-62-07703. The duties of the competent person are set out in WAC 296-62-07728.

AMENDATORY SECTION (Amending WSR 06-05-027, filed 2/7/06, effective 4/1/06)

WAC 296-62-07712 Requirements for asbestos activities in construction and shipyard work. (1) Methods of compliance, the following engineering controls and work practices of this section must be used for construction work defined in WAC 296-155-012 and for all ship repair defined in WAC 296-304-010.

(2) Engineering controls and work practices for all operations covered by this section. The employer must use the

following engineering controls and work practices in all operations covered by this section, regardless of the levels of exposure:

(a) Vacuum cleaners equipped with HEPA filters to collect all debris and dust containing ACM and PACM, except as provided in subsection (10)(b) of this section in the case of roofing material.

(b) Wet methods, or wetting agents, to control employee exposures during asbestos handling, mixing, removal, cutting, application, and cleanup, except where employers demonstrate that the use of wet methods is infeasible due to, for example, the creation of electrical hazards, equipment malfunction, and, in roofing, except as provided in subsection (10)(b) of this section.

(c) Asbestos must be handled, mixed, applied, removed, cut, scored, or otherwise worked in a wet saturated state to prevent the emission of airborne fibers unless the usefulness of the product would be diminished thereby.

(d) Prompt cleanup and disposal of wastes and debris contaminated with asbestos in leak-tight containers except in roofing operations, where the procedures specified in this section apply.

(3) In addition to the requirements of subsection (2) of this section, the employer must use the following control methods to achieve compliance with the TWA permissible exposure limit and excursion limit prescribed by WAC 296-62-07705:

(a) Local exhaust ventilation equipped with HEPA filter dust collection systems;

(b) Enclosure or isolation of processes producing asbestos dust;

(c) Ventilation of the regulated area to move contaminated air away from the breathing zone of employees and toward a filtration or collection device equipped with a HEPA filter;

(d) Use of other work practices and engineering controls that the department can show to be feasible;

(e) Wherever the feasible engineering and work practice controls described above are not sufficient to reduce employee exposure to or below the permissible exposure limit and/or excursion limit prescribed in WAC 296-62-07705, the employer must use them to reduce employee exposure to the lowest levels attainable by these controls and must supplement them by the use of respiratory protection that complies with the requirements of WAC 296-62-07715.

(4) Prohibitions. The following work practices and engineering controls must not be used for work related to asbestos or for work which disturbs ACM or PACM, regardless of measured levels of asbestos exposure or the results of initial exposure assessments:

(a) High-speed abrasive disc saws that are not equipped with point or cut ventilator or enclosures with HEPA filtered exhaust air;

(b) Compressed air used to remove asbestos, or materials containing asbestos, unless the compressed air is used in conjunction with an enclosed ventilation system designed to capture the dust cloud created by the compressed air;

(c) Dry sweeping, shoveling or other dry cleanup of dust and debris containing ACM and PACM;

(d) Employee rotation as a means of reducing employee exposure to asbestos.

(5) Cleanup.

(a) After completion of asbestos work (removal, demolition, and renovation operations), all surfaces in and around the work area must be cleared of any asbestos debris.

(b) Encapsulant must be applied to all areas where asbestos has been removed to ensure binding of any remaining fibers.

(6) Class I requirements. The following engineering controls and work practices and procedures must be used:

(a) All Class I work, including the installation and operation of the control system must be supervised by a competent person as defined in WAC 296-62-07703;

(b) For all Class I jobs involving the removal of more than twenty-five linear or ten square feet of thermal system insulation or surfacing material; for all other Class I jobs, where the employer cannot produce a negative exposure assessment according to WAC 296-62-07709(3), or where employees are working in areas adjacent to the regulated area, while the Class I work is being performed, the employer must use one of the following methods to ensure that airborne asbestos does not migrate from the regulated area:

(i) Critical barriers must be placed over all the openings to the regulated area, except where activities are performed outdoors; or

(ii) The employer must use another barrier or isolation method which prevents the migration of airborne asbestos from the regulated area, as verified by perimeter area surveillance during each work shift at each boundary of the regulated area, showing no visible asbestos dust; and perimeter area monitoring showing that clearance levels contained in 40 C.F.R. Part 763, Subpart E, of the EPA Asbestos in Schools Rule are met, or that perimeter area levels, measured by Phase Contrast Microscopy (PCM) are no more than background levels representing the same area before the asbestos work began. The results of such monitoring must be made known to the employer no later than twenty-four hours from the end of the work shift represented by such monitoring. Exception: For work completed outdoors where employees are not working in areas adjacent to the regulated areas, (a) of this subsection is satisfied when the specific control methods in subsection (7) of this section are used;

(c) For all Class I jobs, HVAC systems must be isolated in the regulated area by sealing with a double layer of 6 mil plastic or the equivalent;

(d) For all Class I jobs, impermeable dropcloths (~~shall~~) must be placed on surfaces beneath all removal activity;

(e) For all Class I jobs, all objects within the regulated area must be covered with impermeable dropcloths or plastic sheeting which is secured by duct tape or an equivalent;

(f) For all Class I jobs where the employer cannot produce a negative exposure assessment, or where exposure monitoring shows that a PEL is exceeded, the employer must ventilate the regulated area to move contaminated air away from the breathing zone of employees toward a HEPA filtration or collection device.

(7) Specific control methods for Class I work. In addition, Class I asbestos work must be performed using one or

more of the following control methods according to the limitations stated below:

(a) Negative pressure enclosure (NPE) systems: NPE systems may be used where the configuration of the work area does not make the erection of the enclosure infeasible, with the following specifications and work practices:

(i) Specifications:

(A) The negative pressure enclosure (NPE) may be of any configuration;

(B) At least 4 air changes per hour must be maintained in the NPE;

(C) A minimum of -0.02 column inches of water pressure differential, relative to outside pressure, must be maintained within the NPE as evidenced by manometric measurements;

(D) The NPE must be kept under negative pressure throughout the period of its use; and

(E) Air movement must be directed away from employees performing asbestos work within the enclosure, and toward a HEPA filtration or collection device.

(ii) Work practices:

(A) Before beginning work within the enclosure and at the beginning of each shift, the NPE must be inspected for breaches and smoke-tested for leaks, and any leaks sealed.

(B) Electrical circuits in the enclosure must be deactivated, unless equipped with ground-fault circuit interrupters.

(b) Glove bag systems may be used to remove PACM and/or ACM from straight runs of piping and elbows and other connections with the following specifications and work practices:

(i) Specifications:

(A) Glove bags must be made of 6 mil thick plastic and must be seamless at the bottom.

(B) Glove bags used on elbows and other connections must be designed for that purpose and used without modifications.

(ii) Work practices:

(A) Each glove bag must be installed so that it completely covers the circumference of pipe or other structure where the work is to be done.

(B) Glove bags must be smoke-tested for leaks and any leaks sealed prior to use.

(C) Glove bags may be used only once and may not be moved.

(D) Glove bags must not be used on surfaces whose temperature exceeds 150°F.

(E) Prior to disposal, glove bags must be collapsed by removing air within them using a HEPA vacuum.

(F) Before beginning the operation, loose and friable material adjacent to the glove bag/box operation must be wrapped and sealed in two layers of six mil plastic or otherwise rendered intact.

(G) Where system uses attached waste bag, such bag must be connected to collection bag using hose or other material which must withstand pressure of ACM waste and water without losing its integrity.

(H) Sliding valve or other device must separate waste bag from hose to ensure no exposure when waste bag is disconnected.

(I) At least two persons must perform Class I glove bag removal operations.

(c) Negative pressure glove bag systems. Negative pressure glove bag systems may be used to remove ACM or PACM from piping.

(i) Specifications: In addition to specifications for glove bag systems above, negative pressure glove bag systems must attach HEPA vacuum systems or other devices to bag during removal.

(ii) Work practices:

(A) The employer must comply with the work practices for glove bag systems in this section.

(B) The HEPA vacuum cleaner or other device used during removal must run continually during the operation until it is completed at which time the bag must be collapsed prior to removal of the bag from the pipe.

(C) Where a separate waste bag is used along with a collection bag and discarded after one use, the collection bag may be reused if rinsed clean with amended water before reuse.

(d) Negative pressure glove box systems: Negative pressure glove boxes may be used to remove ACM or PACM from pipe runs with the following specifications and work practices:

(i) Specifications:

(A) Glove boxes must be constructed with rigid sides and made from metal or other material which can withstand the weight of the ACM and PACM and water used during removal.

(B) A negative pressure generator must be used to create negative pressure in the system.

(C) An air filtration unit must be attached to the box.

(D) The box must be fitted with gloved apertures.

(E) An aperture at the base of the box must serve as a bagging outlet for waste ACM and water.

(F) A back-up generator must be present on site.

(G) Waste bags must consist of 6 mil thick plastic double-bagged before they are filled or plastic thicker than 6 mil.

(ii) Work practices:

(A) At least two persons must perform the removal.

(B) The box must be smoke-tested for leaks and any leaks sealed prior to each use.

(C) Loose or damaged ACM adjacent to the box must be wrapped and sealed in two layers of 6 mil plastic prior to the job, or otherwise made intact prior to the job.

(D) A HEPA filtration system must be used to maintain pressure barrier in box.

(e) Water spray process system. A water spray process system may be used for removal of ACM and PACM from cold line piping if, employees carrying out such process have completed a forty-hour separate training course in its use, in addition to training required for employees performing Class I work. The system must meet the following specifications and ~~((shall))~~ must be performed by employees using the following work practices:

(i) Specifications:

(A) Piping must be surrounded on three sides by rigid framing.

(B) A 360 degree water spray, delivered through nozzles supplied by a high pressure separate water line, must be formed around the piping.

(C) The spray must collide to form a fine aerosol which provides a liquid barrier between workers and the ACM and PACM.

(ii) Work practices:

(A) The system must be run for at least ten minutes before removal begins.

(B) All removal must take place within the water barrier.

(C) The system must be operated by at least three persons, one of whom must not perform removal, but must check equipment, and ensure proper operation of the system.

(D) After removal, the ACM and PACM must be bagged while still inside the water barrier.

(f) A small walk-in enclosure which accommodates no more than two persons (mini-enclosure) may be used if the disturbance or removal can be completely contained by the enclosure with the following specifications and work practices:

(i) Specifications:

(A) The fabricated or job-made enclosure must be constructed of 6 mil plastic or equivalent.

(B) The enclosure must be placed under negative pressure by means of a HEPA filtered vacuum or similar ventilation unit.

(C) Change room. A small change room made of 6-mil-thick polyethylene plastic should be contiguous to the mini-enclosure, and is necessary to allow the worker to vacuum off ~~((his/her))~~ their protective coveralls and remove them before leaving the work area. While inside the enclosure, the worker should wear Tyvek disposable coveralls or equivalent and must use the appropriate HEPA-filtered dual cartridge respiratory protection. The advantages of mini-enclosures are that they limit the spread of asbestos contamination, reduce the potential exposure of bystanders and other workers who may be working in adjacent areas, and are quick and easy to install. The disadvantage of mini-enclosures is that they may be too small to contain the equipment necessary to create a negative-pressure within the enclosure; however, the double layer of plastic sheeting will serve to restrict the release of asbestos fibers to the area outside the enclosure.

(ii) Work practices:

(A) Before use, the mini-enclosure must be inspected for leaks and smoke-tested to detect breaches, and any breaches sealed.

(B) Before reuse, the interior must be completely washed with amended water and HEPA-vacuumed.

(C) During use, air movement must be directed away from the employee's breathing zone within the mini-enclosure.

(8) Alternative control methods for Class I work. Class I work may be performed using a control method which is not referenced in subsections (2)(a) through (3)(e) of this section, or which modifies a control method referenced in subsections (2)(a) through (3)(e) of this section, if the following provisions are complied with:

(a) The control method ~~((shall))~~ must enclose, contain or isolate the processes or source of airborne asbestos dust, before it enters the breathing zone of employees.

(b) A certified industrial hygienist or licensed professional engineer who is also qualified as a project designer as defined in WAC 296-62-07703, ((~~shall~~)) must evaluate the work area, the projected work practices and the engineering controls and ((~~shall~~)) must certify in writing that the planned control method is adequate to reduce direct and indirect employee exposure to below the PELs under worst-case conditions of use, and that the planned control method will prevent asbestos contamination outside the regulated area, as measured by clearance sampling which meets the requirements of EPA's Asbestos in Schools rule issued under AHERA, or perimeter monitoring which meets the criteria in subsection (6)(b)(ii) of this section. Where the TSI or surfacing material to be removed is twenty-five linear or ten square feet or less, the evaluation required in subsection (8)(b) of this section may be performed by a competent person.

(c) Before work which involves the removal of more than twenty-five linear or ten square feet of thermal system insulation or surfacing material is begun using an alternative method which has been the subject of subsections (2)(a) through (3)(e) of this section required evaluation and certification, the employer ((~~shall~~)) must include a copy of such evaluation and certification with notifications required by WAC 296-65-020, Notification requirements. The submission shall not constitute approval by WISHA.

(d) The evaluation of employee exposure required in WAC 296-62-07712(8) must include and be based on sampling and analytical data representing employee exposure during the use of such method under the worst-case conditions and by employees whose training and experiences are equivalent to employees who are to perform the current job.

(9) Work practices and engineering controls for Class II work.

(a) All Class II work must be supervised by a competent person as defined in WAC 296-62-07703.

(b) For all indoor Class II jobs, where the employer has not produced a negative exposure assessment according to WAC 296-62-07709(3), or where during the job, changed conditions indicate there may be exposure above the PEL or where the employer does not remove the ACM in a substantially intact state, the employer must use one of the following methods to ensure that airborne asbestos does not migrate from the regulated area:

(i) Critical barriers must be placed over all openings to the regulated area; or

(ii) The employer must use another barrier or isolation method which prevents the migration of airborne asbestos from the regulated area, as verified by perimeter area monitoring or clearance monitoring which meets the criteria set out in subsection (6)(b)(ii) of this section.

(c) Impermeable dropcloths must be placed on surfaces beneath all removal activity.

(d) All Class II asbestos work must be performed using the work practices and requirements set out above in subsection (2) of this section.

(10) Additional controls for Class II work. Class II asbestos work must also be performed by complying with the work practices and controls designated for each type of asbestos work to be performed, set out in this paragraph. Where more than one control method may be used for a type

of asbestos work, the employer may choose one or a combination of designated control methods. Class II work also may be performed using a method allowed for Class I work, except that glove bags and glove boxes are allowed if they fully enclose the Class II material to be removed.

(a) For removing vinyl and asphalt flooring materials which contain ACM or for which in buildings constructed no later than 1980, the employer has not verified the absence of ACM according to WAC 296-62-07712 (10)(a)(ix). The employer must ensure that employees comply with the following work practices and that employees are trained in these practices according to WAC 296-62-07722.

(i) Flooring or its backing must not be sanded.

(ii) Vacuums equipped with HEPA filter, disposable dust bag, and metal floor tool (no brush) must be used to clean floors.

(iii) Resilient sheeting must be removed by cutting with wetting of the snip point and wetting during delamination. Rip-up of resilient sheet floor material is prohibited.

(iv) All scraping of residual adhesive and/or backing must be performed using wet methods.

(v) Dry sweeping is prohibited.

(vi) Mechanical chipping is prohibited unless performed in a negative pressure enclosure which meets the requirements of subsection (7)(a) of this section.

(vii) Tiles must be removed intact, unless the employer demonstrates that intact removal is not possible.

(viii) When tiles are heated and can be removed intact, wetting may be omitted.

(ix) Resilient flooring material including associated mastic and backing must be assumed to be asbestos-containing unless an industrial hygienist determines that it is asbestos-free using recognized analytical techniques.

(b) For removing roofing material which contains ACM the employer must ensure that the following work practices are followed:

(i) Roofing material must be removed in an intact state to the extent feasible.

(ii) Wet methods must be used to remove roofing materials that are not intact, or that will be rendered not intact during removal, unless such wet methods are not feasible or will create safety hazards.

(iii) Cutting machines must be continuously misted during use, unless a competent person determines that misting substantially decreases worker safety.

(iv) When removing built-up roofs with asbestos-containing roofing felts and an aggregate surface using a power roof cutter, all dust resulting from the cutting operation must be collected by a HEPA dust collector, or must be HEPA vacuumed by vacuuming along the cut line. When removing built-up roofs with asbestos-containing roofing felts and a smooth surface using a power roof cutter, the dust resulting from the cutting operation must be collected either by a HEPA dust collector or HEPA vacuuming along the cut line, or by gently sweeping and then carefully and completely wiping up the still wet dust and debris left along the cut line. The dust and debris must be immediately bagged or placed in covered containers.

(v) Asbestos-containing material that has been removed from a roof must not be dropped or thrown to the ground.

Unless the material is carried or passed to the ground by hand, it must be lowered to the ground via covered, dust-tight chute, crane or hoist:

(A) Any ACM that is not intact must be lowered to the ground as soon as is practicable, but in any event no later than the end of the work shift. While the material remains on the roof it must either be kept wet, placed in an impermeable waste bag, or wrapped in plastic sheeting.

(B) Intact ACM must be lowered to the ground as soon as is practicable, but in any event no later than the end of the work shift.

(vi) Upon being lowered, unwrapped material must be transferred to a closed receptacle in such manner so as to preclude the dispersion of dust.

(vii) Roof level heating and ventilation air intake sources must be isolated or the ventilation system must be shut down.

(viii) Notwithstanding any other provision of this section, removal or repair of sections of intact roofing less than twenty-five square feet in area does not require use of wet methods or HEPA vacuuming as long as manual methods which do not render the material nonintact are used to remove the material and no visible dust is created by the removal method used. In determining whether a job involves less than twenty-five square feet, the employer must include all removal and repair work performed on the same roof on the same day.

(c) When removing cementitious asbestos-containing siding and shingles or transite panels containing ACM on building exteriors (other than roofs, where subsection (10)(b) of this section applies) the employer must ensure that the following work practices are followed:

(i) Cutting, abrading or breaking siding, shingles, or transite panels, must be prohibited unless the employer can demonstrate that methods less likely to result in asbestos fiber release cannot be used.

(ii) Each panel or shingle must be sprayed with amended water prior to removal.

(iii) Unwrapped or unbagged panels or shingles must be immediately lowered to the ground via covered dust-tight chute, crane or hoist, or placed in an impervious waste bag or wrapped in plastic sheeting and lowered to the ground no later than the end of the work shift.

(iv) Nails must be cut with flat, sharp instruments.

(d) When removing gaskets containing ACM, the employer must ensure that the following work practices are followed:

(i) If a gasket is visibly deteriorated and unlikely to be removed intact, removal must be undertaken within a glove bag as described in subsection (7)(b) of this section.

(ii) (Reserved.)

(iii) The gasket must be immediately placed in a disposal container.

(iv) Any scraping to remove residue must be performed wet.

(e) When performing any other Class II removal of asbestos-containing material for which specific controls have not been listed in subsection (10) of this section, the employer must ensure that the following work practices are complied with.

(i) The material must be thoroughly wetted with amended water prior to and during its removal.

(ii) The material must be removed in an intact state unless the employer demonstrates that intact removal is not possible.

(iii) Cutting, abrading or breaking the material must be prohibited unless the employer can demonstrate that methods less likely to result in asbestos fiber release are not feasible.

(iv) Asbestos-containing material removed, must be immediately bagged or wrapped, or kept wet until transferred to a closed receptacle, no later than the end of the work shift.

(f) Alternative work practices and controls. Instead of the work practices and controls listed in subsection (10) of this section, the employer may use different or modified engineering and work practice controls if the following provisions are complied with.

(i) The employer must demonstrate by data representing employee exposure during the use of such method under conditions which closely resemble the conditions under which the method is to be used, that employee exposure will not exceed the PELs under any anticipated circumstances.

(ii) A competent person must evaluate the work area, the projected work practices and the engineering controls, and must certify in writing, that the different or modified controls are adequate to reduce direct and indirect employee exposure to below the PELs under all expected conditions of use and that the method meets the requirements of this standard. The evaluation must include and be based on data representing employee exposure during the use of such method under conditions which closely resemble the conditions under which the method is to be used for the current job, and by employees whose training and experience are equivalent to employees who are to perform the current job.

(11) Work practices and engineering controls for Class III asbestos work. Class III asbestos work must be conducted using engineering and work practice controls which minimize the exposure to employees performing the asbestos work and to bystander employees.

(a) The work must be performed using wet methods.

(b) To the extent feasible, the work must be performed using local exhaust ventilation.

(c) Where the disturbance involves drilling, cutting, abrading, sanding, chipping, braking, or sawing of thermal system insulation or surfacing material, the employer must use impermeable dropcloths, and must isolate the operation using mini-enclosures or glove bag systems according to subsection (7) of this section or another isolation method.

(d) Where the employer does not produce a "negative exposure assessment" for a job, or where monitoring results show the PEL has been exceeded, the employer must contain the area using impermeable dropcloths and plastic barriers or their equivalent, or must isolate the operation using a control system listed in and in compliance with subsection (7) of this section.

(e) Employees performing Class III jobs, which involve the disturbance of thermal system insulation or surfacing material, or where the employer does not produce a "negative exposure assessment" or where monitoring results show a PEL has been exceeded, must wear respirators which are

selected, used and fitted according to provisions of WAC 296-62-07715.

(12) Class IV asbestos work. Class IV asbestos jobs must be conducted by employees trained according to the asbestos awareness training program set out in WAC 296-62-07722. In addition, all Class IV jobs must be conducted in conformity with the requirements set out in this section, mandating wet methods, HEPA vacuums, and prompt clean up of debris containing ACM and PACM.

(a) Employees cleaning up debris and waste in a regulated area where respirators are required must wear respirators which are selected, used and fitted according to provisions of WAC 296-62-07715.

(b) Employers of employees who clean up waste and debris in, and employers in control of, areas where friable thermal system insulation or surfacing material is accessible, must assume that such waste and debris contain asbestos.

(13) Alternative methods of compliance for installation, removal, repair, and maintenance of certain roofing and pipeline coating materials. Notwithstanding any other provision of this section, an employer who complies with all provisions of subsection (10)(a) and (b) of this section when installing, removing, repairing, or maintaining intact pipeline asphaltic wrap, or roof flashings which contain asbestos fibers encapsulated or coated by bituminous or resinous compounds will be deemed to be in compliance with this section. If an employer does not comply with all provisions of this subsection (13), or if during the course of the job the material does not remain intact, the provisions of subsection (10) of this section apply instead of this subsection (13).

(a) Before work begins and as needed during the job, a competent person who is capable of identifying asbestos hazards in the workplace and selecting the appropriate control strategy for asbestos exposure, and who has the authority to take prompt corrective measures to eliminate such hazards, must conduct an inspection of the worksite and determine that the roofing material is intact and will likely remain intact.

(b) All employees performing work covered by this subsection (13) must be trained in a training program that meets the requirements of WAC 296-62-07722.

(c) The material must not be sanded, abraded, or ground. When manual methods are used, materials must stay intact.

(d) Material that has been removed from a roof must not be dropped or thrown to the ground. Unless the material is carried or passed to the ground by hand, it must be lowered to the ground via covered, dust-tight chute, crane or hoist. All such material must be removed from the roof as soon as is practicable, but in any event no later than the end of the work shift.

(e) Where roofing products which have been labeled as containing asbestos pursuant to WAC 296-62-07721, installed on nonresidential roofs during operations covered by this subsection (13), the employer must notify the building owner of the presence and location of such materials no later than the end of the job.

(f) All removal or disturbance of pipeline asphaltic wrap must be performed using wet methods.

AMENDATORY SECTION (Amending WSR 09-15-145, filed 7/21/09, effective 9/1/09)

WAC 296-62-07715 Respiratory protection. (1) General. For employees who use respirators required by WAC 296-62-077 through 296-62-07747, the employer must provide each employee an appropriate respirator that complies with the requirements of this section. Respirators must be used during:

(a) Periods necessary to install or implement feasible engineering and work-practice controls;

(b) Work operations, such as maintenance and repair activities, for which engineering and work-practice controls are not feasible;

(c) Work operations for which feasible engineering and work-practice controls are not yet sufficient to reduce employee exposure to or below the permissible exposure limits;

(d) Emergencies;

(e) Work operations in all regulated areas, except for construction activities which follow requirements set forth in WAC 296-62-07715 (1)(g);

(f) Work operations whenever employee exposure exceeds the permissible exposure limits;

(g) The following construction activities:

(i) Class I asbestos work;

(ii) Class II work where the ACM is not removed in a substantially intact state;

(iii) Class II and Class III work which is not performed using wet methods, except for removal of ACM from sloped roofs when a negative-exposure assessment has been made and the ACM is removed in an intact state;

(iv) Class II and Class III asbestos work for which a negative-exposure assessment has not been conducted;

(v) Class III work when TSI or surfacing ACM or PACM is being disturbed;

(vi) Class IV work performed within regulated areas where employees who are performing other work are required to wear respirators.

(2) Respirator program.

(a) The employer must develop, implement and maintain a respiratory protection program as required by chapter 296-842 WAC, Respirators, which covers each employee required by this chapter to use a respirator.

(b) Employers must provide an employee with a tight-fitting, powered, air-purifying respirator (PAPR) instead of a negative-pressure respirator selected when an employee chooses to use a PAPR and the respirator provides the required protection to the employee.

(c) The employer must inform any employee required to wear a respirator under this section that the employee may require the employer to provide a tight-fitting, powered, air-purifying respirator (PAPR) instead of a negative-pressure respirator.

(d) No employee must be assigned to tasks requiring the use of respirators if, based on their most recent medical examination, the examining physician determines that the employee will be unable to function normally using a respirator, or that the safety or health of the employee or other employees will be impaired by the use of a respirator. Such employees must be assigned to another job or given the

opportunity to transfer to a different position, the duties of which they can perform. If such a transfer position is available, the position must be with the same employer, in the same geographical area, and with the same seniority, status, and rate of pay the employee had just prior to such transfer.

(3) Respirator selection. The employer must:

(a) Select and provide to employees appropriate respirators as specified in this section, and in WAC 296-842-13005, in the respirator rule.

Make sure filtering facepiece respirators are not selected or used for protection against asbestos fibers.

(b) Provide employees with an air-purifying, half-facepiece respirator, other than a filtering-facepiece respirator, that is equipped with a HEPA filter or an N-, R-, or P-100 series filter whenever the employee performs:

(i) Class II and III asbestos work for which no negative-exposure assessment is available;

(ii) Class III asbestos work involving disturbances of TSI or surfacing ACM or PACM.

(c) Equip any powered air-purifying respirator (PAPR) or negative pressure air-purifying respirator with HEPA filters or N-, R-, or P-100 series filters.

(4) Special respiratory protection requirements.

(a) Unless specifically identified in this subsection, respirator selection for asbestos removal, demolition, and renovation operations ~~((shall))~~ **must** be in accordance with the selection specifications of this section and the general selection requirements in WAC 296-842-13005, found in the respirator rule. The employer must provide and require to be worn, at no cost to the employee, a full facepiece supplied-air respirator operated in the pressure demand mode equipped with either an auxiliary positive pressure self-contained breathing apparatus or a HEPA filter egress cartridge, to employees engaged in the following asbestos operations:

(i) Inside negative pressure enclosures used for removal, demolition, and renovation of friable asbestos from walls, ceilings, vessels, ventilation ducts, elevator shafts, and other structural members, but does not include pipes or piping systems; or

(ii) Any dry removal of asbestos.

(b) For all Class I work excluded or not specified in (a)(i) and (ii) of this subsection, when a negative-exposure assessment is not available, and the exposure assessment indicates the exposure level will be at or below 1 f/cc as an 8-hour time weighted average, employers must provide employees with one of the following respirators:

(i) A tight-fitting, powered, air-purifying respirator equipped with high-efficiency filters;

(ii) A full-facepiece supplied-air respirator operated in the pressure-demand mode equipped with either HEPA egress cartridges; or

(iii) An auxiliary positive-pressure, self-contained breathing apparatus.

(c) Whenever the employees are in a regulated area performing Class I asbestos work for which a negative exposure assessment is not available, and an exposure assessment indicates that the exposure level will be above 1 f/cc as an 8-hour TWA, employers must provide a full facepiece supplied-air respirator operated in the pressure-demand mode equipped

with an auxiliary positive-pressure self-contained breathing apparatus.

EXCEPTION: In lieu of the supplied-air respirator required by subsection (4) of this section, an employer may provide and require to be worn, at no cost to the employee, a full facepiece supplied-air respirator operated in the continuous flow mode equipped with either an auxiliary positive pressure self-contained breathing apparatus or a back-up HEPA filter egress cartridge where daily and historical personal monitoring data indicates the concentration of asbestos fibers is not reasonably expected to exceed 10 f/cc. The continuous flow respirator shall be operated at a minimum air flow rate of six cubic feet per minute at the facepiece using respirable air supplied as required by chapter 296-842 WAC, Respirators.

(5) Respirator fit testing.

(a) For each employee wearing negative pressure respirators, employers ~~((shall))~~ **must** perform either quantitative or qualitative face fit tests at the time of initial fitting and at least annually thereafter. The qualitative fit tests may be used only for testing the fit of half-mask respirators where they are permitted to be worn.

(b) Any supplied-air respirator facepiece equipped with a back-up HEPA filter egress cartridge ~~((shall))~~ **must** be quantitatively fit tested (see ~~((WAC 296-62-07160 through 296-62-07162 and 296-62-07201 through 296-62-07248))~~ chapter 296-842 WAC, Respirators).

AMENDATORY SECTION (Amending WSR 14-07-086, filed 3/18/14, effective 5/1/14)

WAC 296-62-07717 Protective work clothing and equipment. (1) Provision and use. If an employee is exposed to asbestos above the permissible exposure limits, or where the possibility of eye irritation exists, or for which a required negative exposure assessment is not produced and for any employee performing Class I operations, the employer ~~((shall))~~ **must** provide at no cost to the employee and require that the employee uses appropriate protective work clothing and equipment such as, but not limited to:

(a) Coveralls or similar full-body work clothing;

(b) Gloves, head coverings, and foot coverings; and

(c) Face shields, vented goggles, or other appropriate protective equipment which complies with WAC 296-800-160.

(2) Removal and storage.

(a) The employer ~~((shall))~~ **must** ensure that employees remove work clothing contaminated with asbestos only in change rooms provided in accordance with WAC 296-62-07719(1).

(b) The employer ~~((shall))~~ **must** ensure that no employee takes contaminated work clothing out of the change room, except those employees authorized to do so for the purpose of laundering, maintenance, or disposal.

(c) Contaminated clothing. Contaminated clothing ~~((shall))~~ **must** be transported in sealed impermeable bags, or other closed, impermeable containers, and be labeled in accordance with WAC 296-62-07721.

(d) The employer ~~((shall))~~ **must** ensure that containers of contaminated protective devices or work clothing which are to be taken out of change rooms or the workplace for clean-

ing, maintenance, or disposal, bear labels in accordance with WAC 296-62-07721(5).

(3) Cleaning and replacement.

(a) The employer ~~((shall))~~ must clean, launder, repair, or replace protective clothing and equipment required by this paragraph to maintain their effectiveness. The employer ~~((shall))~~ must provide clean protective clothing and equipment at least weekly to each affected employee.

(b) The employer ~~((shall))~~ must prohibit the removal of asbestos from protective clothing and equipment by blowing or shaking.

(c) Laundering of contaminated clothing ~~((shall))~~ must be done so as to prevent the release of airborne fibers of asbestos in excess of the permissible exposure limits prescribed in WAC 296-62-07705.

(d) Any employer who gives contaminated clothing to another person for laundering ~~((shall))~~ must inform such person of the requirement in (c) of this subsection to effectively prevent the release of airborne fibers of asbestos in excess of the permissible exposure limits.

(e) The employer ~~((shall))~~ must inform any person who launders or cleans protective clothing or equipment contaminated with asbestos of the potentially harmful effects of exposure to asbestos.

(f) The employer ~~((shall))~~ must ensure that contaminated clothing is transported in sealed impermeable bags, or other closed, impermeable containers, and labeled in accordance with WAC 296-62-07721.

(4) Inspection of protective clothing for construction and shipyard work.

(a) The competent person ~~((shall))~~ must examine worksuits worn by employees at least once per workshift for rips or tears that may occur during performance of work.

(b) When rips or tears are detected while an employee is working, rips and tears ~~((shall))~~ must be immediately mended, or the worksuit ~~((shall))~~ must be immediately replaced.

AMENDATORY SECTION (Amending WSR 03-18-090, filed 9/2/03, effective 11/1/03)

WAC 296-62-07719 Hygiene facilities and practices.

(1) Change rooms.

(a) The employer ~~((shall))~~ must provide clean change rooms for employees required to work in regulated areas or required by WAC 296-62-07717(1) to wear protective clothing.

Exception: In lieu of the change area requirement specified in this subsection, the employer may permit employees in Class III and Class IV asbestos work, to clean their protective clothing with a portable HEPA-equipped vacuum before such employees leave the area where maintenance was performed.

(b) The employer ~~((shall))~~ must ensure that change rooms are in accordance with WAC 296-800-230, and are equipped with two separate lockers or storage facilities, so separated as to prevent contamination of the employee's street clothes from ~~((his/her))~~ their protective work clothing and equipment.

(2) Showers.

(a) The employer ~~((shall))~~ must ensure that employees who work in negative pressure enclosures required by WAC 296-62-07712, or who work in areas where their airborne exposure is above the permissible exposure limits prescribed in WAC 296-62-07705, shower at the end of the work shift.

(b) The employer ~~((shall))~~ must provide shower facilities which comply with WAC 296-800-230.

(c) The employer ~~((shall))~~ must ensure that employees who are required to shower pursuant to (a) of this subsection do not leave the workplace wearing any clothing or equipment worn during the work shift.

(3) Special requirements in addition to the other provisions of WAC 296-62-07719 for construction work defined in WAC 296-155-012 and for all shipyard work defined in WAC 296-304-010.

(a) Requirements for employees performing Class I asbestos jobs involving over twenty-five linear or ten square feet of TSI or surfacing ACM and PACM.

(i) Decontamination areas: The employer ~~((shall))~~ must establish a decontamination area that is adjacent and connected to the regulated area for the decontamination of such employees. The decontamination area ~~((shall))~~ must consist of an equipment room, shower area, and clean room in series. The employer ~~((shall))~~ must ensure that employees enter and exit the regulated area through the decontamination area.

(A) Equipment room. The equipment room ~~((shall))~~ must be supplied with impermeable, labeled bags and containers for the containment and disposal of contaminated protective equipment.

(B) Shower area. Shower facilities ~~((shall))~~ must be provided which comply with WAC 296-800-230, unless the employer can demonstrate that they are not feasible. The showers ~~((shall))~~ must be adjacent both to the equipment room and the clean room, unless the employer can demonstrate that this location is not feasible. Where the employer can demonstrate that it is not feasible to locate the shower between the equipment room and the clean room, or where the work is performed outdoors, the employers ~~((shall))~~ must ensure that employees:

(I) Remove asbestos contamination from their worksuits in the equipment room using a HEPA vacuum before proceeding to a shower that is not adjacent to the work area; or

(II) Remove their contaminated worksuits in the equipment room, then don clean worksuits, and proceed to a shower that is not adjacent to the work area.

(C) Clean change room. The clean room ~~((shall))~~ must be equipped with a locker or appropriate storage container for each employee's use.

(ii) Decontamination area entry procedures. The employer ~~((shall))~~ must ensure that employees:

(A) Enter the decontamination area through the clean room;

(B) Remove and deposit street clothing within a locker provided for their use; and

(C) Put on protective clothing and respiratory protection before leaving the clean room.

(D) Before entering the regulated area, the employer ~~((shall))~~ must ensure that employees pass through the equipment room.

(iii) Decontamination area exit procedures. The employer ~~((shall))~~ must ensure that:

(A) Before leaving the regulated area, employees ~~((shall))~~ must remove all gross contamination and debris from their protective clothing;

(B) Employees ~~((shall))~~ must remove their protective clothing in the equipment room and deposit the clothing in labeled impermeable bags or containers;

(C) Employees ~~((shall))~~ must not remove their respirators in the equipment room;

(D) Employees ~~((shall))~~ must shower prior to entering the clean room. When taking a shower, employees ~~((shall))~~ must be fully wetted, including the face and hair, prior to removing the respirators;

(E) After showering, employees ~~((shall))~~ must enter the clean room before changing into street clothes.

(b) Requirements for Class I work involving less than twenty-five linear or ten square feet of TSI or surfacing ACM and PACM, and for Class II and Class III asbestos work operations where exposures exceed a PEL or where there is no negative exposure assessment produced before the operation.

(i) The employer ~~((shall))~~ must establish an equipment room or area that is adjacent to the regulated area for the decontamination of employees and their equipment which is contaminated with asbestos which ~~((shall))~~ must consist of an area covered by a impermeable drop cloth on the floor or horizontal working surface.

(ii) The area must be of sufficient size as to accommodate cleaning of equipment and removing personal protective equipment without spreading contamination beyond the area (as determined by visible accumulations).

(iii) Work clothing must be cleaned with a HEPA vacuum before it is removed.

(iv) All equipment and surfaces of containers filled with ACM must be cleaned prior to removing them from the equipment room or area.

(v) The employer ~~((shall))~~ must ensure that employees enter and exit the regulated area through the equipment room or area.

(c) Requirements for Class IV work. Employers ~~((shall))~~ must ensure that employees performing Class IV work within a regulated area comply with hygiene practice required of employees performing work which has a higher classification within that regulated area. Otherwise employers of employees cleaning up debris and material which is TSI or surfacing ACM or identified as PACM ~~((shall))~~ must provide decontamination facilities for such employees which are required by WAC 296-62-07719 (3)(b).

(d) Decontamination area for personnel ~~((shall))~~ must not be used for the transportation of asbestos debris.

(e) Waste load-out procedure. The waste load-out area as required by WAC 296-62-07723 ~~((shall))~~ must be used as an area for final preparation and external decontamination of waste containers, as a short term storage area for bagged waste, and as a port for transporting waste. The employer ~~((shall))~~ must ensure waste containers be free of all gross contaminated material before removal from the negative-pressure enclosure. Gross contamination ~~((shall))~~ must be wiped, scraped off, or washed off containers before they are placed into a two chamber air lock which is adjacent to the

negative-pressure enclosure. In the first chamber, the exterior of the waste container ~~((shall))~~ must be decontaminated or placed within a second waste container, and then it ~~((shall))~~ must be moved into the second chamber of the air lock for temporary storage or transferred outside of the regulated area. The second waste container ~~((shall))~~ must not be reused unless thoroughly decontaminated.

(4) Lunchrooms.

(a) The employer ~~((shall))~~ must provide lunchroom facilities for employees who work in areas where their airborne exposure is above the time weighted average and/or excursion limit.

(b) The employer ~~((shall))~~ must ensure that lunchroom facilities have a positive pressure, filtered air supply, and are readily accessible to employees.

(c) The employer ~~((shall))~~ must ensure that employees who work in areas where their airborne exposure is above the time weighted average and/or excursion limit, wash their hands and faces prior to eating, drinking, or smoking.

(d) The employer ~~((shall))~~ must ensure that employees do not enter lunchroom facilities with protective work clothing or equipment unless surface asbestos fibers have been removed from the clothing or equipment by vacuuming or other method that removes dust without causing the asbestos to become airborne.

(5) Smoking in work areas. The employer ~~((shall))~~ must ensure that employees do not smoke in work areas where they are occupationally exposed to asbestos because of activities in that work area.

AMENDATORY SECTION (Amending WSR 14-07-086, filed 3/18/14, effective 5/1/14)

WAC 296-62-07721 Communication of hazards.

(1)(a) Communication of hazards to employees - Introduction. This section applies to the communication of information concerning asbestos hazards in general industry to facilitate compliance with this standard. Asbestos exposure in general industry occurs in a wide variety of industrial and commercial settings. Employees who manufacture asbestos-containing products may be exposed to asbestos fibers. Employees who repair and replace automotive brakes and clutches may be exposed to asbestos fibers. In addition, employees engaged in housekeeping activities in industrial facilities with asbestos product manufacturing operations, and in public and commercial buildings with installed asbestos-containing materials may be exposed to asbestos fibers. It should be noted that employees who perform housekeeping activities during and after construction activities are covered by asbestos construction work requirements in WAC 296-62-077. Housekeeping employees, regardless of industry designation, should know whether building components they maintain may expose them to asbestos. The same hazard communication provisions will protect employees who perform housekeeping operations in all three asbestos standards; general industry, construction, and shipyard employment. Building owners are often the only and/or best source of information concerning the presence of previously installed asbestos-containing building materials. Therefore they, along with employers of potentially exposed employees, are

assigned specific information conveying and retention duties under this section.

(i) Chemical manufacturers, importers, distributors and employers (~~(shall)~~ must comply with all requirements of the Hazard Communication Standard (HCS), WAC 296-901-140 for asbestos.

(ii) In classifying the hazards of asbestos at least the following hazards are to be addressed: Cancer and lung effects.

(iii) Employers (~~(shall)~~ must include asbestos in the hazard communication program established to comply with the HCS WAC 296-901-140. Employers (~~(shall)~~ must ensure that each employee has access to labels on containers of asbestos and to safety data sheets, and is trained in accordance with the requirements of HCS and WAC 296-62-07722.

(b) Installed asbestos-containing material. Employers and building owners are required to treat installed TSI and sprayed-on and troweled-on surfacing materials as ACM for the purposes of this standard. These materials are designated "presumed ACM or PACM," and are defined in WAC 296-62-07703. Asphalt and vinyl flooring installed no later than 1980 also must be treated as asbestos-containing. The employer or building owner may demonstrate that PACM and flooring materials do not contain asbestos by complying with WAC 296-62-07712 (10)(a)(ix).

(c) Duties of employers and building and facility owners.

(i) Building and facility owners must determine the presence, location, and quantity of ACM and/or PACM at the worksite. Employers and building and facility owners must exercise due diligence in complying with these requirements to inform employers and employees about the presence and location of ACM and PACM.

(ii) Before authorizing or allowing any construction, renovation, remodeling, maintenance, repair, or demolition project, an owner or owner's agent must perform, or cause to be performed, a good faith inspection to determine whether materials to be worked on or removed contain asbestos. The inspection must be documented by a written report maintained on file and made available upon request to the director.

(A) The good faith inspection must be conducted by an accredited inspector.

(B) Such good faith inspection is not required if the owner or owner's agent is reasonably certain that asbestos will not be disturbed by the project or the owner or owner's agent assumes that the suspect material contains asbestos and handles the material in accordance with WAC 296-62-07701 through 296-62-07753.

(iii) The owner or owner's agent must provide, to all contractors submitting a bid to undertake any construction, renovation, remodeling, maintenance, repair, or demolition project, the written statement either of the reasonable certainty of nondisturbance of asbestos or of assumption of the presence of asbestos. Contractors must be provided with the written report before they apply or bid to work.

(iv) Any owner or owner's agent who fails to comply with (c)(ii) and (iii) of this subsection must be subject to a mandatory fine of not less than two hundred fifty dollars for each violation. Each day the violation continues must be considered a separate violation. In addition, any construction, renovation, remodeling, maintenance, repair, or demolition

which was started without meeting the requirements of this section must be halted immediately and cannot be resumed before meeting such requirements.

(v) Building and facility owners must inform employers of employees, and employers must inform employees who will perform housekeeping activities in areas which contain ACM and/or PACM of the presence and location of ACM and/or PACM in such areas which may be contacted during such activities.

(vi) Upon written or oral request, building or facility owners must make a copy of the written report required in this section available to the department of labor and industries and the collective bargaining representatives or employee representatives of any employee who may be exposed to any asbestos or asbestos-containing materials. A copy of the written report must be posted conspicuously at the location where employees report to work.

(vii) Building and facility owners must maintain records of all information required to be provided according to this section and/or otherwise known to the building owner concerning the presence, location and quantity of ACM and PACM in the building/facility. Such records must be kept for the duration of ownership and must be transferred to successive owners.

(2) Communication of hazards to employees. Requirements for construction and shipyard employment activities.

(a) Introduction. This section applies to the communication of information concerning asbestos hazards in construction and shipyard employment activities. Most asbestos-related construction and shipyard activities involve previously installed building materials. Building/vessel owners often are the only and/or best sources of information concerning them. Therefore, they, along with employers of potentially exposed employees, are assigned specific information conveying and retention duties under this section. Installed Asbestos Containing Building/Vessel Material: Employers and building/vessel owners must identify TSI and sprayed or troweled on surfacing materials as asbestos-containing unless the employer, by complying with WAC 296-62-07721(3) determines it is not asbestos containing. Asphalt or vinyl flooring/decking material installed in buildings or vessels no later than 1980 must also be considered as asbestos containing unless the employer/owner, according to WAC 296-62-07712 (10)(a)(ix) determines it is not asbestos containing. If the employer or building/vessel owner has actual knowledge or should have known, through the exercise of due diligence, that materials other than TSI and sprayed-on or troweled-on surfacing materials are asbestos containing, they must be treated as such. When communicating information to employees according to this standard, owners and employers must identify "PACM" as ACM. Additional requirements relating to communication of asbestos work on multiemployer worksites are set out in WAC 296-62-07706.

(b) Duties of building/vessel and facility owners.

(i) Before work subject to this section is begun, building/vessel and facility owners must identify the presence, location and quantity of ACM, and/or PACM at the worksite. All thermal system insulation and sprayed on or troweled on surfacing materials in buildings/vessels or substrates constructed no later than 1980 must be identified as PACM. In

addition, resilient flooring/decking material installed no later than 1980 must also be identified as asbestos containing.

(ii) Before authorizing or allowing any construction, renovation, remodeling, maintenance, repair, or demolition project, a building/vessel and facility owner or owner's agent must perform, or cause to be performed, a good faith inspection to determine whether materials to be worked on or removed contain asbestos. The inspection must be documented by a written report maintained on file and made available upon request to the director.

(A) The good faith inspection must be conducted by an accredited inspector.

(B) Such good faith inspection is not required if the building/vessel and facility owner or owner's agent assumes that the suspect material contains asbestos and handles the material in accordance with WAC 296-62-07701 through 296-62-07753 or if the owner or the owner's agent is reasonably certain that asbestos will not be disturbed by the project.

(iii) The building/vessel and facility owner or owner's agent must provide, to all contractors submitting a bid to undertake any construction, renovation, remodeling, maintenance, repair, or demolition project, the written statement either of the reasonable certainty of nondisturbance of asbestos or of assumption of the presence of asbestos. Contractors must be provided the written report before they apply or bid on work.

(iv) Any building/vessel and facility owner or owners agent who fails to comply with WAC 296-62-07721 (2)(b)(ii) and (iii) must be subject to a mandatory fine of not less than two hundred fifty dollars for each violation. Each day the violation continues must be considered a separate violation. In addition, any construction, renovation, remodeling, maintenance, repair, or demolition which was started without meeting the requirements of this section must be halted immediately and cannot be resumed before meeting such requirements.

(v) Upon written or oral request, building/vessel and facility owner or owner's agent must make a copy of the written report required in this section available to the department of labor and industries and the collective bargaining representatives or employee representatives of any employee who may be exposed to any asbestos or asbestos-containing materials. A copy of the written report must be posted conspicuously at the location where employees report to work.

(vi) Building/vessel and facility owner or owner's agent must notify in writing the following persons of the presence, location and quantity of ACM or PACM, at worksites in their buildings/facilities/vessels.

(A) Prospective employers applying or bidding for work whose employees reasonably can be expected to work in or adjacent to areas containing such material;

(B) Employees of the owner who will work in or adjacent to areas containing such material;

(C) On multiemployer worksites, all employers of employees who will be performing work within or adjacent to areas containing such materials;

(D) Tenants who will occupy areas containing such materials.

(c) Duties of employers whose employees perform work subject to this standard in or adjacent to areas containing

ACM and PACM. Building/vessel and facility owner or owner's agents whose employees perform such work must comply with these provisions to the extent applicable.

(i) Before work subject to this standard is begun, building/vessel and facility owner or owner's agents must determine the presence, location, and quantity of ACM and/or PACM at the worksite according to WAC 296-62-07721 (2)(b).

(ii) Before work under this standard is performed employers of employees who will perform such work must inform the following persons of the location and quantity of ACM and/or PACM present at the worksite and the precautions to be taken to insure that airborne asbestos is confined to the area.

(A) Owners of the building/vessel or facility;

(B) Employees who will perform such work and employers of employees who work and/or will be working in adjacent areas;

(iii) Upon written or oral request, a copy of the written report required in this section must be made available to the department of labor and industries and the collective bargaining representatives or employee representatives of any employee who may be exposed to any asbestos or asbestos-containing materials. A copy of the written report must be posted conspicuously at the location where employees report to work.

(iv) Within 10 days of the completion of such work, the employer whose employees have performed work subject to this standard, must inform the building/vessel or facility owner and employers of employees who will be working in the area of the current location and quantity of PACM and/or ACM remaining in the former regulated area and final monitoring results, if any.

(d) In addition to the above requirements, all employers who discover ACM and/or PACM on a worksite must convey information concerning the presence, location and quantity of such newly discovered ACM and/or PACM to the owner and to other employers of employees working at the worksite, within 24 hours of the discovery.

(e) No contractor may commence any construction, renovation, remodeling, maintenance, repair, or demolition project without receiving a copy of the written response or statement required by WAC 296-62-07721 (2)(b). Any contractor who begins any project without the copy of the written report or statement will be subject to a mandatory fine of not less than two hundred fifty dollars per day. Each day the violation continues will be considered a separate violation.

(3) Criteria to rebut the designation of installed material as PACM.

(a) At any time, an employer and/or building/vessel owner may demonstrate, for purposes of this standard, that PACM does not contain asbestos. Building/vessel owners and/or employers are not required to communicate information about the presence of building material for which such a demonstration according to the requirements of (b) of this subsection has been made. However, in all such cases, the information, data and analysis supporting the determination that PACM does not contain asbestos, must be retained according to WAC 296-62-07727.

(b) An employer or owner may demonstrate that PACM does not contain asbestos by the following:

(i) Having a completed inspection conducted according to the requirements of AHERA (40 C.F.R. Part 763, Subpart E) which demonstrates that the material is not ACM;

(ii) Performing tests of the material containing PACM which demonstrate that no asbestos is present in the material. Such tests must include analysis of bulk samples collected in the manner described in 40 C.F.R. 763.86, Asbestos-containing materials in schools. The tests, evaluation and sample collection must be conducted by an accredited inspector. Analysis of samples must be performed by persons or laboratories with proficiency demonstrated by current successful participation in a nationally recognized testing program such as the National Voluntary Laboratory Accreditation Program (NVLAP) of the National Institute for Standards and Technology (NIST) or the Round Robin for bulk samples administered by the American Industrial Hygiene Associate (AIHA), or an equivalent nationally recognized Round Robin testing program.

(4) Warning signs.

(a) Warning signs that demarcate the regulated area must be provided and displayed at each location where a regulated area is required to be established by WAC 296-62-07711. Signs must be posted at such a location that an employee may read the signs and take necessary protective steps before entering the area marked by the signs.

(b) Sign specifications:

(i) The warning signs required by (a) of this subsection must bear the following information:

DANGER
ASBESTOS
MAY CAUSE CANCER
CAUSES DAMAGE TO LUNGS
AUTHORIZED PERSONNEL ONLY

(ii) In addition, where the use of respirators and protective clothing is required in the regulated area under this section, the warning signs ~~((shall))~~ must include the following:

WEAR RESPIRATORY PROTECTION AND
PROTECTIVE CLOTHING IN THIS AREA

~~((iii))~~ Prior to June 1, 2016, employers may use the following legend in lieu of that specified in (b)(i) and (ii) of this subsection:

DANGER
ASBESTOS
CANCER AND LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY
RESPIRATORS AND PROTECTIVE CLOTHING ARE REQUIRED IN
THIS AREA))

(c) The employer ~~((shall))~~ must ensure that employees working in and contiguous to regulated areas comprehend the warning signs required to be posted by (a) of this subsection. Means to ensure employee comprehension may include the use of foreign languages, pictographs, and graphics.

(d) At the entrance to mechanical rooms/areas in which employees reasonably can be expected to enter and which contain TSI or surfacing ACM and PACM, the building/vessel and facility owner or owner's agent must post signs which identify the material which is present, its location, and appropriate work practices which, if followed, will ensure that ACM and/or PACM will not be disturbed. The employer ~~((shall))~~ must ensure, to the extent feasible, that employees who come in contact with these signs can comprehend them. Means to ensure employee comprehension may include the use of foreign languages, pictographs, graphics, and awareness training.

(5) Warning labels.

(a) Labeling. Labels ~~((shall))~~ must be affixed to all raw materials, mixtures, scrap, waste, debris, and other products containing asbestos fibers, or to their containers. When a building owner or employer identifies previously installed ACM and/or PACM, labels or signs ~~((shall))~~ must be affixed or posted so that employees will be notified of what materials contain ACM and/or PACM. The employer ~~((shall))~~ must attach such labels in areas where they will clearly be noticed by employees who are likely to be exposed, such as at the entrance to mechanical room/areas. Signs required by subsection (1) of this section may be posted in lieu of labels so long as they contain the information required for labeling.

(b) Labels must be printed in large, bold letters on a contrasting background.

(c) Label specifications. In addition to the requirements of subsection (1) of this section, the employer ~~((shall))~~ must ensure that labels of bags or containers of protective clothing and equipment, scrap, waste, and debris containing asbestos fibers include the following information:

DANGER
CONTAINS ASBESTOS FIBERS
MAY CAUSE CANCER
CAUSES DAMAGE TO LUNGS
DO NOT BREATHE DUST
AVOID CREATING DUST

~~((d))~~ Prior to June 1, 2015, employers may include the following information on raw materials, mixtures or labels of bags or containers of protective clothing and equipment, scrap, waste, and debris containing asbestos fibers in lieu of the labeling requirements in subsections (1)(a)(i) and (6)(c) of this section:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD
AVOID BREATHING AIRBORNE ASBESTOS FIBERS))

(6) The provisions for labels and for safety data sheets required by subsection (1) of this section do not apply where:

(a) Asbestos fibers have been modified by a bonding agent, coating, binder, or other material, provided that the manufacturer can demonstrate that during any reasonably foreseeable use, handling, storage, disposal, processing, or transportation, no airborne concentrations of fibers of asbestos in excess of the excursion limit will be released; or

(b) Asbestos is present in a product in concentrations less than 1.0 percent by weight.

(7) Safety data sheets. Employers who are manufacturers or importers of asbestos, or asbestos products must comply with the requirements regarding development of safety data sheets as specified in WAC ~~((296-62-05413))~~ 296-901-14014, except as provided by subsection (6) of this section.

(8) When a building/vessel owner/or employer identifies previously installed PACM and/or ACM, labels or signs must be affixed or posted so that employees will be notified of what materials contain PACM and/or ACM. The employer must attach such labels in areas where they will clearly be noticed by employees who are likely to be exposed, such as at the entrance to mechanical rooms/areas. Signs required by subsection (4)(a) of this section may be posted in lieu of labels so long as they contain information required for labeling. The employer must ensure, to the extent feasible, that employees who come in contact with these signs can comprehend them. Means to ensure employee comprehension may include the use of foreign languages, pictographs, graphics, and awareness training.

AMENDATORY SECTION (Amending WSR 05-03-093, filed 1/18/05, effective 3/1/05)

WAC 296-62-0772 Employee information and training. (1) Certification.

(a) Only certified asbestos workers may work on an asbestos project as required in WAC 296-65-010 and 296-65-030.

(b) Only certified asbestos supervisors may supervise asbestos abatement projects as required in WAC 296-65-012 and 296-65-030.

(c) In cases where certification requirements of chapter 296-65 WAC do not apply, all employees must be trained according to the provisions of this section regardless of their exposure levels.

(d) Certification is not required for asbestos work on materials containing less than one percent asbestos.

(2) Training must be provided prior to or at the time of initial assignment, unless the employee has received equivalent training within the previous twelve months, and at least annually thereafter.

(3) Asbestos projects.

(a) Class I work must be considered an asbestos project. Only certified asbestos workers may do this work.

(b) Only certified workers may conduct Class II asbestos work that is considered an asbestos project.

(i) The following Class II asbestos work must be considered asbestos projects:

(A) All Class II asbestos work where critical barriers, equivalent isolation methods, or negative pressure enclosures are required; or

(B) All Class II asbestos work where asbestos containing materials do not stay intact (including removal of vinyl asbestos floor (VAT) or roofing materials by mechanical methods such as chipping, grinding, or sanding).

(ii) The following Class II asbestos work is not considered an asbestos project and is excluded from asbestos worker certification:

(A) All Class II asbestos work involving intact asbestos containing materials (for example, intact roofing materials, bituminous or asphalt pipeline coatings, and intact flooring/decking materials);

(B) All Class II asbestos work of less than one square foot of asbestos containing materials; or

(C) All Class II asbestos work involving asbestos-cement water pipe when the work is done in accordance with training approved by the department through the asbestos certification program (see WAC 296-65-015(4)).

(iii) Asbestos work involving the removal of one square foot or more of intact roofing materials by mechanical sawing or heavy equipment must meet the following requirements:

(A) Only certified asbestos workers may conduct mechanical sawing of intact roofing material;

(B) Noncertified asbestos workers may handle roofing dust, material and debris;

(C) Operators of heavy equipment (such as track hoes with clam shells and excavators) do not need to be certified asbestos workers in the removal or demolition of intact roofing materials.

(c) Only certified asbestos workers may conduct all Class III and Class IV asbestos work that is considered an asbestos project.

(i) The following asbestos work is considered an asbestos project:

(A) All Class III asbestos work where one square foot or more of asbestos containing materials that do not stay intact;

(B) All Class IV asbestos work where one square foot or more of asbestos containing materials that do not stay intact; or

(C) All Class III and Class IV asbestos work with pipe insulation.

(ii) Except for a project involving pipe insulation work, any project involving only Class III or Class IV asbestos work with less than one square foot of asbestos containing materials is not considered an asbestos project.

(4) Training requirements for asbestos work that is not considered an asbestos project or is excluded from asbestos worker certification.

(a) Class II asbestos work.

(i) Employers must provide eight-hours of training to employees who perform asbestos work on one generic category of asbestos containing materials (ACM). When performing asbestos work in more than one category of asbestos containing materials, additional training must be used to supplement the first eight hour training course.

(ii) The training course must include:

~~((A) Hands on training that applies to the category of asbestos containing materials;~~

~~• Specific work practices and engineering controls related to the category of asbestos containing materials present as specified in WAC 296-62-07712; and~~

~~• All the minimum elements of subsection (5) of this section.)~~

(A) Hands-on training that applies to the category of asbestos containing materials;

(B) Specific work practices and engineering controls related to the category of asbestos containing materials present as specified in WAC 296-62-07712; and

(C) All the minimum elements of subsection (5) of this section.

(b) Class III asbestos work (maintenance and custodial work in buildings containing asbestos-containing materials).

(i) Employers must provide training with curriculum and training methods equivalent to the sixteen-hour operations and maintenance course developed by the EPA. (See 40 C.F.R. 763.92 (a)(2).) For those employees whose only affected work is Class II work as described in subsection (4)(a)(i) of this section, employers must meet this 16-hour training requirement or provide training that meets the eight hours Class II requirements in subsection (4)(a) of this section.

(ii) Sixteen hours of training must include:

- ~~((Hands-on training in the use of respiratory protection and work practices; and~~
- ~~• All the minimum elements of subsection (5) of this section.)~~

(A) Hands-on training in the use of respiratory protection and work practices; and

(B) All the minimum elements of subsection (5) of this section.

(c) Class IV asbestos work (maintenance and custodial work in buildings containing asbestos-containing materials).

(i) Employers must provide at least two hours of training with curriculum and training methods equivalent to the awareness training course developed by the EPA.

(ii) Training must include:

- ~~((Available information concerning the location of PACM, ACM, asbestos-containing flooring materials or flooring materials where the absence of asbestos has not been certified;~~
- ~~• Instruction on how to recognize damaged, deteriorated, and delimitation of asbestos-containing building materials; and~~
- ~~• All of the minimum elements of subsection (5) of this section.)~~

(A) Available information concerning the location of PACM, ACM, asbestos-containing flooring materials or flooring materials where the absence of asbestos has not been certified;

(B) Instruction on how to recognize damaged, deteriorated, and delimitation of asbestos-containing building materials; and

(C) All of the minimum elements of subsection (5) of this section.

(5) The training program must be conducted in a manner which the employee is able to understand. The employer must ensure that each employee is informed of the following:

- (a) The health effects associated with asbestos exposure;
- (b) The relationship between smoking and exposure to asbestos producing lung cancer;

(c) Methods of recognizing asbestos and quantity, location, manner of use, release (including the requirements of WAC 296-62-07721 (1)(c) and (2)(b) to presume certain building materials contain asbestos), and storage of asbestos and the specific nature of operations which could result in exposure to asbestos;

(d) The engineering controls and work practices associated with the employee's job assignment;

(e) The specific procedures implemented to protect employees from exposure to asbestos, such as appropriate work practices, housekeeping procedures, hygiene facilities, decontamination procedures, emergency and clean-up procedures (including where Class III and IV work is performed, the contents "Managing Asbestos In Place" (EPA 20T-2003, July 1990) or its equivalent in content), personal protective equipment to be used, waste disposal procedures, and any necessary instructions in the use of these controls and procedures;

(f) The purpose, proper use, and limitations of protective clothing;

(g) The purpose and a description of the medical surveillance program required by WAC 296-62-07725;

(h) The content of this standard, including appendices;

(i) The names, addresses and phone numbers of public health organizations which provide information, materials, and/or conduct programs concerning smoking cessation. The employer may distribute the list of such organizations contained in Appendix I, to comply with this requirement;

(j) The requirements for posting signs and affixing labels and the meaning of the required legends for such signs and labels; and

(k) The purpose, proper use, limitations, and other training requirements for respiratory protection as required by chapter 296-842 WAC (see WAC 296-842-11005, 296-842-16005, and 296-842-19005).

(6) The employer must also provide, at no cost to employees who perform housekeeping operations in a facility which contains ACM or PACM, an asbestos awareness training course to all employees who are or will work in areas where ACM and/or PACM is present who work in buildings containing asbestos-containing materials, which must, at a minimum, contain the following elements:

- ~~((Health effects of asbestos;~~
- ~~• Locations of ACM and PACM in the building/facility;~~
- ~~• Recognition of ACM and PACM damage and deterioration;~~
- ~~• Requirements in this standard relating to housekeeping; and~~
- ~~• Proper response to fiber release episodes.)~~

(a) Health effects of asbestos;

(b) Locations of ACM and PACM in the building/facility;

(c) Recognition of ACM and PACM damage and deterioration;

(d) Requirements in this standard relating to housekeeping; and

(e) Proper response to fiber release episodes.

Each such employee must be so trained at least once a year.

(7) Access to information and training materials.

(a) The employer must make a copy of this standard and its appendices readily available without cost to all affected employees.

(b) The employer must provide, upon request, all materials relating to the employee information and training program to the director.

(c) The employer must inform all employees concerning the availability of self-help smoking cessation program material. Upon employee request, the employer must distribute such material, consisting of NIH Publication No. 89-1647, or equivalent self-help material, which is approved or published by a public health organization listed in Appendix I, WAC 296-62-07751.

AMENDATORY SECTION (Amending WSR 97-01-079, filed 12/17/96, effective 3/1/97)

WAC 296-62-07723 Housekeeping. (1) All surfaces ~~((shall))~~ must be maintained as free as practicable of accumulations of dusts and waste containing asbestos.

(2) All spills and sudden releases of material containing asbestos ~~((shall))~~ must be cleaned up as soon as possible.

(3) Surfaces contaminated with asbestos may not be cleaned by the use of compressed air.

(4) Vacuuming. HEPA-filtered vacuuming equipment ~~((shall))~~ must be used for vacuuming. The equipment ~~((shall))~~ must be used and emptied in a manner which minimizes the reentry of asbestos into the workplace.

(5) Shoveling, dry sweeping, and dry clean-up of asbestos may be used only where vacuuming and/or wet cleaning are not feasible.

(6) Waste disposal. Waste, scrap, debris, bags, containers, equipment, and clothing contaminated with asbestos consigned for disposal, ~~((shall))~~ must be collected and disposed of in sealed impermeable bags, or other closed, impermeable containers. To avoid breakage, bags ~~((shall))~~ must be at least six mils in thickness and shall not be dragged or slid across rough or abrasive surfaces.

(7) Waste removal. Whenever a negative-pressure enclosure is required by WAC 296-62-07712, the employer whenever feasible, ~~((shall))~~ must establish a waste-load-out area that is adjacent and connected to the negative-pressure enclosure, constructed of a two chamber air lock, for the decontamination and removal of asbestos debris.

(8) Deterioration. Asbestos and asbestos containing material which has become damaged or deteriorated ~~((shall))~~ must be repaired, enclosed, encapsulated, or removed.

(9) Care of asbestos-containing flooring/decking material.

(a) Sanding of asbestos-containing floor/deck material is prohibited.

(b) Stripping of finishes ~~((shall))~~ must be conducted using low abrasion pads at speeds lower than 300 rpm and wet methods.

(c) Burnishing or dry buffing may be performed only on asbestos-containing flooring/decking which has sufficient finish so that the pad cannot contact the asbestos-containing material.

(d) Dust and debris in an area containing TSI or surfacing ACM/PACM or visibly deteriorated ACM, ~~((shall))~~ must not be dusted or swept dry, or vacuumed without using a HEPA filter.

(10) Waste and debris and accompanying dust in an area containing accessible thermal system insulation or surfacing material or visibly deteriorated ACM:

(a) ~~((shall))~~ Must not be dusted or swept dry, or vacuumed without using a HEPA filter;

(b) ~~((shall))~~ Must be promptly cleaned up and disposed of in leak tight containers.

AMENDATORY SECTION (Amending WSR 06-05-027, filed 2/7/06, effective 4/1/06)

WAC 296-62-07725 Medical surveillance. (1) General.

(a) Employees covered. The employer ~~((shall))~~ must institute a medical surveillance program for all employees who are or will be exposed to airborne concentrations of fibers of asbestos at or above the permissible exposure limits. Exception.

Employers in the construction or shipyard industries ~~((shall))~~ must institute a medical surveillance program for all employees who for a combined total of thirty or more days per year are engaged in Class I, II, and III work, or are exposed at or above the permissible exposure limit for combined thirty days or more per year; or who are required by the standard to wear negative pressure respirators. For the purpose of this subsection, any day in which an employee engaged in Class II or III work or a combination thereof for one hour or less (taking into account the entire time spent on the removal operation, including cleanup), and, while doing so adheres to the work practices specified in this standard, shall not be counted.

(b) Examination by a physician.

(i) The employer ~~((shall))~~ must ensure that all medical examinations and procedures are performed by or under the supervision of a licensed physician, and ~~((shall))~~ must be provided without cost to the employee and at a reasonable time and place.

(ii) Persons other than licensed physicians, who administer the pulmonary function testing required by this section, ~~((shall))~~ must complete a training course in spirometry sponsored by an appropriate academic or professional institution.

(2) Preplacement examinations.

(a) Except as provided by WAC 296-62-07725 (1)(a), before an employee is assigned to an occupation exposed to airborne concentrations of asbestos, a preplacement medical examination ~~((shall))~~ must be provided or made available by the employer. Examinations administered using the thirty or more days per year criteria of WAC 296-62-07725 (1)(a) ~~((shall))~~ must be given within ten working days following the thirtieth day of exposure. Examinations must be given prior to assignment of employees to areas where negative-pressure respirators are worn.

(b) All examinations ~~((shall))~~ must include, as a minimum, a medical and work history: A complete physical examination of all systems with special emphasis on the pulmonary, cardiovascular, and gastrointestinal systems; completion of the respiratory disease standardized questionnaire in WAC 296-62-07741, Appendix D, Part 1; a chest roentgenogram (posterior-anterior 14x17 inches); pulmonary function tests to include forced vital capacity (FVC) and

forced expiratory volume at 1 second (FEV_{1.0}); and any additional tests deemed appropriate by the examining physician. Interpretation and classification of chest roentgenograms ((shall)) must be conducted in accordance with WAC 296-62-07743, Appendix E.

(3) Periodic examinations.

(a) Periodic medical examinations ((shall)) must be made available annually.

(b) The scope of the medical examination ((shall)) must be in conformance with the protocol established in subsection (2)(b) of this section, except that the frequency of chest roentgenograms ((shall)) must be conducted in accordance with Table 2 of this section, and the abbreviated standardized questionnaire contained in WAC 296-62-07741, Appendix D, Part 2, ((shall)) must be administered to the employee.

TABLE 2—FREQUENCY OF CHEST ROENTGENOGRAMS

Years since first exposure	Age of employee		
	15 to 35	35+ to 45	45+
0 to 10	Every 5 years	Every 5 years	Every 5 years.
10+	Every 5 years	Every 2 years	Every 1 year.

(c) If the examining physician determines that any of the examinations should be provided more frequently than specified, the employer ((shall)) must provide such examinations to affected employees at the frequencies specified by the physician.

(4) Termination of employment examinations.

(a) The employer ((shall)) must provide, or make available, a termination of employment medical examination for any employee who has been exposed to airborne concentrations of fibers of asbestos at or above the permissible exposure limits.

(b) The medical examination ((shall)) must be in accordance with the requirements of the periodic examinations stipulated in subsection (3) of this section, and ((shall)) must be given within thirty calendar days before or after the date of termination of employment.

(5) Recent examinations. No medical examination is required of any employee, if adequate records show that the employee has been examined in accordance with subsection (2), (3), or (4) of this section within the past one-year period.

(6) Information provided to the physician. The employer ((shall)) must provide the following information to the examining physician:

(a) A copy of this standard and Appendices D, E, and H of WAC 296-62-07741, 296-62-07743, and 296-62-07749 respectively.

(b) A description of the affected employee's duties as they relate to the employee's exposure.

(c) The employee's representative exposure level or anticipated exposure level.

(d) A description of any personal protective and respiratory equipment used or to be used.

(e) Information from previous medical examinations of the affected employee that is not otherwise available to the examining physician.

(7) Physician's written opinion.

(a) The employer ((shall)) must obtain a written opinion from the examining physician. This written opinion ((shall))

must contain the results of the medical examination and ((shall)) must include:

(i) The physician's opinion as to whether the employee has any detected medical conditions that would place the employee at an increased risk of material health impairment from exposure to asbestos;

(ii) Any recommended limitations on the employee or upon the use of personal protective equipment such as clothing or respirators;

(iii) A statement that the employee has been informed by the physician of the results of the medical examination and of any medical conditions resulting from asbestos exposure that require further explanation or treatment; and

(iv) A statement that the employee has been informed by the physician of the increased risk of lung cancer attributable to the combined effect of smoking and asbestos exposure.

(b) The employer ((shall)) must instruct the physician not to reveal in the written opinion given to the employer specific findings or diagnoses unrelated to occupational exposure to asbestos.

(c) The employer ((shall)) must provide a copy of the physician's written opinion to the affected employee within thirty days from its receipt.

AMENDATORY SECTION (Amending WSR 04-10-026, filed 4/27/04, effective 8/1/04)

WAC 296-62-07727 Recordkeeping. (1) Exposure measurements.

(a) The employer ((shall)) must keep an accurate record of all measurements taken to monitor employee exposure to asbestos as prescribed in WAC 296-62-07709.

(b) This record ((shall)) must include at least the following information:

(i) Name of employer;

(ii) Name of person conducting monitoring;

(iii) The date of measurement;

(iv) Address of operation or activity;

(v) Description of the operation or activity involving exposure to asbestos that is being monitored;

(vi) Personal or area sample;

(vii) Name, Social Security number, and exposure level of the employees whose exposures are represented;

(viii) Type of protective devices worn, if any;

(ix) Pump calibration date and flow rate;

(x) Total volume of air sampled;

(xi) Name and address of analytical laboratory;

(xii) Number, duration, and results (f/cc) of samples taken;

(xiii) Date of analysis; and

(xiv) Sampling and analytical methods used and evidence of their accuracy.

(c) The employer ((shall)) must maintain this record for the duration of employment plus thirty years, in accordance with chapter 296-802 WAC.

(2) Objective data for exempted operations.

(a) Where the processing, use, or handling of products made from or containing asbestos is exempted from other requirements of this section under WAC 296-62-07709 (2)(a)(iii) and (3)(b)(i), the employer ((shall)) must establish

and maintain an accurate record of objective data reasonably relied upon in support of the exemption.

(b) The record ~~((shall))~~ must include at least the following:

- (i) The product qualifying for exemption;
 - (ii) The source of the objective data;
 - (iii) The testing protocol, results of testing, and/or analysis of the material for the release of asbestos;
 - (iv) A description of the operation exempted and how the data support the exemption; and
 - (v) Other data relevant to the operations, materials, processing, or employee exposures covered by the exemption.
- (c) The employer ~~((shall))~~ must maintain this record for the duration of the employer's reliance upon such objective data.

Note: The employer may utilize the services of competent organizations such as industry trade associations and employee associations to maintain the records required by this section.

(3) Medical surveillance.

(a) The employer ~~((shall))~~ must establish and maintain an accurate record for each employee subject to medical surveillance by WAC 296-62-07725 (1)(a), in accordance with chapter 296-802 WAC.

(b) The record ~~((shall))~~ must include at least the following information:

- (i) The name and Social Security number of the employee;
- (ii) Physician's written opinions;
- (iii) Any employee medical complaints related to exposure to asbestos;
- (iv) A copy of the information provided to the physician as required by WAC 296-62-07725(6); and
- (v) A copy of the employee's medical examination results, including the medical history, questionnaire responses, results of any tests, and physicians recommendations.

(c) The employer ~~((shall))~~ must ensure that this record is maintained for the duration of employment plus thirty years, in accordance with chapter 296-802 WAC.

(4) Training. The employer ~~((shall))~~ must maintain all employee training records for one year beyond the last date of employment of that employee.

(5) Availability.

(a) The employer, upon written request, ~~((shall))~~ must make all records required to be maintained by this section available to the director for examination and copying.

(b) The employer, upon request, ~~((shall))~~ must make any exposure records required by subsection (1) of this section available for examination and copying to affected employees, former employees, designated representatives, and the director, in accordance with chapter 296-802 WAC.

(c) The employer, upon request, ~~((shall))~~ must make employee medical records required by subsection (2) of this section available for examination and copying to the subject employee, to anyone having the specific written consent of the subject employee, and the director, in accordance with chapter 296-802 WAC.

(6) Transfer of records.

(a) The employer ~~((shall))~~ must comply with the requirements concerning transfer of records set forth in chapter 296-802 WAC.

(b) Whenever the employer ceases to do business and there is no successor employer to receive and retain the records for the prescribed period, the employer ~~((shall))~~ must notify the director at least ninety days prior to disposal of records and, upon request, transmit them to the director.

(7) Data to rebut PACM. Where the building owner and employer have relied on data to demonstrate that PACM is not asbestos-containing, such data ~~((shall))~~ must be maintained for as long as they are relied upon to rebut the presumption.

(8) Records of required notifications. Where the building owner has communicated and received information concerning the identification, location and quantity of ACM and PACM, written records of such notifications and their content ~~((shall))~~ must be maintained by the building owner for the duration of ownership and ~~((shall))~~ must be transferred to successive owners of such buildings/facilities.

AMENDATORY SECTION (Amending WSR 99-17-026, filed 8/10/99, effective 11/10/99)

WAC 296-62-07728 Competent person. (1) General. For all construction and shipyard work covered by this standard, the employer must designate a competent person, having the qualifications and authorities for ensuring worker safety and health as required by chapter 296-155 WAC.

(2) Required inspections by the competent person. WAC 296-155-110(9) which requires health and safety prevention programs to provide for frequent and regular inspections on the job sites, materials, and equipment to be made by the competent person, is incorporated.

(3) Additional inspections. In addition, the competent person must make frequent and regular inspections of the job sites in order to perform the duties set out below in this section. For Class I jobs, on-site inspections must be made at least once during each work shift, and at any time at employee request. For Class II and III jobs, on-site inspections must be made at intervals sufficient to assess whether conditions have changed, and at any reasonable time at employee request.

(4) On all worksites where employees are engaged in Class I or II asbestos work, the competent person designated in accordance with WAC 296-62-07712 must perform or supervise the following duties, as applicable:

- (a) Set up the regulated area, enclosure, or other containment;
- (b) Ensure (by on-site inspection) the integrity of the enclosure or containment;
- (c) Set up procedures to control entry and exit from the enclosure and/or area;
- (d) Supervise all employee exposure monitoring required by this section and ensure that it is conducted as required by WAC 296-62-07709;
- (e) Ensure that employees working within the enclosure and/or using glovebags wear protective clothing and respirators as required by WAC 296-62-07715 and 296-62-07717;

(f) Ensure through on-site supervision, that employees set up and remove engineering controls, use work practices and personal protective equipment in compliance with all requirements;

(g) Ensure that employees use the hygiene facilities and observe the decontamination procedures specified in WAC 296-62-07719;

(h) Ensure that through on-site inspection engineering controls are functioning properly and employees are using proper work practices; and

(i) Ensure that notification requirements in WAC 296-62-07721 are met.

(5) Training for competent person.

(a) For Class I and II asbestos work the competent person must be trained in all aspects of asbestos removal and handling, including:

- ((~~• Abatement,~~
- ~~• Installation,~~
- ~~• Removal and handling,~~
- ~~• The contents of this standard,~~
- ~~• The identification of asbestos,~~
- ~~• Removal procedures where appropriate, and~~
- ~~• Other practices for reducing the hazard.))~~

(i) Abatement;

(ii) Installation;

(iii) Removal and handling;

(iv) The contents of this standard;

(v) The identification of asbestos;

(vi) Removal procedures where appropriate; and

(vii) Other practices for reducing the hazard.

Such training must be the certified asbestos supervisor training specified in WAC 296-65-003, 296-65-012, and 296-65-030.

(b) For Class III and IV asbestos work:

(i) The competent person must be certified as an asbestos supervisor as prescribed in WAC 296-65-012 and 296-65-030 for Class III and IV work involving an asbestos project of 3 square feet or 3 linear feet or more of asbestos containing material.

(ii) For Class III and IV asbestos work involving less than 3 square feet or 3 linear feet of asbestos containing material, the competent person must be trained in:

- ((~~• Aspects of asbestos handling appropriate for the nature of the work, to include procedures for setting up glove bags and mini-enclosures,~~
- ~~• Practices for reducing asbestos exposures,~~
- ~~• Use of wet methods,~~
- ~~• The contents of this standard, and~~
- ~~• The identification of asbestos.))~~

(A) Aspects of asbestos handling appropriate for the nature of the work, to include procedures for setting up glove bags and mini-enclosures;

(B) Practices for reducing asbestos exposures;

(C) Use of wet methods;

(D) The contents of this standard; and

(E) The identification of asbestos.

Such training must include successful completion of a course equivalent in curriculum and training method to the 16-hour Operations and Maintenance course developed by EPA for maintenance and custodial workers (see 40 C.F.R. 763.92 (a)(2)) or its equivalent in stringency, content and length.

AMENDATORY SECTION (Amending WSR 99-17-026, filed 8/10/99, effective 11/10/99)

WAC 296-62-07735 Appendix A—WISHA reference method—Mandatory. This mandatory appendix specifies the procedure for analyzing air samples for asbestos, tremolite, anthophyllite, and actinolite and specifies quality control procedures that must be implemented by laboratories performing the analysis. The sampling and analytical methods described below represent the elements of the available monitoring methods (such as Appendix B to this section, the most current version of the WISHA method ID-60, or the most current version of the NIOSH 7400 method) which WISHA considers to be essential to achieve adequate employee exposure monitoring while allowing employers to use methods that are already established within their organizations. All employers who are required to conduct air monitoring under WAC 296-62-07709 are required to utilize analytical laboratories that use this procedure, or an equivalent method, for collecting and analyzing samples.

(1) Sampling and analytical procedure.

(a) The sampling medium for air samples must be mixed cellulose ester filter membranes. These must be designated by the manufacturer as suitable for asbestos, tremolite, anthophyllite, and actinolite counting. See below for rejection of blanks.

(b) The preferred collection device is the 25-mm diameter cassette with an open-faced 50-mm electrically conductive extension cowl. The 37-mm cassette may be used if necessary but only if written justification for the need to use the 37-mm filter cassette accompanies the sample results in the employee's exposure monitoring record. Do not reuse or reload cassettes for asbestos sample collection.

(c) An air flow rate between 0.5 liter/min and 4.0 liters/min must be selected for the 25-mm cassette. If the 37-mm cassette is used, an air flow rate between 1 liter/min and 4.0 liters/min must be selected.

(d) Where possible, a sufficient air volume for each air sample must be collected to yield between one hundred and one thousand three hundred fibers per square millimeter on the membrane filter. If a filter darkens in appearance or if loose dust is seen on the filter, a second sample must be started.

(e) Ship the samples in a rigid container with sufficient packing material to prevent dislodging the collected fibers. Packing material that has a high electrostatic charge on its surface (e.g., expanded polystyrene) cannot be used because such material can cause loss of fibers to the sides of the cassette.

(f) Calibrate each personal sampling pump before and after use with a representative filter cassette installed between the pump and the calibration devices.

(g) Personal samples must be taken in the "breathing zone" of the employee (i.e., attached to or near the collar or lapel near the worker's face).

(h) Fiber counts must be made by positive phase contrast using a microscope with an 8 to 10 X eyepiece and a 40 to 45 X objective for a total magnification of approximately 400 X and a numerical aperture of 0.65 to 0.75. The microscope ((shall)) must also be fitted with a green or blue filter.

(i) The microscope must be fitted with a Walton-Beckett eyepiece graticule calibrated for a field diameter of one hundred micrometers (+/-2 micrometers).

(j) The phase-shift detection limit of the microscope must be about 3 degrees measured using the HSE phase shift test slide as outlined below.

(i) Place the test slide on the microscope stage and center it under the phase objective.

(ii) Bring the blocks of grooved lines into focus.

Note: The slide consists of seven sets of grooved lines (ca. 20 grooves to each block) in descending order of visibility from sets one to seven, seven being the least visible. The requirements for asbestos, tremolite, anthophyllite, and actinolite counting are that the microscope optics must resolve the grooved lines in set three completely, although they may appear somewhat faint, and that the grooved lines in sets six and seven must be invisible. Sets four and five must be at least partially visible but may vary slightly in visibility between microscopes. A microscope that fails to meet these requirements has either too low or too high a resolution to be used for asbestos, tremolite, anthophyllite, and actinolite counting.

(iii) If the image deteriorates, clean and adjust the microscope optics. If the problem persists, consult the microscope manufacturer.

(k) Each set of samples taken will include ten percent blanks or a minimum of two blanks. These blanks must come from the same lot as the filters used for sample collection. The field blank results must be averaged and subtracted from the analytical results before reporting. Any samples represented by a blank having a fiber count in excess of the detection limit of the method being used must be rejected.

(l) The samples must be mounted by the acetone/triacetin method or a method with an equivalent index of refraction and similar clarity.

(m) Observe the following counting rules.

(i) Count only fibers equal to or longer than five micrometers. Measure the length of curved fibers along the curve.

(ii) Count all particles as asbestos, tremolite, anthophyllite, and actinolite that have a length-to-width ratio (aspect ratio) of three to one or greater.

(iii) Fibers lying entirely within the boundary of the Walton-Beckett graticule field must receive a count of one. Fibers crossing the boundary once, having one end within the circle, must receive the count of one-half. Do not count any fiber that crosses the graticule boundary more than once. Reject and do not count any other fibers even though they may be visible outside the graticule area.

(iv) Count bundles of fibers as one fiber unless individual fibers can be identified by observing both ends of an individual fiber.

(v) Count enough graticule fields to yield 100 fibers. Count a minimum of 20 fields; stop counting at 100 fields regardless of fiber count.

(n) Blind recounts must be conducted at the rate of ten percent.

(2) Quality control procedures.

(a) Intralaboratory program. Each laboratory and/or each company with more than one microscopist counting slides must establish a statistically designed quality assurance program involving blind recounts and comparisons between microscopists to monitor the variability of counting by each microscopist and between microscopists. In a company with more than one laboratory, the program must include all laboratories and must also evaluate the laboratory-to-laboratory variability.

(b) Interlaboratory program.

(i) Each laboratory analyzing asbestos, tremolite, anthophyllite, and actinolite samples for compliance determination ((shall)) must implement an interlaboratory quality assurance program that as a minimum includes participation of at least two other independent laboratories. Each laboratory must participate in round robin testing at least once every six months with at least all the other laboratories in its interlaboratory quality assurance group. Each laboratory must submit slides typical of its own work load for use in this program. The round robin ((shall)) must be designed and results analyzed using appropriate statistical methodology.

(ii) All laboratories should participate in a national sample testing scheme such as the Proficiency Analytical Testing Program (PAT), the Asbestos Registry sponsored by the American Industrial Hygiene Association (AIHA).

(c) All individuals performing asbestos, tremolite, anthophyllite, and actinolite analysis must have taken the NIOSH course for sampling and evaluating airborne asbestos, tremolite, anthophyllite, and actinolite dust or an equivalent course, recognized by the department.

(d) When the use of different microscopes contributes to differences between counters and laboratories, the effect of the different microscope must be evaluated and the microscope must be replaced, as necessary.

(e) Current results of these quality assurance programs must be posted in each laboratory to keep the microscopists informed.

AMENDATORY SECTION (Amending WSR 87-24-051, filed 11/30/87)

WAC 296-62-07743 Appendix E—Interpretation and classification of chest roentgenograms—Mandatory.

(1) Chest roentgenograms ((shall)) must be interpreted and classified in accordance with a professionally accepted classification system and recorded on an interpretation form following the format of the CDC/NIOSH (M) 2.8 form. As a minimum, the content within the bold lines of this form (items one through four) ((shall)) must be included. This form is not to be submitted to NIOSH.

(2) Roentgenograms ((shall)) must be interpreted and classified only by a B-reader, a board eligible/certified radiologist, or an experienced physician with known expertise in pneumoconioses.

(3) All interpreters, whenever interpreting chest roentgenograms made under this section, ((shall)) must have immediately available for reference a complete set of the

ILO-U/C International Classification of Radiographs for Pneumoconioses, 1980.

AMENDATORY SECTION (Amending WSR 00-06-075, filed 3/1/00, effective 4/10/00)

WAC 296-62-07745 Appendix F—Work practices and engineering controls for automotive brake and clutch inspection, disassembly, repair and assembly—Mandatory. This mandatory appendix specifies engineering controls and work practices that must be implemented by the employer during automotive brake and clutch inspection, disassembly, repair, and assembly operations. Proper use of these engineering controls and work practices will reduce employees' asbestos exposure below the permissible exposure level during clutch and brake inspection, disassembly, repair, and assembly operations. The employer ~~((shall))~~ must institute engineering controls and work practices using either the method set forth in (1) or (2) of this appendix, or any other method which the employer can demonstrate to be equivalent in terms of reducing employee exposure to asbestos as defined and which meets the requirements described in (3) of this appendix, for those facilities in which no more than five pairs of brakes or five clutches are inspected, disassembled, reassembled and/or repaired per week, the method set forth in (4) of this appendix may be used:

(1) Negative pressure enclosure/HEPA vacuum system method.

(a) The brake and clutch inspection, disassembly, repair, and assembly operations ~~((shall))~~ must be enclosed to cover and contain the clutch or brake assembly and to prevent the release of asbestos fibers into the worker's breathing zone.

(b) The enclosure ~~((shall))~~ must be sealed tightly and thoroughly inspected for leaks before work begins on brake and clutch inspection, disassembly, repair and assembly.

(c) The enclosure ~~((shall))~~ must be such that the worker can clearly see the operation and ~~((shall))~~ must provide impermeable sleeves through which the worker can handle the brake and clutch inspection, disassembly, repair and assembly. The integrity of the sleeves and ports ~~((shall))~~ must be examined before work begins.

(d) A HEPA-filtered vacuum ~~((shall))~~ must be employed to maintain the enclosure under negative pressure throughout the operation. Compressed-air may be used to remove asbestos fibers or particles from the enclosure.

(e) The HEPA vacuum ~~((shall))~~ must be used first to loosen the asbestos containing residue from the brake and clutch parts and then to evacuate the loosened asbestos containing material from the enclosure and capture the material in the vacuum filter.

(f) The vacuum's filter, when full, ~~((shall))~~ must be first wetted with a fine mist of water, then removed and placed immediately in an impermeable container, labeled according to WAC 296-62-07721(6) and disposed of according to WAC 296-62-07723.

(g) Any spills or releases of asbestos containing waste material from inside of the enclosure or vacuum hose or vacuum filter ~~((shall))~~ must be immediately cleaned up and disposed of according to WAC 296-62-07723.

(2) Low pressure/wet cleaning method.

(a) A catch basin ~~((shall))~~ must be placed under the brake assembly, positioned to avoid splashes and spills.

(b) The reservoir ~~((shall))~~ must contain water containing an organic solvent or wetting agent. The flow of liquid ~~((shall))~~ must be controlled such that the brake assembly is gently flooded to prevent the asbestos-containing brake dust from becoming airborne.

(c) The aqueous solution ~~((shall))~~ must be allowed to flow between the brake drum and brake support before the drum is removed.

(d) After removing the brake drum, the wheel hub and back of the brake assembly ~~((shall))~~ must be thoroughly wetted to suppress dust.

(e) The brake support plate, brake shoes and brake components used to attach the brake shoes ~~((shall))~~ must be thoroughly washed before removing the old shoes.

(f) In systems using filters, the filters, when full, ~~((shall))~~ must be first wetted with a fine mist of water, then removed and placed immediately in an impermeable container, labeled according to WAC 296-62-07721(6) and disposed of according to WAC 296-62-07723.

(g) Any spills of asbestos-containing aqueous solution or any asbestos-containing waste material ~~((shall))~~ must be cleaned up immediately and disposed of according to WAC 296-62-07723.

(h) The use of dry brushing during low pressure/wet cleaning operations is prohibited.

(3) Equivalent methods. An equivalent method is one which has sufficient written detail so that it can be reproduced and has been demonstrated that the exposures resulting from the equivalent method are equal to or less than the exposure which would result from the use of the method described in subsection (1) of this appendix. For purposes of making this comparison, the employer ~~((shall))~~ must assume that exposures resulting from the use of the method described in subsection (1) of this appendix ~~((shall))~~ must not exceed 0.016 f/cc, as measured by the WISHA reference method and as averaged over at least eighteen personal samples.

(4) Wet method.

(a) A spray bottle, hose nozzle, or other implement capable of delivering a fine mist of water or amended water or other delivery system capable of delivering water at low pressure, ~~((shall))~~ must be used to first thoroughly wet the brake and clutch parts. Brake and clutch components ~~((shall))~~ must then be wiped clean with a cloth.

(b) The cloth ~~((shall))~~ must be placed in an impermeable container, labeled according to WAC 296-62-07721(6) and then disposed of according to WAC 296-62-07723, or the cloth ~~((shall))~~ must be laundered in a way to prevent the release of asbestos fibers in excess of 0.1 fiber per cubic centimeter of air.

(c) Any spills of solvent or any asbestos containing waste material ~~((shall))~~ must be cleaned up immediately according to WAC 296-62-07723.

(d) The use of dry brushing during the wet method operations is prohibited.

AMENDATORY SECTION (Amending WSR 06-16-106, filed 8/1/06, effective 9/1/06)

WAC 296-62-08003 Hexavalent chromium. Scope.

This standard applies to occupational exposures to chromium (VI) in all forms and compounds in general industry; construction; shipyards, marine terminals, and longshoring, except:

((*) (1) Agricultural operations covered by chapter 296-307 WAC, Safety standards for agriculture((-

*));

(2) Exposures that occur in the application of pesticides regulated by the Washington state department of agriculture or another federal government agency (e.g., the treatment of wood with preservatives);

((*) (3) Exposures to portland cement; or

((*) (4) Where the employer has objective data demonstrating that a material containing chromium or a specific process, operation, or activity involving chromium cannot release dusts, fumes, or mists of chromium (VI) in concentrations at or above 0.5 (mu)g/m³ as an 8-hour time-weighted average (TWA) under any expected conditions of use.

AMENDATORY SECTION (Amending WSR 06-16-106, filed 8/1/06, effective 9/1/06)

WAC 296-62-08005 Definitions. For the purposes of this section the following definitions apply:

Action level ((means)). A concentration of airborne chromium (VI) of 2.5 micrograms per cubic meter of air (2.5 (mu)g/m³) calculated as an 8-hour time-weighted average (TWA).

Chromium (VI) (hexavalent chromium or Cr(VI)) ((means)). Chromium with a valence of positive six, in any form and in any compound.

Emergency ((means)). Any occurrence that results, or is likely to result, in an uncontrolled release of chromium (VI). If an incidental release of chromium (VI) can be controlled at the time of release by employees in the immediate release area, or by maintenance personnel, it is not an emergency.

Employee exposure ((means)). The exposure to airborne chromium (VI) that would occur if the employee were not using a respirator.

High-efficiency particulate air (HEPA) filter ((means)). A filter that is at least 99.97 percent efficient in removing mono-dispersed particles of 0.3 micrometers in diameter or larger.

Historical monitoring data ((means)). Data from chromium (VI) monitoring conducted prior to July 31, 2006, obtained during work operations conducted under workplace conditions closely resembling the processes, types of material, control methods, work practices, and environmental conditions in the employer's current operations.

Objective data ((means)). Information such as air monitoring data from industry-wide surveys or calculations based on the composition or chemical and physical properties of a substance demonstrating the employee exposure to chromium (VI) associated with a particular product or material or a specific process, operation, or activity. The data must reflect workplace conditions closely resembling the processes, types of material, control methods, work practices,

and environmental conditions in the employer's current operations.

Physician or other licensed health care professional (PLHCP) ((is)). An individual whose legally permitted scope of practice (i.e., license, registration, or certification) allows him or her to independently provide or be delegated the responsibility to provide some or all of the particular health care services required by WAC 296-62-08023.

Regulated area ((means)). An area, demarcated by the employer, where an employee's exposure to airborne concentrations of chromium (VI) exceeds, or can reasonably be expected to exceed, the PEL.

AMENDATORY SECTION (Amending WSR 06-16-106, filed 8/1/06, effective 9/1/06)

WAC 296-62-08007 Permissible exposure limit (PEL). Permissible exposure limit (PEL). The employer ((shall)) must ensure that no employee is exposed to an airborne concentration of chromium (VI) in excess of 5 micrograms per cubic meter of air (5 (mu)g/m³), calculated as an 8-hour time-weighted average (TWA).

AMENDATORY SECTION (Amending WSR 10-24-119, filed 12/1/10, effective 1/1/11)

WAC 296-62-08009 Exposure determination. (1) General. Each employer who has a workplace or work operation covered by this section ((shall)) must determine the 8-hour TWA exposure for each employee exposed to chromium (VI). This determination ((shall)) must be made in accordance with either subsection (2) or (3) of this section.

(2) Scheduled monitoring option.

(a) The employer ((shall)) must perform initial monitoring to determine the 8-hour TWA exposure for each employee on the basis of a sufficient number of personal breathing zone air samples to accurately characterize full shift exposure on each shift, for each job classification, in each work area. Where an employer does representative sampling instead of sampling all employees in order to meet this requirement, the employer ((shall)) must sample the employee(s) expected to have the highest chromium (VI) exposures.

(b) If initial monitoring indicates that employee exposures are below the action level, the employer may discontinue monitoring for those employees whose exposures are represented by such monitoring.

(c) If monitoring reveals employee exposures to be at or above the action level, the employer ((shall)) must perform periodic monitoring at least every six months.

(d) If monitoring reveals employee exposures to be above the PEL, the employer ((shall)) must perform periodic monitoring at least every three months.

(e) If periodic monitoring indicates that employee exposures are below the action level, and the result is confirmed by the result of another monitoring taken at least seven days later, the employer may discontinue the monitoring for those employees whose exposures are represented by such monitoring.

(f) The employer ((shall)) must perform additional monitoring when there has been any change in the production pro-

cess, raw materials, equipment, personnel, work practices, or control methods that may result in new or additional exposures to chromium (VI), or when the employer has any reason to believe that new or additional exposures have occurred.

(3) Performance-oriented option. The employer ((shall)) must determine the 8-hour TWA exposure for each employee on the basis of any combination of air monitoring data, historical monitoring data, or objective data sufficient to accurately characterize employee exposure to chromium (VI).

(4) Employee notification of determination results.

(a) In general industry within five work days after making an exposure determination in accordance with subsection (2) or (3) of this section, the employer ((shall)) must individually notify each affected employee in writing of the results of that determination or post the results in an appropriate location accessible to all affected employees.

(b) In construction and shipyards, marine terminals, and longshoring within five work days after making an exposure determination in accordance with subsection (2) or (3) of this section, the employer ((shall)) must individually notify each affected employee in writing of the results of that determination or post the results in an appropriate location accessible to all affected employees.

(c) Whenever the exposure determination indicates that employee exposure is above the PEL, the employer ((shall)) must describe in the written notification the corrective action being taken to reduce employee exposure to or below the PEL.

(5) Accuracy of measurement. Where air monitoring is performed to comply with the requirements of this section, the employer ((shall)) must use a method of monitoring and analysis that can measure chromium (VI) to within an accuracy of plus or minus twenty-five percent and can produce accurate measurements to within a statistical confidence level of ninety-five percent for airborne concentrations at or above the action level.

(6) Observation of monitoring.

(a) Where air monitoring is performed to comply with the requirements of this section, the employer ((shall)) must provide affected employees or their designated representatives an opportunity to observe any monitoring of employee exposure to chromium (VI).

(b) When observation of monitoring requires entry into an area where the use of protective clothing or equipment is required, the employer ((shall)) must provide the observer with clothing and equipment and ((shall assure)) must ensure that the observer uses such clothing and equipment and complies with all other applicable safety and health procedures.

AMENDATORY SECTION (Amending WSR 06-16-106, filed 8/1/06, effective 9/1/06)

WAC 296-62-08011 Regulated areas.

Exemption: This section does not apply to construction, shipyards, marine terminals or longshoring.

(1) Establishment. The employer ((shall)) must establish a regulated area wherever an employee's exposure to airborne concentrations of chromium (VI) is, or can reasonably be expected to be, in excess of the PEL.

(2) Demarcation. The employer ((shall)) must ensure that regulated areas are demarcated from the rest of the workplace in a manner that adequately establishes and alerts employees of the boundaries of the regulated area.

(3) Access. The employer ((shall)) must limit access to regulated areas to:

(a) Persons authorized by the employer and required by work duties to be present in the regulated area;

(b) Any person entering such an area as a designated representative of employees for the purpose of exercising the right to observe monitoring procedures under WAC 296-62-08009;

(c) Any person authorized by the Washington Industrial Safety and Health Act (WISHA) or regulations issued under it to be in a regulated area.

AMENDATORY SECTION (Amending WSR 06-16-106, filed 8/1/06, effective 9/1/06)

WAC 296-62-08013 Methods of compliance. (1) Engineering and work practice controls.

(a) Except as permitted in (c) of this subsection, the employer ((shall)) must use engineering and work practice controls to reduce and maintain employee exposure to chromium (VI) to or below the PEL unless the employer can demonstrate that such controls are not feasible. Wherever feasible engineering and work practice controls are not sufficient to reduce employee exposure to or below the PEL, the employer ((shall)) must use them to reduce employee exposure to the lowest levels achievable, and ((shall)) must supplement them by the use of respiratory protection that complies with the requirements of WAC 296-62-08015.

Exemption: This (b) does not apply to construction, shipyards, marine terminals and longshoring.

(b) Where painting of aircraft or large aircraft parts is performed in the aerospace industry, the employer ((shall)) must use engineering and work practice controls to reduce and maintain employee exposure to chromium (VI) to or below 25 (mu)g/m³ unless the employer can demonstrate that such controls are not feasible. The employer ((shall)) must supplement such engineering and work practice controls with the use of respiratory protection that complies with the requirements of WAC 296-62-08015 to achieve the PEL.

(c) Where the employer can demonstrate that a process or task does not result in any employee exposure to chromium (VI) above the PEL for thirty or more days per year (twelve consecutive months), the requirement to implement engineering and work practice controls to achieve the PEL does not apply to that process or task.

(2) Prohibition of rotation. The employer ((shall)) must not rotate employees to different jobs to achieve compliance with the PEL.

AMENDATORY SECTION (Amending WSR 09-15-145, filed 7/21/09, effective 9/1/09)

WAC 296-62-08015 Respiratory protection. (1) General. Where respiratory protection is required by this section, the employer must provide each employee an appropriate res-

pirator that complies with the requirements of this chapter. Respiratory protection is required during:

(a) Periods necessary to install or implement feasible engineering and work practice controls;

(b) Work operations, such as maintenance and repair activities, for which engineering and work practice controls are not feasible;

(c) Work operations for which an employer has implemented all feasible engineering and work practice controls and such controls are not sufficient to reduce exposures to or below the PEL;

(d) Work operations where employees are exposed above the PEL for fewer than thirty days per year, and the employer has elected not to implement engineering and work practice controls to achieve the PEL; or

(e) Emergencies.

(2) Respiratory protection program. Where respirator use is required by this section, the employer ~~((shall))~~ must institute a respiratory protection program in accordance with chapter 296-842 WAC, Respirators, which covers each employee required to use a respirator.

AMENDATORY SECTION (Amending WSR 14-07-086, filed 3/18/14, effective 5/1/14)

WAC 296-62-08017 Protective work clothing and equipment. (1) Provision and use. Where a hazard is present or is likely to be present from skin or eye contact with chromium (VI), the employer ~~((shall))~~ must provide appropriate personal protective clothing and equipment at no cost to employees, and ~~((shall))~~ must ensure that employees use such clothing and equipment.

(2) Removal and storage.

(a) The employer ~~((shall))~~ must ensure that employees remove all protective clothing and equipment contaminated with chromium (VI) at the end of the work shift or at the completion of their tasks involving chromium (VI) exposure, whichever comes first.

(b) The employer ~~((shall))~~ must ensure that no employee removes chromium (VI) contaminated protective clothing or equipment from the workplace, except for those employees whose job it is to launder, clean, maintain, or dispose of such clothing or equipment.

(c) When contaminated protective clothing or equipment is removed for laundering, cleaning, maintenance, or disposal, the employer ~~((shall))~~ must ensure that it is stored and transported in sealed, impermeable bags or other closed, impermeable containers.

(d) The employer ~~((shall))~~ must ensure that bags or containers of contaminated protective clothing or equipment that are removed from change rooms for laundering, cleaning, maintenance, or disposal shall be labeled in accordance with the requirements of the hazard communication standard, WAC 296-901-140.

(3) Cleaning and replacement.

(a) The employer ~~((shall))~~ must clean, launder, repair and replace all protective clothing and equipment required by this section as needed to maintain its effectiveness.

(b) The employer ~~((shall))~~ must prohibit the removal of chromium (VI) from protective clothing and equipment by

blowing, shaking, or any other means that disperses chromium (VI) into the air or onto an employee's body.

(c) The employer ~~((shall))~~ must inform any person who launders or cleans protective clothing or equipment contaminated with chromium (VI) of the potentially harmful effects of exposure to chromium (VI) and that the clothing and equipment should be laundered or cleaned in a manner that minimizes skin or eye contact with chromium (VI) and effectively prevents the release of airborne chromium (VI) in excess of the PEL.

AMENDATORY SECTION (Amending WSR 06-16-106, filed 8/1/06, effective 9/1/06)

WAC 296-62-08019 Hygiene areas and practices. (1) General.

(a) General industry, shipyards, marine terminals and longshoring. Where protective clothing and equipment is required, the employer ~~((shall))~~ must provide change rooms in conformance with WAC 296-800-230, Sanitation and hygiene facilities and procedures. Where skin contact with chromium (VI) occurs, the employer ~~((shall))~~ must provide washing facilities in conformance with WAC 296-800-230, Sanitation and hygiene facilities and procedures. Eating and drinking areas provided by the employer ~~((shall))~~ must also be in conformance with WAC 296-800-230, Sanitation and hygiene facilities and procedures.

(b) Construction. Where protective clothing and equipment is required, the employer ~~((shall))~~ must provide change rooms in conformance with WAC 296-155-17321, Hygiene facilities and practices. Where skin contact with chromium (VI) occurs, the employer ~~((shall))~~ must provide washing facilities in conformance with WAC 296-155-17321, Hygiene facilities and practices. Eating and drinking areas provided by the employer ~~((shall))~~ must also be in conformance with WAC 296-155-17321, Hygiene facilities and practices.

(2) Change rooms. The employer ~~((shall-assure))~~ must ensure that change rooms are equipped with separate storage facilities for protective clothing and equipment and for street clothes, and that these facilities prevent cross-contamination.

(3) Washing facilities.

(a) The employer ~~((shall))~~ must provide readily accessible washing facilities capable of removing chromium (VI) from the skin, and ~~((shall))~~ must ensure that affected employees use these facilities when necessary.

(b) The employer ~~((shall))~~ must ensure that employees who have skin contact with chromium (VI) wash their hands and faces at the end of the work shift and prior to eating, drinking, smoking, chewing tobacco or gum, applying cosmetics, or using the toilet.

(4) Eating and drinking areas.

(a) Whenever the employer allows employees to consume food or beverages at a worksite where chromium (VI) is present, the employer ~~((shall))~~ must ensure that eating and drinking areas and surfaces are maintained as free as practicable of chromium (VI).

(b) The employer ~~((shall))~~ must ensure that employees do not enter eating and drinking areas with protective work clothing or equipment unless surface chromium (VI) has

been removed from the clothing and equipment by methods that do not disperse chromium (VI) into the air or onto an employee's body.

(5) Prohibited activities. The employer (~~(shall)~~) must ensure that employees do not eat, drink, smoke, chew tobacco or gum, or apply cosmetics in areas where skin or eye contact with chromium (VI) occurs; or carry the products associated with these activities, or store such products in these areas.

AMENDATORY SECTION (Amending WSR 14-07-086, filed 3/18/14, effective 5/1/14)

WAC 296-62-08021 Housekeeping.

Exemption: This section does not apply to construction, shipyards, marine terminals and longshoring.

(1) General. The employer (~~(shall)~~) must ensure that:

(a) All surfaces are maintained as free as practicable of accumulations of chromium (VI).

(b) All spills and releases of chromium (VI) containing material are cleaned up promptly.

(2) Cleaning methods.

(a) The employer (~~(shall)~~) must ensure that surfaces contaminated with chromium (VI) are cleaned by HEPA-filter vacuuming or other methods that minimize the likelihood of exposure to chromium (VI).

(b) Dry shoveling, dry sweeping, and dry brushing may be used only where HEPA-filtered vacuuming or other methods that minimize the likelihood of exposure to chromium (VI) have been tried and found not to be effective.

(c) The employer (~~(shall)~~) must not allow compressed air to be used to remove chromium (VI) from any surface unless:

(i) The compressed air is used in conjunction with a ventilation system designed to capture the dust cloud created by the compressed air; or

(ii) No alternative method is feasible.

(d) The employer (~~(shall)~~) must ensure that cleaning equipment is handled in a manner that minimizes the reentry of chromium (VI) into the workplace.

(3) Disposal. The employer (~~(shall)~~) must ensure that:

(a) Waste, scrap, debris, and any other materials contaminated with chromium (VI) and consigned for disposal are collected and disposed of in sealed, impermeable bags or other closed, impermeable containers.

(b) Bags or containers of waste, scrap, debris, and any other materials contaminated with chromium (VI) that are consigned for disposal are labeled in accordance with the requirements of WAC 296-901-140(~~(g)~~) Hazard communication.

AMENDATORY SECTION (Amending WSR 06-16-106, filed 8/1/06, effective 9/1/06)

WAC 296-62-08023 Medical surveillance. (1) General.

(a) The employer (~~(shall)~~) must make medical surveillance available at no cost to the employee, and at a reasonable time and place, for all employees:

(i) Who are or may be occupationally exposed to chromium (VI) at or above the action level for thirty or more days a year;

(ii) Experiencing signs or symptoms of the adverse health effects associated with chromium (VI) exposure; or

(iii) Exposed in an emergency.

(b) The employer (~~(shall assure)~~) must ensure that all medical examinations and procedures required by this section are performed by or under the supervision of a PLHCP.

(2) Frequency. The employer shall provide a medical examination:

(a) Within thirty days after initial assignment, unless the employee has received a chromium (VI) related medical examination that meets the requirements of this paragraph within the last twelve months;

(b) Annually;

(c) Within thirty days after a PLHCP's written medical opinion recommends an additional examination;

(d) Whenever an employee shows signs or symptoms of the adverse health effects associated with chromium (VI) exposure;

(e) Within thirty days after exposure during an emergency which results in an uncontrolled release of chromium (VI); or

(f) At the termination of employment, unless the last examination that satisfied the requirements of WAC 296-62-08023, Medical surveillance was less than six months prior to the date of termination.

(3) Contents of examination. A medical examination consists of:

(a) A medical and work history, with emphasis on: Past, present, and anticipated future exposure to chromium (VI); any history of respiratory system dysfunction; any history of asthma, dermatitis, skin ulceration, or nasal septum perforation; and smoking status and history;

(b) A physical examination of the skin and respiratory tract; and

(c) Any additional tests deemed appropriate by the examining PLHCP.

(4) Information provided to the PLHCP. The employer (~~(shall)~~) must ensure that the examining PLHCP has a copy of this standard, and (~~(shall)~~) must provide the following information:

(a) A description of the affected employee's former, current, and anticipated duties as they relate to the employee's occupational exposure to chromium (VI);

(b) The employee's former, current, and anticipated levels of occupational exposure to chromium (VI);

(c) A description of any personal protective equipment used or to be used by the employee, including when and for how long the employee has used that equipment; and

(d) Information from records of employment-related medical examinations previously provided to the affected employee, currently within the control of the employer.

(5) PLHCP's written medical opinion.

(a) The employer (~~(shall)~~) must obtain a written medical opinion from the PLHCP, within thirty days for each medical examination performed on each employee, which contains:

(i) The PLHCP's opinion as to whether the employee has any detected medical condition(s) that would place the employee at increased risk of material impairment to health from further exposure to chromium (VI);

(ii) Any recommended limitations upon the employee's exposure to chromium (VI) or upon the use of personal protective equipment such as respirators;

(iii) A statement that the PLHCP has explained to the employee the results of the medical examination, including any medical conditions related to chromium (VI) exposure that require further evaluation or treatment, and any special provisions for use of protective clothing or equipment.

(b) The PLHCP ~~((shall))~~ **must** not reveal to the employer specific findings or diagnoses unrelated to occupational exposure to chromium (VI).

(c) The employer ~~((shall))~~ **must** provide a copy of the PLHCP's written medical opinion to the examined employee within two weeks after receiving it.

AMENDATORY SECTION (Amending WSR 14-07-086, filed 3/18/14, effective 5/1/14)

WAC 296-62-08025 Communication of chromium (VI) hazards. (1) Hazard communication - General.

(a) Chemical manufacturers, importers, distributors, and employers ~~((shall))~~ **must** comply with all requirements of the hazard communication standard (HCS), WAC 296-901-140 for chromium (VI).

(b) In classifying the hazards of chromium (VI) at least the following hazards are to be addressed: Cancer, eye irritation, and skin sensitization.

(c) Employers ~~((shall))~~ **must** include chromium (VI) in the hazard communication program established to comply with the HCS, WAC 296-901-140. Employers ~~((shall))~~ **must** ensure that each employee has access to labels on containers of chromium (VI) and to safety data sheets, and is trained in accordance with the requirements of HCS and subsection (2) of this section. The employer ~~((shall))~~ **must** ensure that at least the following hazards are addressed: Cancer, skin sensitization, and eye irritation.

(2) Employee information and training.

(a) The employer ~~((shall))~~ **must** ensure that each employee can demonstrate knowledge of at least the following:

(i) The contents of this section; and
(ii) The purpose and a description of the medical surveillance program required by (a)(i) of this subsection.

(b) The employer ~~((shall))~~ **must** make a copy of this section readily available without cost to all affected employees.

AMENDATORY SECTION (Amending WSR 06-16-106, filed 8/1/06, effective 9/1/06)

WAC 296-62-08027 Recordkeeping. (1) Air monitoring data.

(a) The employer ~~((shall))~~ **must** maintain an accurate record of all air monitoring conducted to comply with the requirements of this section.

(b) This record ~~((shall))~~ **must** include at least the following information:

(i) The date of measurement for each sample taken;
(ii) The operation involving exposure to chromium (VI) that is being monitored;
(iii) Sampling and analytical methods used and evidence of their accuracy;

(iv) Number, duration, and the results of samples taken;
(v) Type of personal protective equipment, such as respirators worn; and

(vi) Name, Social Security number, and job classification of all employees represented by the monitoring, indicating which employees were actually monitored.

(c) The employer ~~((shall))~~ **must** ensure that exposure records are maintained and made available in accordance with chapter 296-802 WAC, Employee medical and exposure records.

(2) Historical monitoring data.

(a) Where the employer has relied on historical monitoring data to determine exposure to chromium (VI), the employer ~~((shall))~~ **must** establish and maintain an accurate record of the historical monitoring data relied upon.

(b) The record ~~((shall))~~ **must** include information that reflects the following conditions:

(i) The data were collected using methods that meet the accuracy requirements of WAC 296-62-08009(5);

(ii) The processes and work practices that were in use when the historical monitoring data were obtained are essentially the same as those to be used during the job for which exposure is being determined;

(iii) The characteristics of the chromium (VI) containing material being handled when the historical monitoring data were obtained are the same as those on the job for which exposure is being determined;

(iv) Environmental conditions prevailing when the historical monitoring data were obtained are the same as those on the job for which exposure is being determined; and

(v) Other data relevant to the operations, materials, processing, or employee exposures covered by the exception.

(c) The employer ~~((shall))~~ **must** ensure that historical exposure records are maintained and made available in accordance with chapter 296-802 WAC, Employee medical and exposure records.

(3) Objective data.

(a) The employer ~~((shall))~~ **must** maintain an accurate record of all objective data relied upon to comply with the requirements of this section.

(b) This record ~~((shall))~~ **must** include at least the following information:

(i) The chromium (VI) containing material in question;
(ii) The source of the objective data;
(iii) The testing protocol and results of testing, or analysis of the material for the release of chromium (VI);

(iv) A description of the process, operation, or activity and how the data support the determination; and

(v) Other data relevant to the process, operation, activity, material, or employee exposures.

(c) The employer ~~((shall))~~ **must** ensure that objective data are maintained and made available in accordance with chapter 296-802 WAC, Employee medical and exposure records.

(4) Medical surveillance.

(a) The employer ~~((shall))~~ **must** establish and maintain an accurate record for each employee covered by medical surveillance under WAC 296-62-08023, Medical surveillance.

(b) The record ~~((shall))~~ must include the following information about the employee:

- (i) Name and Social Security number;
- (ii) A copy of the PLHCP's written opinions;
- (iii) A copy of the information provided to the PLHCP as required by WAC 296-62-08023(4).

(c) The employer ~~((shall))~~ must ensure that medical records are maintained and made available in accordance with chapter 296-802 WAC, Employee medical and exposure records.

AMENDATORY SECTION (Amending WSR 06-16-106, filed 8/1/06, effective 9/1/06)

WAC 296-62-08029 Dates. (1) For employers with twenty or more employees, all obligations of this section, except engineering controls required by WAC 296-62-08013, commence November 27, 2006.

(2) For employers with nineteen or fewer employees, all obligations of this section, except engineering controls required by WAC 296-62-08013, commence May 30, 2007.

(3) For all employers, engineering controls required by WAC 296-62-08013 ~~((shall))~~ must be implemented no later than May 31, 2010.

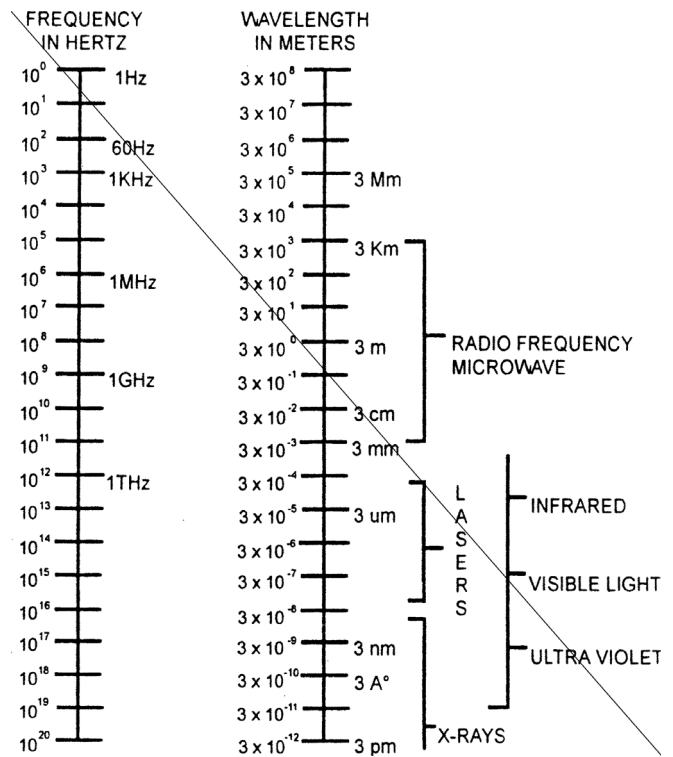
AMENDATORY SECTION (Amending WSR 01-17-033, filed 8/8/01, effective 9/1/01)

WAC 296-62-09001 Definitions. ~~((1) "Physical agents" shall mean, but are not limited to: Illumination, ionizing radiation, nonionizing radiation, pressure, vibration, temperature and humidity, and noise.~~

~~(2) "Nonionizing radiation" as related to industrial sources, means electromagnetic radiation within the spectral range of approximately 200 nanometers to 3 kilometers including ultraviolet, visible, infrared and radiofrequency/microwave radiation. The electromagnetic spectrum is shown graphically in Figure 1 below.~~

ELECTROMAGNETIC SPECTRUM

Figure 1



~~(3) Pressure is a barometric force. Positive pressure would be that above 14.7 lbs. per square inch absolute and negative pressure would be that below 14.7 lbs. per square inch absolute. 14.7 lbs. per square inch equals 760 mm. mercury.~~

~~(4) "Vibration" means rapid movement to and fro or oscillating movement.~~

~~(5) "Noise" means unwanted sound or loud discordant or disagreeable sound or sounds.~~

~~(6) "Temperature" means the degree of hotness or coldness measured by use of a thermometer.~~

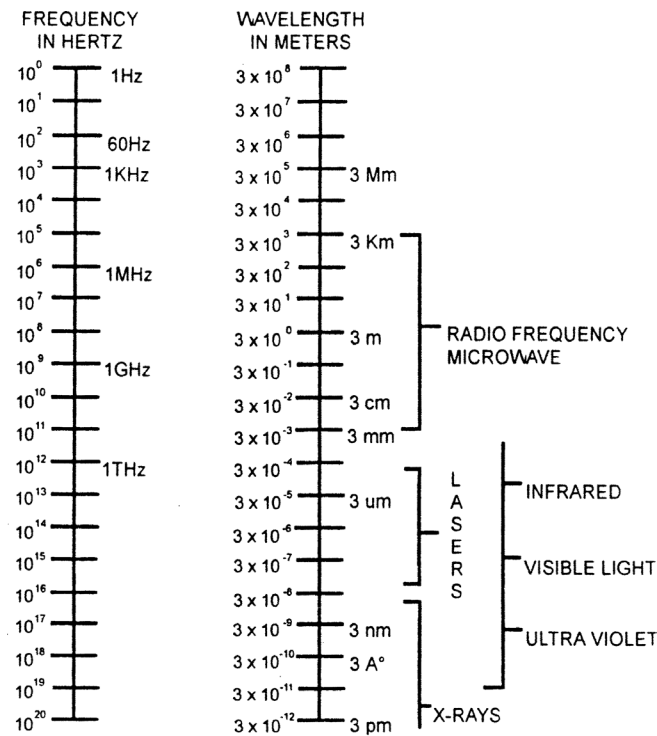
~~(7) "Radiant heat" means infrared radiation emitted from hot surfaces.~~

~~(8) "Relative humidity" means the percent of moisture in the air compared to the maximum amount of moisture the air could contain at the same temperature.) **Noise.** Unwanted sound or loud discordant or disagreeable sound or sounds.~~

Nonionizing radiation. As related to industrial sources, means electromagnetic radiation within the spectral range of approximately 200 nanometers to 3 kilometers including ultraviolet, visible, infrared and radiofrequency/microwave radiation. The electromagnetic spectrum is shown graphically in Figure 1 below.

ELECTROMAGNETIC SPECTRUM

Figure 1



Physical agents. Must mean, but are not limited to: illumination, ionizing radiation, nonionizing radiation, pressure, vibration, temperature and humidity, and noise.

Pressure is a barometric force. Positive pressure would be that above 14.7 lbs. per square inch absolute and negative pressure would be that below 14.7 lbs. per square inch absolute. 14.7 lbs. per square inch equals 760 mm. mercury.

Radiant heat. Infrared radiation emitted from hot surfaces.

Relative humidity. The percent of moisture in the air compared to the maximum amount of moisture the air could contain at the same temperature.

Temperature. The degree of hotness or coldness measured by use of a thermometer.

Vibration. Rapid movement to and fro or oscillating movement.

AMENDATORY SECTION (Amending WSR 85-01-022, filed 12/11/84)

WAC 296-62-09004 Ionizing radiation. (1) Definitions applicable to this section.

Note: Definitions also appear in some subsections.

(a) ("~~Rad~~)**Radiation**("~~Rad~~). Includes alpha rays, beta rays, gamma rays, X-rays, neutrons, high-speed electrons, high-speed protons, and other atomic particles; but such term does not include sound or radio waves, or visible light, or infrared or ultraviolet light.

(b) ("~~Radioactive material~~" means) **Radioactive material.** Any material which emits, by spontaneous nuclear disintegration, corpuscular or electromagnetic emanations.

(c) ("~~Restricted area~~" means) **Restricted area.** Any area access to which is controlled by the employer for purposes of protection of individuals from exposure to radiation or radioactive materials.

(d) ("~~Unrestricted area~~" means) **Unrestricted area.** Any area access to which is not controlled by the employer for purposes of protection of individuals from exposure to radiation or radioactive materials.

(e) ("~~Dose~~" means) **Dose.** The quantity of ionizing radiation absorbed, per unit of mass, by the body or by any portion of the body. When the provisions in this section specify a dose during a period of time, the dose is the total quantity of radiation absorbed, per unit of mass, by the body or by any portion of the body during such period of time. Several different units of dose are in current use. Definitions of units used in this section are set forth in subdivisions (f) and (g) of this subsection.

(f) ("~~Rad~~" means) **Rad.** A measure of the dose of any ionizing radiation to body tissues in terms of the energy absorbed per unit of mass of the tissue. One rad is the dose corresponding to the absorption of 100 ergs per gram of tissue (1 millirad (mrad) = 0.001 rad).

(g) ("~~Rem~~" means) **Rem.** A measure of the dose of any ionizing radiation to body tissue in terms of its estimated biological effect relative to a dose of 1 roentgen (r) of X-rays (1 millirem (mrem) = 0.001 rem). The relation of the rem to other dose units depends upon the biological effect under consideration and upon the conditions for irradiation. Each of the following is considered to be equivalent to a dose of 1 rem:

- (i) A dose of 1 roentgen due to x- or gamma radiation;
- (ii) A dose of 1 rad due to x-, gamma, or beta radiation;
- (iii) A dose of 0.1 rad due to neutrons or high energy protons;
- (iv) A dose of 0.05 rad due to particles heavier than protons and with sufficient energy to reach the lens of the eye;
- (v) If it is more convenient to measure the neutron flux, or equivalent, than to determine the neutron dose in rads, as provided in item (iii) of this subdivision, 1 rem of neutron radiation may, for purposes of the provisions in this section be assumed to be equivalent to 14 million neutrons per square centimeter incident upon the body; or, if there is sufficient information to estimate with reasonable accuracy the approximate distribution in energy of the neutrons, the incident number of neutrons per square centimeter equivalent to 1 rem may be estimated from the following table:

Neutron Flux Dose Equivalents		
Neutron energy (million electron volts (Mev))	Number of neutrons per square centimeter equivalent to a dose of 1 rem (neutrons/cm ²)	Average flux to deliver 100 millirem in 40 hours (neutrons/cm ² per sec.)
Thermal	970 X 10 ⁶	670
0.0001	720 X 10 ⁶	500
0.005	820 X 10 ⁶	570
0.02	400 X 10 ⁶	280

Neutron Flux Dose Equivalents

Neutron energy (million electron volts (Mev))	Number of neutrons per square centimeter equivalent to a dose of 1 rem (neutrons/cm ²)	Average flux to deliver 100 millirem in 40 hours (neutrons/cm ² per sec.)
0.1.....	120 X 10 ⁶	80
0.5.....	43 X 10 ⁶	30
1.0.....	26 X 10 ⁶	18
2.5.....	29 X 10 ⁶	20
5.0.....	26 X 10 ⁶	18
7.5.....	24 X 10 ⁶	17
10.....	24 X 10 ⁶	17
10 to 30.....	14 X 10 ⁶	10

(h) For determining exposures to X- or gamma rays up to 3 Mev., the dose limits specified in this section may be assumed to be equivalent to the "air dose." For the purpose of this section "air dose" means that the dose is measured by a properly calibrated appropriate instrument in air at or near the body surface in the region of the highest dosage rate.

(i) (~~"Curie" means~~) **Curie.** A unit of measurement of radioactivity. One curie (Ci) is that quantity of radioactive material which decays at the rate of 2.2 x 10¹² disintegrations per minute (dpm).

- (i) One millicurie (mCi) = 10⁻³Ci
- (ii) One microcurie (uCi) = 10⁻⁶Ci
- (iii) One nanocurie (nCi) = 10⁻⁹Ci
- (iv) One picocurie (pCi) = 10⁻¹²Ci

(2) Nuclear Regulatory Commission licensees—NRC contractors operating NRC plants and facilities.

(a) Any employer who possesses or uses source material, byproduct material, or special nuclear material, as defined in the Atomic Energy Act of 1954, as amended, under a license issued by the Nuclear Regulatory Commission and in accordance with the requirements of chapter 402-24 WAC shall be deemed to be in compliance with the requirements of this section with respect to such possession and use.

(b) NRC contractors operating NRC plants and facilities: Any employer who possesses or uses source material, byproduct material, special nuclear material, or other radiation sources under a contract with the Nuclear Regulatory Commission for the operation of NRC plants and facilities and in accordance with the standards, procedures, and other requirements for radiation protection established by the commission for such contract pursuant to the Atomic Energy Act of 1954 as amended (42 U.S.C. 2011 et seq.) shall be deemed to be in compliance with the requirements of this section with respect to such possession and use.

(c) State licensees or registrants:

(i) Atomic Energy Act sources. Any employer who possesses or uses source material, byproduct material, or special nuclear material, as defined in the Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 et seq.), and has registered such sources with the state (~~(shall)~~) **must** be deemed to be in compliance with the radiation requirements of this section,

insofar as his possession and use of such material is concerned.

(ii) Other sources. Any employer who possesses or uses radiation sources other than source material, byproduct material, or special nuclear material, as defined in the Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 et seq.), and has registered such sources with the state (~~(shall)~~) **must** be deemed to be in compliance with the radiation requirements of this section insofar as his possession and use of such material is concerned.

(3) Exposure of individuals to radiation in restricted areas.

(a) Except as provided in subdivision (b) of this subsection, no employer shall possess, use, or transfer sources of ionizing radiation in such a manner as to cause any individual in a restricted area to receive in any period of one calendar quarter from sources in the employer's possession or control a dose in excess of the limits specified in the following table:

EXPOSURE IN RESTRICTED AREAS	Rems per Calendar Quarter
Whole body: Head and trunk; active blood-forming organs; lens of eyes; or gonads.	1 1/4
Hand and forearms; feet and ankles	18 3/4
Skin of whole body.	7 1/2

(b) An employer may permit an individual in a restricted area to receive doses to the whole body greater than those permitted under subdivision (a) of this subsection, so long as:

(i) During any calendar quarter the dose to the whole body shall not exceed 3 rems; and

(ii) The dose to the whole body, when added to the accumulated occupational dose to the whole body, shall not exceed 5 (N-18) rems, where "N" equals the individual's age in years at his last birthday; and

(iii) The employer maintains adequate past and current exposure records which show that the addition of such a dose will not cause the individual to exceed the amount authorized in this subdivision. As used in this subdivision "Dose to the whole body" (~~(shall)~~) **must** be deemed to include any dose to the whole body, gonad, active blood-forming organs, head and trunk, or lens of the eye.

(c) No employer (~~(shall)~~) **must** permit any employee who is under eighteen years of age to receive in any period of one calendar quarter a dose in excess of ten percent of the limits specified in the preceding table entitled "exposure in restricted areas."

(d) (~~"Calendar quarter" means~~) **Calendar quarter.** Any three-month period determined as follows:

(i) The first period of any year may begin on any date in January: Provided, That the second, third and fourth periods accordingly begin on the same date in April, July, and October, respectively, and that the fourth period extends into January of the succeeding year, if necessary to complete a three-month quarter. During the first year of use of this method of determination, the first period for that year (~~(shall)~~) **must** also include any additional days in January preceding the starting date for the first period; or

(ii) The first period in a calendar year of thirteen complete, consecutive calendar weeks; the second period in a calendar year of thirteen complete consecutive weeks; the third period in a calendar year of thirteen complete, consecutive calendar weeks; the fourth period in a calendar year of thirteen complete, consecutive calendar weeks. If at the end of a calendar year there are any days not falling within a complete calendar week of that year, such days ~~((shall))~~ must be included within the last complete calendar week of that year. If at the beginning of any calendar year there are days not falling within a complete calendar week of that year, such days shall be included within the last complete calendar week of the previous year; or

(iii) The four periods in a calendar year may consist of the first 14 complete, consecutive calendar weeks; the next twelve complete, consecutive calendar weeks, the next fourteen complete, consecutive calendar weeks, and the last twelve complete, consecutive calendar weeks. If at the end of a calendar year there are any days not falling within a complete calendar week of that year, such days ~~((shall))~~ must be included (for purposes of this section) within the last complete calendar week of the year. If at the beginning of any calendar year there are days not falling within a complete calendar week of that year, such days ~~((shall))~~ must be included (for purposes of this section) within the last complete week of the previous year.

(e) No employer ~~((shall))~~ must change the method used by him to determine calendar quarters except at the beginning of a calendar year.

(4) Exposure to airborne radioactive material.

(a) No employer ~~((shall))~~ must possess, use or transport radioactive material in such a manner as to cause any employee, within a restricted area, to be exposed to airborne radioactive material in an average concentration in excess of the limits specified in Table I of WAC 402-24-220, Appendix A. The limits given in Table I are for exposure to the concentrations specified for forty hours in any workweek of seven consecutive days. In any such period where the number of hours of exposure is less than 40 the limits specified in the table may be increased proportionately. In any such period where the number of hours of exposure is greater than forty, the limits specified in the table shall be decreased proportionately.

(b) No employer shall possess, use, or transfer radioactive material in such a manner as to cause any individual within a restricted area, who is under eighteen years of age, to be exposed to airborne radioactive material in an average concentration in excess of the limits specified in Table II of WAC 402-24-220, Appendix A.

For purposes of this subdivision, concentrations may be averaged over periods not greater than 1 week.

(c) "Exposed" as used in this subdivision means that the individual is present in an airborne concentration. No allowance shall be made for the use of protective clothing or equipment, or particle size.

(5) Precautionary procedures and personal monitoring.

(a) Every employer ~~((shall))~~ must make such surveys as may be necessary for him to comply with the provisions in this section. "Survey" means an evaluation of the radiation hazards incident to the production, use, release, disposal, or

presence of radioactive materials or other sources of radiation under a specific set of conditions. When appropriate, such evaluation includes a physical survey of the location of materials and equipment, and measurements of levels of radiation or concentrations of radioactive material present.

(b) Every employer ~~((shall))~~ must supply appropriate personnel monitoring equipment, such as film badges, pocket chambers, pocket dosimeters, or film rings, to, and ~~((shall))~~ must require the use of such equipment by:

(i) Each employee who enters a restricted area under such circumstances that he receives, or is likely to receive, a dose in any calendar quarter in excess of twenty-five percent of the applicable value specified in subsection (3)(a) of this section; and

(ii) Each employee under eighteen years of age who enters a restricted area under such circumstances that he receives, or is likely to receive a dose in any calendar quarter in excess of five percent of the applicable value specified in subsection (3)(a) of this section; and

(iii) Each employee who enters a high radiation area.

(c) As used in this section:

(i) ~~("Personnel monitoring equipment" means)~~ **Personnel monitoring equipment.** Devices designed to be worn or carried by an individual for the purpose of measuring the dose received (e.g., film badges, pocket chambers, pocket dosimeters, film rings, etc.);

(ii) ~~("Radiation area" means)~~ **Radiation area.** Any area, accessible to personnel, in which there exists radiation at such levels that a major portion of the body could receive in any 1 hour a dose in excess of 5 millirem, or in any five consecutive days a dose in excess of 100 millirem; and

(iii) ~~("High radiation area" means)~~ **High radiation area.** Any area, accessible to personnel, in which there exists radiation at such levels that a major portion of the body could receive in any one hour a dose in excess of 100 millirem.

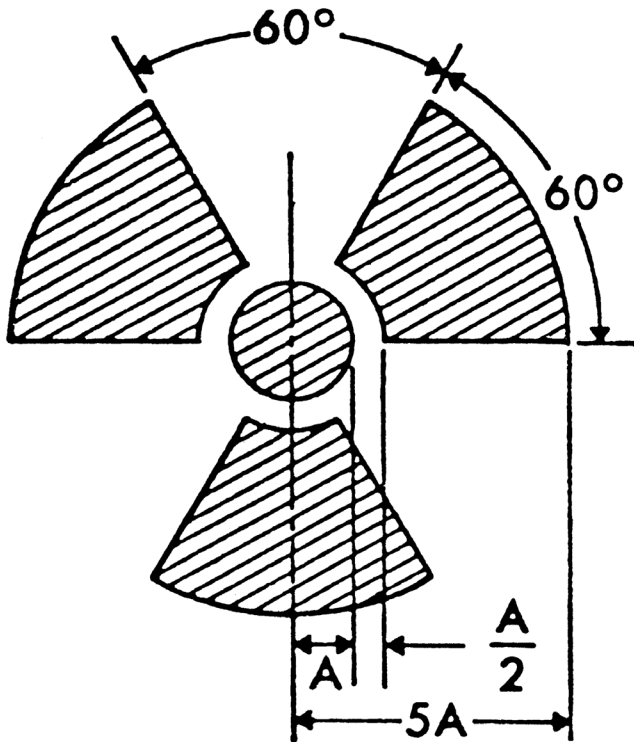
(6) Caution signs, labels and signals.

(a) General.

(i) Symbols prescribed by this subsection ~~((shall))~~ must use the conventional radiation caution colors (magenta or purple on yellow background). The symbol prescribed by this subsection is the conventional three-bladed design:

RADIATION SYMBOL

1. Cross-hatched area is to be magenta or purple.
2. Background is to be yellow.



(ii) In addition to the contents of signs and labels prescribed in this subsection, employers may provide on or near such signs and labels any additional information which may be appropriate in aiding individuals to minimize exposure to radiation or to radioactive material.

(b) Radiation area. Each radiation area (~~shall~~) must be conspicuously posted with a sign or signs bearing the radiation caution symbol described in subdivision (a) of this subsection and the words:

CAUTION
RADIATION AREA

(c) High radiation area.

(i) Each high radiation area (~~shall~~) must be conspicuously posted with a sign or signs bearing the radiation caution symbol and the words:

CAUTION
HIGH RADIATION AREA

(ii) Each high radiation area (~~shall~~) must be equipped with a control device which (~~shall~~) must either cause the level of radiation to be reduced below that at which an individual might receive a dose of 100 millirems in one hour upon entry into the area or (~~shall~~) must energize a conspicuous visible or audible alarm signal in such a manner that the individual entering and the employer or a supervisor of the activity are made aware of the entry. In the case of a high radiation area established for a period of thirty days or less, such control device is not required.

(d) Airborne radioactivity area.

(i) As used in the provisions of this section, "airborne radioactivity area" means:

(A) Any room, enclosure, or operating area in which airborne radioactive materials, composed wholly or partly of radioactive material, exist in concentrations in excess of the amounts specified in column 1 of Table I of WAC 402-24-220, Appendix A.

(B) Any room, enclosure, or operating area in which airborne radioactive materials exist in concentrations which, averaged over the number of hours in any week during which individuals are in the area, exceed twenty-five percent of the amounts specified in column 1 of Table I of WAC 402-24-220, Appendix A.

(ii) Each airborne radioactivity area (~~shall~~) must be conspicuously posted with a sign or signs bearing the radiation caution symbol described in subdivision (a) of this subsection and the words:

CAUTION
AIRBORNE RADIOACTIVITY AREA

(e) Additional requirements.

(i) Each area or room in which radioactive material is used or stored and which contains any radioactive material (other than natural uranium or thorium) in any amount exceeding ten times the quantity of such material specified in WAC 402-24-230, Appendix B (~~shall~~) must be conspicuously posted with a sign or signs bearing the radiation caution symbol described in subdivision (a) of this subsection and the words:

CAUTION
RADIOACTIVE MATERIALS

(ii) Each area or room in which natural uranium or thorium is used or stored in an amount exceeding one hundred times the quantity of such material specified in chapter 402-24 WAC (~~shall~~) must be conspicuously posted with a sign or signs bearing the radiation caution symbol described in subdivision (a) of this subsection and the words:

CAUTION
RADIOACTIVE MATERIALS

(f) Containers.

(i) Each container in which is transported, stored, or used a quantity of any radioactive material (other than natural uranium or thorium) greater than the quantity of such material specified in WAC 402-24-230, Appendix B (~~shall~~) must bear a durable, clearly visible label bearing the radiation caution symbol described in subdivision (a) of this subsection and the words:

CAUTION
RADIOACTIVE MATERIALS

(ii) Each container in which natural uranium or thorium is transported, stored, or used in a quantity greater than ten times the quantity specified in WAC 402-24-230, Appendix B (~~shall~~) must bear a durable, clearly visible label bearing the radiation caution symbol described in subdivision (a) of this subsection and the words:

CAUTION
RADIOACTIVE MATERIALS

(iii) Notwithstanding the provisions of items (i) and (ii) of this subdivision a label shall not be required:

(A) If the concentration of the material in the container does not exceed that specified in column 2 of Table I of WAC 402-24-220, Appendix A.

(B) For laboratory containers, such as beakers, flasks, and test tubes, used transiently in laboratory procedures, when the user is present.

(iv) Where containers are used for storage, the labels required in this subdivision ~~((shall))~~ must state also the quantities and kinds of radioactive materials in the containers and the date of measurement of the quantities.

(7) Immediate evacuation warning signal.

(a) Signal characteristics.

(i) The signal ~~((shall))~~ must be a midfrequency complex sound wave amplitude modulated at a subsonic frequency. The complex sound wave in free space ~~((shall))~~ must have a fundamental frequency f_1 between 450 and 500 hertz (Hz) modulated at a subsonic rate between 4 and 5 hertz.

(ii) The signal generator ~~((shall))~~ must not be less than 75 decibels at every location where an individual may be present whose immediate, rapid, and complete evacuation is essential.

(iii) A sufficient number of signal units ~~((shall))~~ must be installed such that the requirements of item (i) of this subdivision are met at every location where an individual may be present whose immediate, rapid, and complete evacuation is essential.

(iv) The signal ~~((shall))~~ must be unique in the plant or facility in which it is installed.

(v) The minimum duration of the signal ~~((shall))~~ must be sufficient to insure that all affected persons hear the signal.

(vi) The signal-generating system ~~((shall))~~ must respond automatically to an initiating event without requiring any human action to sound the signal.

(b) Design objectives.

(i) The signal-generating system ~~((shall))~~ must be designed to incorporate components which enable the system to produce the desired signal each time it is activated within one-half second of activation.

(ii) The signal-generating system ~~((shall))~~ must be provided with an automatically activated secondary power supply which is adequate to simultaneously power all emergency equipment to which it is connected, if operation during power failure is necessary, except in those systems using batteries as the primary source of power.

(iii) All components of the signal-generating system ~~((shall))~~ must be located to provide maximum practicable protection against damage in case of fire, explosion, corrosive atmosphere, or other environmental extremes consistent with adequate system performance.

(iv) The signal-generating system ~~((shall))~~ must be designed with the minimum number of components necessary to make it function as intended, and should utilize components which do not require frequent servicing such as lubrication or cleaning.

(v) Where several activating devices feed activating information to a central signal generator, failure of any acti-

vating device ~~((shall))~~ must not render the signal-generator system inoperable to activating information from the remaining devices.

(vi) The signal-generating system ~~((shall))~~ must be designed to enhance the probability that alarm occurs only when immediate evacuation is warranted. The number of false alarms ~~((shall))~~ must not be so great that the signal will come to be disregarded and shall be low enough to minimize personal injuries or excessive property damage that might result from such evacuation.

(c) Testing.

(i) Initial tests, inspections, and checks of the signal-generating system ~~((shall))~~ must be made to verify that the fabrication and installation were made in accordance with design plans and specifications and to develop a thorough knowledge of the performance of the system and all components under normal and hostile conditions.

(ii) Once the system has been placed in service, periodic tests, inspections, and checks ~~((shall))~~ must be made to minimize the possibility of malfunction.

(iii) Following significant alterations or revisions to the system, tests and checks similar to the initial installation tests ~~((shall))~~ must be made.

(iv) Tests ~~((shall))~~ must be designed to minimize hazards while conducting the tests.

(v) Prior to normal operation the signal-generating system shall be checked physically and functionally to ~~((assure))~~ ensure reliability and to demonstrate accuracy and performance. Specific tests ~~((shall))~~ must include:

(A) All power sources.

(B) Calibration and calibration stability.

(C) Trip levels and stability.

(D) Continuity of function with loss and return of required services such as AC or DC power, air pressure, etc.

(E) All indicators.

(F) Trouble indicator circuits and signals, where used.

(G) Air pressure (if used).

(H) Determine that sound level of the signal is within the limit of item (a)(ii) of this subsection at all points that require immediate evacuation.

(vi) In addition to the initial startup and operating tests, periodic scheduled performance tests and status checks must be made to ~~((insure))~~ ensure that the system is at all times operating within design limits and capable of the required response. Specific periodic tests or checks or both ~~((shall))~~ must include:

(A) Adequacy of signal activation device.

(B) All power sources.

(C) Function of all alarm circuits and trouble indicator circuits including trip levels.

(D) Air pressure (if used).

(E) Function of entire system including operation without power where required.

(F) Complete operational tests including sounding of the signal and determination that sound levels are adequate.

(vii) Periodic tests ~~((shall))~~ must be scheduled on the basis of need, experience, difficulty, and disruption of operations. The entire system should be operationally tested at least quarterly.

(viii) All employees whose work may necessitate their presence in an area covered by the signal shall be made familiar with the actual sound of the signal—preferably as it sounds at their work location. Before placing the system into operation, all employees normally working in the area ~~((shall))~~ must be made acquainted with the signal by actual demonstration at their work locations.

(8) Exceptions from posting requirements. Notwithstanding the provisions of subsection (6) of this section:

(a) A room or area is not required to be posted with a caution sign because of the presence of a sealed source, provided the radiation level twelve inches from the surface of the source container or housing does not exceed 5 millirem per hour.

(b) Rooms or other areas in onsite medical facilities are not required to be posted with caution signs because of the presence of patients containing radioactive material, provided that there are personnel in attendance who ~~((shall))~~ must take the precautions necessary to prevent the exposure of any individual to radiation or radioactive material in excess of the limits established in the provisions of this section.

(c) Caution signs are not required to be posted at areas or rooms containing radioactive materials for periods of less than 8 hours: Provided, that

(i) The materials are constantly attended during such periods by an individual who ~~((shall))~~ must take the precautions necessary to prevent the exposure of any individual to radiation or radioactive materials in excess of the limits established in the provisions of this section; and

(ii) Such area or room is subject to the employer's control.

(9) Exemptions for radioactive materials packaged for shipment. Radioactive materials packaged and labeled in accordance with regulations of the Department of Transportation published in 49 C.F.R. Chapter I, are exempt from the labeling and posting requirements of this section during shipment, provided that the inside containers are labeled in accordance with the provisions of subsection (6) of this section.

(10) Instruction of personnel, posting.

(a) Employers regulated by the Nuclear Regulatory Commission shall be governed by 10 C.F.R. Part 20 standards. Employers conducting business in Washington state ~~((shall))~~ must be governed by the requirements of the laws and regulations of the state. All other employers ~~((shall))~~ must be regulated by the following:

(b) All individuals working in or frequenting any portion of a radiation area ~~((shall))~~ must be informed of the occurrence of radioactive materials or of radiation in such portions of the radiation area; ~~((shall))~~ must be instructed in the safety problems associated with exposure to such materials or radiation and in precautions or devices to minimize exposure; ~~((shall))~~ must be instructed in the applicable provisions of this section for the protection of employees from exposure to radiation or radioactive materials; and ~~((shall))~~ must be advised of reports of radiation exposure which employees may request pursuant to the regulations in this section.

(c) Each employer to whom this section applies ~~((shall))~~ must post a current copy of its provisions and a copy of the operating procedures applicable to the work conspicuously in

such locations as to ~~((insure))~~ ensure that employees working in or frequenting radiation areas will observe these documents on the way to and from their place of employment, or ~~((shall))~~ must keep such documents available for examination of employees upon request.

(11) Storage of radioactive materials. Radioactive materials stored in a nonradiation area ~~((shall))~~ must be secured against unauthorized removal from the place of storage.

(12) Waste disposal. No employer ~~((shall))~~ must dispose of radioactive material except as provided for in WAC 402-24-130.

(13) Notification of incidents.

(a) Immediate notification. Each employer ~~((shall))~~ must immediately notify the industrial hygiene section, division of industrial safety and health for employees not protected by the Nuclear Regulatory Commission by means of 10 C.F.R. Part 20; subsection (2)(b) of this section by telephone or telegraph of any incident involving radiation which may have caused or threatens to cause:

(i) Exposure of the whole body of any individual to 25 rems or more of radiation; exposure of the skin of the whole body of any individual to 150 rems or more of radiation; or exposure of the feet, ankles, hands, or forearms of any individual to 375 rems or more of radiation; or

(ii) The release of radioactive material in concentrations which, if averaged over a period of twenty-four hours, would exceed 5,000 times the limit specified for such materials in Table II of WAC 402-24-220, Appendix A.

(iii) A loss of 1 working week or more of the operation of any facilities affected; or

(iv) Damage to property in excess of \$100,000.

(b) Twenty-four hour notification. Each employer ~~((shall))~~ must within twenty-four hours following its occurrence notify the industrial hygiene section, division of industrial safety and health, for employees not protected by the Nuclear Regulatory Commission by means of 10 C.F.R. Part 20; subsection (2)(b) of this section, by telephone or telegraph of any incident involving radiation which may have caused or threatens to cause:

(i) Exposure of the whole body of any individual to 5 rems or more of radiation; exposure of the skin of the whole body of any individual to 30 rems or more of radiation; or exposure of the feet, ankles, hands, or forearms to 75 rems or more of radiation; or

(ii) A loss of one day or more of the operation of any facilities; or

(iii) Damage to property in excess of \$10,000.

(14) Reports of overexposure and excessive levels and concentrations.

(a) In addition to any notification required by subsection (13) of this section each employer ~~((shall))~~ must make a report in writing within thirty days to the industrial hygiene section division of industrial safety and health, for employees not protected by the Nuclear Regulatory Commission by means of 10 C.F.R. Part 20; or under subsection (2)(b) of this section, of each exposure of an individual to radiation or concentrations of radioactive material in excess of any applicable limit in this section. Each report required under this subdivision ~~((shall))~~ must describe the extent of exposure of persons to radiation or to radioactive material; levels of radiation and

concentration of radioactive material involved, the cause of the exposure, levels of concentrations; and corrective steps taken or planned to ((~~assure~~)) ensure against a recurrence.

(b) In any case where an employer is required pursuant to the provisions of this subsection to report to the industrial hygiene section, division of industrial safety and health, any exposure of an individual to radiation or to concentrations of radioactive material, the employer ((~~shall~~)) must also notify such individual of the nature and extent of exposure. Such notice ((~~shall~~)) must be in writing and ((~~shall~~)) must contain the following statement: "You should preserve this report for future reference."

(15) Records.

(a) Every employer ((~~shall~~)) must maintain records of the radiation exposure of all employees for whom personnel monitoring is required under subsection (5) of this section and advise each of his employees of his individual exposure on at least an annual basis.

(b) Every employer ((~~shall~~)) must maintain records in the same units used in tables in subsection (2) of this section and WAC 402-24-220, Appendix A.

(16) Disclosure to former employee of individual employee's record.

(a) At the request of a former employee an employer ((~~shall~~)) must furnish to the employee a report of the employee's exposure to radiation as shown in records maintained by the employer pursuant to subdivision (15)(a) of this section. Such report ((~~shall~~)) must be furnished within thirty days from the time the request is made, and ((~~shall~~)) must cover each calendar quarter of the individual's employment involving exposure to radiation or such lesser period as may be requested by the employee. The report ((~~shall~~)) must also include the results of any calculations and analysis of radioactive material deposited in the body of the employee. The report ((~~shall~~)) must be in writing and contain the following statement: "You should preserve this report for future reference."

(b) The former employee's request should include appropriate identifying data, such as Social Security number and dates and locations of employment.

(17) (Reserved)

(18) Radiation standards for mining.

(a) For the purpose of this subsection, a "working level" is defined as any combination of radon daughters in 1 liter of air which will result in the ultimate emission of 1.3×10^5 million electron volts of potential alpha energy. The numerical value of the "working level" is derived from the alpha energy released by the total decay of short-lived radon daughter products in equilibrium with 100 picocuries of radon 222 per liter of air. A working level month is defined as the exposure received by a worker breathing air at one working level concentration for 4-1/3 weeks of forty hours each.

(b) Occupational exposure to radon daughters in mines ((~~shall~~)) must be controlled so that no individual will receive an exposure of more than two working level months in any calendar quarter and no more than four working level months in any calendar year. Actual exposures ((~~shall~~)) must be kept as far below these values as practicable.

(c)(i) For uranium mines, records of environmental concentrations in the occupied parts of the mine, and of the time

spent in each area by each person involved in an underground work ((~~shall~~)) must be established and maintained. These records ((~~shall~~)) must be in sufficient detail to permit calculations of the exposures, in units of working level months, of the individuals and shall be available for inspection by the industrial hygiene section, division of safety and health or their authorized representatives.

(ii) For other than uranium mines and for surface workers in all mines, item (i) of this subdivision will be applicable: Provided, however, That if no environmental sample shows a concentration greater than 0.33 working level in any occupied part of the mine, the maintenance of individual occupancy records and the calculation of individual exposures will not be required.

(d)(i) At the request of an employee (or former employee) a report of the employee's exposure to radiation as shown in records maintained by the employer pursuant to subdivision (c) of this subsection ((~~shall~~)) must be furnished to ((~~him~~)) them. The report ((~~shall~~)) must be in writing and contain the following statement:

"This report is furnished to you under the provisions of the state of Washington, Ionizing Radiation Safety and Health Standards (chapter 296-62 WAC). You should preserve this report for future reference."

(ii) The former employee's request should include appropriate identifying data, such as Social Security number and dates and locations of employment. See tables in WAC 402-24-220, Appendix A and 402-24-230, Appendix B.

AMENDATORY SECTION (Amending WSR 92-22-067, filed 10/30/92, effective 12/8/92)

WAC 296-62-09005 Nonionizing radiation. (1) Introduction. Employees ((~~shall~~)) must be protected from exposure to hazardous levels of nonionizing radiation. Health standards have been established for ultraviolet, radiofrequency/microwave, and laser radiations which ((~~shall~~)) must be used to promote a healthful working environment. These standards refer to levels of nonionizing radiation and represent conditions under which it is believed that nearly all workers may be repeatedly exposed day after day without adverse effects. They are based on the best available information from experimental studies. Because of the wide variations in individual susceptibility, exposure of an occasional individual at, or even below, the permissible limit, may result in discomfort, aggravation of a preexisting condition, or physiological damage.

(a) Permissible exposure limits (PELs) refer to a time weighted average (TWA) of exposure for an eight-hour work day within a forty-hour workweek. Exceptions are those limits which are given a ceiling value.

(b) These PELs should be interpreted and applied only by technically qualified persons.

(c) Ceiling value. There are nonionizing radiations which produce physiological responses from short intense exposure and the PELs for these radiations are more appropriately based on this particular hazard. Nonionizing radiations with this type of hazard are best controlled by a ceiling value which is a maximum level of exposure which ((~~shall~~)) must not be exceeded.

(2) The employer ~~((shall))~~ must establish and maintain a program for the control and monitoring of nonionizing radiation hazards. This program ~~((shall))~~ must provide employees adequate supervision, training, facilities, equipment, and supplies, for the control and assessment of nonionizing radiation hazards.

(3) Radiofrequency/microwave radiation permissible exposure limits.

(a) Definition(~~(: "Partial body exposure" means)~~). **Partial body exposure.** The case in which only the hands and forearms or the feet and legs below the knee are exposed.

(b) Warning symbol.

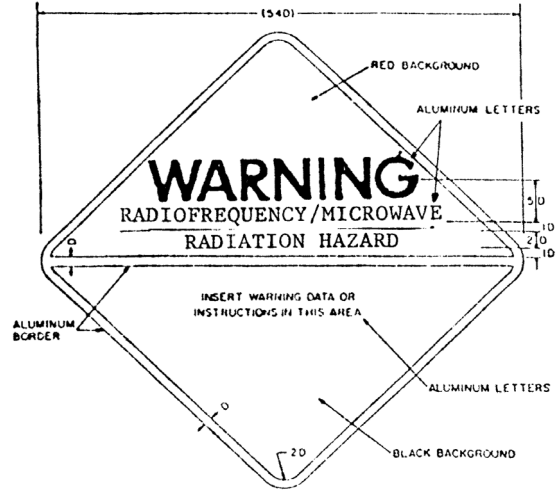
(i) The warning symbol for radiofrequency/microwave radiation ~~((shall))~~ must consist of a red isosceles triangle above an inverted black isosceles triangle, separated and outlined by an aluminum color border. The words "Warning - Radiofrequency/microwave radiation hazard" ~~((shall))~~ must appear in the upper triangle. See Figure 1.

(ii) All areas where entry may result in an exposure to radiofrequency/microwave radiation in excess of the PEL ~~((shall))~~ must have a warning symbol prominently displayed at their entrance.

(iii) American National Standard Safety Color Code for Marking Physical Hazards and the Identification of Certain Equipment, Z53.1-1953, ~~((shall))~~ must be used for color specification. All lettering and the border ~~((shall))~~ must be of aluminum color.

(iv) The inclusion and choice of warning information or precautionary instructions is at the discretion of the user. If such information is included it ~~((shall))~~ must appear in the lower triangle of the warning symbol.

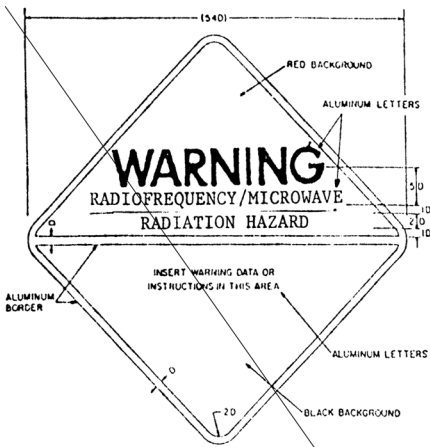
((f



1. Place handling and mounting instructions on reverse side.
2. D = Scaling Unit.
3. Lettering: Ratio of letter height to thickness of letter lines.
 Upper triangle: 5 to 1 Large
 6 to 1 Medium
 Lower triangle: 4 to 1 Small
 6 to 1 Medium
4. Symbol is square, triangles are right-angle isosceles.

Figure 1
Radiofrequency/Microwave Radiation Hazard Warning
Symbol

((f



1. Place handling and mounting instructions on reverse side.
2. D = Scaling Unit.
3. Lettering: Ratio of letter height to thickness of letter lines.
 Upper triangle: 5 to 1 Large
 6 to 1 Medium
 Lower triangle: 4 to 1 Small
 6 to 1 Medium
4. Symbol is square, triangles are right-angle isosceles.

Figure 1
Radiofrequency/Microwave Radiation Hazard Warning
Symbol

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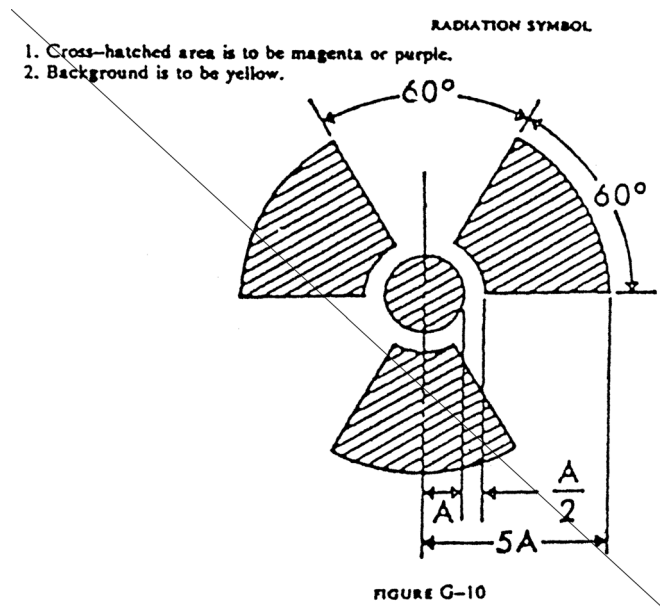


FIGURE G-10

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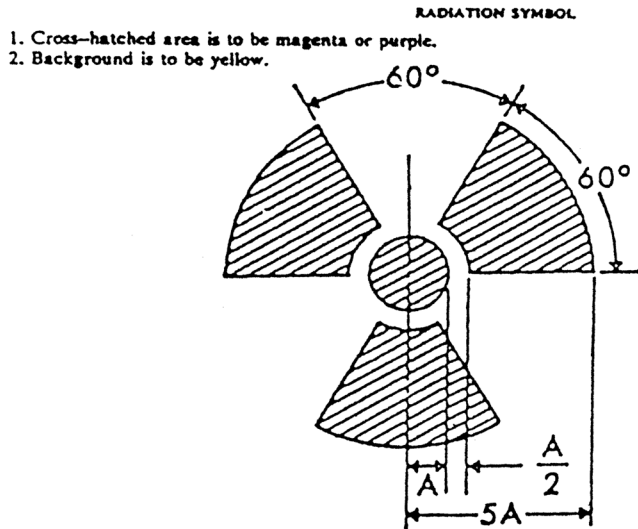


FIGURE G-10

(c) These PELs refer to radiofrequency/microwave radiation exposures in the frequency range of 300 kHz to 100 GHz. Based on current knowledge, it is believed that workers may be exposed at these PELs without adverse health effects.

(i) Table I gives the PELs in terms of the mean squared electric (E^2) and magnetic (H^2) field strengths and in terms of the equivalent plane-wave free-space power density, as a function of frequency.

(ii) The average exposure for any six minute (0.1 hour) period ~~((shall))~~ must not exceed the PEL.

(iii) Measurements ~~((shall))~~ must be made at distances of 5 cm or greater from any object.

(iv) For mixed or broadband fields at a number of frequencies for which there are different PELs, the fraction of the PEL incurred within each frequency interval ~~((shall))~~ must be determined and the sum of these fractions ~~((shall))~~ must not exceed unity.

(v) PELs given in Table I for frequencies between 300 kHz and 1 GHz may be exceeded for partial body exposures if the output power of the radiating device is 7 watts or less.

Table I. Radiofrequency/Microwave Radiation Permissible Exposure Limits (PELs).

Frequency(f)	Power Density*	Electric Field Strength Squared*	Magnetic Field Strength Squared*
	mW/cm ²	V ² /m ²	A ² /m ²
0.3 to 3 MHz	100	400,000	2.5
3 to 30 MHz	900/f ²	4000(900/f ²)	0.025(900/f ²)
30 to 300 MHz	1.0	4000	0.025
300 to 1500 MHz	f/300	4000(f/300)	0.025(f/300)
1.5 to 100 GHz	5.0	20,000	0.125

Note: f = frequency (MHz)

*Ceiling value

(4) Laser radiation permissible exposure limits.

(a) Definitions.

(i) (~~"Diffuse reflection" means~~) Diffuse reflection. A change of the spatial distribution of a beam of radiation when it is reflected in many directions by a surface or medium.

(ii) (~~"Specular reflection" means~~) Specular reflection. A mirrorlike reflection.

(iii) (~~"Accessible radiation" means~~) Accessible radiation. Laser radiation to which human access is possible.

(b) All lasers and laser systems ~~((shall))~~ must be classified in accordance with the Federal Laser Product Performance Standards (21 C.F.R. 1040.10) or, if manufactured prior to August 2, 1976, in accordance with ANSI Z136.1-1980.

(i) Class I. Laser systems that are considered to be incapable of producing damaging radiation levels and are thereby exempt from control measures. This is a no hazard category.

(ii) Class II. Visible wavelength laser systems that have a low hazard potential because of the expected aversion response. There is some possibility of injury if stared at. This is a low hazard category.

(iii) Class III. Laser systems in which intrabeam viewing of the direct beam or specular reflections of the beam may be hazardous. This class is further subdivided into IIIa and IIIb. This is a moderate hazard category.

(iv) Class IV. Laser systems whose direct or diffusely reflected radiation may be hazardous and where the beam may constitute a fire hazard. Class IV systems require the use of controls that prevent exposure of the eye and skin to specular or diffuse reflections of the beam. This is a high hazard category.

(c) Warning signs and classification labels ~~((shall))~~ must be prepared in accordance with 21 C.F.R. 1040.10 when classifying lasers and laser systems, and ANSI Z136.1 - 1980 when using classified lasers and laser systems. All signs and labels ~~((shall))~~ must be conspicuously displayed.

(i) The signal word "CAUTION" ~~((shall))~~ must be used with all signs and labels associated with Class II and Class IIIa lasers and laser systems.

(ii) The signal word "DANGER" ~~((shall))~~ must be used with all signs and labels associated with Class IIIb and Class IV lasers and laser systems.

(d) Personal protective equipment ~~((shall))~~ must be provided at no cost to the employee and ~~((shall))~~ must be worn whenever operational conditions or maintenance of lasers may result in a potentially hazardous exposure.

(i) Protective eyewear ~~((shall))~~ must be specifically designed for protection against radiation of the wavelength and radiant energy of the laser or laser system. Ocular exposure shall not exceed the recommendations of ANSI Z136.1 - 1980.

(ii) For Class IV lasers and laser systems protective eyewear ~~((shall))~~ must be worn for all operational conditions or maintenance which may result in exposures to laser radiation.

(e) Engineering controls ~~((shall))~~ must be used whenever feasible to reduce the accessible radiation levels for Class IV lasers and laser systems to a lower classification level. These controls may include, but are not limited to: Protective housings, interlocks, optical system attenuators, enclosed beam paths, remote controls, beam stops, and emission delays with audible warnings.

(f) All employees who may be exposed to laser radiation shall receive laser safety training. The training ((shall)) must ensure that the employees are knowledgeable of the potential hazards and control measures for the laser equipment in use.

(5) Ultraviolet radiation.

(a) These permissible exposure limits refer to ultraviolet radiation in the spectral region between 200 and 400 nanometer (nm) and represent conditions under which it is believed that nearly all workers may be repeatedly exposed without adverse effect. These values for exposure of the eye or the skin apply to ultraviolet radiation from arcs, gas, and vapor discharges, and incandescent sources, but do not apply to ultraviolet lasers or solar radiation. These levels should not be used for determining exposure of photosensitive individuals to ultraviolet radiation. These values ((shall)) must be used in the control of exposure to continuous sources where the exposure relation ((shall)) must not be less than 0.1 sec.

(b) The permissible exposure limit for occupational exposure to ultraviolet radiation incident upon skin or eye where irradiance values are known and exposure time is controlled are as follows:

(i) For the near ultraviolet spectral region (320 to 400 nanometer (nm)), total irradiance incident upon the unprotected skin or eye ((shall)) must not exceed 1.0 milliwatt/sq. centimeter for periods greater than 10³ seconds (approximately 16 minutes) and for exposure times less than 10³ seconds shall not exceed one Joule/sq. centimeter.

(ii) For the actinic ultraviolet spectral region (200 - 315 nm), radiant exposure incident upon the unprotected skin or eye ((shall)) must not exceed the values given in Table 4 within an 8-hour period.

(iii) To determine the effective irradiance of a broadband source weighted against the peak of the spectral effectiveness curve (270 nanometer (nm)), the following weighting formulas shall be used.

$$E_{\text{eff}} = \sum (E\text{-Lambda}) (S\text{-Lambda}) (\Delta\text{-Lambda})$$

Where:

- E_{eff} = effective irradiance relative to a monochromatic source at 270nm
- E-Lambda = spectral irradiance in Watts/sq. centimeter/nanometer.
- S-Lambda = relative spectral effectiveness (unitless)
- Delta-Lambda = band width in nanometers

(iv) Permissible exposure time in seconds for exposure to actinic ultraviolet radiation incident upon the unprotected skin or eye may be computed by dividing 0.003 Joules/sq. centimeter by E_{eff} in Watts/sq. centimeter. The exposure time may also be determined using Table 5 which provides exposure times corresponding to effective irradiances in $\mu\text{W}/\text{cm}^2$.

TABLE 4

Wavelength nanometer	PEL millijoules/sq. centimeters	Relative Spectral Effectiveness S Lambda
200	100	0.03
210	40	0.075
220	25	0.12
230	16	0.19
240	10	0.30
250	7.0	0.43
254	6.0	0.5
260	4.6	0.65
270	3.0	1.0
280	3.4	0.88
290	4.7	0.64
300	10	0.30
305	50	0.06
310	200	0.015
315	1000	0.003

TABLE 5

Duration of Exposure Per Day	Effective Irradiance E_{eff} ($\mu\text{W}/\text{cm}^2$)
8 hrs.	0.1
4 hrs.	0.2
2 hrs.	0.4
1 hr.	0.8
1/2 hr.	1.7
15 min.	3.3
10 min.	5
5 min.	10
1 min.	50
30 sec.	100
10 sec.	300
1 sec.	3,000
0.5 sec.	6,000
0.1 sec.	30,000

TABLE 6

Densities and Transmissions (in Percent); also Tolerances in Densities and Transmissions of Various Shades of Glasses for Protection Against Injurious Rays

(Shades 3 to 8, inclusive, are for use in goggles, shades 10 to 14, inclusive, for welder's helmets and face shields)

[CODIFICATION NOTE: The graphic presentation of this table has been varied slightly in order that it would fall within the printing specifications for the Washington Administrative Code. In the following table, the original table had columns relating to (1) "Optical Density" which is now "Part 1," (2) "Total Visible Luminous Transmittance" and "Maximum total Infrared" which are now "Part 2," (3) "Maximum Ultraviolet Transmission" which is now "Part 3," and (4) "Recommended Uses" which is now "Part 4." These columns were all positioned side by side. In the new WAC format these are split up into four separate tables.]

TABLE 6—Part 1

Shade No.	Optical Density		
	Minimum [C]O.D.	Standard O.D.	Maximum O.D.
3.0	.64	.857	1.06
4.0	1.07	1.286	1.49
5.0	1.50	1.714	1.92
6.0	1.93	2.143	2.35
7.0	2.36	2.572	2.78
8	2.79	3.000	3.21
9	3.22	3.429	3.63
10	3.64	3.857	4.06
11	4.07	4.286	4.49
12	4.50	4.715	4.92
13	4.93	5.143	5.35
14	5.36	5.571	5.78

TABLE 6—Part 2

Shade No.	Total Visible Luminous Transmittance			Maximum Total Infrared %
	Maximum %	Standard %	Minimum %	
3.0	22.9	13.9	8.70	9.0
4.0	8.51	5.18	3.24	5.0
5.0	3.16	1.93	1.20	2.5
6.0	1.18	.72	.45	1.5
7.0	.44	.27	.17	1.3
8	.162	.100	.062	1.0
9	.060	.037	.023	.8
10	.0229	.0139	.0087	.6
11	.0085	.0052	.0033	.5
12	.0032	.0019	.0012	.5
13	.00118	.00072	.00045	.4
14	.00044	.00027	.00017	.3

TABLE 6—Part 3

Shade No.	Maximum Ultraviolet Transmission			
	313mu %	334mu %	365mu %	405mu %
3.0	.2	.2	.5	1.0

Shade No.	Maximum Ultraviolet Transmission			
	313mu %	334mu %	365mu %	405mu %
4.0	.2	.2	.5	1.0
5.0	.2	.2	.2	.5
6.0	.1	.1	.1	.5
7.0	.1	.1	.1	.5
8	.1	.1	.1	.5
9	.1	.1	.1	.5
10	.1	.1	.1	.5
11	.05	.05	.05	.1
12	.05	.05	.05	.1
13	.05	.05	.05	.1
14	.05	.05	.05	.1

TABLE 6—Part 4

Shade No.	Recommended Uses
3.0	Glare of reflected sunlight from snow, water, sand, etc., stray light from cutting and welding metal pouring and work around furnaces and foundries.
4.0	
5.0	Light acetylene cutting and welding; light electric spot welding.
6.0	
7.0	Acetylene cutting and medium welding; arc welding up to 30 amperes.
8	
9	Heavy acetylene welding; arc cutting and welding between 30 and 75 amperes.
10	
11	Arc cutting and welding between 75 and 200 amperes.
12	
13	Arc cutting and welding between 200 and 400 amperes.
14	Arc cutting and welding above 400 amperes.
a.	American Standard Safety Code for the Protection of Heads, Eyes, and Respiratory Organs.
b.	Standard density is defined as the logarithms (base 10) of the reciprocal of the transmission. Shade number is determined by the density according to the relations: Shade number = 7/3 density + 1 with tolerances as given in the table.

Note: Safety glasses are available with lenses which protect the eyes against ultraviolet radiation.

Reviser's note: The brackets and enclosed material in the text of the above section occurred in the copy filed by the agency and appear in the Register pursuant to the requirements of RCW 34.08.040.

AMENDATORY SECTION (Amending WSR 91-11-070, filed 5/20/91, effective 6/20/91)

WAC 296-62-09007 Pressure. (1) Employees exposed to pressures above normal atmospheric pressure which may produce physiological injury ~~((shall))~~ must adhere to decompression schedules or other tables as are or may be adopted by the department of labor and industries: for example, state of Washington "safety standards for compressed air work" and "safety standards for commercial diving operations." The employer ~~((shall))~~ must provide and supervise the use of decompression equipment and schedules in accordance with applicable requirements.

(2) If no specific requirements prevail for an unusual condition, a plan based on the recommendations of professionally qualified advisors, experienced with hazards associated with such exposures, ~~((shall))~~ must be followed by both the employer and employee.

AMENDATORY SECTION (Amending Order 73-3, filed 5/7/73)

WAC 296-62-09009 Vibration. Reasonable precautions ~~((shall))~~ must be taken to protect workmen against the hazardous effects of unavoidable exposure to vibrations.

AMENDATORY SECTION (Amending Order 73-3, filed 5/7/73)

WAC 296-62-09013 Temperature, radiant heat, or temperature-humidity combinations. ~~((+))~~ Workmen subjected to temperature extremes, radiant heat, humidity, or air velocity combinations which, over a period of time, are likely to produce physiological responses which are harmful ~~((shall))~~ must be afforded protection by use of adequate controls, methods or procedures, or protective clothing. This ~~((shall))~~ must not be construed to apply to normal occupations under atmospheric conditions which may be expected in the area except that special provisions which are required by other regulations for certain areas or occupations ~~((shall))~~ must prevail.

AMENDATORY SECTION (Amending WSR 08-12-109, filed 6/4/08, effective 7/5/08)

WAC 296-62-09510 Scope and purpose. (1) WAC 296-62-095 through 296-62-09560 applies to all employers with employees performing work in an outdoor environment.

(2) The requirements of WAC 296-62-095 through 296-62-09560 apply to outdoor work environments from May 1 through September 30, annually, only when employees are exposed to outdoor heat at or above an applicable temperature listed in Table 1.

Table 1

To determine which temperature applies to each worksite, select the temperature associated with the general type of clothing or personal protective equipment (PPE) each employee is required to wear.

Outdoor Temperature Action Levels

All other clothing	89°
Double-layer woven clothes including coveralls, jackets and sweatshirts	77°
Nonbreathing clothes including vapor barrier clothing or PPE such as chemical resistant suits	52°

Note: There is no requirement to maintain temperature records. The temperatures in Table 1 were developed based on Washington state data and are not applicable to other states.

(3) WAC 296-62-095 through 296-62-09560 does not apply to incidental exposure which exists when an employee is not required to perform a work activity outdoors for more than fifteen minutes in any sixty-minute period. This exception may be applied every hour during the work shift.

(4) WAC 296-62-095 through 296-62-09560 supplement all industry-specific standards with related requirements. Where the requirements under these sections provide more specific or greater protection than the industry-specific standards, the employer ~~((shall))~~ must comply with the requirements under these sections. Additional related requirements are found in chapter 296-305 WAC, Safety standards for firefighters and chapter 296-307 WAC, Safety standards for agriculture.

AMENDATORY SECTION (Amending WSR 08-12-109, filed 6/4/08, effective 7/5/08)

WAC 296-62-09520 Definitions. ~~((+))~~ **Acclimatization** ~~((means))~~, The body's temporary adaptation to work in heat that occurs as a person is exposed to it over time.

~~((=))~~ **Double-layer woven clothing** ~~((means))~~, Clothing worn in two layers allowing air to reach the skin. For example, coveralls worn on top of regular work clothes.

~~((=))~~ **Drinking water** ~~((means))~~, Potable water that is suitable to drink. Drinking water packaged as a consumer product and electrolyte-replenishing beverages (i.e., sports drinks) that do not contain caffeine are acceptable.

~~((+))~~ **Engineering controls** ~~((means))~~, The use of devices to reduce exposure and aid cooling (i.e., air conditioning).

~~((=))~~ **Environmental factors for heat-related illness** ~~((means))~~, Working conditions that increase susceptibility for heat-related illness such as air temperature, relative humidity, radiant heat from the sun and other sources, conductive heat sources such as the ground, air movement, workload (i.e., heavy, medium, or low) and duration, and personal protective equipment worn by employees. Measurement of environmental factors is not required by WAC 296-62-095.

~~((+))~~ **Heat-related illness** ~~((means))~~, A medical condition resulting from the body's inability to cope with a particular heat load, and includes, but is not limited to, heat cramps, heat rash, heat exhaustion, fainting, and heat stroke.

~~((=))~~ **Outdoor environment** ~~((means))~~, An environment where work activities are conducted outside. Work environments such as inside vehicle cabs, sheds, and tents or other structures may be considered an outdoor environment if the environmental factors affecting temperature are not managed by engineering controls. Construction activity is consid-

ered to be work in an indoor environment when performed inside a structure after the outside walls and roof are erected.

~~((8))~~ **Vapor barrier clothing** (~~means~~), Clothing that significantly inhibits or completely prevents sweat produced by the body from evaporating into the outside air. Such clothing includes encapsulating suits, various forms of chemical resistant suits used for PPE, and other forms of nonbreathing clothing.

AMENDATORY SECTION (Amending WSR 99-10-071, filed 5/4/99, effective 9/1/99)

WAC 296-62-11019 Spray-finishing operations. (1) Definitions.

(a) (~~"Spray finishing operations"~~ means) **Spray-finishing operations.** Employment of methods wherein organic or inorganic materials are utilized in dispersed form from deposit on surfaces to be coated, treated or cleaned. Such methods of deposit may involve either automatic, manual, or electrostatic deposition but do not include metal spraying or metallizing, dipping, flow coating, roller coating, tumbling, centrifuging, or spray washing and degreasing as conducted in self-contained washing and degreasing machines or systems.

(b) (~~"~~)**Spray booth**(~~"~~), Spray booths are defined and described in WAC 296-24-370 through 296-24-37007. (See sections 103, 104, and 105 of the Standard for Spray Finishing Using Flammable and Combustible Materials, NFPA No. 33-1969.)

(c) (~~"~~)**Spray room**(~~"~~ means), A room in which spray-finishing operations not conducted in a spray booth are performed separately from other areas.

(d) (~~"Minimum maintained velocity"~~ means) **Minimum maintained velocity.** The velocity of air movement which must be maintained in order to meet minimum specified requirements for health and safety.

(2) Location and application. Spray booths or spray rooms are to be used to enclose or confine all operations. Spray-finishing operations (~~shall~~) must be located as provided in sections 201 through 206 of the Standard for Spray Finishing Using Flammable and Combustible Materials, NFPA No. 33-1969.

(3) Design and construction of spray booths.

(a) Spray booths (~~shall~~) must be designed and constructed in accordance with WAC 296-24-370 through 296-24-37007 (see sections 301-304 and 306-310 of the Standard for Spray Finishing Using Flammable and Combustible Materials, NFPA No. 33-1969), for general construction specifications.

Note: For a more detailed discussion of fundamentals relating to this subject, see ANSI Z9.2-1960.

(i) Lights, motors, electrical equipment and other sources of ignition (~~shall~~) must conform to the requirements of WAC 296-24-370. (See section 310 and chapter 4 of the Standard for Spray Finishing Using Flammable and Combustible Materials, NFPA No. 33-1969.)

(ii) In no case (~~shall~~) must combustible material be used in the construction of a spray booth and supply or exhaust duct connected to it.

(b) Unobstructed walkways (~~shall~~) must not be less than 6 1/2 feet high and (~~shall~~) must be maintained clear of obstruction from any work location in the booth to a booth exit or open booth front. In booths where the open front is the only exit, such exits (~~shall~~) must be not less than 3 feet wide. In booths having multiple exits, such exits (~~shall~~) must not be less than 2 feet wide, provided that the maximum distance from the work location to the exit is 25 feet or less. Where booth exits are provided with doors, such doors shall open outward from the booth.

(c) Baffles, distribution plates, and dry-type overspray collectors (~~shall~~) must conform to the requirements of WAC 296-24-370. (See sections 304 and 305 of the Standard for Spray Finishing Using Flammable and Combustible Materials, NFPA No. 33-1969.)

(i) Overspray filters (~~shall~~) must be installed and maintained in accordance with the requirements of WAC 296-24-370, (See section 305 of the Standard for Spray Finishing Using Flammable and Combustible Materials, NFPA No. 33-1969), and (~~shall~~) must only be in a location easily accessible for inspection, cleaning, or replacement.

(ii) Where effective means, independent of the overspray filters are installed which will result in design air distribution across the booth cross section, it is permissible to operate the booth without the filters in place.

(d)(i) For wet or water-wash spray booths, the water-chamber enclosure, within which intimate contact of contaminated air and cleaning water or other cleaning medium is maintained, if made of steel, (~~shall~~) must be 18 gauge or heavier and adequately protected against corrosion.

(ii) Chambers may include scrubber spray nozzles, headers, troughs, or other devices. Chambers (~~shall~~) must be provided with adequate means for creating and maintaining scrubbing action for removal of particulate matter from the exhaust air stream.

(e) Collecting tanks (~~shall~~) must be of welded steel construction or other suitable noncombustible material. If pits are used as collecting tanks, they (~~shall~~) must be concrete, masonry, or other material having similar properties.

(i) Tanks (~~shall~~) must be provided with weirs, skimmer plates, or screens to prevent sludge and floating paint from entering the pump suction box. Means for automatically maintaining the proper water level (~~shall~~) must also be provided. Fresh water inlets (~~shall~~) must not be submerged. They (~~shall~~) must terminate at least one pipe diameter above the safety overflow level of the tank.

(ii) Tanks (~~shall~~) must be so constructed as to discourage accumulation of hazardous deposits.

(f) Pump manifolds, risers, and headers (~~shall~~) must be adequately sized to insure sufficient water flow to provide efficient operation of the water chamber.

(4) Design and construction of spray rooms.

(a) Spray rooms, including floors, (~~shall~~) must be constructed of masonry, concrete, or other noncombustible material.

(b) Spray rooms (~~shall~~) must have noncombustible fire doors and shutters.

(c) Spray rooms (~~shall~~) must be adequately ventilated so that the atmosphere in the breathing zone of the operator

((shall)) must be maintained in accordance with the requirements of (6)(b) of this section.

(d) Spray rooms used for production spray-finishing operations ((shall)) must conform to the requirements of spray booths.

(5) Ventilation.

(a) Ventilation ((shall)) must be provided in accordance with provisions of WAC 296-24-370, (See chapter 5 of the Standard for Spray Finishing Using Flammable or Combustible Materials, NFPA No. 33-1969), and in accordance with the following:

(i) Where a fan plenum is used to equalize or control the distribution of exhaust air movement through the booth, it ((shall)) must be of sufficient strength or rigidity to withstand the differential air pressure or other superficially imposed loads for which the equipment is designed and also to facilitate cleaning. Construction specifications ((shall)) must be at least equivalent to those of (5)(c) of this section.

(ii) All fan ratings ((shall)) must be in accordance with Air Moving and Conditioning Association Standard Test Code for Testing Air Moving Devices, Bulletin 210, April 1962.

(b) Inlet or supply ductwork used to transport makeup air to spray booths or surrounding areas ((shall)) must be constructed of noncombustible materials.

(i) If negative pressure exists within inlet ductwork, all seams and joints ((shall)) must be sealed if there is a possibility of infiltration of harmful quantities of noxious gases, fumes, or mists from areas through which ductwork passes.

(ii) Inlet ductwork ((shall)) must be sized in accordance with volume flow requirements and provide design air requirements at the spray booth.

(iii) Inlet ductwork ((shall)) must be so supported throughout its length to sustain at least its own weight plus any negative pressure which is exerted upon it under normal operating conditions.

(c) Ducts ((shall)) must be so constructed as to provide structural strength and stability at least equivalent to sheet steel of not less than the following thickness:

DIAMETER OR GREATER DIMENSION	(U.S. gauge)
Up to 8 inches inclusive	No. 24
Over 8 inches to 18 inches inclusive	No. 22
Over 18 inches to 30 inches inclusive	No. 20
Over 30 inches	No. 18

(i) Exhaust ductwork ((shall)) must be adequately supported throughout its length to sustain its weight plus any normal accumulation in interior during normal operating conditions and any negative pressure exerted upon it.

(ii) Exhaust ductwork ((shall)) must be sized in accordance with good design practice which shall include consideration of fan capacity, length of duct, number of turns and elbows, variation in size, volume, and character of materials being exhausted. See American National Standard Z9.2-1960 for further details and explanation concerning elements of design.

(ii) Longitudinal joints in sheet steel ductwork ((shall)) must be either lock-seamed, riveted, or welded. For other than steel construction, equivalent securing of joints ((shall)) must be provided.

(iv) Circumferential joints in ductwork ((shall)) must be substantially fastened together and lapped in the direction of airflow. At least every fourth joint ((shall)) must be provided with connecting flanges, bolted together or of equivalent fastening security.

(v) Inspection or clean-out doors ((shall)) must be provided for every nine to twelve feet of running length for ducts up to twelve inches in diameter, but the distance between clean-out doors may be greater for larger pipes. (See 8.3.21 of American National Standard Z9.1-1960.) A clean-out door or doors ((shall)) must be provided for servicing the fan, and where necessary, a drain shall be provided.

(vi) Where ductwork passes through a combustible roof or wall, the roof or wall ((shall)) must be protected at the point of penetration by open space or fire-resistive material between the duct and the roof or wall. When ducts pass through fire-walls, they ((shall)) must be provided with automatic fire dampers on both sides of the wall, except that three-eighth-inch steel plates may be used in lieu of automatic fire dampers for ducts not exceeding 18 inches in diameter.

(vii) Ductwork used for ventilating any process covered in this standard ((shall)) must not be connected to ducts ventilating any other process or any chimney or flue used for conveying any products of combustion.

(6) Velocity and air flow requirements.

(a) Except where a spray booth has an adequate air replacement system, the velocity of air into all openings of a spray booth ((shall)) must be not less than that specified in Table 14 for the operating conditions specified. An adequate air replacement system is one which introduces replacement air upstream or above the object being sprayed and is so designed that the velocity of air in the booth cross section is not less than that specified in Table 14 when measured upstream or above the object being sprayed.

TABLE 14
MINIMUM MAINTAINED VELOCITIES
INTO SPRAY BOOTHS

Operating Airflow conditions for object completely inside booth	Crossdraft f.p.m.	Velocities, f.p.m.	
		Design	Range
Electrostatic and automatic airless operation contained in booth without operator.	Negligible . . .	50 large booth	50-75
		100 small booth	75-125
Air-operated guns, manual or automatic	Up to 50 . . .	100 large booth	75-125
		150 small booth	125-175
Air-operated guns, manual or automatic	Up to 100 . . .	150 large booth	125-175
		200 small booth	150-250

Notes:

- (1) Attention is invited to the fact that the effectiveness of the spray booth is dependent upon the relationship of the depth of the booth to its height and width.

- (2) Crossdrafts can be eliminated through proper design and such design should be sought. Crossdrafts in excess of 100 fpm (feet per minute) should not be permitted.
- (3) Excessive air pressures result in loss of both efficiency and material waste in addition to creating a backlash that may carry overspray and fumes into adjacent work areas.
- (4) Booths should be designed with velocity shown in the column headed "Design." However, booths operating with velocities shown in the column headed "Range" are in compliance with this standard.

(b) In addition to the requirements in (6)(a) of this section the total air volume exhausted through a spray booth (~~shall~~) must be such as to dilute solvent vapor to at least 25 percent of the lower explosive limit of the solvent being sprayed. An example of the method of calculating this volume is given below.

Example: To determine the lower explosive limits of the most common solvents used in spray finishing, see Table 15. Column 1 gives the number of cubic feet of vapor per gallon of solvent and column 2 gives the lower explosive limit (LEL) in percentage by volume of air. Note that the quantity of solvent will be diminished by the quantity of solids and nonflammable contained in the finish.

To determine the volume of air in cubic feet necessary to dilute the vapor from 1 gallon of solvent to 25 percent of the lower explosive limit, apply the following formula:

$$\text{Dilution volume required per gallon of solvent} = \frac{4 (100\text{-LEL})}{\text{LEL} \times (\text{cubic feet of vapor per gallon})}$$

Using toluene as the solvent.

- (1) LEL of toluene from Table 15, column 2, is 1.4 percent.
- (2) Cubic feet of vapor per gallon from Table 15, column 1, is 30.4 cubic feet per gallon.
- (3) Dilution volume required =
$$\frac{4 (100-1.4) 30.4}{1.4} = 8,564 \text{ cubic feet.}$$

(4) To convert to cubic feet per minute of required ventilation, multiply the dilution volume required per gallon of solvent by the number of gallons of solvent evaporated per minute.

TABLE 15
LOWER EXPLOSIVE LIMIT OF SOME COMMONLY USED SOLVENTS

Solvent	Lower explosive limit in percent by volume of air at 70°F.	
	Column 1	Column 2
Acetone	44.0	2.6
Amyl Acetate (iso)	21.6	1.0 ¹
Amyl Alcohol (n)	29.6	1.2
Amyl Alcohol (iso)	29.6	1.2
Benzene	36.8	1.4 ¹
Butyl Acetate (n)	24.8	1.7
Butyl Alcohol (n)	35.2	1.4
Butyl Cellosolve	24.8	1.1

Solvent	Cubic feet of vapor per gallon of liquid at 70°F.	Lower explosive limit in percent by volume of air at 70°F.
Cellosolve	33.6	1.8
Cellosolve Acetate	23.2	1.7
Cyclohexanone	31.2	1.1 ¹
1,1 Dichloroethylene	42.4	5.6
1,2 Dichloroethylene	42.4	9.7
Ethyl Acetate	32.8	2.5
Ethyl Alcohol	55.2	4.3
Ethyl Lactate	28.0	1.5 ¹
Methyl Acetate	40.0	3.1
Methyl Alcohol	80.8	7.3
Methyl Cellosolve	40.8	2.5
Methyl Ethyl Ketone	36.0	1.8
Methyl n-Propyl Ketone	30.4	1.5
Naphtha (VM&P) (76° Naphtha)	22.4	0.9
Naphtha (100° Flash) Safety Solvent-Stoddard Solvent	23.2	1.1
Propyl Acetate (n)	27.2	2.0
Propyl Acetate (iso)	28.0	1.8
Propyl Alcohol (n)	44.8	2.1
Propyl Alcohol (iso)	44.0	2.0
Toluene	30.4	1.4
Turpentine	20.8	0.8
Xylene (o)	26.4	1.0

¹ At 212°F.

(c)(i) When an operator is in a booth downstream of the object being sprayed, an air-supplied respirator or other type of respirator certified by NIOSH under 42 C.F.R. part 84 for the material being sprayed should be used by the operator.

(ii) Where downdraft booths are provided with doors, such doors (~~shall~~) must be closed when spray painting.

(7) Make-up air.

(a) Clean fresh air, free of contamination from adjacent industrial exhaust systems, chimneys, stacks, or vents, (~~shall~~) must be supplied to a spray booth or room in quantities equal to the volume of air exhausted through the spray booth.

(b) Where a spray booth or room receives make-up air through self-closing doors, dampers, or louvers, they (~~shall~~) must be fully open at all times when the booth or room is in use for spraying. The velocity of air through such doors, dampers, or louvers (~~shall~~) must not exceed 200 feet per minute. If the fan characteristics are such that the required air flow through the booth will be provided, higher velocities through the doors, dampers, or louvers may be used.

(c)(i) Where the air supply to a spray booth or room is filtered, the fan static pressure (~~shall~~) must be calculated on

the assumption that the filters are dirty to the extent that they require cleaning or replacement.

(ii) The rating of filters ~~((shall))~~ must be governed by test data supplied by the manufacturer of the filter. A pressure gauge ~~((shall))~~ must be installed to show the pressure drop across the filters. This gauge ~~((shall))~~ must be marked to show the pressure drop at which the filters require cleaning or replacement. Filters ~~((shall))~~ must be replaced or cleaned whenever the pressure drop across them becomes excessive or whenever the air flow through the face of the booth falls below that specified in Table 14.

(d)(i) Means of heating make-up air to any spray booth or room, before or at the time spraying is normally performed, ~~((shall))~~ must be provided in all places where the outdoor temperature may be expected to remain below 55°F. for appreciable periods of time during the operation of the booth except where adequate and safe means of radiant heating for all operating personnel affected is provided. The replacement air during the heating seasons ~~((shall))~~ must be maintained at not less than 65°F. at the point of entry into the spray booth or spray room. When otherwise unheated make-up air would be at a temperature of more than 10°F. below room temperature, its temperature ~~((shall))~~ must be regulated as provided in section 3.6 of ANSI Z9.2-1960.

(ii) As an alternative to an air replacement system complying with the preceding section, general heating of the building in which the spray room or booth is located may be employed provided that all occupied parts of the building are maintained at not less than 65°F. when the exhaust system is in operation or the general heating system supplemented by other sources of heat may be employed to meet this requirement.

(iii) No means of heating make-up air ~~((shall))~~ must be located in a spray booth.

(iv) Where make-up air is heated by coal or oil, the products of combustion ~~((shall))~~ must not be allowed to mix with the make-up air, and the products of combustion ~~((shall))~~ must be conducted outside the building through a flue terminating at a point remote from all points where make-up air enters the building.

(v) Where make-up air is heated by gas, and the products of combustion are not mixed with the make-up air but are conducted through an independent flue to a point outside the building remote from all points where make-up air enters the building, it is not necessary to comply with (7)(d)(vi) of this section.

(vi) Where make-up air to any manually operated spray booth or room is heated by gas and the products of combustion are allowed to mix with the supply air, the following precautions must be taken:

(A) The gas must have a distinctive and strong enough odor to warn workmen in a spray booth or room of its presence if in an unburned state in the make-up air.

(B) The maximum rate of gas supply to the make-up air heater burners must not exceed that which would yield in excess of 200 p.p.m. (parts per million) of carbon monoxide or 2,000 p.p.m. of total combustible gases in the mixture if the unburned gas upon the occurrence of flame failure were mixed with all of the make-up air supplied.

(C) A fan must be provided to deliver the mixture of heated air and products of combustion from the plenum chamber housing the gas burners to the spray booth or room.

(8) Scope. Spray booths or spray rooms are to be used to enclose or confine all spray finishing operations covered by this paragraph. This paragraph does not apply to the spraying of the exteriors of buildings, fixed tanks, or similar structures, nor to small portable spraying apparatus not used repeatedly in the same location.

AMENDATORY SECTION (Amending WSR 07-23-072, filed 11/19/07, effective 1/2/08)

WAC 296-62-135 Oxygen deficient atmospheres. (1) **Definition.** A lack of sufficient oxygen is deemed to exist if the atmosphere at sea level has less than 19.5% oxygen by volume or has a partial pressure of oxygen of 148 millimeters of mercury (mm Hg) or less. This may deviate when working at higher elevations and should be determined for an individual location. Factors such as acclimatization, physical conditions of the persons involved, etc., must be considered for such circumstances and conditions.

(2) **Entering areas with possible oxygen deficient atmospheres.** Workers entering any area where a lack of sufficient oxygen is probable ~~((shall))~~ must be supplied with and ~~((shall))~~ must use approved equipment (for specific requirements see applicable provisions of chapters 296-62, 296-307 (Part-U3), 296-809 and 296-841 WAC) capable of providing safe respirable air, or prior to entry and at all times when workers are in such areas a sufficient supply of safe, respirable air ~~((shall))~~ must be provided. All workers so exposed ~~((shall))~~ must be under constant observation. If the oxygen content is unknown or may change during occupation, tests ~~((shall))~~ must be required prior to and during occupation of questionable areas.

AMENDATORY SECTION (Amending WSR 07-23-072, filed 11/19/07, effective 1/2/08)

WAC 296-62-13605 Definition. Ventilation shall mean the provision, circulation or exhausting of air into or from an area or space.

~~((1)) "Local exhaust ventilation" shall mean the mechanical removal of contaminated air from the point where the contaminant is being generated or liberated.~~

~~((2)) "Dilution ventilation" means inducing and mixing uncontaminated air with contaminated air in such quantities that the resultant mixture in the breathing zone will not exceed the permissible exposure limit (PEL) specified for any contaminant.~~

~~((3)) "Exhaust ventilation" means the general movement of air out of the area or permit required confined space by mechanical or natural means.~~

~~((4)) "Tempered make-up air" means air which has been conditioned by changing its heat content to obtain a specific desired temperature.)~~ **Dilution ventilation.** Inducing and mixing uncontaminated air with contaminated air in such quantities that the resultant mixture in the breathing zone will not exceed the permissible exposure limit (PEL) specified for any contaminant.

Exhaust ventilation. The general movement of air out of the area or permit-required confined space by mechanical or natural means.

Local exhaust ventilation. The mechanical removal of contaminated air from the point where the contaminant is being generated or liberated.

Tempered make-up air. Air which has been conditioned by changing its heat content to obtain a specific desired temperature.

AMENDATORY SECTION (Amending WSR 07-23-072, filed 11/19/07, effective 1/2/08)

WAC 296-62-13615 Adequate system. Adequate ventilation systems (~~(shall)~~) **must** be installed as needed to control concentrations of airborne contaminants below applicable threshold limit values.

AMENDATORY SECTION (Amending WSR 07-23-072, filed 11/19/07, effective 1/2/08)

WAC 296-62-13620 Exhaust. Exhaust from ventilation systems (~~(shall)~~) **must** discharge in such a manner that the contaminated air being exhausted will not present a health hazard to any workman or reenter buildings in harmful amounts.

AMENDATORY SECTION (Amending WSR 07-23-072, filed 11/19/07, effective 1/2/08)

WAC 296-62-13625 Make-up air quantity. Make-up air (~~(shall)~~) **must** be of ample quantity to replace the exhausted air and shall be tempered when necessary.

AMENDATORY SECTION (Amending WSR 07-23-072, filed 11/19/07, effective 1/2/08)

WAC 296-62-13630 Design and operation. Ventilation systems (~~(shall)~~) **must** be designed and operated in such a manner that employees will not be subjected to excessive air velocities.

AMENDATORY SECTION (Amending WSR 07-23-072, filed 11/19/07, effective 1/2/08)

WAC 296-62-13635 Compatibility of systems. Make-up air systems (~~(shall)~~) **must** be designed and operated in such a manner that they will not interfere with the effectiveness of the exhaust air system.

AMENDATORY SECTION (Amending WSR 14-07-086, filed 3/18/14, effective 5/1/14)

WAC 296-62-14533 Cotton dust. (1) Scope and application.

(a) This section, in its entirety, applies to the control of employee exposure to cotton dust in all workplaces where employees engage in yarn manufacturing, engage in slashing and weaving operations, or work in waste houses for textile operations.

(b) This section does not apply to the handling or processing of woven or knitted materials; to maritime operations covered by chapters 296-56 and 296-304 WAC; to harvesting or ginning of cotton; or to the construction industry.

(c) Only subsection (8) of this section, Medical surveillance, subsection (11)(b) of this section, Medical surveillance, subsection (11)(c) of this section, Availability, subsection (11)(d) of this section, Transfer of records, and Appendices B, C, and D of this section apply in all work places where employees exposed to cotton dust engage in cottonseed processing or waste processing operations.

(d) This section applies to yarn manufacturing and slashing and weaving operations exclusively using washed cotton (as defined by subsection (14) of this section) only to the extent specified by subsection (14) of this section.

(e) This section, in its entirety, applies to the control of all employees exposure to the cotton dust generated in the preparation of washed cotton from opening until the cotton is thoroughly wetted.

(f) This section does not apply to knitting, classing or warehousing operations except that employers with these operations, if requested by WISHA, (~~(shall)~~) **must** grant WISHA access to their employees and workplaces for exposure monitoring and medical examinations for purposes of a health study to be performed by WISHA on a sampling basis.

(2) Definitions applicable to this section:

(a) (~~("Blow down"–)~~) **Blow down.** The cleaning of equipment and surfaces with compressed air.

(b) (~~("Blow off"–)~~) **Blow off.** The use of compressed air for cleaning of short duration and usually for a specific machine or any portion of a machine.

(c) (~~("Cotton dust"–)~~) **Cotton dust.** Dust present in the air during the handling or processing of cotton, which may contain a mixture of many substances including ground-up plant matter, fiber, bacteria, fungi, soil, pesticides, noncotton plant matter and other contaminants which may have accumulated with the cotton during the growing, harvesting and subsequent processing or storage periods. Any dust present during the handling and processing of cotton through the weaving or knitting of fabrics, and dust present in other operations or manufacturing processes using raw or waste cotton fibers or cotton fiber by-products from textile mills are considered cotton dust within this definition. Lubricating oil mist associated with weaving operations is not considered cotton dust.

(d) (~~("Director"–)~~) **Director.** The director of labor and industries or (~~(his)~~) **their** authorized representative.

(e) (~~("Equivalent instrument"–)~~) **Equivalent instrument.** A cotton dust sampling device that meets the vertical elutriator equivalency requirements as described in subsection (4)(a)(iii) of this section.

(f) (~~("Lint-free respirable cotton dust"–)~~) **Lint-free respirable cotton dust.** Particles of cotton dust of approximately 15 microns or less aerodynamic equivalent diameter.

(g) (~~("Vertical elutriator cotton dust sampler" or "vertical elutriator"–)~~) **Vertical elutriator cotton dust sampler or vertical elutriator.** A dust sampler which has a particle size cut-off at approximately 15 microns aerodynamic equivalent diameter when operating at the flow rate of 7.4 ± 0.2 liters per minute.

(h) (~~("Waste processing")~~) **Waste processing.** Waste recycling (sorting, blending, cleaning and willowing) and garnetting.

(i) (~~("Yarn manufacturing")~~) **Yarn manufacturing.** All textile mill operations from opening to, but not including, slashing and weaving.

(3) Permissible exposure limits and action levels.

(a) Permissible exposure limits (PEL).

(i) The employer (~~((shall assure))~~) **must ensure** that no employee who is exposed to cotton dust in yarn manufacturing and cotton washing operations is exposed to airborne concentrations of lint-free respirable cotton dust greater than 200 µg/m³ mean concentration, averaged over an eight-hour period, as measured by a vertical elutriator or an equivalent instrument.

(ii) The employer (~~((shall assure))~~) **must ensure** that no employee who is exposed to cotton dust in textile mill waste house operations or is exposed in yarn manufacturing to dust from "lower grade washed cotton" as defined in subsection (14)(e) of this section is exposed to airborne concentrations of lint-free respirable cotton dust greater than 500 µg/m³ mean concentration, averaged over an eight-hour period, as measured by a vertical elutriator or an equivalent instrument.

(iii) The employer (~~((shall assure))~~) **must ensure** that no employee who is exposed to cotton dust in the textile processes known as slashing and weaving is exposed to airborne concentrations of lint-free respirable cotton dust greater than 750 µg/m³ mean concentration, averaged over an eight-hour period, as measured by a vertical elutriator or an equivalent instrument.

(b) Action levels.

(i) The action level for yarn manufacturing and cotton washing operations is an airborne concentration of lint-free respirable cotton dust of 100 µg/m³ mean concentration, averaged over an eight-hour period, as measured by a vertical elutriator or an equivalent instrument.

(ii) The action level for waste houses for textile operations is an airborne concentration of lint-free respirable cotton dust of 250 µg/m³ mean concentration, averaged over an eight-hour period, as measured by a vertical elutriator or an equivalent instrument.

(iii) The action level for the textile processes known as slashing and weaving is an airborne concentration of lint-free respirable cotton dust of 375 µg/m³ mean concentration, averaged over an eight-hour period, as measured by a vertical elutriator or an equivalent instrument.

(4) Exposure monitoring and measurement.

(a) General.

(i) For the purposes of this section, employee exposure is that exposure which would occur if the employee were not using a respirator.

(ii) The sampling device to be used (~~((shall))~~) **must** be either the vertical elutriator cotton dust sampler or an equivalent instrument.

(iii) If an alternative to the vertical elutriator cotton dust sampler is used, the employer (~~((shall))~~) **must** establish equivalency by demonstrating that the alternative sampling devices:

(A) It collects respirable particulates in the same range as the vertical elutriator (approximately 15 microns);

(B) Replicate exposure data used to establish equivalency are collected in side-by-side field and laboratory comparisons; and

(C) A minimum of 100 samples over the range of 0.5 to 2 times the permissible exposure limit are collected, and ninety percent of these samples have an accuracy range of plus or minus twenty-five percent of the vertical elutriator reading with a ninety-five percent confidence level as demonstrated by a statistically valid protocol. (An acceptable protocol for demonstrating equivalency is described in Appendix E of this section.)

(iv) WISHA will issue a written opinion stating that an instrument is equivalent to a vertical elutriator cotton dust sampler if:

(A) A manufacturer or employer requests an opinion in writing and supplies the following information:

(I) Sufficient test data to demonstrate that the instrument meets the requirements specified in this paragraph and the protocol specified in Appendix E of this section;

(II) Any other relevant information about the instrument and its testing requested by WISHA; and

(III) A certification by the manufacturer or employer that the information supplied is accurate; and

(B) If WISHA finds, based on information submitted about the instrument, that the instrument meets the requirements for equivalency specified by this subsection.

(b) Initial monitoring. Each employer who has a place of employment within the scope of subsection ~~((s))~~ (1)(a), (d) or (e) of this section (~~((shall))~~) **must** conduct monitoring by obtaining measurements which are representative of the exposure of all employees to airborne concentrations of lint-free respirable cotton dust over an eight-hour period. The sampling program (~~((shall))~~) **must** include at least one determination during each shift for each work area.

(c) Periodic monitoring.

(i) If the initial monitoring required by (4)(b) of this section or any subsequent monitoring reveals employee exposure to be at or below the permissible exposure limit, the employer shall repeat the monitoring for those employees at least annually.

(ii) If the initial monitoring required by (4)(b) of this section or any subsequent monitoring reveals employee exposure to be above the PEL, the employer (~~((shall))~~) **must** repeat the monitoring for those employees at least every six months.

(iii) Whenever there has been a production, process, or control change which may result in new or additional exposure to cotton dust, or whenever the employer has any other reason to suspect an increase in employee exposure, the employer (~~((shall))~~) **must** repeat the monitoring and measurements for those employees affected by the change or increase.

(d) Employee notification.

(i) Within fifteen working days after the receipt of monitoring results, the employer (~~((shall))~~) **must** notify each employee in writing of the exposure measurements which represent that employee's exposure.

(ii) Whenever the results indicate that the employee's exposure exceeds the applicable permissible exposure limit specified in subsection (3) of this section, the employer (~~((shall))~~) **must** include in the written notice a statement that

the permissible exposure limit was exceeded and a description of the corrective action taken to reduce exposure below the permissible exposure limit.

(5) Methods of compliance.

(a) Engineering and work practice controls. The employer ~~((shall))~~ must institute engineering and work practice controls to reduce and maintain employee exposure to cotton dust at or below the permissible exposure limit specified in subsection (3) of this section, except to the extent that the employer can establish that such controls are not feasible.

(b) Whenever feasible engineering and work practice controls are not sufficient to reduce employee exposure to or below the permissible exposure limit, the employer ~~((shall))~~ must nonetheless institute these controls to immediately reduce exposure to the lowest feasible level, and ~~((shall))~~ must supplement these controls with the use of respirators which ~~((shall))~~ must comply with the provisions of subsection (6) of this section.

(c) Compliance program.

(i) Where the most recent exposure monitoring data indicates that any employee is exposed to cotton dust levels greater than the permissible exposure limit, the employer ~~((shall))~~ must establish and implement a written program sufficient to reduce exposures to or below the permissible exposure limit solely by means of engineering controls and work practices as required by (a) of this subsection.

(ii) The written program ~~((shall))~~ must include at least the following:

(A) A description of each operation or process resulting in employee exposure to cotton dust;

(B) Engineering plans and other studies used to determine the controls for each process;

(C) A report of the technology considered in meeting the permissible exposure limit;

(D) Monitoring data obtained in accordance with subsection (4) of this section;

(E) A detailed schedule for development and implementation of engineering and work practice controls, including exposure levels projected to be achieved by such controls;

(F) Work practice program; and

(G) Other relevant information.

(iii) The employer's schedule as set forth in the compliance program, ~~((shall))~~ must project completion of the implementation of the compliance program no later than March 27, 1984 or as soon as possible if monitoring after March 27, 1984 reveals exposures over the PEL, except as provided in subsection (13)(b)(ii)(B) of this section.

(iv) The employer ~~((shall))~~ must complete the steps set forth in his program by the dates in the schedule.

(v) Written programs ~~((shall))~~ must be submitted, upon request, to the director, and ~~((shall))~~ must be available at the worksite for examination and copying by the director, and any affected employee or their designated representatives.

(vi) The written programs required under subsection (5)(c) of this section ~~((shall))~~ must be revised and updated at least every six months to reflect the current status of the program and current exposure levels.

(d) Mechanical ventilation. When mechanical ventilation is used to control exposure, measurements which demonstrate the effectiveness of the system to control exposure,

such as capture velocity, duct velocity, or static pressure ~~((shall))~~ must be made at reasonable intervals.

(6) Use of respirators.

(a) General. For employees who are required to use respirators by this section, the employer must provide each employee an appropriate respirator that complies with the requirements of this section. Respirators must be used during:

(i) Periods necessary to install or implement feasible engineering controls and work-practice controls;

(ii) Maintenance and repair activities for which engineering and work-practice controls are not feasible;

(iii) Work operations for which feasible engineering and work-practice controls are not yet sufficient to reduce employee exposure to or below the permissible exposure limits;

(iv) Work operations specified under subsection (7)(a) of this section;

(v) Periods for which an employee requests a respirator.

(b) Respirator program.

(i) The employer must develop, implement and maintain a respiratory protection program as required by chapter 296-842 WAC, Respirators, which covers each employee required by this chapter to use a respirator.

(ii) Whenever a physician determines that an employee who works in an area in which the cotton-dust concentration exceeds the PEL is unable to use a respirator, including a powered air-purifying respirator, the employee must be given the opportunity to transfer to an available position, or to a position that becomes available later, that has a cotton-dust concentration at or below the PEL. The employer must ensure that such employees retain their current wage rate or other benefits as a result of the transfer.

(c) Respirator selection. The employer must:

(i) Select and provide to employees the appropriate respirators by following requirements in this section and WAC 296-842-13005, found in the respirator rule.

(ii) Provide employees with a powered air-purifying respirator (PAPR) when the employee chooses to use a PAPR instead of a negative-pressure air-purifying respirator, and the PAPR will provide adequate protection.

(iii) Limit the use of filtering facepiece respirators for protection against cotton dust to concentrations less than or equal to five times (5x) the PEL.

(iv) Provide high-efficiency particulate air (HEPA) filters or N-, R-, or P-100 series filters for powered air-purifying respirators (PAPRs) and negative-pressure air-purifying respirators when used in cotton dust concentrations greater than ten times (10x) the PEL.

(7) Work practices. Each employer ~~((shall))~~ must, regardless of the level of employee exposure, immediately establish and implement a written program of work practices which ~~((shall))~~ must minimize cotton dust exposure. The following ~~((shall))~~ must be included where applicable:

(a) Compressed air "blow down" cleaning shall be prohibited, where alternative means are feasible. Where compressed air is used for cleaning, the employees performing the "blow down" or "blow off" ~~((shall))~~ must wear suitable respirators. Employees whose presence is not required to perform "blow down" or "blow off" ~~((shall be required to))~~ must

leave the area affected by the "blow down" or "blow off" during this cleaning operation.

(b) Cleaning of clothing or floors with compressed air ~~((shall))~~ must be prohibited.

(c) Floor sweeping ~~((shall))~~ must be performed with a vacuum or with methods designed to minimize dispersal of dust.

(d) In areas where employees are exposed to concentrations of cotton dust greater than the permissible exposure limit, cotton and cotton waste ~~((shall))~~ must be stacked, sorted, baled, dumped, removed or otherwise handled by mechanical means, except where the employer can show that it is infeasible to do so. Where infeasible, the method used for handling cotton and cotton waste ~~((shall))~~ must be the method which reduces exposure to the lowest level feasible.

(8) Medical surveillance.

(a) General.

(i) Each employer covered by the standard ~~((shall))~~ must institute a program of medical surveillance for all employees exposed to cotton dust.

(ii) The employer ~~((shall assure))~~ must ensure that all medical examinations and procedures are performed by or under the supervision of a licensed physician and are provided without cost to the employee.

(iii) Persons other than licensed physicians, who administer the pulmonary function testing required by this section ~~((shall))~~ must have completed a NIOSH approved training course in spirometry.

(b) Initial examinations. The employer ~~((shall))~~ must provide medical surveillance to each employee who is or may be exposed to cotton dust. For new employees' this examination ~~((shall))~~ must be provided prior to initial assignment. The medical surveillance ~~((shall))~~ must include at least the following:

(i) A medical history;

(ii) The standardized questionnaire contained in WAC 296-62-14537; and

(iii) A pulmonary function measurement, including a determination of forced vital capacity (FVC) and forced expiratory volume in one second (FEV₁), the FEV₁/FVC ratio, and the percentage that the measured values of FEV₁ and FVC differ from the predicted values, using the standard tables in WAC 296-62-14539. These determinations ~~((shall))~~ must be made for each employee before the employee enters the workplace on the first day of the work week, preceded by at least thirty-five hours of no exposure to cotton dust. The tests ~~((shall))~~ must be repeated during the shift, no less than four hours and no more than ten hours after the beginning of the work shift; and, in any event, no more than one hour after cessation of exposure. Such exposure ~~((shall))~~ must be typical of the employee's usual workplace exposure. The predicted FEV₁ and FVC for blacks ~~((shall))~~ must be multiplied by 0.85 to adjust for ethnic differences.

(iv) Based upon the questionnaire results, each employee ~~((shall))~~ must be graded according to Schilling's byssinosis classification system.

(c) Periodic examinations.

(i) The employer ~~((shall))~~ must provide at least annual medical surveillance for all employees exposed to cotton dust above the action level in yarn manufacturing, slashing and

weaving, cotton washing and waste house operations. The employer ~~((shall))~~ must provide medical surveillance at least every two years for all employees exposed to cotton dust at or below the action level, for all employees exposed to cotton dust from washed cotton (except from washed cotton defined in subsection (9)(c) of this section), and for all employees exposed to cotton dust in cottonseed processing and waste processing operations. Periodic medical surveillance ~~((shall))~~ must include at least an update of the medical history, standardized questionnaire (Appendix B-111), Schilling byssinosis grade, and the pulmonary function measurements in (b)(iii) of this subsection.

(ii) Medical surveillance as required in (c)(i) of this subsection ~~((shall))~~ must be provided every six months for all employees in the following categories:

(A) An FEV₁ of greater than eighty percent of the predicted value, but with an FEV₁ decrement of five percent or 200 ml. on a first working day;

(B) An FEV₁ of less than eighty percent of the predicted value; or

(C) Where, in the opinion of the physician, any significant change in questionnaire findings, pulmonary function results, or other diagnostic tests have occurred.

(iii) An employee whose FEV₁ is less than sixty percent of the predicted value ~~((shall))~~ must be referred to a physician for a detailed pulmonary examination.

(iv) A comparison ~~((shall))~~ must be made between the current examination results and those of previous examinations and a determination made by the physician as to whether there has been a significant change.

(d) Information provided to the physician. The employer ~~((shall))~~ must provide the following information to the examining physician:

(i) A copy of this regulation and its appendices;

(ii) A description of the affected employee's duties as they relate to the employee's exposure;

(iii) The employee's exposure level or anticipated exposure level;

(iv) A description of any personal protective equipment used or to be used; and

(v) Information from previous medical examinations of the affected employee which is not readily available to the examining physician.

(e) Physician's written opinion.

(i) The employer ~~((shall))~~ must obtain and furnish the employee with a copy of a written opinion from the examining physician containing the following:

(A) The results of the medical examination and tests including the FEV₁, FVC, and FEV₁/FVC ratio;

(B) The physician's opinion as to whether the employee has any detected medical conditions which would place the employee at increased risk of material impairment of the employee's health from exposure to cotton dust;

(C) The physician's recommended limitations upon the employee's exposure to cotton dust or upon the employee's use of respirators including a determination of whether an employee can wear a negative pressure respirator, and where the employee cannot, a determination of the employee's ability to wear a powered air purifying respirator; and

(D) A statement that the employee has been informed by the physician of the results of the medical examination and any medical conditions which require further examination or treatment.

(ii) The written opinion obtained by the employer ~~((shall))~~ must not reveal specific findings or diagnoses unrelated to occupational exposure.

(9) Employee education and training.

(a) Training program.

(i) The employer ~~((shall))~~ must train each employee exposed to cotton dust in accordance with the requirements of this section and ~~((shall assure))~~ must ensure that each employee is informed of the following:

(A) The acute and long term health hazards associated with exposure to cotton dust;

(B) The names and descriptions of jobs and processes which could result in exposure to cotton dust at or above the PEL;

(C) The measures, including work practices required by subsection (7) of this section, necessary to protect the employee from exposures in excess of the permissible exposure limit;

(D) The purpose, proper use, limitations, and other training requirements for respiratory protection as required by subsection (6) of this section and chapter 296-842 WAC (see WAC 296-842-11005, 296-842-16005 and 296-842-19005);

(E) The purpose for and a description of the medical surveillance program required by subsection (8) of this section and other information which will aid exposed employees in understanding the hazards of cotton dust exposure; and

(F) The contents of this standard and its appendices.

(ii) The training program ~~((shall))~~ must be provided prior to initial assignment and ~~((shall))~~ must be repeated annually for each employee exposed to cotton dust, when job assignments or work processes change and when employee performance indicates a need for retraining.

(b) Access to training materials.

(i) Each employer ~~((shall))~~ must post a copy of this section with its appendices in a public location at the workplace, and ~~((shall))~~ must, upon request, make copies available to employees.

(ii) The employer ~~((shall))~~ must provide all materials relating to the employee training and information program to the director upon request.

(10) Signs.

~~((a))~~ The employer ~~((shall))~~ must post the following warning sign in each work area where the permissible exposure limit for cotton dust is exceeded:

DANGER
COTTON DUST
CAUSES DAMAGE TO LUNGS
(BYSSINOSIS)
WEAR RESPIRATORY PROTECTION IN THIS AREA

~~((b)) Prior to June 1, 2016, employers may use the following legend in lieu of that specified in (a) of this subsection:~~

WARNING
COTTON DUST WORK AREA
MAY CAUSE ACUTE OR DELAYED LUNG INJURY
(BYSSINOSIS)
RESPIRATORS REQUIRED IN THIS AREA))

(11) Recordkeeping.

(a) Exposure measurements.

(i) The employer ~~((shall))~~ must establish and maintain an accurate record of all measurements required by subsection (4) of this section.

(ii) The record ~~((shall))~~ must include:

(A) A log containing the items listed in WAC 296-62-14535 (4)(a), and the dates, number, duration, and results of each of the samples taken, including a description of the procedure used to determine representative employee exposures;

(B) The type of protective devices worn, if any, and length of time worn; and

(C) The names, Social Security number, job classifications, and exposure levels of employees whose exposure the measurement is intended to represent.

(iii) The employer ~~((shall))~~ must maintain this record for at least twenty years.

(b) Medical surveillance.

(i) The employer ~~((shall))~~ must establish and maintain an accurate medical record for each employee subject to medical surveillance required by subsection (8) of this section.

(ii) The record ~~((shall))~~ must include:

(A) The name and Social Security number and description of the duties of the employee;

(B) A copy of the medical examination results including the medical history, questionnaire response, results of all tests, and the physician's recommendation;

(C) A copy of the physician's written opinion;

(D) Any employee medical complaints related to exposure to cotton dust;

(E) A copy of this standard and its appendices, except that the employer may keep one copy of the standard and the appendices for all employees, provided that he references the standard and appendices in the medical surveillance record of each employee; and

(F) A copy of the information provided to the physician as required by subsection (8)(d) of this section.

(iii) The employer ~~((shall))~~ must maintain this record for at least twenty years.

(c) Availability.

(i) The employer ~~((shall))~~ must make all records required to be maintained by subsection (11) of this section available to the director for examination and copying.

(ii) Employee exposure measurement records and employee medical records required by this subsection ~~((shall))~~ must be provided upon request to employees, designated representatives, and the assistant director in accordance with chapter 296-802 WAC.

(d) Transfer of records.

(i) Whenever the employer ceases to do business, the successor employer ~~((shall))~~ must receive and retain all records required to be maintained by subsection (11) of this section.

(ii) The employer ((shall)) must also comply with any additional requirements involving transfer of records set forth in WAC 296-802-60005.

(12) Observation of monitoring.

(a) The employer ((shall)) must provide affected employees or their designated representatives an opportunity to observe any measuring or monitoring of employee exposure to cotton dust conducted pursuant to subsection (4) of this section.

(b) Whenever observation of the measuring or monitoring of employee exposure to cotton dust requires entry into an area where the use of personal protective equipment is required, the employer ((shall)) must provide the observer with and assure the use of such equipment and ((shall)) must require the observer to comply with all other applicable safety and health procedures.

(c) Without interfering with the measurement, observers ((shall)) must be entitled to:

(i) An explanation of the measurement procedures;

(ii) An opportunity to observe all steps related to the measurement of airborne concentrations of cotton dust performed at the place of exposure; and

(iii) An opportunity to record the results obtained.

(13) Washed cotton.

(a) Exemptions. Cotton, after it has been washed by the processes described in this section is exempt from all or parts of this section as specified if the requirements of this section are met.

(b) Initial requirements.

(i) In order for an employer to qualify as exempt or partially exempt from this standard for operations using washed cotton, the employer must demonstrate that the cotton was washed in a facility which is open to inspection by the director and the employer must provide sufficient accurate documentary evidence to demonstrate that the washing methods utilized meet the requirements of this section.

(ii) An employer who handles or processes cotton which has been washed in a facility not under the employer's control and claims an exemption or partial exemption under this paragraph, must obtain from the cotton washer and make available at the worksite, to the director, or ((his)) their designated representative, to any affected employee, or to their designated representative the following:

(A) A certification by the washer of the cotton of the grade of cotton, the type of washing process, and that the batch meets the requirements of this section:

(B) Sufficient accurate documentation by the washer of the cotton grades and washing process; and

(C) An authorization by the washer that the director may inspect the washer's washing facilities and documentation of the process.

(c) Medical and dyed cotton. Medical grade (USP) cotton, cotton that has been scoured, bleached and dyed, and mercerized yarn ((shall)) must be exempt from all provisions of this standard.

(d) Higher grade washed cotton. The handling or processing of cotton classed as "low middling light spotted or better" (color grade 52 or better and leaf grade code 5 or better according to the 1993 USDA classification system) ((shall)) must be exempt from all provisions of the standard

except requirements of subsection (8) of this section, medical surveillance; subsection (11)(b) through (d) of this section, recordkeeping-medical records, and Appendices B, C, and D of this section, if they have been washed on one of the following systems:

(i) On a continuous batt system or a rayon rinse system including the following conditions:

(A) With water;

(B) At a temperature of no less than 60°C;

(C) With a water-to-fiber ratio of no less than 40:1; and

(D) With the bacterial levels in the wash water controlled to limit bacterial contamination of the cotton.

(ii) On a batch kier washing system including the following conditions:

(A) With water;

(B) With cotton fiber mechanically opened and thoroughly pretreated before forming the cake;

(C) For low-temperature processing, at a temperature of no less than 60°C with a water-to-fiber ratio of no less than 40:1; or, for high-temperature processing, at a temperature of no less than 93°C with a water-to-fiber ratio of no less than 15:1;

(D) With a minimum of one wash cycle followed by two rinse cycles for each batch, using fresh water in each cycle; and

(E) With bacterial levels in the wash water controlled to limit bacterial contamination of the cotton.

(e) Lower grade washed cotton. The handling and processing of cotton of grades lower than "low middling light spotted," that has been washed as specified in (d) of this subsection and has also been bleached, ((shall)) must be exempt from all provisions of the standard except the requirements of subsection (3)(a) of this section, Permissible exposure limits, subsection (4) of this section, Exposure monitoring and measurement, subsection (8) of this section, Medical surveillance, subsection (11) of this section, Recordkeeping, and Appendices B, C and D of this section.

(f) Mixed grades of washed cotton. If more than one grade of washed cotton is being handled or processed together, the requirements of the grade with the most stringent exposure limit, medical and monitoring requirements ((shall)) must be followed.

(14) Appendices.

(a) Appendix B (B-I, B-II and B-III), WAC 296-62-14537, Appendix C, WAC 296-62-14539 and Appendix D, WAC 296-62-14541 are incorporated as part of this chapter and the contents of these appendices are mandatory.

(b) Appendix A of this chapter, WAC 296-62-14535 contains information which is not intended to create any additional obligations not otherwise imposed or to detract from any existing obligations.

(c) Appendix E of this chapter is a protocol which may be followed in the validation of alternative measuring devices as equivalent to the vertical elutriator cotton dust sampler. Other protocols may be used if it is demonstrated that they are statistically valid, meet the requirements in subsection (4)(a)(iii) of this section, and are appropriate for demonstrating equivalency.

AMENDATORY SECTION (Amending WSR 80-17-014, filed 11/13/80)

WAC 296-62-14535 Appendix A—Air sampling and analytical procedures for determining concentrations of cotton dust. (1) Sampling locations. The sampling procedures must be designed so that samples of the actual dust concentrations are collected accurately and consistently and reflect the concentrations of dust at the place and time of sampling. Sufficient number of six-hour area samples in each distinct work area of the plant should be collected at locations which provide representative samples of air to which the worker is exposed. In order to avoid filter overloading, sampling time may be shortened when sampling in dusty areas. Samples in each work area should be gathered simultaneously or sequentially during a normal operating period. The daily time-weighted average (TWA) exposure of each worker can then be determined by using the following formula:

$$\frac{\text{Summation of hours spent in each location and the dust concentration in that location.}}{\text{Total hours spent}}$$

A time-weighted average concentration should be computed for each worker and properly logged and maintained on file for review.

(2) Sampling equipment.

(a) Sampler. The instrument selected for monitoring is the Lumsden-Lynch vertical elutriator. It should operate at a flow rate of 7.4 ± 0.2 liters/minute. The samplers should be cleaned prior to sampling. The pumps should be monitored during sampling.

(b) Filter holder. A three-piece cassette constructed of polystyrene designed to hold a 37-mm diameter filter should be used. Care must be exercised to insure that an adequate seal exists between elements of the cassette.

(c) Filters and support pads. The membrane filters used should be polyvinyl chloride with a 5-um pore size and 37-mm diameter. A support pad, commonly called a backup pad, should be used under the filter membrane in the field monitor cassette.

(d) Balance. A balance sensitive to 10 micrograms should be used.

(3) Instrument calibration procedure. Samplers (~~shall~~) must be calibrated when first received from the factory, after repair, and after receiving any abuse. The samplers should be calibrated in the laboratory both before they are used in the field and after they have been used to collect a large number of field samples. The primary standard, such as a spirometer or other standard calibrating instruments such as a wet test meter or a large bubble meter or dry gas meter, should be used. Instructions for calibration with the wet test meter follow. If another calibration device is selected, equivalent procedures should be used:

(a) Level wet test meter. Check the water level which should just touch the calibration point at the left side of the meter. If water level is low, add water 1-2°F. warmer than room temperature of till point. Run the meter for thirty minutes before calibration;

(b) Place the polyvinyl chloride membrane filter in the filter cassette;

(c) Assemble the calibration sampling train;

(d) Connect the wet test meter to the train.

The pointer on the meter should run clockwise and a pressure drop of not more than 1.0 inch of water indicated. If the pressure drop is greater than 1.0, disconnect and check the system;

(e) Operate the system for ten minutes before starting the calibration;

(f) Check the vacuum gauge on the pump to insure that the pressure drop across the orifice exceeds seventeen inches of mercury;

(g) Record the following on calibration data sheets:

(i) Wet test meter reading, start and finish;

(ii) Elapsed time, start and finish (at least two minutes);

(iii) Pressure drop at manometer;

(iv) Air temperature;

(v) Barometric pressure; and

(vi) Limiting orifice number.

(h) Calculate the flow rate and compare against the flow of 7.4 ± 0.2 liters/minute. If flow is between these limits, perform calibration again, average results, and record orifice number and flow rate. If flow is not within these limits, discard or modify orifice and repeat procedure;

(i) Record the name of the person performing the calibration, the date, serial number of the wet test meter, and the number of the critical orifices being calibrated.

(4) Sampling procedure.

(a) Sampling data sheets should include a log of:

(i) The date of the sample collection;

(ii) The time of sampling;

(iii) The location of the sampler;

(iv) The sampler serial number;

(v) The cassette number;

(vi) The time of starting and stopping the sampling and the duration of sampling;

(vii) The weight of the filter before and after sampling;

(viii) The weight of dust collected (corrected for controls);

(ix) The dust concentration measured;

(x) Other pertinent information; and

(xi) Name of person taking sample.

(b) Assembly of filter cassette should be as follows:

(i) Loosely assemble three-piece cassette;

(ii) Number cassette;

(iii) Place absorbent pad in cassette;

(iv) Weigh filter to an accuracy of 10 µg;

(v) Place filter in cassette;

(vi) Record weight of filter in log, using cassette number for identification;

(vii) Fully assemble cassette, using pressure to force parts tightly together;

(viii) Install plugs top and bottom;

(ix) Put shrink band on cassette, covering joint between center and bottom parts of cassette; and

(x) Set cassette aside until shrink band dries thoroughly.

(c) Sampling collection should be performed as follows:

(i) Clean lint out of the motor and elutriator;

(ii) Install vertical elutriator in sampling locations specified above with inlet 4-1/2 to 5-1/2 feet from floor (breathing zone height);

(iii) Remove top section of cassette;

- (iv) Install cassette in ferrule of elutriator;
- (v) Tape cassette to ferrule with masking tape or similar material for air-tight seal;
- (vi) Remove bottom plug of cassette and attach hose containing critical orifice;
- (vii) Start elutriator pump and check to see if gauge reads above 17 in. of Hg vacuum;
- (viii) Record starting time, cassette number, and sampler number;
- (ix) At end of sampling period stop pump and record time; and
- (x) Controls with each batch of samples collected, two additional filter cassettes should be subjected to exactly the same handling as the samples, except that they are not opened. These control filters should be weighed in the same manner as the sample filters.

Any difference in weight in the control filters would indicate that the procedure for handling sample filters may not be adequate and should be evaluated to ascertain the cause of the difference, whether and what necessary corrections must be made, and whether additional samples must be collected.

(d) Shipping. The cassette with samples should be collected, along with the appropriate number of blanks, and shipped to the analytical laboratory in a suitable container to prevent damage in transit.

(e) Weighing of the sample should be achieved as follows:

- (i) Remove shrink band;
 - (ii) Remove top and middle sections of cassette and bottom plug;
 - (iii) Remove filter from cassette and weigh to an accuracy of 10 μg ; and
 - (iv) Record weight in log against original weight.
- (f) Calculation of volume of air sampled should be determined as follows:

(i) From starting and stopping times of sampling period, determine length of time in minutes of sampling period; and

(ii) Multiply sampling time in minutes by flow rate of critical orifice in liters per minute and divide by 1000 to find air quantity in cubic meters.

(g) Calculation of dust concentrations should be made as follows:

(i) Subtract weight of clean filter from dirty filter and apply control correction to find actual weight of sample. Record this weight (in μg) in log; and

(ii) Divide mass of sample in μg by air volume in cubic meters to find dust concentration in $\mu\text{g}/\text{m}$. Record in log.

AMENDATORY SECTION (Amending WSR 88-14-108, filed 7/6/88)

WAC 296-62-14541 Appendix D—Pulmonary function standards for cotton dust standard. The spirometric measurements of pulmonary function ~~((shall))~~ **must** conform to the following minimum standards, and these standards are not intended to preclude additional testing or alternate methods which can be determined to be superior.

(1) Apparatus.

(a) The instrument ~~((shall))~~ **must** be accurate to within ± 50 milliliters or within ± 3 percent of reading, whichever is greater.

(b) The instrument should be capable of measuring vital capacity from 0 to 7 liters BTPS.

(c) The instrument ~~((shall))~~ **must** have a low inertia and offer low resistance to airflow such that the resistance to airflow at 12 liters per second must be less than 1.5 cm. $\text{H}_2\text{O}/\text{liter}/\text{sec}$.

(d) The zero time point for the purpose of timing the FEV_1 ~~((shall))~~ **must** be determined by extrapolating the steepest portion of the volume time curve back to the maximal inspiration volume (1, 2, 3, 4) or by an equivalent method.

(e) Instruments incorporating measurements of airflow to determine volume ~~((shall))~~ **must** conform to the same volume accuracy stated in (a) of this subsection when presented with flow rates from at least 0 to 12 liters per second.

(f) The instrument or user of the instrument must have means of correcting volumes to a body temperature saturated with water vapor (BTPS) under conditions of varying ambient spirometer temperatures and barometric pressures.

(g) The instrument used ~~((shall))~~ **must** provide a tracing or display of either flow versus volume or volume versus time during the entire forced expiration. A tracing or display is necessary to determine whether the patient has performed the test properly. The tracing must be stored and available for recall and must be of sufficient size that hand measurements may be made within requirement of (a) of this subsection. If a paper record is made it must have a paper speed of at least 2 cm/sec and a volume sensitivity of at least 10.0 mm of chart per liter of volume.

(h) The instrument ~~((shall))~~ **must** be capable of accumulating volume for a minimum of ten seconds and ~~((shall))~~ **must** not stop accumulating volume before (i) the volume change for a 0.5 second interval is less than 25 milliliters or (ii) the flow is less than 50 milliliters per second for a 0.5 second interval.

(i) The forced vital capacity (FVC) and forced expiratory volume in 1 second $\text{FEV}_{1.0}$ measurements ~~((shall))~~ **must** comply with the accuracy requirements stated in (a) of this subsection. That is, they should be accurately measured to within ± 50 ml or within ± 3 percent of reading, whichever is greater.

(j) The instrument must be capable of being calibrated in the field with respect to the FEV_1 and FVC. This calibration of the FEV_1 and FVC may be either directly or indirectly through volume and time base measurements. The volume calibration source should provide a volume displacement of at least 2 liters and should be accurate to within ± 30 milliliters.

(2) Technique for measurement of forced vital capacity maneuver.

(a) Use of a nose clip is recommended but not required. The procedures ~~((shall))~~ **must** be explained in simple terms to the patient who ~~((shall))~~ **must** be instructed to loosen any tight clothing and stand in front of the apparatus. The subject may sit, but care should be taken on repeat testing that same position be used and, if possible, the same spirometer. Partic-

ular attention ~~((shall))~~ must be given to insure that the chin is slightly elevated with the neck slightly extended. The patient ~~((shall))~~ must be instructed to make a full inspiration from a normal breathing pattern and then blow into the apparatus, without interruption, as hard, fast, and completely as possible. At least three forced expirations ~~((shall))~~ must be carried out. During the maneuvers, the patient ~~((shall))~~ must be observed for compliance with instructions. The expirations ~~((shall))~~ must be checked visually for reproducibility from flow-volume or volume-time tracings or displays. The following efforts ~~((shall))~~ must be judged unacceptable when the patient:

- (i) Has not reached full inspiration preceding the forced expiration,
- (ii) Has not used maximal effort during the entire forced expiration,
- (iii) Has not continued the expiration for at least 5 seconds or until an obvious plateau in the volume time curve has occurred,
- (iv) Has coughed or closed his glottis,
- (v) Has an obstructed mouthpiece or a leak around the mouthpiece (obstruction due to tongue being placed in front of mouthpiece, false teeth falling in front of mouthpiece, etc.),
- (vi) Has an unsatisfactory start of expiration, one characterized by excessive hesitation (or false starts), and therefore not allowing back extrapolation of time 0 (extrapolated volume on the volume time tracing must be less than 10 percent of the FVC),
- (vii) Has an excessive variability between the three acceptable curves. The variation between the two largest FVC's and FEV₁'s of the three satisfactory tracings should not exceed ten percent or \pm 100 milliliters, whichever is greater.

(b) Periodic and routine recalibration of the instrument or method for recording FVC and FEV_{1.0} should be performed using a syringe or other volume source of at least 2 liters.

(3) Interpretation of spirogram.

(a) The first step in evaluating a spirogram should be to determine whether or not the patient has performed the test properly or as described in subsection (2) of this section. From the three satisfactory tracings, the forced vital capacity (FVC) and forced expiratory volume in one second (FEV_{1.0}) ~~((shall))~~ must be measured and recorded. The largest observed FVC and largest observed FEV_{1.0} ~~((shall))~~ must be used in the analysis regardless of the curve(s) on which they occur.

(b) The following guidelines are recommended by NIOSH for the evaluation and management of workers exposed to cotton dust. It is important to note that employees who show reductions in FEV₁/FVC ratio below .75 or drops in Monday FEV₁ of five percent or greater on their initial screening exam, should be reevaluated within a month of the first exam. Those who show consistent decrease in lung function, as shown on the following table, should be managed as recommended.

(4) Qualifications of personnel administering the test.

Technicians who perform pulmonary function testing should have the basic knowledge required to produce meaningful results. Training consisting of approximately sixteen hours of formal instruction should cover the following areas.

- (a) Basic physiology of the forced vital capacity maneuver and the determinants of airflow limitation with emphasis on the relation to reproducibility of results.
- (b) Instrumentation requirements including calibration procedures, sources of error and their correction.
- (c) Performance of the testing including subject coaching, recognition of improperly performed maneuvers and corrective actions.
- (d) Data quality with emphasis on reproducibility.
- (e) Actual use of the equipment under supervised conditions.
- (f) Measurement of tracings and calculations of results.

AMENDATORY SECTION (Amending Order 77-14, filed 7/25/77)

WAC 296-62-20001 Definitions. For the purpose of this section:

~~((1))~~ **Authorized person.**⁽¹⁾ Any person specifically authorized by the employer whose duties require the person to enter a regulated area, or any person entering such an area as a designated representative of employees for the purpose of exercising the opportunity to observe monitoring and measuring procedures under WAC 296-62-20025.

~~((2))~~ **Beehive oven.**⁽²⁾ A coke oven in which the products of carbonization other than coke are not recovered, but are released into the ambient air.

~~((3))~~ **Coke oven.**⁽³⁾ A retort in which coke is produced by the destructive distillation or carbonization of coal.

~~((4))~~ **Coke oven battery.**⁽⁴⁾ A structure containing a number of slot-type coke ovens.

~~((5))~~ **Coke oven emissions.**⁽⁵⁾ The benzenesoluble fraction of total particulate matter present during the destructive distillation or carbonization of coal for the production of coke.

~~((6))~~ **Director.**⁽⁶⁾ The director of the department of labor and industries or ~~((his or her))~~ their authorized representative.

~~((7))~~ **Emergency.**⁽⁷⁾ Any occurrence such as, but not limited to, equipment failure which is likely to, or does, result in any massive release of coke oven emissions.

~~((8))~~ **Existing coke oven battery.**⁽⁸⁾ A battery in operation or under construction on January 20, 1977, and which is not rehabilitated.

~~((9))~~ **Green push.** Coke which when removed from the oven results in emissions due to the presence of unvolatilized coal.

Pipeline charging. Any apparatus used to introduce coal into an oven which uses a pipe or duct permanently mounted onto an oven and through which coal is charged.

Rehabilitated coke oven battery.⁽⁹⁾ A battery which is rebuilt, overhauled, renovated, or restored such as from the pad up, after January 20, 1977.

~~((10))~~ **Sequential charging.** A procedure, usually automatically timed, by which a predetermined volume of

coal in each larry car hopper is introduced into an oven such that no more than two hoppers commence or finish discharging simultaneously although, at some point, all hoppers are discharging simultaneously.

Stage charging.⁽¹¹⁾ A procedure by which a predetermined volume of coal in each larry car hopper is introduced into an oven such that no more than two hoppers are discharging simultaneously.

~~((11) "Sequential charging." A procedure, usually automatically timed, by which a predetermined volume of coal in each larry car hopper is introduced into an oven such that no more than two hoppers commence or finish discharging simultaneously although, at some point, all hoppers are discharging simultaneously.~~

(12) "Pipeline charging." Any apparatus used to introduce coal into an oven which uses a pipe or duct permanently mounted onto an oven and through which coal is charged.

(13) "Green push." Coke which when removed from the oven results in emissions due to the presence of unvolatized coal.)

AMENDATORY SECTION (Amending Order 77-14, filed 7/25/77)

WAC 296-62-2003 Permissible exposure limit. The employer ~~((shall assure))~~ must ensure that no employee is exposed to coke oven emissions at concentrations greater than 150 micrograms per cubic meter of air (150 ug/m³), averaged over any 8-hour period.

AMENDATORY SECTION (Amending Order 77-14, filed 7/25/77)

WAC 296-62-2005 Regulated areas. (1) The employer ~~((shall))~~ must establish regulated areas and ~~((shall))~~ must limit access to them to authorized persons.

(2) The employer ~~((shall))~~ must establish the following as regulated areas:

(a) The coke oven battery including topside and its machinery, pushside and its machinery, coke side and its machinery, and the battery ends; the wharf; and the screening station;

(b) The beehive oven and its machinery.

AMENDATORY SECTION (Amending Order 77-14, filed 7/25/77)

WAC 296-62-2007 Exposure monitoring and measurement. (1) Monitoring program.

(a) Each employer who has a place of employment where coke oven emissions are present ~~((shall))~~ must monitor employees employed in the regulated area to measure their exposure to coke oven emissions.

(b) The employer ~~((shall))~~ must obtain measurements which are representative of each employee's exposure to coke oven emissions over an eight-hour period. All measurements ~~((shall))~~ must determine exposure without regard to the use of respiratory protection.

(c) The employer ~~((shall))~~ must collect full-shift (for at least seven continuous hours) personal samples, including at least one sample during each shift for each battery and each

job classification within the regulated areas including at least the following job classifications:

- (i) Lidman;
- (ii) Tar chaser;
- (iii) Larry car operator;
- (iv) Luterman;
- (v) Machine operator, coke side;
- (vi) Benchman, coke side;
- (vii) Benchman, pusher side;
- (viii) Heater;
- (ix) Quenching car operator;
- (x) Pusher machine operator;
- (xi) Screening station operator;
- (xii) Wharfman;
- (xiii) Oven patcher;
- (xiv) Oven repairman;
- (xv) Spellman; and
- (xvi) Maintenance personnel.

(d) The employer ~~((shall))~~ must repeat the monitoring and measurements required by subsection (1) of this section at least every three months.

(2) Redetermination. Whenever there has been a production, process, or control change which may result in new or additional exposure to coke oven emissions, or whenever the employer has any other reason to suspect an increase in employee exposure, the employer ~~((shall))~~ must repeat the monitoring and measurements required by subsection (1) of this section for those employees affected by such change or increase.

(3) Employee notification.

(a) The employer ~~((shall))~~ must notify each employee in writing of the exposure measurements which represent that employee's exposure within five working days after the receipt of the results of measurements required by subsection (1) and (2) of this section.

(b) Whenever such results indicate that the representative employee exposure exceeds the permissible exposure limit, the employer ~~((shall))~~ must, in such notification, inform each employee of that fact and of the corrective action being taken to reduce exposure to or below the permissible exposure limit.

(4) Accuracy of measurement. The employer ~~((shall))~~ must use a method of monitoring and measurement which has an accuracy (with a confidence level of 95%) of not less than plus or minus 35% for concentrations of coke oven emissions greater than or equal to 150 Ug/m³.

AMENDATORY SECTION (Amending WSR 88-23-054, filed 11/14/88)

WAC 296-62-2009 Methods of compliance. The employer ~~((shall))~~ must control employee exposure to coke oven emissions by the use of engineer controls, work practices and respiratory protection as follows:

(1) Priority of compliance methods.

(a) Existing coke oven batteries.

(i) The employer ~~((shall))~~ must institute the engineer and work practice controls listed in subsections (2), (3) and (4) of this section in existing coke oven batteries at the earliest possible time, but not later than January 20, 1980, except to the

extent that the employer can establish that such controls are not feasible. In determining the earliest possible time for institution of engineer and work practice controls, the requirement, effective August 27, 1971, to implement feasible administrative or engineer controls to reduce exposures to coal tar pitch volatiles, ~~((shall))~~ must be considered. Whenever the engineer and work practice controls which can be instituted are not sufficient to reduce employee exposures to or below the permissible exposure limit, the employer ~~((shall))~~ must nonetheless use them to reduce exposures to the lowest level achievable by these controls and ~~((shall))~~ must supplement them by the use of respiratory protection which complies with the requirements of WAC 296-62-20011.

(ii) The engineer and work practice controls required under subsections (2), (3) and (4) of this section are minimum requirements generally applicable to all existing coke oven batteries. If, after implementing all controls required by subsections (2), (3) and (4) of this section, or after January 20, 1980, whichever is sooner, employee exposures still exceed the permissible exposure limit, employers ~~((shall))~~ must implement any other engineer and work practice controls necessary to reduce exposure to or below the permissible exposure limit except to the extent that the employer can establish that such controls are not feasible. Whenever the engineer and work practice controls which can be instituted are not sufficient to reduce employee exposures to or below the permissible exposure limit, the employer ~~((shall))~~ must nonetheless use them to reduce exposures to the lowest level achievable by these controls and ~~((shall))~~ must supplement them by the use of respiratory protection which complies with the requirements of WAC 296-62-20011.

(b) New or rehabilitated coke oven batteries.

(i) The employer ~~((shall))~~ must institute the best available engineer and work practice controls on all new or rehabilitated coke oven batteries to reduce and maintain employee exposures at or below the permissible exposure limit, except to the extent that the employer can establish that such controls are not feasible. Whenever the engineer and work practice controls which can be instituted are not sufficient to reduce employee exposures to or below the permissible exposure limit, the employer ~~((shall))~~ must nonetheless use them to reduce exposures to the lowest level achievable by these controls and ~~((shall))~~ must supplement them by the use of respiratory protection which complies with the requirements of WAC 296-62-20011.

(ii) If, after implementing all the engineer and work practice controls required by (b)(i) of this subsection, employee exposures still exceed the permissible exposure limit, the employer ~~((shall))~~ must implement any other engineer and work practice controls necessary to reduce exposure to or below the permissible exposure limit except to the extent that the employer can establish that such controls are not feasible. Whenever the engineer and work practice controls which can be instituted are not sufficient to reduce employee exposures to or below the permissible exposure limit, the employer ~~((shall))~~ must nonetheless use them to reduce exposures to the lowest level achievable by these controls and ~~((shall))~~ must supplement them by the use of respiratory protection

which complies with the requirements of WAC 296-62-20011.

(c) Beehive ovens.

(i) The employer ~~((shall))~~ must institute engineer and work practice controls on all beehive ovens at the earliest possible time to reduce and maintain employee exposures at or below the permissible exposure limit, except to the extent that the employer can establish that such controls are not feasible. In determining the earliest possible time for institution of engineer and work practice controls, the requirement, effective August 27, 1971, to implement feasible administrative or engineer controls to reduce exposures to coal tar pitch volatiles, ~~((shall))~~ must be considered. Whenever the engineer and work practice controls which can be instituted are not sufficient to reduce employee exposures to or below the permissible exposure limit, the employer ~~((shall))~~ must nonetheless use them to reduce exposures to the lowest level achievable by these controls and ~~((shall))~~ must supplement them by the use of respiratory protection which complies with the requirements of WAC 296-62-20011.

(ii) If, after implementing all engineer and work practice controls required by (c)(i) of this subsection, employee exposures still exceed the permissible exposure limit, the employer ~~((shall))~~ must implement any other engineer and work practice controls necessary to reduce exposures to or below the permissible exposure limit except to the extent that the employer can establish that such controls are not feasible. Whenever the engineer and work practice controls which can be instituted are not sufficient to reduce employee exposures to or below the permissible exposure limit, the employer ~~((shall))~~ must nonetheless use them to reduce exposures to the lowest level achievable by these controls and ~~((shall))~~ must supplement them by the use of respiratory protection which complies with the requirements of WAC 296-62-20011.

(2) Engineer controls.

(a) Charging. The employer ~~((shall))~~ must equip and operate existing coke oven batteries with all of the following engineer controls to control coke oven emissions during charging operations:

(i) One of the following methods of charging:

(A) Stage charging as described in subsection (3)(a)(ii) of this section; or

(B) Sequential charging as described in subsection (3)(a)(ii) of this section except that subsection (3)(a)(ii) and (3)(d) of this section does not apply to sequential charging; or

(C) Pipeline charging or other forms of enclosed charging in accordance with (a) of this subsection, except (a)(ii), (iv), (v), (vi) and (viii) of this subsection do not apply.

(ii) Drafting from two or more points in the oven being charged, through the use of double collector mains, or a fixed or moveable jumper pipe system to another oven, to effectively remove the gases from the oven to the collector mains;

(iii) Aspiration systems designed and operated to provide sufficient negative pressure and flow volume to effectively move the gases evolved during charging into the collector mains, including sufficient steam pressure, and steam jets of sufficient diameter;

(iv) Mechanical volumetric controls on each larry car hopper to provide the proper amount of coal to be charged

through each charging hole so that the tunnel head will be sufficient to permit the gases to move from the oven into the collector mains;

(v) Devices to facilitate the rapid and continuous flow of coal into the oven being charged, such as stainless steel liners, coal vibrators or pneumatic shells;

(vi) Individually operated larry car drop sleeves and slide gates designed and maintained so that the gases are effectively removed from the oven into the collector mains;

(vii) Mechanized gooseneck and standpipe cleaners;

(viii) Air seals on the pusher machine leveler bars to control air infiltration during charging; and

(ix) Roof carbon cutters or a compressed air system or both on the pusher machine rams to remove roof carbon.

(b) Coking. The employer (~~shall~~) must equip and operate existing coke oven batteries with all of the following engineer controls to control coke oven emissions during coking operations:

(i) A pressure control system on each battery to obtain uniform collector main pressure;

(ii) Ready access to door repair facilities capable of prompt and efficient repair of doors, door sealing edges and all door parts;

(iii) An adequate number of spare doors available for replacement purposes;

(iv) Chuck door gaskets to control chuck door emissions until such door is repaired, or replaced; and

(v) Heat shields on door machines.

(3) Work practice controls.

(a) Charging. The employer (~~shall~~) must operate existing coke oven batteries with all of the following work practices to control coke oven emissions during the charging operation:

(i) Establishment and implementation of a detailed, written inspection and cleaning procedure for each battery consisting of at least the following elements:

(A) Prompt and effective repair or replacement of all engineer controls;

(B) Inspection and cleaning of goosenecks and standpipes prior to each charge to a specified minimum diameter sufficient to effectively move the evolved gases from the oven to the collector mains;

(C) Inspection for roof carbon build-up prior to each charge and removal of roof carbon as necessary to provide an adequate gas channel so that the gases are effectively moved from the oven into the collector mains;

(D) Inspection of the steam aspiration system prior to each charge so that sufficient pressure and volume is maintained to effectively move the gases from the oven to the collector mains;

(E) Inspection of steam nozzles and liquor sprays prior to each charge and cleaning as necessary so that the steam nozzles and liquor sprays are clean;

(F) Inspection of standpipe caps prior to each charge and cleaning and luting or both as necessary so that the gases are effectively moved from the oven to the collector mains; and

(G) Inspection of charging holes and lids for cracks, warpage and other defects prior to each charge and removal of carbon to prevent emissions, and application of luting

material to standpipe and charging hole lids where necessary to obtain a proper seal.

(ii) Establishment and implementation of a detailed written charging procedure, designed and operated to eliminate emissions during charging for each battery, consisting of at least the following elements:

(A) Larry car hoppers filled with coal to a predetermined level in accordance with the mechanical volumetric controls required under subsection (2)(a)(iv) of this section so as to maintain a sufficient gas passage in the oven to be charged;

(B) The larry car aligned over the oven to be charged, so that the drop sleeves fit tightly over the charging holes; and

(C) The oven charged in accordance with the following sequence of requirements:

(I) The aspiration system turned on;

(II) Coal charged through the outermost hoppers, either individually or together, depending on the capacity of the aspiration system to collect the gases involved;

(III) The charging holes used under (a)(ii) and (b) of this subsection relidged or otherwise sealed off to prevent leakage of coke oven emissions;

(IV) If four hoppers are used, the third hopper discharged and relidged or otherwise sealed off to prevent leakage of coke oven emissions;

(V) The final hopper discharged until the gas channel at the top of the oven is blocked and then the chuck door opened and the coal leveled;

(VI) When the coal from the final hopper is discharged and the leveling operation complete, the charging hole relidged or otherwise sealed off to prevent leakage of coke oven emissions; and

(VII) The aspiration system turned off only after the charging holes have been closed.

(VIII) Establishment and implementation of a detailed written charging procedure, designed and operated to eliminate emissions during charging of each pipeline or enclosed charged battery.

(b) Coking. The employer (~~shall~~) must operate existing coke oven batteries pursuant to a detailed written procedure established and implemented for the control of coke oven emissions during coking, consisting of at least the following elements:

(i) Checking oven back pressure controls to maintain uniform pressure conditions in the collecting main;

(ii) Repair, replacement and adjustment of oven doors and check doors and replacement of door jambs so as to provide a continuous metal-to-metal fit;

(iii) Cleaning of oven doors, chuck doors and door jambs each coking cycle so as to provide an effective seal;

(iv) An inspection system and corrective action program to control door emissions to the maximum extent possible; and

(v) Luting of doors that are sealed by luting each coking cycle and reluting, replacing or adjusting as necessary to control leakage.

(c) Pushing. The employer (~~shall~~) must operate existing coke oven batteries with the following work practices to control coke oven emissions during pushing operations:

(i) Coke and coal spillage quenched as soon as practicable and not shoveled into a heated oven; and

(ii) A detailed written procedure for each battery established and implemented for the control of emissions during pushing consisting of the following elements:

(A) Dampering off the ovens and removal of charging hole lids to effectively control coke oven emissions during the push;

(B) Heating of the coal charge uniformly for a sufficient period so as to obtain proper coking including preventing green pushes;

(C) Prevention of green pushes to the maximum extent possible;

(D) Inspection, adjustment and correction of heating flue temperatures and defective flues at least weekly and after any green push, so as to prevent green pushes;

(E) Cleaning of heating flues and related equipment to prevent green pushes, at least weekly and after any green push.

(d) Maintenance and repair. The employer ~~((shall))~~ must operate existing coke oven batteries pursuant to a detailed written procedure of maintenance and repair established and implemented for the effective control of coke oven emissions consisting of the following elements:

(i) Regular inspection of all controls, including goose-necks, standpipes, standpipe caps, charging hole lids and castings, jumper pipes and air seals for cracks, misalignment or other defects and prompt implementation of the necessary repairs as soon as possible;

(ii) Maintaining the regulated area in a neat, orderly condition free of coal and coke spillage and debris;

(iii) Regular inspection of the damper system, aspiration system and collector main for cracks or leakage, and prompt implementation of the necessary repairs;

(iv) Regular inspection of the heating system and prompt implementation of the necessary repairs;

(v) Prevention of miscellaneous fugitive topside emissions;

(vi) Regular inspection and patching of over brickwork;

(vii) Maintenance of battery equipment and controls in good working order;

(viii) Maintenance and repair of coke oven doors, chuck doors, door jambs and seals; and

(ix) Repairs instituted and completed as soon as possible, including temporary repair measures instituted and completed where necessary, including but not limited to:

(A) Prevention of miscellaneous fugitive topside emissions; and

(B) Chuck door gaskets, which ~~((shall))~~ must be installed prior to the start of the next coking cycle.

(4) Filtered air.

(a) The employer ~~((shall))~~ must provide positive-pressure, temperature controlled filtered air for larry car, pusher machine, door machine, and quench car cabs.

(b) The employer ~~((shall))~~ must provide standby pulpits on the battery topside, at the wharf, and at the screening station, equipped with positive-pressure, temperature controlled filtered air.

(5) Emergencies. Whenever an emergency occurs, the next coking cycle may not begin until the cause of the emergency is determined and corrected, unless the employer can

establish that it is necessary to initiate the next coking cycle in order to determine the cause of the emergency.

(6) Compliance program.

(a) Each employer ~~((shall))~~ must establish and implement a written program to reduce exposures solely by means of the engineer and work practice controls specified in subsections (2) through (4) of this section.

(b) The written program ~~((shall))~~ must include at least the following:

(i) A description of each coke oven operation by battery, including work force and operating crew, coking time, operating procedures and maintenance practices;

(ii) Engineer plans and other studies used to determine the controls for the coke battery;

(iii) A report of the technology considered in meeting the permissible exposure limit;

(iv) Monitoring data obtained in accordance with WAC 296-62-20007.

(v) A detailed schedule for the implementation of the engineer and work practice controls specified in subsections (2) through (4) of this section; and

(vi) Other relevant information.

(c) If, after implementing all controls required by subsections (2) through (4) of this section, or after January 20, 1980, whichever is sooner, or after completion of a new or rehabilitated battery the permissible exposure limit is still exceeded, the employer ~~((shall))~~ must develop a detailed written program and schedule for the implementation of any additional engineer controls and work practices necessary to reduce exposure to or below the permissible exposure limit.

(d) Written plans for such programs ~~((shall))~~ must be submitted, upon request, to the director, and ~~((shall))~~ must be available at the worksite for examination and copying by the director, and the authorized employee representative. The plans required under this subsection ~~((shall))~~ must be revised and updated at least every six months to reflect the current status of the program.

(7) Training in compliance procedures. The employer ~~((shall))~~ must incorporate all written procedures and schedules required under this section in the education and training program required under WAC 296-62-20019 and, where appropriate, post in the regulated area.

AMENDATORY SECTION (Amending WSR 01-11-038, filed 5/9/01, effective 9/1/01)

WAC 296-62-20013 Protective clothing and equipment. (1) Provision and Use. The employer ~~((shall))~~ must provide and ~~((assure))~~ ensure the use of appropriate protective clothing and equipment, such as but not limited to:

(a) Flame resistant jacket and pants;

(b) Flame resistant gloves;

(c) Face shields or vented goggles which comply with WAC 296-800-160;

(d) Footwear providing insulation from hot surfaces;

(e) Safety shoes which comply with WAC 296-800-160; and

(f) Protective helmets which comply with WAC 296-800-160.

(2) Cleaning and Replacement.

(a) The employer (~~(shall)~~) must provide the protective clothing required by subsection (1)(a) and (b) of this section in a clean and dry condition at least weekly.

(b) The employer (~~(shall)~~) must clean, launder, or dispose of protective clothing required by subsection ~~((s))~~ (1)(a) and (b) of this section.

(c) The employer (~~(shall)~~) must repair or replace the protective clothing and equipment as needed to maintain their effectiveness.

(d) The employer (~~(shall assure))~~) must ensure that all protective clothing is removed at the completion of a work shift only in change rooms prescribed in WAC 296-62-20015.

(e) The employer (~~(shall assure))~~) must ensure that contaminated protective clothing which is to be cleaned, laundered, or disposed of, is placed in a closed container in the changeroom.

(f) The employer (~~(shall)~~) must inform any person who cleans or launders protective clothing required by this section, of the potentially harmful effects of exposure to coke oven emissions.

AMENDATORY SECTION (Amending WSR 03-18-090, filed 9/2/03, effective 11/1/03)

WAC 296-62-20015 Hygiene facilities and practices.

(1) Change rooms. The employer (~~(shall)~~) must provide clean change rooms equipped with storage facilities for street clothes and separate storage facilities for protective clothing and equipment whenever employees are required to wear protective clothing and equipment in accordance with WAC 296-62-20013.

(2) Showers.

(a) The employer (~~(shall assure))~~) must ensure that employees working in the regulated area shower at the end of the work shift.

(b) The employer (~~(shall)~~) must provide shower facilities in accordance with WAC 296-800-230.

(3) Lunchrooms. The employer (~~(shall)~~) must provide lunchroom facilities which have a temperature controlled, positive pressure, filtered air supply, and which are readily accessible to employees working in the regulated area.

(4) Lavatories.

(a) The employer (~~(shall assure))~~) must ensure that employees working in the regulated area wash their hands and face prior to eating.

(b) The employer (~~(shall)~~) must provide lavatory facilities in accordance with WAC 296-800-230.

(5) Prohibition of activities in the regulated area.

(a) The employer (~~(shall assure))~~) must ensure that in the regulated area, food or beverages are not present or consumed, smoking products are not present or used, and cosmetics are not applied, except, that these activities may be conducted in the lunchrooms, change rooms and showers required under subsections ~~((+)-(3))~~ (1) through (3) of this section.

(b) Drinking water may be consumed in the regulated area.

AMENDATORY SECTION (Amending WSR 99-17-094, filed 8/17/99, effective 12/1/99)

WAC 296-62-20017 Medical surveillance. (1) General requirements.

(a) Each employer (~~(shall)~~) must institute a medical surveillance program for all employees who are employed in the regulated areas at least 30 days per year.

(b) This program (~~(shall)~~) must provide each employee covered under subsection (1)(a) of this section with an opportunity for medical examinations in accordance with this section.

(c) The employer (~~(shall)~~) must inform any employee who refuses any required medical examination of the possible health consequences of such refusal and (~~(shall)~~) must obtain a signed statement from the employee indicating that the employee understands the risk involved in the refusal to be examined.

(d) The employer (~~(shall assure))~~) must ensure that all medical examinations and procedures are performed by or under the supervision of a licensed physician, and are provided without cost to the employee.

(2) Initial examinations. At the time of initial assignment to a regulated area or upon the institution of the medical surveillance program, the employer (~~(shall)~~) must provide a medical examination including at least the following elements:

(a) A work history and medical history which (~~(shall)~~) must include smoking history and the presence and degree of respiratory symptoms, such as breathlessness, cough, sputum production, and wheezing;

(b) A 14" x 17" posterior-anterior chest X-ray and International Labour Office UICC/Cincinnati (ILO U/C) rating;

(c) Pulmonary function tests including forced vital capacity (FVC) and forced expiratory volume at one second (FEV 1.0) with recording of type of equipment used;

(d) Weight;

(e) A skin examination;

(f) Urinalysis for sugar, albumin, and hematuria; and

(g) A urinary cytology examination.

(3) Periodic examinations.

(a) The employer (~~(shall)~~) must provide the examinations specified in subsection ~~((s)-(2)(a)-(f))~~ (2)(a) through (f) of this section at least annually for employees covered under subsection (1)(a) of this section.

(b) The employer (~~(shall)~~) must provide the examinations specified in subsection (2)(a) and ~~((e)-(g))~~ (c) through (g) of this section at least semi-annually for employees forty-five years of age or older or with five or more years employment in the regulated area.

(c) Whenever an employee who is forty-five years of age or older or with five or more years employment in the regulated area transfers or is transferred from employment in a regulated area, the employer (~~(shall)~~) must continue to provide the examinations specified in subsection ~~((s))~~ (2)(a) and ~~((e)-(g))~~ (c) through (g) of this section semi-annually, as long as that employee is employed by the same employer or a successor employer.

(d) The employer (~~(shall)~~) must provide the X-ray specified in subsection (2)(b) of this section at least annually for employees covered under this subsection.

(e) Whenever an employee has not taken the examination specified in subsection ~~((s)(3)(a)-(e))~~ (3)(a) through (c) of this section within the six months preceding the termination of employment, the employer ~~((shall))~~ must provide such examinations to the employee upon termination of employment.

(4) Information provided to the physician. The employer ~~((shall))~~ must provide the following information to the examining physician:

- (a) A copy of this regulation and its Appendixes;
 - (b) A description of the affected employee's duties as they relate to the employee's exposure;
 - (c) The employee's exposure level or anticipated exposure level;
 - (d) A description of any personal protective equipment used or to be used; and
 - (e) Information from previous medical examinations of the affected employee which is not readily available to the examining physician.
- (5) Physician's written opinion.
- (a) The employer ~~((shall))~~ must obtain a written opinion from the examining physician which shall include:
- (i) The results of the medical examinations;
 - (ii) The physician's opinion as to whether the employee has any detected medical conditions which would place the employee at increased risk of material impairment of the employee's health from exposure to coke oven emissions;
 - (iii) Any recommended limitations upon the employee's exposure to coke oven emissions or upon the use of protective clothing or equipment such as respirators; and
 - (iv) A statement that the employee has been informed by the physician of the results of the medical examination and any medical conditions which require further explanation or treatment.
- (b) The employer ~~((shall))~~ must instruct the physician not to reveal in the written opinion specific findings or diagnoses unrelated to occupational exposure.
- (c) The employer ~~((shall))~~ must provide a copy of the written opinion to the affected employee.

AMENDATORY SECTION (Amending WSR 05-03-093, filed 1/18/05, effective 3/1/05)

WAC 296-62-20019 Employee information and training. (1) Training program.

- (a) The employer ~~((shall))~~ must institute a training program for employees who are employed in the regulated area and shall assure their participation.
- (b) The training program ~~((shall))~~ must be provided as of January 20, 1977, for employees who are employed in the regulated area at that time or at the time of initial assignment to a regulated area.
- (c) The training program ~~((shall))~~ must be provided at least annually for all employees who are employed in the regulated area, except that training regarding the occupational safety and health hazards associated with exposure to coke oven emissions and the purpose, proper use, and limitations of respiratory protective devices ~~((shall))~~ must be provided at least quarterly until January 20, 1978.

(d) The training program ~~((shall))~~ must include informing each employee of:

- (i) The information contained in the substance information sheet for coke oven emissions (Appendix A);
 - (ii) The purpose, proper use, and limitations of respiratory protective devices in addition to other information as required by chapter 296-842 WAC (see WAC 296-842-11005, 296-842-16005, and 296-842-19005).
 - (iii) The purpose for and a description of the medical surveillance program required by WAC 296-62-20017 including information on the occupational safety and health hazards associated with exposure to coke oven emissions;
 - (iv) A review of all written procedures and schedules required under WAC 296-62-20009; and
 - (v) A review of this standard.
- (2) Access to training materials.
- (a) The employer ~~((shall))~~ must make a copy of this standard and its appendixes readily available to all employees who are employed in the regulated area.
- (b) The employer ~~((shall))~~ must provide all materials relating to the employee information and training program to the director.

AMENDATORY SECTION (Amending WSR 14-07-086, filed 3/18/14, effective 5/1/14)

WAC 296-62-20021 Communication of hazards. (1) Hazard communication - General. The employer ~~((shall))~~ must include coke oven emissions in the program established to comply with the Hazard Communication Standard (HCS), WAC 296-901-140. The employer ~~((shall))~~ must ensure that each employee has access to labels on containers of chemicals and substances associated with coke oven processes and to safety data sheets, and is trained in accordance with the provisions of HCS and WAC 296-62-20019. The employer ~~((shall))~~ must ensure that at least the following hazard is addressed: Cancer.

(2) Signs.

(a) The employer ~~((shall))~~ must post signs in the regulated area bearing the legends:

DANGER
COKE OVEN EMISSIONS
MAY CAUSE CANCER
DO NOT EAT, DRINK OR SMOKE
WEAR RESPIRATORY PROTECTION IN THIS AREA
AUTHORIZED PERSONNEL ONLY

(b) In addition, the employer ~~((shall))~~ must post signs in the areas where the permissible exposure limit is exceeded bearing the legend:

WEAR RESPIRATORY PROTECTION IN THIS AREA

(c) The employer ~~((shall))~~ must ensure that no statement appears on or near any sign required by this section which contradicts or detracts from the effects of the required sign.

(d) The employer ~~((shall))~~ must ensure that signs required by this subsection are illuminated and cleaned as necessary so that the legend is readily visible.

~~((e) Prior to June 1, 2016, employers may use the following legend in lieu of that specified in (a) of this subsection:~~

DANGER
CANCER HAZARD
AUTHORIZED PERSONNEL ONLY
NO SMOKING OR EATING

~~(f) Prior to June 1, 2016, employers may use the following legend in lieu of that specified in (b) of this subsection:~~

DANGER
RESPIRATOR REQUIRED))

(3) Labels.

~~((a))~~ The employer ~~((shall))~~ must ensure that labels of contaminated protective clothing and equipment include the following information:

CONTAMINATED WITH COKE EMISSIONS
MAY CAUSE CANCER
DO NOT REMOVE DUST BY BLOWING OR SHAKING

~~((b) Prior to June 1, 2015, employers may include the following information on contaminated protective clothing and equipment in lieu of the labeling requirements in (a) of this subsection:~~

CAUTION
CLOTHING CONTAMINATED WITH COKE
EMISSIONS
DO NOT REMOVE DUST BY BLOWING OR SHAKING))

AMENDATORY SECTION (Amending WSR 12-24-071, filed 12/4/12, effective 1/4/13)

WAC 296-62-20023 Recordkeeping. (1) Exposure measurements. The employer ~~((shall))~~ must establish and maintain an accurate record of all measurements taken to monitor employee exposure to coke oven emissions required in WAC 296-62-20007.

(a) This record ~~((shall))~~ must include:

- (i) Name, Social Security number, and job classification of the employees monitored;
- (ii) The date(s), number, duration and results of each of the samples taken, including a description of the sampling procedure used to determine representative employee exposure where applicable;
- (iii) The type of respiratory protective devices worn, if any;
- (iv) A description of the sampling and analytical methods used and evidence of their accuracy; and
- (v) The environment variables that could affect the measurement of employee exposure.

(b) The employer ~~((shall))~~ must maintain this record for at least forty years or for the duration of employment plus twenty years, whichever is longer.

(2) Medical surveillance. The employer ~~((shall))~~ must establish and maintain an accurate record for each employee subject to medical surveillance as required by WAC 296-62-20017.

(a) The record ~~((shall))~~ must include:

- (i) The name, Social Security number, and description of duties of the employee;
- (ii) A copy of the physician's written opinion;
- (iii) The signed statement of any refusal to take a medical examination under WAC 296-62-20017; and

(iv) Any employee medical complaints related to exposure to coke oven emissions.

(b) The employer ~~((shall))~~ must keep, or ~~((assure))~~ ensure that the examining physician keeps, the following medical records:

- (i) A copy of the medical examination results including medical and work history required under WAC 296-62-20017;
- (ii) A description of the laboratory procedures used and a copy of any standards or guidelines used to interpret the test results;
- (iii) The initial X-ray;
- (iv) The X-rays for the most recent five years;
- (v) Any X-ray with a demonstrated abnormality and all subsequent X-rays;
- (vi) The initial cytologic examination slide and written description;
- (vii) The cytologic examination slide and written description for the most recent ten years; and
- (viii) Any cytologic examination slides with demonstrated atypia, if such atypia persists for three years, and all subsequent slides and written descriptions.

(c) The employer ~~((shall))~~ must maintain medical records required under subsection (2) of this section for at least forty years, or for the duration of employment plus twenty years, whichever is longer.

(3) Availability.

(a) The employer ~~((shall))~~ must make available upon request all records required to be maintained by this section to the director for examination and copying.

(b) Employee exposure measurement records and employee medical records required by this subsection ~~((shall))~~ must be provided upon request to employees, designated representatives, and the assistant director in accordance with chapter 296-802 WAC.

(c) The employer ~~((shall))~~ must make available upon request employee medical records required to be maintained by subsection (2) of this section to a physician designated by the affected employee or former employee.

(4) Transfer of records.

(a) Whenever the employer ceases to do business, the successor employer ~~((shall))~~ must receive and retain all records required to be maintained by this section.

(b) The employer ~~((shall))~~ must also comply with any additional requirements involving transfer of records set forth in WAC 296-802-60005.

AMENDATORY SECTION (Amending Order 77-14, filed 7/25/77)

WAC 296-62-20025 Observation of monitoring. (1) Employee observation. The employer ~~((shall))~~ must provide affected employees or their representatives an opportunity to observe any measuring or monitoring of employee exposure to coke oven emissions conducted pursuant to WAC 296-62-20007.

(2) Observation procedures.

(a) Whenever observation of the measuring or monitoring of employee exposure to coke oven emissions requires entry into an area where the use of protective clothing or

equipment is required, the employer (~~(shall)~~) must provide the observer with and assure the use of such equipment and (~~(shall)~~) must require the observer to comply with all other applicable safety and health procedures.

(b) Without interfering with the measurement, observers shall be entitled to:

- (i) An explanation of the measurement procedures;
- (ii) Observe all steps related to the measurement of coke oven emissions performed at the place of exposure; and
- (iii) Record the results obtained.

AMENDATORY SECTION (Amending WSR 12-02-053, filed 1/3/12, effective 1/1/14)

WAC 296-62-50005 Scope. (1) This chapter applies to all employers in health care facilities regardless of the setting that have employees with occupational exposure to hazardous drugs.

(2) Chapter application.

(a) The requirements in this rule only apply to the hazardous drugs being used in the workplace.

(b) If hazardous drugs are being used in the workplace the requirements in this rule only apply if there is reasonably anticipated occupational exposure as defined in WAC 296-62-50010.

(c) If there is reasonably anticipated occupational exposure to one or more hazardous drugs, the employer must develop a hazardous drugs control program as required in section WAC 296-62-50015.

(d) For purposes of making the determinations in this section about scope and application, occupational exposure is that exposure which would be reasonably anticipated in the absence of engineering controls or PPE.

(3) The following lists jobs that may involve occupational exposure to hazardous drugs. This is not an exhaustive list and there may be other jobs that fall within the scope of this chapter:

- (*) (a) Pharmacists and pharmacy technicians.
- (*) (b) Physicians and physician assistants.
- (*) (c) Nurses (ARNPs, RNs, LPNs).
- (*) (d) Patient care assistive personnel (e.g., health care assistants, nursing assistants).
- (*) (e) Operating room personnel.
- (*) (f) Home health care workers.
- (*) (g) Veterinarians and veterinary technicians.
- (*) (h) Environmental services employees (e.g., house-keeping, laundry, and waste disposal) in health care facilities.
- (*) (i) Employees in health care facilities who ship, or receive hazardous drugs from the manufacturer or distributor.

AMENDATORY SECTION (Amending WSR 16-10-083, filed 5/3/16, effective 6/3/16)

WAC 296-62-50010 Definitions. Biological safety cabinet ((means)). A ventilated cabinet for compounding pharmaceutical ingredients, personnel, product, and environmental protection having an open front with inward airflow for personnel protection, downward high-efficiency air (HEPA)-filtered laminar airflow for product protection, and HEPA-filtered exhausted air for environmental protection. For a complete description of the different types of biologic

safety cabinets see the Centers for Disease Control and Prevention (CDC)/National Institutes of Health (NIH) document *Primary Containment for Biohazards: Selection, Installation and Use of Biological Safety Cabinets*.

Chemotherapy glove ((means)). A medical glove that has been approved by the Food and Drug Administration (FDA) and that meets the permeability standards of the American Society for Testing Materials (ASTM) Standard D6978 - 05.

Closed system drug-transfer device ((means)). A drug-transfer device that mechanically prohibits the transfer of environmental contaminants into the system and the escape of hazardous drug or vapor concentrations outside of the system.

Decontamination ((means)). Inactivation, neutralization, or removal of toxic agents, usually by chemical means.

Engineering controls ((means)). Devices designed to eliminate or reduce worker exposure to hazards. Examples include biological safety cabinets, laboratory fume hoods, containment isolators, safer sharps devices, and safety interlocks.

Hazardous drugs ((means)). Any drug identified as hazardous by the National Institute for Occupational Safety and Health (NIOSH) at the Centers for Disease Control (CDC) or any drug that meets at least one of the following six criteria:

- (*) (a) Carcinogenicity.
- (*) (b) Teratogenicity or developmental toxicity.
- (*) (c) Reproductive toxicity in humans.
- (*) (d) Organ toxicity at low doses in humans or animals.
- (*) (e) Genotoxicity.
- (*) (f) New drugs that mimic existing hazardous drugs in structure and toxicity.

Health care facilities ((means)). All hospitals, clinics, nursing homes, laboratories, offices or similar places where a health care provider provides health care to patients. For purposes of this chapter this includes veterinary medicine, retail pharmacies, home health care agencies and also those research laboratories in settings where a health care provider provides health care to patients. It does not include the drug manufacturing sector or research laboratories where health care providers do not provide health care to patients.

HEPA filter ((means)). A high-efficiency particulate air filter rated 99.97% efficient in capturing 0.3-micron-diameter particles.

• **Isolator ((means)).** A device that is sealed or is supplied with air through a microbially retentive filtration system (HEPA minimum) and may be reproducibly decontaminated. When closed, an isolator uses only decontaminated interfaces (when necessary) or rapid transfer ports (RTPs) for materials transfer. When open, it allows for the ingress and/or egress of materials through defined openings that have been designed and validated to preclude the transfer of contaminants or unfiltered air to adjacent environments. An isolator can be used for aseptic processing, for containment of potent compounds, or for simultaneous asepsis and containment. Some isolator designs allow operations within the isolator to be conducted through attached rubber gloves without compromising asepsis and/or containment.

• **Aseptic isolator**~~((+))~~₂. A ventilated isolator designed to exclude external contamination from entering the critical zone inside the isolator.

• **Aseptic containment isolator**~~((+))~~₂. A ventilated isolator designed to meet the requirements of both an aseptic isolator and a containment isolator.

• **Containment isolator**~~((+))~~₂. A ventilated isolator designed to prevent the toxic materials processed inside it from escaping to the surrounding environment.

Occupational exposure ~~((means))~~₂. Reasonably anticipated inhalation, skin, ingestion, or injection contact with hazardous drugs as a result of the performance of an employee's duties. Some drugs defined as hazardous may not pose a significant risk of occupational exposure because of their dosage formulation (for example, coated tablets or capsules that are administered to patients without modifying the formulation). However, they may pose a risk if altered (for example, if tablets are crushed or dissolved, or if capsules are pierced or opened).

Safety data sheet (SDS) ~~((means))~~₂. A summary provided by the manufacturer to describe the chemical properties and hazards of specific chemicals and ways in which workers can protect themselves from exposure to these chemicals.

Ventilated cabinet ~~((means))~~₂. A type of engineering control designed for purposes of worker protection. These devices are designed to minimize worker exposures by controlling emissions of airborne contaminants through the following:

~~((+))~~ (a) The full or partial enclosure of a potential contaminant source.

~~((+))~~ (b) The use of airflow capture velocities to capture and remove airborne contaminants near their point of generation.

~~((+))~~ (c) The use of air pressure relationships that define the direction of airflow into the cabinet.

Examples of ventilated cabinets include biological safety cabinets and containment isolators.

AMENDATORY SECTION (Amending WSR 12-02-053, filed 1/3/12, effective 1/1/14)

WAC 296-62-50055 Implementation plan. ~~((+))~~
Effective dates.

~~((+))~~ (a) The written hazardous drugs control program must be completed and implemented by January 1, 2014, with the exception of (b) and (c) of this subsection.

~~((+))~~ (b) Employee training must be implemented by July 1, 2014.

~~((+))~~ (c) Installation of appropriate ventilated cabinets must be completed by January 1, 2015.

~~((+))~~ (2)) The department will work with stakeholders to implement this chapter by doing the following:

~~((+))~~ (1) Establish a hazardous drugs advisory committee to discuss new NIOSH recommendations, scientific and technological developments and other unanticipated issues related to rule implementation. This committee will include employer and employee representatives of the health care industry and representatives of affected state agencies. It may provide recommendations to the department regarding appropriate actions.

~~((+))~~ (2) Work with trade associations, labor unions and other representatives from the health care industry to develop model programs for implementation of these rules in a variety of health care facilities and settings. The department will provide education, training and consultation services to ensure that these model programs are widely distributed and can be effectively utilized.

~~((+))~~ (3) Establish a hazardous drugs web page, and post relevant resources, sample programs and forms.

WSR 18-20-105
PROPOSED RULES
DEPARTMENT OF
LABOR AND INDUSTRIES

[Filed October 2, 2018, 11:07 a.m.]

Continuance of WSR 18-17-150.

Expedited Rule Making—Proposed notice was filed as WSR 18-11-114.

Title of Rule and Other Identifying Information: Chapter 296-840 WAC, Respirable crystalline silica: WAC 296-840-170 Appendix B—Medical surveillance guidelines—Nonmandatory and 296-840-175 Appendix C—Adult tuberculosis screening tool for workers exposed to respirable crystalline silica—Nonmandatory.

Hearing Location(s): On November 8, 2018, at 1:00 p.m., at the Department of Labor and Industries Tukwila Location, Room C20, 12806 Gateway Drive South, Tukwila, WA 98168.

Date of Intended Adoption: November 30, 2018.

Submit Written Comments to: Josefina Magana, P.O. Box 44620, Olympia, WA 98504-4620, email Josefina.Magana@lni.wa.gov, fax 360-902-5619, by November 20, 2018, at 5:00 p.m.

Assistance for Persons with Disabilities: Contact Josefina Magana, phone 360-902-4233, fax 360-902-5619, email Josefina.Magana@lni.wa.gov, by October 25, 2018.

Purpose of the Proposal and Its Anticipated Effects, Including Any Changes in Existing Rules: The department is filing a continuance of the proposal for the purpose of adding a second public hearing and extending the written comment period.

October 2, 2018

Joel Sacks
Director

NEW SECTION

WAC 296-840-170 Appendix B—Medical surveillance guidelines—Nonmandatory.
Introduction.

The purpose of this Appendix is to provide medical information and recommendations to aid physicians and other licensed health care professionals (PLHCPs) regarding compliance with the medical surveillance provisions of the respirable crystalline silica standard (chapter 296-840 WAC, Respirable crystalline silica). Appendix B is for informational and guidance purposes only and none of the statements

in Appendix B should be construed as imposing a mandatory requirement on employers that is not otherwise imposed by the standard.

Medical screening and surveillance allow for early identification of exposure-related health effects in individual employee and groups of employees, so that actions can be taken to both avoid further exposure and prevent or address adverse health outcomes. Silica-related diseases can be fatal, encompass a variety of target organs, and may have public health consequences when considering the increased risk of a latent tuberculosis (TB) infection becoming active. Thus, medical surveillance of silica-exposed employees requires that PLHCPs have a thorough knowledge of silica-related health effects.

This Appendix is divided into eight sections. Section 1 reviews silica-related diseases, medical responses, and public health responses. Section 2 outlines the components of the medical surveillance program for employees exposed to silica. Section 3 describes the roles and responsibilities of the PLHCP implementing the program and of other medical specialists and public health professionals. Section 4 provides a discussion of considerations, including confidentiality. Section 5 provides a list of additional resources and Section 6 lists references.

Section 7 provides sample forms for the written medical report for the employee, the written medical opinion for the employer and the written authorization. Section 8 provides information regarding Washington state reporting requirements for tuberculosis.

1. Recognition of Silica-related Diseases.

1.1. Overview. The term "silica" refers specifically to the compound silicon dioxide (SiO₂). Silica is a major component of sand, rock, and mineral ores. Exposure to fine (respirable size) particles of crystalline forms of silica is associated with adverse health effects, such as silicosis, lung cancer, chronic obstructive pulmonary disease (COPD), and activation of latent TB infections. Exposure to respirable crystalline silica can occur in industry settings such as foundries, abrasive blasting operations, paint manufacturing, glass and concrete product manufacturing, brick making, china and pottery manufacturing, manufacturing of plumbing fixtures, and many construction activities including highway repair, masonry, concrete work, rock drilling, and tuck-pointing. New uses of silica continue to emerge. These include countertop manufacturing, finishing, and installation (Kramer et al. 2012; OSHA 2015) and hydraulic fracturing in the oil and gas industry (OSHA 2012).

Silicosis is an irreversible, often disabling, and sometimes fatal fibrotic lung disease. Progression of silicosis can occur despite removal from further exposure. Diagnosis of silicosis requires a history of exposure to silica and radiologic findings characteristic of silica exposure. Three different presentations of silicosis (chronic, accelerated, and acute) have been defined. Accelerated and acute silicosis are much less common than chronic silicosis. However, it is critical to recognize all cases of accelerated and acute silicosis because these are life-threatening illnesses and because they are caused by substantial overexposures to respirable crystalline silica. Although any case of silicosis indicates a breakdown

in prevention, a case of acute or accelerated silicosis implies current high exposure and a very marked breakdown in prevention.

In addition to silicosis, employees exposed to respirable crystalline silica, especially those with accelerated or acute silicosis, are at increased risks of contracting active TB and other infections (ATS 1997; Rees and Murray 2007). Exposure to respirable crystalline silica also increases an employee's risk of developing lung cancer, and the higher the cumulative exposure, the higher the risk (Steenland et al. 2001; Steenland and Ward 2014). Symptoms for these diseases and other respirable crystalline silica-related diseases are discussed below.

1.2. Chronic Silicosis. Chronic silicosis is the most common presentation of silicosis and usually occurs after at least 10 years of exposure to respirable crystalline silica. The clinical presentation of chronic silicosis is:

1.2.1. Symptoms - shortness of breath and cough, although employees may not notice any symptoms early in the disease. Constitutional symptoms, such as fever, loss of appetite and fatigue, may indicate other diseases associated with silica exposure, such as TB infection or lung cancer. Employees with these symptoms should immediately receive further evaluation and treatment.

1.2.2. Physical Examination - may be normal or disclose dry rales or rhonchi on lung auscultation.

1.2.3. Spirometry - may be normal or may show only a mild restrictive or obstructive pattern.

1.2.4. Chest X-ray - classic findings are small, rounded opacities in the upper lung fields bilaterally. However, small irregular opacities and opacities in other lung areas can also occur. Rarely, "eggshell calcifications" in the hilar and mediastinal lymph nodes are seen.

1.2.5. Clinical Course - chronic silicosis in most cases is a slowly progressive disease. Under the respirable crystalline silica standard, the PLHCP is to recommend that employees with a 1/0 category X-ray be referred to an American Board Certified Specialist in Pulmonary Disease or Occupational Medicine. The PLHCP and/or Specialist should counsel employees regarding work practices and personal habits that could affect employees' respiratory health.

1.3. Accelerated Silicosis. Accelerated silicosis generally occurs within 5-10 years of exposure and results from high levels of exposure to respirable crystalline silica. The clinical presentation of accelerated silicosis is:

1.3.1. Symptoms - shortness of breath, cough, and sometimes sputum production. Employees with exposure to respirable crystalline silica, and especially those with accelerated silicosis, are at high risk for activation of TB infections, atypical mycobacterial infections, and fungal superinfections. Constitutional symptoms, such as fever, weight loss, hemoptysis (coughing up blood), and fatigue may herald one of these infections or the onset of lung cancer.

1.3.2. Physical Examination - rales, rhonchi, or other abnormal lung findings in relation to illnesses present. Clubbing of the digits, signs of heart failure, and cor pulmonale may be present in severe lung disease.

1.3.3. Spirometry - restrictive or mixed restrictive/obstructive pattern.

1.3.4. Chest X-ray - small rounded and/or irregular opacities bilaterally. Large opacities and lung abscesses may indicate infections, lung cancer, or progression to complicated silicosis, also termed progressive massive fibrosis.

1.3.5. Clinical Course - accelerated silicosis has a rapid, severe course. Under the respirable crystalline silica standard, the PLHCP can recommend referral to a Board Certified Specialist in either Pulmonary Disease or Occupational Medicine, as deemed appropriate, and referral to a Specialist is recommended whenever the diagnosis of accelerated silicosis is being considered.

1.4. Acute Silicosis. Acute silicosis is a rare disease caused by inhalation of extremely high levels of respirable crystalline silica particles. The pathology is similar to alveolar proteinosis with lipoproteinaceous material accumulating in the alveoli. Acute silicosis develops rapidly, often, within a few months to less than 2 years of exposure, and is almost always fatal. The clinical presentation of acute silicosis is as follows:

1.4.1. Symptoms - sudden, progressive, and severe shortness of breath. Constitutional symptoms are frequently present and include fever, weight loss, fatigue, productive cough, hemoptysis (coughing up blood), and pleuritic chest pain.

1.4.2. Physical Examination - dyspnea at rest, cyanosis, decreased breath sounds, inspiratory rales, clubbing of the digits, and fever.

1.4.3. Spirometry - restrictive or mixed restrictive/obstructive pattern.

1.4.4. Chest X-ray - diffuse haziness of the lungs bilaterally early in the disease. As the disease progresses, the "ground glass" appearance of interstitial fibrosis will appear.

1.4.5. Clinical Course - employees with acute silicosis are at especially high risk of TB activation, nontuberculous mycobacterial infections, and fungal superinfections. Acute silicosis is immediately life-threatening. The employee should be urgently referred to a Board Certified Specialist in Pulmonary Disease or Occupational Medicine for evaluation and treatment. Although any case of silicosis indicates a breakdown in prevention, a case of acute or accelerated silicosis implies a profoundly high level of silica exposure and may mean that other employees are currently exposed to dangerous levels of silica.

1.5. COPD. COPD, including chronic bronchitis and emphysema, has been documented in silica-exposed employees, including those who do not develop silicosis. Periodic spirometry tests are performed to evaluate each employee for progressive changes consistent with the development of COPD. In addition to evaluating spirometry results of individual employees over time, PLHCPs may want to be aware of general trends in spirometry results for groups of employees from the same workplace to identify possible problems that might exist at that workplace. (See Section 2 of this Appendix on Medical Surveillance for further discussion.) Heart disease may develop secondary to lung diseases such as COPD. A recent study by Liu et al. 2014 noted a significant exposure-response trend between cumulative silica exposure and heart disease deaths, primarily due to pulmonary heart disease, such as cor pulmonale.

1.6. Renal and Immune System. Silica exposure has been associated with several types of kidney disease, including

glomerulonephritis, nephrotic syndrome, and end stage renal disease requiring dialysis. Silica exposure has also been associated with other autoimmune conditions, including progressive systemic sclerosis, systemic lupus erythematosus, and rheumatoid arthritis. Studies note an association between employees with silicosis and serologic markers for autoimmune diseases, including antinuclear antibodies, rheumatoid factor, and immune complexes (Jalloul and Banks 2007; Shtraichman et al. 2015).

1.7. TB and Other Infections. Silica-exposed employees with latent TB are 3 to 30 times as likely to develop active pulmonary TB infection (ATS 1997; Rees and Murray 2007). Although respirable crystalline silica exposure does not cause TB infection, individuals with latent TB infection are at increased risk for activation of disease if they have higher levels of respirable crystalline silica exposure, greater profusion of radiographic abnormalities, or a diagnosis of silicosis. Demographic characteristics, such as immigration from some countries, are associated with increased rates of latent TB infection. PLHCPs can review the latest Centers for Disease Control and Prevention (CDC) information on TB incidence rates and high risk populations online. (See Section 5 of this Appendix.) Additionally, silica-exposed employees are at increased risk for contracting nontuberculous mycobacterial infections, including *Mycobacterium avium-intracellulare* and *Mycobacterium kansasii*.

1.8. Lung Cancer. The National Toxicology Program has listed respirable crystalline silica as a known human carcinogen since 2000 (NTP 2014). The International Agency for Research on Cancer (2012) has also classified silica as Group 1 (carcinogenic to humans). Several studies have indicated that the risk of lung cancer from exposure to respirable crystalline silica and smoking is greater than additive (Brown 2009; Liu et al. 2013). Employees should be counseled on smoking cessation.

2. Medical Surveillance.

PLHCPs who manage silica medical surveillance programs should have a thorough understanding of the many silica-related diseases and health effects outlined in Section 1 of this Appendix. At each clinical encounter, the PLHCP should consider silica-related health outcomes, with particular vigilance for acute and accelerated silicosis. In this Section, the required components of medical surveillance under the respirable crystalline silica standard are reviewed, along with additional guidance and recommendations for PLHCPs performing medical surveillance examinations for silica-exposed employees.

2.1. History.

2.1.1. The respirable crystalline silica standard requires the following: A medical and work history, with emphasis on: past, present, and anticipated exposure to respirable crystalline silica, dust, and other agents affecting the respiratory system; any history of respiratory system dysfunction, including signs and symptoms of respiratory disease (e.g., shortness of breath, cough, wheezing); smoking status and history; and history of tuberculosis. The history of tuberculosis should include completion of the Washington State Department of Labor and Industries form F252-113-000, Adult Tuberculosis Screening Tool for Workers Exposed to

Respirable Crystalline Silica, located in WAC 296-840-175, Appendix C.

2.1.2. Further, the employer must provide the PLHCP with the following information:

2.1.2.1. A description of the employee's former, current, and anticipated duties as they relate to the employee's occupational exposure to respirable crystalline silica;

2.1.2.2. The employee's former, current, and anticipated levels of occupational exposure to respirable crystalline silica;

2.1.2.3. A description of any personal protective equipment used or to be used by the employee, including when and for how long the employee has used or will use that equipment; and

2.1.2.4. Information from records of employment-related medical examinations previously provided to the employee and currently within the control of the employer.

2.1.3. Additional guidance and recommendations: A history is particularly important both in the initial evaluation and in periodic examinations. Information on past and current medical conditions (particularly a history of kidney disease, cardiac disease, connective tissue disease, and other immune diseases), medications, hospitalizations and surgeries may uncover health risks, such as immune suppression, that could put an employee at increased health risk from exposure to silica. This information is important when counseling the employee on risks and safe work practices related to silica exposure.

2.2. Physical Examination.

2.2.1. The respirable crystalline silica standard requires the following: A physical examination, with special emphasis on the respiratory system. The physical examination must be performed at the initial examination and every three years thereafter.

2.2.2. Additional guidance and recommendations: Elements of the physical examination that can assist the PLHCP include: an examination of the cardiac system, an extremity examination (for clubbing, cyanosis, edema, or joint abnormalities), and an examination of other pertinent organ systems identified during the history.

2.3. TB Testing.

2.3.1. The respirable crystalline silica standard requires the following: Baseline testing for TB on initial examination.

2.3.2. Additional guidance and recommendations:

2.3.2.1. To assist the PLHCP with screening for tuberculosis, a tool is included in Appendix C: The Washington State Department of Labor and Industries form F252-113-000, Adult Tuberculosis Screening Tool for Workers Exposed to Respirable Crystalline Silica.

2.3.2.2. Current CDC guidelines (See Section 5 of this Appendix) should be followed for the application and interpretation of Tuberculin skin tests (TST). The interpretation and documentation of TST reactions should be performed within 48 to 72 hours of administration by trained PLHCPs.

2.3.2.3. PLHCPs may use alternative TB tests, such as interferon- γ release assays (IGRAs), if sensitivity and specificity are comparable to TST (Mazurek et al. 2010; Slater et al. 2013). PLHCPs can consult the current CDC guidelines for acceptable tests for latent TB infection or refer to Appendix C: The Washington State Department of Labor and

Industries form F252-113-000, Adult Tuberculosis Screening Tool for Workers Exposed to Respirable Crystalline Silica.

2.3.2.4. The silica standard allows the PLHCP to order additional tests or test at a greater frequency than required by the standard, if deemed appropriate. Therefore, PLHCPs might perform periodic (e.g., annual) TB testing as appropriate, based on employees' risk factors. For example, according to the American Thoracic Society (ATS), the diagnosis of silicosis or exposure to silica for 25 years or more are indications for annual TB testing (ATS 1997). PLHCPs should consult the current CDC guidance on risk factors for TB (See Section 5 of this Appendix), and refer to Appendix C: The Washington State Department of Labor and Industries form F252-113-000, Adult Tuberculosis Screening Tool for Workers Exposed to Respirable Crystalline Silica.

2.3.2.5. Employees with positive TB tests and those with indeterminate test results should be referred to the appropriate agency or specialist, depending on the test results and clinical picture. Agencies, such as local public health departments, and the Washington State Department of Health or specialists, such as a pulmonary or infectious disease specialist, may be the appropriate referral. Active TB is a nationally notifiable disease. PLHCPs should be aware of the reporting requirements for their region. All States have TB Control Offices that can be contacted for further information. (See Section 5 of this Appendix for links to CDC's TB resources and State TB Control Offices.)

2.3.2.6. The following public health principles are key to TB control in the U.S. (ATS-CDC-IDS 2005):

(1) Prompt detection and reporting of persons who have contracted active TB;

(2) Prevention of TB spread to close contacts of active TB cases;

(3) Prevention of active TB in people with latent TB through targeted testing and treatment; and

(4) Identification of settings at high risk for TB transmission so that appropriate infection-control measures can be implemented.

2.4. Pulmonary Function Testing.

2.4.1. The respirable crystalline silica standard requires the following: Pulmonary function testing must be performed on the initial examination and every three years thereafter. The required pulmonary function test is spirometry and must include forced vital capacity (FVC), forced expiratory volume in one second (FEV1), and FEV1/FVC ratio. Testing must be administered by a spirometry technician with a current certificate from a National Institute for Occupational Health and Safety (NIOSH)-approved spirometry course.

2.4.2. Additional guidance and recommendations: Spirometry provides information about individual respiratory status and can be used to track an employee's respiratory status over time or as a surveillance tool to follow individual and group respiratory function. For quality results, the ATS and the American College of Occupational and Environmental Medicine (ACOEM) recommend use of the third National Health and Nutrition Examination Survey (NHANES III) values, and ATS publishes recommendations for spirometry equipment (Miller et al. 2005; Townsend 2011; Redlich et al. 2014). OSHA's publication, Spirometry Testing in Occupational Health Programs: Best Practices for Healthcare Profes-

sionals provides helpful guidance (See Section 5 of this Appendix). Abnormal spirometry results may warrant further clinical evaluation and possible recommendations for limitations on the employee's exposure to respirable crystalline silica.

2.5. Chest X-ray.

2.5.1. The respirable crystalline silica standard requires the following: A single posteroanterior (PA) radiographic projection or radiograph of the chest at full inspiration recorded on either film (no less than 14 x 17 inches and no more than 16 x 17 inches) or digital radiography systems. A chest X-ray must be performed on the initial examination and every three years thereafter. The chest X-ray must be interpreted and classified according to the International Labour Office (ILO) International Classification of Radiographs of Pneumoconioses by a NIOSH-certified B Reader. Chest radiography is necessary to diagnose silicosis, monitor the progression of silicosis, and identify associated conditions such as TB. If the B reading indicates small opacities in a profusion of 1/0 or higher, the employee is to receive a recommendation for referral to a Board Certified Specialist in Pulmonary Disease or Occupational Medicine.

2.5.2. Additional guidance and recommendations: Medical imaging has largely transitioned from conventional film-based radiography to digital radiography systems. The ILO Guidelines for the Classification of Pneumoconioses has historically provided film-based chest radiography as a referent standard for comparison to individual exams. However, in 2011, the ILO revised the guidelines to include a digital set of referent standards that were derived from the prior film-based standards. To assist in assuring that digitally-acquired radiographs are at least as safe and effective as film radiographs, NIOSH has prepared guidelines, based upon accepted contemporary professional recommendations (See Section 5 of this Appendix). Current research from Laney et al. 2011 and Halldin et al. 2014 validate the use of the ILO digital referent images. Both studies conclude that the results of pneumoconiosis classification using digital references are comparable to film-based ILO classifications. Current ILO guidance on radiography for pneumoconioses and B-reading should be reviewed by the PLHCP periodically, as needed, on the ILO or NIOSH websites (See Section 5 of this Appendix).

2.6. Other Testing.

Under the respirable crystalline silica standards, the PLHCP has the option of ordering additional testing he or she deems appropriate. Additional tests can be ordered on a case-by-case basis depending on individual signs or symptoms and clinical judgment. For example, if an employee reports a history of abnormal kidney function tests, the PLHCP may want to order a baseline renal function tests (e.g., serum creatinine and urinalysis). As indicated above, the PLHCP may order annual TB testing for silica-exposed employees who are at high risk of developing active TB infections. Additional tests that PLHCPs may order based on findings of medical examinations include, but is not limited to, chest computerized tomography (CT) scan for lung cancer or COPD, testing for immunologic diseases, and cardiac testing for pulmonary-related heart disease, such as cor pulmonale.

3. Roles and Responsibilities.

3.1. PLHCP. The PLHCP designation refers to "an individual whose legally permitted scope of practice (i.e., license, registration, or certification) allows him or her to independently provide or be delegated the responsibility to provide some or all of the particular health care services required" by the respirable crystalline silica standard. The legally permitted scope of practice for the PLHCP is determined by each State. PLHCPs who perform clinical services for a silica medical surveillance program should have a thorough knowledge of respirable crystalline silica-related diseases and symptoms. Suspected cases of silicosis, advanced COPD, or other respiratory conditions causing impairment should be promptly referred to a Board Certified Specialist in Pulmonary Disease or Occupational Medicine.

The medical surveillance program in this chapter is not intended to reduce a worker's legal rights or to limit a physician's obligations under Title 51 RCW.

Once the medical surveillance examination is completed, the employer must ensure that the PLHCP explains to the employee the results of the medical examination and provides the employee with a written medical report within 30 days of the examination. The written medical report must contain a statement indicating the results of the medical examination, including any medical condition(s) that would place the employee at increased risk of material impairment to health from exposure to respirable crystalline silica and any medical conditions that require further evaluation or treatment. In addition, the PLHCP's written medical report must include any recommended limitations on the employee's use of respirators, any recommended limitations on the employee's exposure to respirable crystalline silica, and a statement that the employee should be examined by a Board Certified Specialist in Pulmonary Disease or Occupational Medicine if the chest X-ray is classified as 1/0 or higher by the B Reader, or if referral to a Specialist is otherwise deemed appropriate by the PLHCP.

The PLHCP should discuss all findings and test results and any recommendations regarding the employee's health, worksite safety and health practices, and medical referrals for further evaluation, if indicated. In addition, it is suggested that the PLHCP offer to provide the employee with a complete copy of their examination and test results, as some employees may want this information for their own records or to provide to their personal physician or a future PLHCP. Employees are entitled to access their medical records.

Under the respirable crystalline silica standard, the employer must ensure that the PLHCP provides the employer with a written medical opinion within 30 days of the employee examination, and that the employee also gets a copy of the written medical opinion for the employer within 30 days. The PLHCP may choose to directly provide the employee a copy of the written medical opinion. This can be particularly helpful to employees, such as construction employees, who may change employers frequently. The written medical opinion can be used by the employee as proof of up-to-date medical surveillance. The following lists the elements of the written medical report for the employee and written medical opinion for the employer. (Sample forms for the written medical report for the employee, the written med-

ical opinion for the employer, and the written authorization are provided in Section 7 of this Appendix.)

3.1.1. The written medical report for the employee must include the following information:

3.1.1.1. A statement indicating the results of the medical examination, including any medical condition(s) that would place the employee at increased risk of material impairment to health from exposure to respirable crystalline silica and any medical conditions that require further evaluation or treatment;

3.1.1.2. Any recommended limitations upon the employee's use of a respirator;

3.1.1.3. Any recommended limitations on the employee's exposure to respirable crystalline silica; and

3.1.1.4. A statement that the employee should be examined by a Board Certified Specialist in Pulmonary Disease or Occupational Medicine, where the standard requires or where the PLHCP has determined such a referral is necessary. The standard requires referral to a Board Certified Specialist in Pulmonary Disease or Occupational Medicine for a chest X-ray B reading indicating small opacities in a profusion of 1/0 or higher, or if the PLHCP determines that referral to a Specialist is necessary for other silica-related findings.

3.1.2. The PLHCP's written medical opinion for the employer must include only the following information:

3.1.2.1. The date of the examination;

3.1.2.2. A statement that the examination has met the requirements of this chapter; and

3.1.2.3. Any recommended limitations on the employee's use of respirators.

3.1.2.4. If the employee provides the PLHCP with written authorization, the written opinion for the employer shall also contain either or both of the following:

(1) Any recommended limitations on the employee's exposure to respirable crystalline silica; and

(2) A statement that the employee should be examined by a Board Certified Specialist in Pulmonary Disease or Occupational Medicine if the chest X-ray provided in accordance with this chapter is classified as 1/0 or higher by the B Reader, or if referral to a Specialist is otherwise deemed appropriate.

3.1.2.5. In addition to the above referral for abnormal chest X-ray, the PLHCP may refer an employee to a Board Certified Specialist in Pulmonary Disease or Occupational Medicine for other findings of concern during the medical surveillance examination if these findings are potentially related to silica exposure.

3.1.2.6. Although the respirable crystalline silica standard requires the employer to ensure that the PLHCP explains the results of the medical examination to the employee, the standard does not mandate how this should be done. The written medical opinion for the employer could contain a statement that the PLHCP has explained the results of the medical examination to the employee.

3.2. Medical Specialists. The silica standard requires that all employees with chest X-ray B readings of 1/0 or higher be referred to a Board Certified Specialist in Pulmonary Disease or Occupational Medicine. If the employee has given written authorization for the employer to be informed, then the employer shall make available a medical examination by a

Specialist within 30 days after receiving the PLHCP's written medical opinion.

3.2.1. The employer must provide the following information to the Board Certified Specialist in Pulmonary Disease or Occupational Medicine:

3.2.1.1. A description of the employee's former, current, and anticipated duties as they relate to the employee's occupational exposure to respirable crystalline silica;

3.2.1.2. The employee's former, current, and anticipated levels of occupational exposure to respirable crystalline silica;

3.2.1.3. A description of any personal protective equipment used or to be used by the employee, including when and for how long the employee has used or will use that equipment; and

3.2.1.4. Information from records of employment-related medical examinations previously provided to the employee and currently within the control of the employer.

3.2.2. The PLHCP should make certain that, with written authorization from the employee, the Board Certified Specialist in Pulmonary Disease or Occupational Medicine has any other pertinent medical and occupational information necessary for the specialist's evaluation of the employee's condition.

3.2.3. Once the Board Certified Specialist in Pulmonary Disease or Occupational Medicine has evaluated the employee, the employer must ensure that the Specialist explains to the employee the results of the medical examination and provides the employee with a written medical report within 30 days of the examination. The employer must also ensure that the Specialist provides the employer with a written medical opinion within 30 days of the employee examination. (Sample forms for the written medical report for the employee, the written medical opinion for the employer and the written authorization are provided in Section 7 of this Appendix.)

3.2.4. The Specialist's written medical report for the employer must include the following information:

3.2.4.1. A statement indicating the results of the medical examination, including any medical condition(s) that would place the employee at increased risk of material impairment to health from exposure to respirable crystalline silica and any medical conditions that require further evaluation or treatment;

3.2.4.2. Any recommended limitations upon the employee's use of a respirator; and

3.2.4.3. Any recommended limitations on the employee's exposure to respirable crystalline silica.

3.2.5. The Specialist's written medical opinion for the employer must include the following information:

3.2.5.1. The date of the examination; and

3.2.5.2. Any recommended limitations on the employee's use of respirators.

3.2.5.3. If the employee provides the Board Certified Specialist in Pulmonary Disease or Occupational Medicine with written authorization, the written medical opinion for the employer shall also contain any recommended limitations on the employee's exposure to respirable crystalline silica.

3.2.5.4. Although the respirable crystalline silica standard requires the employer to ensure that the Board Certified

Specialist in Pulmonary Disease or Occupational Medicine explains the results of the medical examination to the employee, the standard does not mandate how this should be done. The written medical opinion for the employer could contain a statement that the Specialist has explained the results of the medical examination to the employee.

3.2.6. After evaluating the employee, the Board Certified Specialist in Pulmonary Disease or Occupational Medicine should provide feedback to the PLHCP as appropriate, depending on the reason for the referral. OSHA believes that because the PLHCP has the primary relationship with the employer and employee, the Specialist may want to communicate his or her findings to the PLHCP and have the PLHCP simply update the original medical report for the employee and medical opinion for the employer. This is permitted under the standard, so long as all requirements and time deadlines are met.

3.3. Public Health Professionals. PLHCPs might refer employees or consult with public health professionals as a result of silica medical surveillance. For instance, if individual cases of active TB are identified, public health professionals from the Washington State Department of Health or local health departments may assist in diagnosis and treatment of individual cases and may evaluate other potentially affected persons, including coworkers. Because silica-exposed employees are at increased risk of progression from latent to active TB, treatment of latent infection is recommended. The diagnosis of active TB, acute or accelerated silicosis, or other silica-related diseases and infections should serve as sentinel events suggesting high levels of exposure to silica and may require consultation with the appropriate public health agencies to investigate potentially similarly exposed coworkers to assess for disease clusters. These agencies include local or state health departments or OSHA. In addition, NIOSH can provide assistance upon request through their Health Hazard Evaluation program. (See Section 5 of this Appendix.)

4. Confidentiality and Other Considerations.

The information that is provided from the PLHCP to the employee and employer under the medical surveillance section of DOSH's respirable crystalline silica standard differs from that of medical surveillance requirements in previous DOSH standards. The standard requires two separate written communications, a written medical report for the employee and a written medical opinion for the employer. The confidentiality requirements for the written medical opinion are more stringent than in past standards. For example, the information the PLHCP can (and must) include in his or her written medical opinion for the employer is limited to: the date of the examination, a statement that the examination has met the requirements of this chapter, and any recommended limitations on the employee's use of respirators. If the employee provides written authorization for the disclosure of any limitations on the employee's exposure to respirable crystalline silica, then the PLHCP can (and must) include that information in the written medical opinion for the employer as well. Likewise, with the employee's written authorization, the PLHCP can (and must) disclose the PLHCP's referral recommendation (if any) as part of the written medical opinion for

the employer. However, the opinion to the employer must not include information regarding recommended limitations on the employee's exposure to respirable crystalline silica or any referral recommendations without the employee's written authorization. Nor can the opinion for the employer include the confidential medical information gathered using the Adult Tuberculosis Screening Tool for Workers Exposed to Respirable Crystalline Silica, found in Appendix C (WAC 296-840-175) of this standard.

The standard also places limitations on the information that the Board Certified Specialist in Pulmonary Disease or Occupational Medicine can provide to the employer without the employee's written authorization. The Specialist's written medical opinion for the employer, like the PLHCP's opinion, is limited to (and must contain): the date of the examination and any recommended limitations on the employee's use of respirators. If the employee provides written authorization, the written medical opinion can (and must) also contain any limitations on the employee's exposure to respirable crystalline silica.

The PLHCP should discuss the implication of signing or not signing the authorization with the employee (in a manner and language that he or she understands) so that the employee can make an informed decision regarding the written authorization and its consequences. The discussion should include the risk of ongoing silica exposure, personal risk factors, risk of disease progression, and possible health and economic consequences. For instance, written authorization is required for a PLHCP to advise an employer that an employee should be referred to a Board Certified Specialist in Pulmonary Disease or Occupational Medicine for evaluation of an abnormal chest X-ray (B-reading 1/0 or greater). If an employee does not sign an authorization, then the employer will not know and cannot facilitate the referral to a Specialist and is not required to pay for the Specialist's examination. In the rare case where an employee is diagnosed with acute or accelerated silicosis, co-workers are likely to be at significant risk of developing those diseases as a result of inadequate controls in the workplace. In this case, the PLHCP and/or Specialist should explain this concern to the affected employee and make a determined effort to obtain written authorization from the employee so that the PLHCP and/or Specialist can contact the employer.

Finally, without written authorization from the employee, the PLHCP and/or Board Certified Specialist in Pulmonary Disease or Occupational Medicine cannot provide feedback to an employer regarding control of workplace silica exposure, at least in relation to an individual employee. However, the regulation does not prohibit a PLHCP and/or Specialist from providing an employer with general recommendations regarding exposure controls and prevention programs in relation to silica exposure and silica-related illnesses, based on the information that the PLHCP receives from the employer such as employees' duties and exposure levels.

Recommendations may include increased frequency of medical surveillance examinations, additional medical surveillance components, engineering and work practice controls, exposure monitoring and personal protective equipment. For instance, more frequent medical surveillance

examinations may be a recommendation to employers for employees who do abrasive blasting with silica because of the high exposures associated with that operation.

ACOEM's Code of Ethics and discussion is a good resource to guide PLHCPs regarding the issues discussed in this chapter. (See Section 5 of this Appendix.)

5. Resources.

5.1. American College of Occupational and Environmental Medicine (ACOEM): ACOEM Code of Ethics. Accessed at: <http://www.acoem.org/codeofconduct.aspx> Raymond, L.W. and Wintermeyer, S. (2006) ACOEM evidenced-based statement on medical surveillance of silica-exposed workers: medical surveillance of workers exposed to crystalline silica. *J Occup Environ Med*, 48, 95-101.

5.2. Center for Disease Control and Prevention (CDC) Tuberculosis web page: <http://www.cdc.gov/tb/default.htm>

State TB Control Offices web page: <http://www.cdc.gov/tb/links/tboffices.htm>

Tuberculosis Laws and Policies web page: <http://www.cdc.gov/tb/programs/laws/default.htm> CDC. (2013). Latent Tuberculosis Infection: A Guide for Primary Health Care Providers. Accessed at: <http://www.cdc.gov/tb/publications/tlbi/pdf/targetedtbi.pdf>

5.3. International Labour Organization.

International Labour Office (ILO). (2011) Guidelines for the use of the ILO International Classification of Radiographs of Pneumoconioses, Revised edition 2011. Occupational Safety and Health Series No. 22: http://www.ilo.org/safework/info/publications/WCMS_168260/lang--en/index.htm

5.4. National Institute of Occupational Safety and Health (NIOSH) NIOSH B Reader Program web page. (Information on interpretation of X-rays for silicosis and a list of certified B-readers.) Accessed at: <http://www.cdc.gov/niosh/topics/chestradiography/breader-info.html> NIOSH Guideline (2011). Application of Digital Radiography for the Detection and Classification of Pneumoconiosis. NIOSH publication number 2011-198. Accessed at: [http://www.cdc.gov/niosh/docs/2011-198/NIOSH_Hazard_Review_\(2002\),_Health_Effects_of_Occupational_Exposure_to_Respirable_Crystalline_Silica._NIOSH_publication_number_2002-129](http://www.cdc.gov/niosh/docs/2011-198/NIOSH_Hazard_Review_(2002),_Health_Effects_of_Occupational_Exposure_to_Respirable_Crystalline_Silica._NIOSH_publication_number_2002-129): Accessed at [http://www.cdc.gov/niosh/docs/2002-129/NIOSH_Health_Hazard_Evaluations_Programs._\(Information_on_the_NIOSH_Health_Hazard_Evaluation_\(HHE\)_program,_how_to_request_an_HHE_and_how_to_look_up_an_HHE_report.\)](http://www.cdc.gov/niosh/docs/2002-129/NIOSH_Health_Hazard_Evaluations_Programs._(Information_on_the_NIOSH_Health_Hazard_Evaluation_(HHE)_program,_how_to_request_an_HHE_and_how_to_look_up_an_HHE_report.)) Accessed at: <http://www.cdc.gov/niosh/hhe/>

5.5. National Industrial Sand Association:

Occupational Health Program for Exposure to Crystalline Silica in the Industrial Sand Industry. National Industrial Sand Association, 2nd ed. 2010. Can be ordered at: <http://www.sand.org/silica-occupational-health-program>

5.6. Occupational Safety and Health Administration (OSHA)

Contacting OSHA: http://www.osha.gov/html/Feed_Back.html

OSHA's Clinicians web page. (OSHA resources, regulations and links to help clinicians navigate OSHA's web site

and aid clinicians in caring for workers.) Accessed at: <http://www.osha.gov/dts/oom/clinicians/index.html>

OSHA's Safety and Health Topics webpage on Silica. Accessed at: http://www.osha.gov/dsg/topics/silica_crystalline/index.html

OSHA (2013). Spirometry Testing in Occupational Health Programs: Best Practices for Healthcare Professionals. (OSHA 3637-03 2013.) Accessed at: <http://www.osha.gov/Publications/OSHA3637.pdf>

OSHA/NIOSH (2011). Spirometry: OSHA/NIOSH Spirometry InfoSheet (OSHA 3415-1-11). (Provides guidance to employers.) Accessed at <http://www.osha.gov/Publications/osh3415.pdf>

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5.7. Other.

Steenland, K. and Ward E. (2014). Silica: A lung carcinogen. *CA Cancer J Clin*, 64, 63-69. (This article reviews not only silica and lung cancer but also all the known silica-related health effects. Further, the authors provide guidance to clinicians on medical surveillance of silica-exposed workers and worker counseling on safety practices to minimize silica exposure.)

6. References.

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International Agency for Research on Cancer. (2012). Monographs on the evaluation of carcinogenic risks to humans: Arsenic, Metals, Fibers, and Dusts Silica Dust, Crystalline, in the Form of Quartz or Cristobalite. A Review of Human Carcinogens. Volume 100 C. Geneva, Switzerland: World Health Organization.

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phosphor computed radiography and conventional film-screen radiography in the recognition of small pneumoniconitic opacities. *Chest*, 140,1574-1580.

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Mazurek, G. H., Jereb, J., Vernon, A., LoBue, P., Goldberg, S., Castro, K. (2010). Updated guidelines for using interferon gamma release assays to detect *Mycobacterium tuberculosis* infection - United States. *Morbidity and Mortality Weekly Report (MMWR)*, 59(RR05), 1-25.

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Occupational Safety and Health Administration/National Institute for Occupational Safety and Health (OSHA/NIOSH) (2015). Hazard alert. Worker exposure to silica during countertop manufacturing, finishing, and installation. (OSHA-HA-3768-2015.)

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7. Sample Forms.

Three sample forms are provided. The first is a sample written medical report for the employee. The second is a sample written medical opinion for the employer. And the third is a sample written authorization form that employees sign to clarify what information the employee is authorizing to be released to the employer.

8. Washington State Reporting Requirements for Tuberculosis.

Active TB disease is a reportable condition in all Washington state counties. Current statewide requirements for notifiable conditions are found in WAC 246-101-101. Contact your local health department immediately to report or obtain assistance regarding any confirmed or suspected cases of active TB disease.

Latent TB infection may be a reportable condition in your Washington state county. Contact your local health department for more information on local reporting requirements, or to obtain assistance with the evaluation and management of latent TB infection.

WRITTEN MEDICAL REPORT FOR EMPLOYEE

EMPLOYEE NAME: _____ DATE OF EXAMINATION: _____

TYPE OF EXAMINATION:

[] Initial examination [] Periodic examination [] Specialist examination
[] Other: _____

RESULTS OF MEDICAL EXAMINATION:

Physical Examination - [] Normal [] Abnormal (see below) [] Not performed
Chest X-Ray - [] Normal [] Abnormal (see below) [] Not performed
Breathing Test (Spirometry) - [] Normal [] Abnormal (see below) [] Not performed
Test for Tuberculosis - [] Normal [] Abnormal (see below) [] Not performed
Other: _____ [] Normal [] Abnormal (see below) [] Not performed

Results reported as abnormal: _____

[] Your health may be at increased risk from exposure to respirable crystalline silica due to the following:

RECOMMENDATIONS:

[] No limitations on respirator use
[] Recommended limitations on use of respirator: _____
[] Recommended limitations on exposure to respirable crystalline silica: _____

Dates for recommended limitations, if applicable: _____ to _____
MM/DD/YYYY MM/DD/YYYY

[] I recommend that you be examined by a Board Certified Specialist in Pulmonary Disease or Occupational Medicine

[] Other recommendations*: _____

Your next periodic examination for silica exposure should be in: [] 3 years [] Other: _____

Examining Provider: _____ Date: _____
(signature) MM/DD/YYYY

Provider Name: _____ Office Phone: _____
Office Address: _____

*These findings may not be related to respirable crystalline silica exposure or may not be work-related, and therefore may not be covered by the employer. These findings may necessitate follow-up and treatment by your personal physician.

Respirable Crystalline Silica standard, chapter 296-840 WAC.

WRITTEN MEDICAL OPINION FOR EMPLOYER

EMPLOYER: _____

EMPLOYEE NAME: _____ DATE OF EXAMINATION: _____

TYPE OF EXAMINATION:

[] Initial examination [] Periodic examination [] Specialist examination
[] Other: _____

USE OF RESPIRATOR:

[] No limitations on respirator use
[] Recommended limitations on use of respirator: _____

Dates for recommended limitations, if applicable: _____ to _____
MM/DD/YYYY MM/DD/YYYY

The employee has provided written authorization for disclosure of the following to the employer (if applicable):

[] This employee should be examined by an American Board Certified Specialist in Pulmonary Disease or Occupational
Medicine
[] Recommended limitations on exposure to respirable crystalline silica: _____

Dates for exposure limitations noted above: _____ to _____
MM/DD/YYYY MM/DD/YYYY

NEXT PERIODIC EVALUATION: [] 3 years [] Other: _____
MM/DD/YYYY

Examining Provider: _____ Date: _____
(signature)

Provider Name: _____ Provider's Specialty: _____

Office Address: _____ Office Phone: _____

[] I attest that the results have been explained to the employee.

The following is required to be checked by the Physician or other Licensed Health Care Professional (PLHCP):

[] I attest that this medical examination has met the requirements of the medical surveillance section of the DOSH
Respirable Crystalline Silica standard, WAC 296-840-145.

AUTHORIZATION FOR CRYSTALLINE SILICA OPINION TO EMPLOYER

This medical examination for exposure to crystalline silica could reveal a medical condition that results in recommendations for (1) limitations on respirator use, (2) limitations on exposure to crystalline silica, or (3) examination by a specialist in pulmonary disease or occupational medicine. Recommended limitations on respirator use will be included in the written opinion to the employer. If you want your employer to know about limitations on crystalline silica exposure or recommendations for a specialist examination, you will need to give authorization for the written opinion to the employer to include one or both of those recommendations.

I hereby authorize the opinion to the employer to contain the following information, if relevant (please check all that apply):

Recommendations for limitations on crystalline silica exposure

Recommendation for a specialist examination

OR

I do not authorize the opinion to the employer to contain anything other than recommended limitations on respirator use.

Please read and initial:

_____ I understand that if I do not authorize my employer to receive the recommendation for specialist examination, the employer will not be responsible for arranging and covering costs of a specialist examination.

Name (printed)

Signature

Date

NEW SECTION**WAC 296-840-175 Appendix C—Adult tuberculosis screening tool for workers exposed to respirable crystalline silica—Nonmandatory.**

Screening is the identification of those individuals—among a group with unknown disease status— who are likely to have a given medical condition. Because exposure to respirable crystalline silica increases the risk of developing active tuberculosis (TB) disease in workers who have latent TB infection, this standard requires that the physician or other licensed health care professional (PLHCP) conduct TB screening as part of both initial (baseline) and periodic examinations.

Persons undergoing TB screening do not necessarily require testing for latent TB infection:

- The PLHCP must offer testing for latent TB infection as part of initial (baseline) examinations.
- The PLHCP has discretion whether to offer testing for latent TB infection as part of periodic examinations.

The following TB screening tool is designed to help the PLHCP identify:

- workers who should undergo comprehensive evaluation for active TB disease (**section 1 of this form in this appendix**); and
- workers who should receive testing for latent TB infection (**section 2 of this form in this appendix**.)

Active TB disease is a reportable condition in all Washington State counties. Current statewide requirements for notifiable conditions are found at WAC 246-101-101. Contact your local health department immediately to report or obtain assistance regarding any confirmed or suspected cases of active TB disease.

Latent TB infection may be a reportable condition in your Washington State county. Contact your local health department for more information on local reporting requirements, or to obtain assistance with the evaluation and management of latent TB infection.

As a decision aid for the PLHCP, this tool does not supersede the PLHCP's determination of which additional tests are offered to an employee under the medical surveillance section of Chapter 296-840 WAC, beyond those tests the standard requires. The employee medical information gathered using the screening tool is confidential and cannot be included in the written medical opinion for employers. Section 4 of Appendix B (WAC 296-840-170) contains additional considerations on confidentiality under the medical surveillance section of Chapter 296-840 WAC.

The complete medical surveillance requirements for examinations and procedures under this chapter are described at WAC 296-840-145.



Adult Tuberculosis Screening Tool for Workers Exposed to Respirable Crystalline Silica

Provider's Name
Assessment Date

Patient's Name
Date of Birth

For use in meeting medical surveillance requirements per WAC 296-840-145.

This tool is designed to help providers identify:

- Adult workers who should undergo comprehensive evaluation for active tuberculosis (TB) disease (Section 1), AND
Adult workers who should receive testing for latent TB infection (Section 2).

Section 1 — Symptom Screen for Active TB Disease
Workers who have any of the following symptoms may require further evaluation for active TB disease. This tool is intended to be an adjunct to clinical evaluation and is not a substitute for exercising sound clinical judgement. Responses should be considered in clinical context and should not automatically result in a comprehensive evaluation for active TB disease, unless indicated.
Signs and symptoms consistent with active TB disease in the lung, pleura, airways, or larynx.
Cough (longer than 3 weeks), Coughing Up Blood, Fever, Night Sweats, Unusual Fatigue, Weight Loss (without trying), Loss of Appetite, Shortness of Breath, Chest Pain, Hoarseness.
For patients with clinical circumstances that require additional evaluation for active TB disease, consider the following: chest x-ray if not already obtained, sputum AFB smears, cultures and nucleic acid amplification.
A negative tuberculin skin test (TST) or interferon gamma release assay (IGRA) does not rule out active TB disease, but these tests can be useful for making the diagnosis and should be considered.

Continue to Page 2 to Begin Evaluation for Latent TB infection Testing

Adapted from the Washington State Department of Health Adult Tuberculosis Risk Assessment and Symptoms Screening

Centers for Disease Control and Prevention. Guidelines for Preventing the Transmission of Mycobacterium tuberculosis in Health-Care Settings, 2005. MMWR 2005, 54 (No.RR-17): 16.

Provider's Name	Patient's Name
Assessment Date	Date of Birth

Section 2 — Risk Assessment for <i>Latent TB Infection</i>
Latent Tuberculosis Infection (LTBI) Testing is recommended if any of the eight boxes in the following Risk Assessment are checked.
If LTBI test result is positive and active TB disease is ruled out, LTBI treatment is recommended.
Retesting should generally only be done in persons with a previous negative test who have new risk factors since the last assessment.
Risk Assessment: Check appropriate risk factor boxes below. ⁱⁱ
<input type="checkbox"/> Worker is undergoing initial (baseline) medical examination per WAC 296-840-145.
<input type="checkbox"/> Foreign-born person from a country with an elevated TB rate. <ul style="list-style-type: none"> • Includes any country other than the United States, Canada, Australia, New Zealand, or a country in western or northern Europe. • Interferon gamma release assay (IGRA) is preferred over tuberculin skin test (TST) for foreign-born persons.
<input type="checkbox"/> Immunosuppression — current or planned. <ul style="list-style-type: none"> • HIV infection, organ transplant recipient, treated with TNF-alpha antagonist (e.g. infliximab, etanercept, others), steroids (equivalent of prednisone ≥ 15 mg/day for ≥ 1 month), or other immunosuppressive medication.
<input type="checkbox"/> Close contact to someone with infectious TB disease at any time.
<input type="checkbox"/> Certain foreign travel. <ul style="list-style-type: none"> • Travel to countries with an elevated TB rate may be a risk for TB exposure in certain circumstances (e.g. extended duration, likely contact with infectious TB cases, high prevalence of TB in travel location, non-tourist travel).
<input type="checkbox"/> Diagnosis of silicosis.
<input type="checkbox"/> Exposure to respirable crystalline silica for 25 years or more.
<input type="checkbox"/> Other risk factor: _____
Latent Tuberculosis Infection (LTBI) Testing is recommended if any of the eight boxes in the Risk Assessment are checked.
IGRA testing for LTBI is preferred in BCG vaccinated persons: because IGRA has increased specificity of TB infection in persons vaccinated with BCG, IGRA is preferred over the TST in these persons. Most persons born outside the United States have been vaccinated with BCG.

Continue to Page 4 to Complete Risk Assessment for *Latent TB Infection Testing*

ⁱⁱ This list is not exhaustive. For additional information, see the Washington State Department of Health Adult TB Risk Assessment User Guide (www.doh.wa.gov).

If LTBI test result is positive and active TB disease is ruled out, LTBI treatment is recommended.

In persons at low risk for tuberculosis infection and disease progression, **confirmatory testing is recommended if the initial test for LTBI is positive:**ⁱⁱⁱ

- Either a TST or an IGRAs may be used for the second (confirmatory) test,
 - but if the TST is the initial positive test, it should not be used as the confirmatory test due to potential side-effects.
- Persons at low risk are only considered to have LTBI if both tests are positive.
 - Discordant testing is likely due to false positive results in persons at low risk.

As used by this tool, low risk refers to patients who have no identified risk factors for either 1. having acquired TB infection (e.g. foreign-born person from a country with an elevated TB rate), or 2. having excess risk of disease progression (e.g., current or planned immunosuppression).^{iv,v}

ⁱⁱⁱ Lewinsohn et al. 2017. *Official American Thoracic Society/Infectious Diseases Society of America/Centers for Disease Control and Prevention Clinical Practice Guidelines: Diagnosis of Tuberculosis in Adults and Children*. Clin Infect Dis 64(2): e1-e33.

^{iv} Ibid.

^v See *DOH Adult TB Risk Assessment User Guide*. Please request from the Washington State Department of Health.

WSR 18-20-113
PROPOSED RULES
WASHINGTON STATE UNIVERSITY

[Filed October 2, 2018, 4:21 p.m.]

Original Notice.

Preproposal statement of inquiry was filed as WSR 18-03-181.

Title of Rule and Other Identifying Information: Chapter 504-04 WAC, Practice and procedure and chapter 504-26 WAC, Standards of conduct for students.

Hearing Location(s): On November 6, 2018, at 4:00 p.m., at Lighty 405, Washington State University (WSU) Pullman, Pullman, Washington; SAC 503A, WSU Spokane, Spokane, Washington; East 212, WSU Tri-Cities, Richland, Washington; VECS 122, WSU Vancouver, Vancouver, Washington; and Seminar Room 461, WSU Everett, Everett, Washington.

Date of Intended Adoption: November 16, 2018.

Submit Written Comments to: Deborah Bartlett, Rules Coordinator, P.O. Box 641225, Pullman, WA 99164-1225, email prf.forms@wsu.edu, fax 509-335-3969, by November 6, 2018.

Assistance for Persons with Disabilities: Contact Joy Faerber, phone 509-335-2005, fax 509-335-3969, email prf.forms@wsu.edu, by October 31, 2018.

Purpose of the Proposal and Its Anticipated Effects, Including Any Changes in Existing Rules: The university is updating the rules regarding standards of conduct for students, chapter 504-26 WAC, and the rules regarding practice and procedure, chapter 504-04 WAC.

Reasons Supporting Proposal: The proposed amendments modify, clarify, and update the student conduct procedures in the university's standards of conduct for students and rules regarding practice and procedure, including, but not limited to, student conduct hearings and appeals. The proposed amendments include, but are not limited to, changes to incorporate legal requirements and help ensure that students' rights are well protected throughout the process, while also protecting the university community and holding individuals accountable for violations.

Statutory Authority for Adoption: RCW 28B.30.150.

Rule is necessary because of federal law, Title IX of the Civil Rights Act of 1964.

Name of Proponent: WSU, public.

Name of Agency Personnel Responsible for Drafting: Danielle Hess, Senior Assistant Attorney General, Attorney General's Office, WSU Division, French Administration 332, Pullman, WA 99164-1031, 509-335-2636; Implementation and Enforcement: Mary Jo Gonzales, Vice President, Student Affairs, French Administration 134, Pullman, WA 99164-1013, 509-335-4531 and Stacy Pearson, Vice President, Finance and Administration, French Administration 442, Pullman, WA 99164-1048, 509-335-2600.

A school district fiscal impact statement is not required under RCW 28A.305.135.

A cost-benefit analysis is not required under RCW 34.05.328. The university does not consider this rule to be a significant legislative rule.

This rule proposal, or portions of the proposal, is exempt from requirements of the Regulatory Fairness Act because the proposal:

Is exempt under RCW 19.85.025(3) as the rules adopt, amend, or repeal a procedure, practice, or requirement relating to agency hearings; or a filing or related process requirement for applying to an agency for a license or permit.

Is exempt under RCW 19.85.025.

Explanation of exemptions: The amendments to WSU student conduct code only apply to students at WSU, and therefore do not effect business or commerce in any way.

October 2, 2018.

Deborah L. Bartlett, Director
 Procedures, Records, and Forms
 and University Rules Coordinator

AMENDATORY SECTION (Amending WSR 17-13-049, filed 6/15/17, effective 7/16/17)

WAC 504-04-010 Matters subject to brief adjudication. The following proceedings are matters to be treated as brief adjudications pursuant to RCW 34.05.482 through 34.05.491:

(1) ~~Student conduct proceedings under chapter 504-26 WAC are treated as brief adjudications, except for matters involving sanctions of suspension for greater than ten instructional days, expulsion, revocation of degree, or loss of recognition of a student organization, which shall be referred for a full (formal) adjudication in accordance with this chapter), except for matters involving sanctions of suspension for greater than ten instructional days, expulsion, revocation of degree, or loss of recognition of a recognized or registered student organization. The procedural rules of chapter 504-26 WAC apply to all student conduct proceedings.~~

(2) Appeals of residency determinations. If a hearing is required by law or constitutional right, appeals of residency determinations under RCW 28B.15.013 are brief adjudicative proceedings conducted by the office of ~~((admissions))~~ the registrar.

(3) Appeals of parking violations. Appeals of parking violations are brief ~~((adjudicatory))~~ adjudicative proceedings conducted pursuant to applicable rules. See WAC 504-13-860, 504-14-860, 504-15-860, and 504-19-860.

(4) Hearings on student records. Hearings pursuant to the Family Educational Rights and Privacy Act, 20 U.S.C. ~~((§))~~ Sec. 1232g are to be brief adjudicative proceedings conducted pursuant to the rules of chapter 504-21 WAC.

(5) Hearings on denial of financial aid. Any hearings required by state or federal law regarding granting, modification or denial of financial aid are brief adjudicative proceedings conducted by the office of ~~((scholarships and))~~ student financial ((aid)) services.

~~((Emergency withdrawal of students. Proceedings to disenroll students for medical or psychological reasons are brief adjudicative proceedings conducted by the office of student affairs.~~

~~((7))~~ Discipline and termination of student employees. When required by law, hearings for the termination of or

imposition of disciplinary measures on student employees ~~((shall be))~~ are brief adjudicative proceedings.

AMENDATORY SECTION (Amending WSR 17-13-049, filed 6/15/17, effective 7/16/17)

WAC 504-04-020 Appointment of presiding officers for all adjudicative proceedings. The president of Washington State University or his or her designee ~~((shall have))~~ has the power to appoint members of the faculty, staff, and student body; administrative law judges; members in good standing of the Washington state bar association; the president or his or her designee; a person or entity with whom the university contracts; or any combination of the above to be presiding officers for formal and brief adjudicative proceedings. When more than one individual is designated to be the presiding officer, one person shall be designated by the president or ~~((president's))~~ designee to make decisions concerning discovery, closure, means of recording adjudicative proceedings, and similar matters. The term "presiding officer" as used in this chapter ~~((shall be))~~ is read in the plural when the context demands.

AMENDATORY SECTION (Amending WSR 17-13-049, filed 6/15/17, effective 7/16/17)

WAC 504-04-110 Adoption of model rules of procedure for formal (full) ~~((proceedings))~~ adjudications— Exceptions. In formal ~~((proceedings))~~ adjudications (also referred to as full adjudications) pursuant to RCW 34.05.413 through 34.05.476, Washington State University follows the Administrative Procedure Act (chapter 34.05 RCW) and hereby adopts the model rules of procedure adopted by the office of administrative hearings, chapter 10-08 WAC, with the following exceptions ~~((and modifications))~~:

(1) WAC 10-08-190 Adjudicative proceedings—Cameras—Recording devices.

See WAC 504-04-120 which determines the use of cameras and recording devices at adjudicative proceedings.

(2) ~~((WAC 10-08-040 Adjudicative proceedings—Notice of hearing. In addition to this model rule regarding notice, the provisions in WAC 504-26-401(5) and 504-26-403 (1) and (2) apply.~~

~~(3) The parties in a student conduct matter implicating Title IX of the Civil Rights Act of 1964 (Title IX) shall include the complainant(s) if the complainant(s) notifies the university that she/he wishes to participate as a party.~~

(4) ~~WAC 10-08-120 Adjudicative proceedings—Subpoenas. In determining whether to issue, quash, or modify a subpoena to a complainant/witness in a student conduct matter implicating Title IX, the presiding officer shall give due consideration to state and federal legal requirements including, but not limited to, Title IX, its implementing regulations, and guidance issued by the federal office for civil rights. In such cases, the party requesting the subpoena has the burden of showing that a subpoena is necessary for full disclosure of all the relevant facts and issues.~~

~~(5) Cross examination. As required by RCW 34.05.449, cross examination of witnesses shall be permitted to the extent necessary for full disclosure of all relevant facts and issues. However, in a student conduct matter implicating~~

~~Title IX, the complainant and respondent shall not be permitted to cross examine each other directly. The preferred method of cross examination in all student conduct matters is through written questions submitted to, and asked by, the presiding officer. The presiding officer may decline to ask cross examination questions that are irrelevant, immaterial, or unduly repetitious. In accordance with evidence rule 412, a complainant's sexual history generally will not be admissible. All questions submitted by the parties will be retained as part of the agency record. At the request of either participating party in a student conduct matter implicating Title IX, the requesting party shall be permitted to participate remotely, or in a different room, in accordance with chapter 504-26 WAC.~~

~~(6) Discovery. Depositions, interrogatories, and medical examinations of parties as part of discovery are not permitted in adjudications of student conduct matters. Other forms of discovery may be permitted at the discretion of the presiding officer; however, discovery should be limited to help ensure the prompt completion of the adjudication process, in accordance with RCW 34.05.446.~~

~~(7) Standard of proof. The standard of proof in student conduct proceedings is preponderance of the evidence.~~

~~(8) Administrative review in full adjudications. Within twenty days of service of an initial order resulting from a full adjudication in a student conduct proceeding, or a different time period as specified in the initial order, a student or student organization may appeal the decision to the university president or designee, who reviews the matter in accordance with RCW 34.05.464. Complainants in student conduct matters shall be afforded the same right to appeal as respondents. The university president or designee, of his or her own initiative, may review any initial order resulting from a full adjudication. The decision of the president shall be the final order of the university. If no appeal is initiated, the initial order following a full adjudication becomes the final order of the university after twenty-one days, or the day after the appeal period specified in the initial order, whichever is sooner.) Chapter 504-26 WAC sets forth exceptions and modifications to the model rules of procedure for formal hearings involving student discipline.~~

~~(3) The university's faculty manual sets forth exceptions and modifications to the model rules of procedure for formal hearings involving faculty discipline.~~

~~(4) Other procedural rules adopted in this title and this chapter are supplementary to the model rules. In the case of a conflict between the model rules and procedural rules adopted by Washington State University, the procedural rules adopted by the university ~~((shall))~~ govern.~~

AMENDATORY SECTION (Amending WSR 17-13-049, filed 6/15/17, effective 7/16/17)

WAC 504-04-120 Confidentiality of student, faculty, and staff formal adjudicative proceedings. In formal adjudicative proceedings, the presiding officer ~~((shall have))~~ has the power to close all or part of the hearing to public observation. The presiding officer ~~((shall have))~~ has the power to impose reasonable conditions upon observation of the proceeding. The presiding officer also ~~((shall have))~~ has the power to regulate the use of photographic and recording

equipment. In the case of hearings involving discipline, termination, or ~~((medical withdrawal))~~ administrative cancellation of enrollment, hearings ~~((will))~~ are normally ~~((be))~~ closed to public observation. In student conduct matters, including those implicating Title IX, hearings ~~((will be))~~ are closed to public observation in accordance with WAC 504-26-025.

AMENDATORY SECTION (Amending WSR 17-13-049, filed 6/15/17, effective 7/16/17)

WAC 504-04-130 Advising and representation of parties. Any person whose rights are in issue in a formal adjudicative proceeding ~~((shall have))~~ has the right to have an ~~((adviser))~~ advisor present during any stage of the proceedings. However, only persons admitted to the practice of law in the state of Washington, including licensed legal interns ~~((pursuant to admission to practice rule 9, shall be)),~~ are permitted to act as ~~((#))~~ representatives at the proceedings. The presiding officer ~~((shall have))~~ has the power to impose reasonable conditions upon participation of advisors and representatives.

AMENDATORY SECTION (Amending WSR 17-13-049, filed 6/15/17, effective 7/16/17)

WAC 504-04-140 Discovery. Discovery in formal hearings may be permitted at the discretion of the presiding officer, ~~((except as provided in WAC 504-04-110(6)))~~ unless specific limitations apply. In permitting discovery, reference ~~((shall))~~ must be made to the civil rules applicable in court proceedings for guidance.

The presiding officer ~~((shall have))~~ has the power to control the frequency and nature of discovery permitted, and to order discovery conferences to discuss discovery issues.

PART I

GENERAL MATTERS

AMENDATORY SECTION (Amending WSR 17-13-049, filed 6/15/17, effective 7/16/17)

WAC 504-26-001 Preamble. Washington State ~~((University, a community dedicated to the advancement of knowledge, expects all students to behave in a manner consistent with its high standards of scholarship and conduct.))~~ University's long-standing commitment to providing students with a transformational experience continues with a focus on enhancing the quality and relevance of the learning experience, providing more personalized student services, expanding learning opportunities outside the classroom, and developing a more cohesive student community. To this end, students are expected to uphold and be accountable ~~((for these))~~ to high standards ~~((both on and off campus and acknowledge the university's authority to take disciplinary action. The purpose of these standards and processes is to educate students and protect the welfare of the university community.~~

~~Accordingly, the conduct process is nonadversarial to the extent possible, confidential except to the extent permitted by law and these))~~ of conduct that foster a safe, healthy,

and inclusive campus community. The basic philosophy behind the standards of conduct and processes is one of education, centered on student learning through personal development and accountability. Therefore, the student conduct process is designed to guide and correct behaviors, challenge students to make better choices, and protect the rights and safety of all students, the university, and the community at large.

The university strives to provide a fair process for every student without bias or favor regardless of socioeconomic status, connections, race, color, creed, religion, national or ethnic origin, sex/gender, sexual orientation, gender identity/expression, age, marital status, disability, genetic information, or status as an honorably discharged veteran or member of the military. It also has responsibility to inform and educate the university community, parents, and the public at large on these standards, uphold them, and exercise the authority to take educational and/or disciplinary action accordingly.

Correspondingly, students have the responsibility to read and be familiar with the standards of conduct ~~((this chapter), and not to be considered analogous to court proceedings. Further, the conduct process is independent of any criminal or civil penalties. WSU permits students to have advisors in certain circumstances in the student conduct process, but the role of the advisor is very limited, except in full adjudications. Sanctions under these standards of conduct are intended to challenge students' moral and ethical decision-making and help them bring their behavior into accord with university community expectations. When students are unable to conform their behavior to community expectations, the student conduct process may determine that they should no longer share in the privilege of participating in the university community)),~~ to abide by them, and to understand that violation of these standards, if the student is found responsible, will result in disciplinary and/or educational sanctions. The vice president for student affairs is the person designated by the university president to be responsible for the administration of the standards of conduct.

AMENDATORY SECTION (Amending WSR 17-13-049, filed 6/15/17, effective 7/16/17)

WAC 504-26-010 Definitions. ~~((1) The term "accused student" means any student accused of violating the standards of conduct for students (this chapter).~~

~~((2) The term "a))~~ For purposes of the standards of conduct, the following definitions apply:

(1) Academic integrity hearing board. Teaching faculty and student representatives who, collectively, are authorized by the university or college to review an instructor's determination that a student violated university academic integrity policies and whether or not the outcome proposed by the instructor is in keeping with the instructor's published policies.

(2) Appeals board (" means any person or persons authorized by the vice president for student affairs)). The group of students, faculty, and staff, collectively, authorized in accordance with WAC 504-26-115 to consider ~~((an))~~ appeals from a university conduct board's or conduct officer's determina-

tion(~~(, or a determination after a full adjudication,)~~) as to whether a student has violated the standards of conduct (~~(for students)~~) and any sanctions imposed.

(3) ~~((The term ")~~ Brief adjudication. The process by which a conduct officer may adjudicate student conduct matters involving possible sanctions, other than matters involving suspension for more than ten instructional days, expulsion, loss of recognition, or revocation of degree. Also referred to as a "conduct officer hearing" or "brief adjudicative proceeding."

(4) Cheating("). Includes, but is not limited to:

(a) Use of unauthorized materials in taking quizzes, tests, or examinations, or giving or receiving unauthorized assistance by any means, including talking, copying information from another student, using electronic devices, or taking an examination for another student.

(b) Use of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or carrying out other assignments.

(c) Acquisition or possession of tests or other academic material belonging to a member of the university faculty or staff when acquired without the permission of the university faculty or staff member.

(d) Fabrication, which is the intentional invention or counterfeiting of information in the course of an academic activity. Fabrication includes, but is not limited to:

(i) Counterfeiting data, research results, information, or procedures with inadequate foundation in fact(~~(;)~~). The office of research must be consulted in matters involving alleged research misconduct as that term is defined in the university's executive policy 33.

(ii) Counterfeiting a record of internship or practicum experiences(~~(;)~~).

(iii) Submitting a false excuse for absence or tardiness or a false explanation for failing to complete a class requirement or scheduled examination at the appointed date and time.

(e) Engaging in any behavior for the purpose of gaining an unfair advantage specifically prohibited by a faculty member in the course syllabus or class discussion.

(f) Scientific misconduct. Falsification, fabrication, plagiarism, or other forms of dishonesty in scientific and scholarly research are prohibited. Complaints and inquiries involving cases of scientific misconduct are managed according to the university's policy for responding to allegations of scientific misconduct. A finding of scientific misconduct is subject to sanctions by the (~~(office of student conduct)~~) center for community standards. The policy for responding to allegations of scientific misconduct (executive policy 33) may be reviewed by contacting the office of research.

(g) Unauthorized collaboration on assignments.

(h) Intentionally obtaining unauthorized knowledge of examination materials.

(i) Plagiarism. Presenting the information, ideas, or phrasing of another person as the student's own work without proper acknowledgment of the source. This includes submitting a commercially prepared paper or research project or submitting for academic credit any work done by someone else. The term "plagiarism" includes, but is not limited to, the use, by paraphrase or direct quotation, of the published or unpublished work of another person without full and clear

acknowledgment. It also includes the unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic materials.

(j) Unauthorized multiple submission of the same work.

(k) Sabotage of others' work.

(l) Tampering with or falsifying records.

~~((4) The term ")~~ (5) Complainant(" means any party").

Any person who is the alleged victim of prohibited student conduct, whether or not such person has made an actual complaint. Any individual, group, or entity, including the university, who submits a (~~(charge)~~) complaint alleging that a student or a registered or recognized student organization violated the standards of conduct (~~(for students~~

~~(5) The term ")~~.

(6) Conduct board. The group of students, faculty, and staff, collectively authorized in accordance with WAC 504-26-110 to adjudicate certain student conduct matters.

(7) Conduct officer. A university official authorized by the vice president for student affairs to initiate, manage, and/or adjudicate certain student conduct matters in accordance with WAC 504-26-401 and 504-26-402.

(8) Faculty member("). For purposes of this chapter, (~~(means)~~) any person hired by the university to conduct classroom or teaching activities or who is otherwise considered by the university to be a member of its faculty.

~~((6) The term ")~~ (9) Full adjudication. The process by which a conduct board adjudicates matters involving possible suspension of greater than ten instructional days, expulsion, loss of recognition, revocation of degree, or other matters as determined by the university. Also referred to as "formal adjudication," "formal (or full) adjudicative proceeding," or "conduct board hearing."

(10) Gender identity(" means). Having or being perceived as having a gender identity, self-image, appearance, behavior, or expression, whether or not that gender identity, self-image, appearance, behavior, or expression is different from that traditionally associated with the sex assigned to the person at birth.

~~((7) The term "may" is used in the permissive sense.~~

~~(8) The term ")~~ (11) Member of the university community("). Includes any person who is a student, faculty member, university official, any person employed by the university, or any person with a relationship with the university, including guests of and visitors to the university. A person's status in a particular situation is determined by the vice president for student affairs or designee.

~~((9) The term "policy" means)~~ (12) Parties. The parties to a student conduct proceeding must include the university and the respondent. The parties in a student conduct matter implicating Title IX of the Civil Rights Act of 1964 must include the complainant(s), if the complainant(s) notifies the university in writing that they wish to participate as a party. The university may designate other complainants, individuals, or recognized or registered student organizations as parties to conduct proceedings, or allow individuals or recognized or registered student organizations to intervene in conduct proceedings.

(13) Policies. The written rules and regulations of the university as found in, but not limited to, the standards of conduct (~~(for students, residence life handbook, the univer-~~

city web page and computer use policy, and graduate/undergraduate catalogs.

~~(10) The term ")", university policy manuals, housing and dining policies, academic regulations, and the university's graduate, undergraduate, and professional catalogs and other publications, including electronic publications.~~

~~(14) Recognized or registered student organization((" means any number of persons who have)). A group of students, collectively, that has complied with the formal requirements for university recognition or registration.~~

~~((11) The term "shall" is used in the imperative sense.~~

~~(12) The term "student" includes all persons)) (15) Respondent. A student or recognized or registered student organization alleged to have violated these standards of conduct.~~

~~(16) Student. Any person taking courses at the university, either full-time or part-time, pursuing undergraduate, graduate, or professional studies. Persons who withdraw after allegedly violating the standards of conduct ((for students)), who are not officially enrolled for a particular term but who have a continuing relationship with the university (including suspended students) or who have been notified of their acceptance for admission are considered "students" as are persons who are living in university residence halls, ((although)) even if not enrolled ((in this institution.~~

~~(13) The term "student conduct officer" means a university official authorized by the vice president for student affairs to manage conduct complaints including the imposition of sanctions upon any student(s) found to have violated the standards of conduct for students)).~~

~~((14) The term "university" means)) (17) University. Includes all locations, premises, programs, and operations of Washington State University.~~

~~((15) The term "university conduct board" means those persons who, collectively, have been authorized by the vice president for student affairs to determine whether a student has violated the standards of conduct for students and to impose sanctions when a student is found responsible by the board to have violated these standards of conduct.~~

~~(16) The term "academic integrity hearing board" means teaching faculty and student representatives who, collectively, have been authorized by the university or college to review an instructor's determination that a student violated university academic integrity policies and whether or not the outcome proposed by the instructor is in keeping with the instructor's published policies.~~

~~(17) The term ")", (18) University official((" includes)). Any person employed by the university, performing assigned administrative or professional responsibilities.~~

~~((18) The term ")", (19) University premises((" includes)). All land, buildings, facilities, vehicles, web sites, and other property in the possession of or owned, used, or controlled by the university (including adjacent streets and sidewalks), including its study abroad program sites, as well as university-sponsored or hosted online platforms.~~

~~((19) The vice president for student affairs is that person designated by the university president to be responsible for the administration of the standards of conduct for students.))~~

NEW SECTION

WAC 504-26-015 Jurisdiction and applicability—Relationship to other proceedings. (1) General. The standards of conduct apply to conduct that occurs on university premises or in connection with university sponsored activities, including transit to or from the activity.

(2) Off-campus conduct. In addition to subsection (1) of this section, the standards of conduct may apply to conduct that occurs off university premises and not in connection with university-sponsored activities, if the conduct adversely affects the health and/or safety of the university community or the pursuit of the university's vision, mission, or values.

(a) The university has sole discretion to make this determination. In making this determination, the conduct officer considers whether the alleged conduct:

(i) Requires the university to exercise jurisdiction under law or as required by federal or state agencies;

(ii) Negatively impacted the reputation of the university or its students;

(iii) Occurred on the property of recognized or registered student organizations;

(iv) Caused physical, mental, or emotional harm to another; or

(v) Was recognized by onlookers, complainants, or witnesses as being carried out by a student or recognized or registered student organization.

(b) When the university chooses to exercise jurisdiction for off-campus conduct not in connection with a university-sponsored activity, the parties must be notified in writing of the decision and the reasons for the decision, and their right to challenge the decision to the vice president for student affairs or designee. Challenges to jurisdiction must be in writing and filed within five calendar days from the date the notice is sent. In cases implicating Washington State University's executive policy 15, which prohibits discrimination, sexual harassment, and sexual misconduct, the vice president for student affairs or designee must consult with the university's Title IX coordinator.

(3) Online conduct - Electronic communications. These standards of conduct may be applied to behavior conducted online, via electronic mail, text message, or other electronic means.

(4) Time frame for applicability. Each student is responsible and accountable for their conduct from the time of application for admission through the actual awarding of a degree, even though conduct may occur before classes begin or after classes end, as well as during the academic year and during periods between terms of actual enrollment. These standards apply to a student's conduct even if the student withdraws from school, takes a leave of absence, or graduates.

(5) Group accountability. Recognized or registered student organizations that violate university policies and the standards of conduct are subject to sanctions. A recognized or registered student organization may be held accountable for the behavior of its officers, members, or guests when the university demonstrates that:

(a) The organization or its officers should have foreseen that behavior constituting a violation was likely to occur, yet failed to take reasonable precautions against such behavior;

(b) A policy or practice of the organization was responsible for a violation; or

(c) The behavior constituting a violation was committed by, condoned by, or involved a significant number of organization officers, members, or guests.

(6) International and national study programs. Students who participate in any university-sponsored or sanctioned international or national study program must observe the following rules and regulations:

(a) The laws of the host country and/or state;

(b) The academic and disciplinary regulations of the educational institution or residential housing program where the student is studying;

(c) Any other agreements related to the student's study program; and

(d) These standards of conduct.

(7) Academic and professional standards. Nothing in these standards of conduct is to be construed as limiting academic action that may be taken by a program or other academic unit against a respondent who, based on an established violation of these standards or otherwise, demonstrates a failure to meet the academic and/or professional standards of the program.

(8) Relationship between student conduct process and other legal processes. The university is not required to stay a student conduct proceeding pending any criminal or civil proceeding, nor must the disposition of any such criminal or civil proceeding control the outcome of any student conduct proceeding. Respondents may choose to remain silent during conduct proceedings, in accordance with WAC 504-26-045.

NEW SECTION

WAC 504-26-020 Advisors and representatives. (1) Advisors. Any party may have an advisor of their choice present during all stages of a conduct process. Upon a party's request, a list of trained advisors from outside the office of the dean of students (and those offices reporting to the dean of students) is provided. Advisors may assist any party engaged in the conduct process and attend meetings and hearings. Advisors may not be witnesses to the alleged behavior. Students should select an advisor whose schedule allows for attendance at the scheduled date and time of the informational meeting and/or hearing, because delays are not normally allowed due to scheduling conflicts of the advisor.

(2) Communication with the center for community standards. Advisors and representatives may communicate directly with the center for community standards to receive information on dates and times of meetings, status of conduct processes, and outcomes. As a condition of participation in the conduct process, the center for community standards may require advisors and representatives to sign a statement agreeing to comply with legal requirements and university rules including, but not limited to, requirements related to confidentiality of student information.

(3) Advisors in conduct meetings and hearings. During any conduct process, breaks may be taken, within reason, to allow a party to consult with their advisor. However, advisors are not permitted to speak on behalf of parties.

(4) Representatives. A party may choose to be represented during a full adjudication, at their own expense. Only persons currently admitted to practice law, including licensed legal interns, are permitted to act as representatives. In conduct board hearings, questions regarding logistical and administrative issues are to be directed to the presiding officer, who may impose reasonable conditions upon participation of advisors and representatives.

NEW SECTION

WAC 504-26-025 Confidentiality and participation in student conduct hearings. Student conduct meetings and hearings are closed to public observation. The parties and their advisors or representatives may attend the entire hearing, excluding deliberations. Admission of any other person to the hearing is at the discretion of the conduct officer or presiding officer, as applicable. For convenience, or to accommodate concerns for the personal safety, well-being, or fears of confrontation of any party or witness, the conduct officer or presiding officer may allow participation remotely, in separate rooms, or by other means.

NEW SECTION

WAC 504-26-030 Consolidation. In any student conduct matter in which there are common issues or parties, the parties may request, or the conduct officer or presiding officer may decide, to consolidate the proceedings. This decision is within the sole discretion of the conduct officer or presiding officer.

NEW SECTION

WAC 504-26-035 Service and notification. Service of all university notices under this chapter is sent by electronic mail addressed to the party's university-issued email address or, if the party does not have a university-issued email address, to the email address on record with the university. Service is complete when the email is sent to the email address. Service may also be accomplished by personal delivery or regular U.S. mail. Notifications via regular U.S. mail are sent to the party's last known address or the address on file with the university registrar, and service is complete on the date the notice is placed in the mail. The student is responsible for maintaining an updated mailing address on file with the registrar. Recognized or registered student organizations are responsible for updating their mailing address on file with the center for fraternity and sorority life, university recreation, or student involvement. Deadlines described in this chapter begin the date the notification is sent via email, personally delivered, or placed in regular U.S. mail.

NEW SECTION

WAC 504-26-040 Presumptions and standard of proof. All students and registered or recognized student organizations are presumed "not responsible" for alleged violations. Any violation must be proven by a preponderance of the evidence, meaning that it is more likely than not that the violation occurred. As part of the university's opening state-

ment in any conduct board hearing, the university's representative must read a statement to this effect.

NEW SECTION

WAC 504-26-045 Evidence. (1) Evidence, including hearsay evidence, is admissible in student conduct proceedings if, in the judgment of the conduct officer or presiding officer, it is the kind of evidence that reasonably prudent persons are accustomed to rely on in the conduct of their affairs. The conduct officer or presiding officer determines the admissibility and relevance of all information and evidence. The sexual history of a complainant is not admissible in a student conduct proceeding except to the extent permitted by evidence rule 412 and RCW 34.05.452 (stating that presiding officers must refer to the Washington rules of evidence as guidelines for evidentiary rulings).

(2) Students may choose to remain silent during conduct proceedings, recognizing that they give up the opportunity to explain their version of events and that the decision is made based on the information presented at the hearing. No student must be compelled to give self-incriminating evidence, and no negative inference will be drawn from a student's refusal to participate in any stage of the conduct proceeding. If either party does not attend or participate in a hearing, the conduct officer or conduct board may resolve the matter based on the information available at the time of the hearing.

NEW SECTION

WAC 504-26-050 Interim measures. (1) While a student conduct matter is pending, the university may take a number of interim actions in order to ensure the preservation of the educational experience and the overall university environment of the parties. These actions may include, but are not limited to:

- (a) A no-contact order imposed on any party;
- (b) University housing room change for one or more involved parties; and/or
- (c) Changes in academic schedules or assignments for any party.

(2) As stated in the university's housing and dining policies, the university reserves the right to assign roommates, to change room or hall assignments, and/or to consolidate vacancies by requiring residents to move from one room to another in the event such reassignments are determined to be necessary by the university.

(3) University departments taking interim measures must coordinate with the center for community standards, which advises the parties of the interim measures and the process for challenging them. For matters involving the university's executive policy 15, which prohibits discrimination, sexual harassment, and sexual misconduct, the departments must also consult with the university's office for equal opportunity regarding interim measures. Interim measures are not sanctions and do not imply or assume responsibility for a violation of the standards of conduct.

~~((ARTICLE I~~

AUTHORITY FOR STANDARDS OF CONDUCT FOR STUDENTS)) PART II

OFFICERS AND BOARDS

AMENDATORY SECTION (Amending WSR 17-13-049, filed 6/15/17, effective 7/16/17)

WAC 504-26-100 ~~((Composition of conduct and appeals boards.))~~ **Presiding officers.** ~~((1) The university))~~ Full adjudicative proceedings are conducted by the conduct board ~~((shall be composed of five individuals appointed by the vice president for student affairs and comprised of students and persons who are any category of university employee, including affiliate faculty and staff. The chairperson of the conduct board shall be named by the vice president for student affairs and shall be a university employee.~~

Any three persons constitute a quorum of a conduct board and may act, provided that at least one student and the chairperson are present.

~~((2) The appeals board shall be appointed by the vice president for student affairs. It shall be composed of three persons, including the chair. The chair shall be a university employee. The other members may be university employees, including affiliate faculty and staff, or students. Three persons constitute a quorum of the appeals board.))~~ and are presided over by an individual who is licensed to practice law in the state of Washington and has judicial training. The presiding officer's role is to ensure a fair and impartial process and is limited to making procedural and evidentiary rulings and handling logistical and other matters related to facilitating the proceedings to ensure compliance with legal requirements. The presiding officer must transmit a full and complete record of the proceedings to the center for community standards and the conduct board, including such comments upon demeanor of witnesses as the presiding officer deems relevant, in accordance with RCW 34.05.461. The presiding officer does not vote and is not considered for purposes of creating a quorum of the conduct board.

NEW SECTION

WAC 504-26-105 Recruitment, appointment, and term of conduct and appeals board members. A committee comprised of students, staff, and faculty members and convened by the vice president for student affairs selects a pool of members of the university community to serve as conduct board members, as well as a separate pool for appeals board members. Each pool must include representatives from all WSU campuses. Pool members are approved by the university president and must be in good standing with the university. Pool members serve a maximum term of four calendar years but may apply to serve another four-year term after a break of two years. Terms of pool members are staggered. Boards are convened by the vice president for student affairs or designee. The center for community standards is not involved in the recruitment or application processes for board members.

NEW SECTION

WAC 504-26-110 Composition of conduct board. A conduct board must consist of five members. A quorum of five is needed to hear a matter. The presiding officer is not a member of the conduct board and therefore is not considered for purposes of determining whether there is a quorum. A majority of conduct board members hearing a matter must be enrolled WSU students (undergraduate, graduate, or professional) and may be full-time or part-time. The remaining members may be students, or full-time or part-time faculty or staff of any rank or classification. When the complainant or respondent is enrolled at a particular campus, at least one member of the conduct board must be from that campus. No conduct board member may serve on a case if the member previously served on a board in a case involving the same complainant or respondent.

NEW SECTION

WAC 504-26-115 Composition of appeals board. The appeals board must consist of three members. A quorum of three is needed to review a matter. A majority of appeals board members hearing a matter must be enrolled WSU students (undergraduate, graduate, or professional) and may be full-time or part-time. The remaining members may be students, or full-time or part-time faculty or staff of any rank or classification. No appeals board member may serve on a case if the member previously served on a board on a case involving the same complainant or respondent. The vice president for student affairs or designee is responsible for designating one of the three appeals board members as chair. The chair is responsible for ensuring a fair and impartial process and is a voting member of the appeals board.

NEW SECTION

WAC 504-26-120 Training. (1) Board members and presiding officers. Conduct board members, appeals board members, and presiding officers must not participate in any student conduct matter until, at a minimum, training in the following areas has been completed:

- (a) Cultural competency and implicit bias;
 - (b) Student development and student conduct philosophies, including the educational component of the student conduct process;
 - (c) Identifying bias against individuals and against groups;
 - (d) Conflict of interest;
 - (e) Sexual assault and gender-based violence;
 - (f) Alcohol and drug prevention;
 - (g) Due process and burden of proof in student conduct matters; and
 - (h) Sanctioning principles and guidelines.
- (2) Conduct officers. Conduct officers must not participate in any student conduct matter until, at a minimum, training in the following areas has been completed:

- (a) Alternative dispute resolution;
- (b) Restorative justice; and
- (c) All training required of board members (see subsection (1) of this section).

- (3) Renewal of training. Training must be renewed on an annual basis.

NEW SECTION

WAC 504-26-125 Recusal. (1) Notification of names of conduct officers and board members. All parties must be notified of the names of conduct officers, conduct board members, and/or appeals board members assigned to their case no later than ten calendar days prior to the hearing or appeals board meeting date.

(2) Requesting recusal of conduct officers and board members. A party requesting recusal of a conduct officer or conduct/appeals board member must demonstrate good cause. The request must be made in writing no later than five calendar days prior to the date of the conduct hearing or appeals board meeting. For conduct board members, the presiding officer is responsible for granting or denying requests. For conduct officers and appeals board members, the vice president for student affairs or designee is responsible for granting or denying requests.

(3) Presiding officer. Requests for recusal of the presiding officer are governed by the model rules of procedure, WAC 10-08-050(2).

(4) Self-recusal in the event of conflict of interest. Conduct officers and board members must be trained in conflict of interest. For any matter in which they are participating, if they identify a potential conflict of interest, appeals board members and conduct officers must promptly notify and consult with the vice president for student affairs or designee, while conduct board members must promptly notify and consult with the presiding officer. Conduct officers and board members must recuse themselves if, after consultation, an actual conflict is determined to exist. If a potential conflict is identified but is determined by the vice president or designee or presiding officer, as applicable, to be insufficient to justify removal of the person, the parties must be notified of the potential conflict and reasons for determining that it does not pose an actual conflict. For purposes of this subsection, a conflict of interest is defined as a personal interest, financial, familial, or otherwise, that might impair, or reasonably appear to an objective, outside observer to impair, a person's independent unbiased judgment in the discharge of their official responsibilities.

~~((ARTICLE II~~~~PROSCRIBED)) PART III~~~~PROHIBITED CONDUCT~~

AMENDATORY SECTION (Amending WSR 15-01-080, filed 12/15/14, effective 1/15/15)

WAC 504-26-201 Misconduct—Rules and regulations. Any student or recognized or registered student organization found to have committed, assisted, conspired, or attempted to commit the following misconduct (WAC 504-26-202 through 504-26-230) is subject to the disciplinary sanctions outlined in WAC 504-26-405.

AMENDATORY SECTION (Amending WSR 07-11-030, filed 5/8/07, effective 6/8/07)

WAC 504-26-203 Disruption or obstruction. Students have the right to freedom of speech, including the right to dissent or protest, but this expression may not interfere with the rights of others or disrupt the university's activities. Prohibited behavior includes: Disruption or obstruction of teaching, research, administration, disciplinary proceedings, other university activities, including its public service functions on or off campus, or of other authorized nonuniversity activities when the conduct occurs on university premises or is directed toward any member of the university community (~~(members)~~) by any means including use of telephone, computer, or some other medium.

AMENDATORY SECTION (Amending WSR 15-01-080, filed 12/15/14, effective 1/15/15)

WAC 504-26-204 Abuse of others or disruption or interference with the university community. Abuse of others or disruption or interference with the university community includes, but is not limited to:

(1) Physical abuse, threats, intimidation, and/or other conduct that threatens, endangers, harms, or undermines the health, safety, or welfare of the university community or any person, including, but not limited to, domestic or intimate partner violence.

(2) Conduct that disrupts the university community or prevents (~~(other students, employees, or guests of)~~) any member of the university community from completing their duties.

(3) Conduct that interferes with or disrupts the university's mission, operations, or activities.

AMENDATORY SECTION (Amending WSR 06-23-159, filed 11/22/06, effective 12/23/06)

WAC 504-26-206 Hazing. (1) No student or recognized or registered student organization at Washington State University may conspire to engage in hazing or participate in hazing of another.

(a) Hazing includes any activity expected of someone joining a group (or maintaining full status in a group) that causes or is likely to cause a risk of mental, emotional and/or physical harm, regardless of the person's willingness to participate.

(b) Hazing activities may include, but are not limited to, the following: Abuse of alcohol during new member activities; striking another person whether by use of any object or one's body; creation of excessive fatigue; physical and/or psychological shock; morally degrading or humiliating games or activities that create a risk of bodily, emotional, or mental harm.

(c) Hazing does not include practice, training, conditioning and eligibility requirements for customary athletic events such as intramural or club sports and NCAA athletics, or other similar contests or competitions, but gratuitous hazing activities occurring as part of such customary athletic event or contest are prohibited.

(2) Washington state law also prohibits hazing which may subject violators to criminal prosecution. As used in RCW 28B.10.901 and 28B.10.902, "hazing" includes any method of initiation into a recognized or registered student organization or living group, or any pastime or amusement engaged in with respect to such an organization or living group that causes, or is likely to cause, bodily danger or physical harm, or serious mental or emotional harm, to any student or other person attending a public or private institution of higher education or other postsecondary education institution in this state.

(3) Washington state law (RCW 28B.10.901) also provides sanctions for hazing:

(a) Any person who violates this rule, in addition to other sanctions that may be imposed, (~~(shall)~~) forfeits any entitlement to state-funded grants, scholarships, or awards for a period of time determined by the university.

(b) Any recognized or registered student organization (~~(association, or student living group)~~) that knowingly permits hazing by its members or others subject to its direction or control (~~(shall)~~) must be deprived of any official recognition or approval granted by the university.

AMENDATORY SECTION (Amending WSR 08-05-001, filed 2/6/08, effective 3/8/08)

WAC 504-26-213 Firearms and dangerous weapons.

No student may carry, possess, or use any firearm, explosive (including fireworks), dangerous chemical, or any dangerous weapon on university (~~(property)~~) premises or in university-approved housing. Airsoft guns and other items that shoot projectiles are not permitted in university-approved housing. Students wishing to maintain a firearm on campus for hunting or sporting activities must store the firearm with the Washington State University department of public safety.

AMENDATORY SECTION (Amending WSR 06-23-159, filed 11/22/06, effective 12/23/06)

WAC 504-26-214 Disruptive activity. Participating in an on-campus or off-campus riot or unlawful assembly that disrupts the normal operations of the university and/or infringes on the rights of other members of the university community; leading or inciting others to disrupt scheduled and/or normal activities within any (~~(campus building or area)~~) university premises. For peaceful demonstrations, students should consult with university police for safety guidelines.

AMENDATORY SECTION (Amending WSR 15-01-080, filed 12/15/14, effective 1/15/15)

WAC 504-26-219 Abuse of the student conduct system. Abuse of the student conduct system including, but not limited to:

(1) Failure to obey any notice from a university conduct board or other university official to appear for a meeting or hearing as part of the student conduct system.

(2) Willful falsification, distortion, or misrepresentation of information before a university conduct proceeding.

(3) Disruption or interference with the orderly conduct of a university conduct board proceeding.

(4) Filing fraudulent charges or initiating a university conduct proceeding in bad faith.

(5) Attempting to discourage an individual's proper participation in, or use of, the student conduct system.

(6) Attempting to influence the impartiality of a member of the university conduct system prior to, and/or during the course of, any university conduct board proceeding.

(7) Harassment (verbal, written, or physical) and/or intimidation of a member of a university conduct board, any individual involved in the conduct process, or any conduct officer before, during, and/or after any university conduct proceeding.

(8) Failure to comply with or failure to complete any term or condition of any disciplinary sanction(s) imposed under the standards of conduct (~~(for students)~~).

(9) Influencing or attempting to influence another person to commit an abuse of the university conduct system.

(10) Violation of probation or any probationary conditions.

AMENDATORY SECTION (Amending WSR 14-11-025, filed 5/12/14, effective 6/12/14)

WAC 504-26-220 Discrimination and discriminatory harassment. Discrimination or discriminatory harassment on the basis of race; sex/gender; sexual orientation; gender identity/expression; religion; age; color; creed; national or ethnic origin; physical, mental, or sensory disability (including disability requiring the use of a trained service animal); marital status; genetic information; and/or status as an honorably discharged veteran or member of the military; and as defined in Washington State University's executive policy 15, which prohibits discrimination, sexual harassment, and sexual misconduct.

AMENDATORY SECTION (Amending WSR 08-05-001, filed 2/6/08, effective 3/8/08)

WAC 504-26-225 Trespassing. Knowingly entering or remaining unlawfully in or on university premises or any portion thereof. Any person who has been given notice by a university official of the university's decision to exclude (~~(him or her)~~) them from all or a portion of the university (~~(property)~~) premises is not licensed, invited, or otherwise privileged to enter or remain on the identified portion of university (~~(property)~~) premises, unless given prior explicit written permission by university administration.

AMENDATORY SECTION (Amending WSR 14-11-025, filed 5/12/14, effective 6/12/14)

WAC 504-26-227 Sexual harassment. Sexual harassment includes behavior defined in Washington State University's executive policy 15, which prohibits discrimination, sexual harassment, and sexual misconduct.

AMENDATORY SECTION (Amending WSR 14-11-025, filed 5/12/14, effective 6/12/14)

WAC 504-26-230 Retaliation. Retaliation includes any act that would dissuade a reasonable person from making or supporting a complaint, or participating in an investigation, under the standards of conduct (~~(for students)~~) (this chapter). Retaliatory behavior includes action or threat of action that could negatively affect another's employment, education, reputation, or other interest. It also includes retaliation as defined in Washington State University's executive policy 15, which prohibits discrimination, sexual harassment, and sexual misconduct.

~~((ARTICLE III~~

~~RULES AND REGULATIONS))~~

~~((ARTICLE)) PART IV~~

~~((STANDARDS OF CONDUCT FOR STUDENTS))
PROCEDURES~~

AMENDATORY SECTION (Amending WSR 17-13-049, filed 6/15/17, effective 7/16/17)

WAC 504-26-401 (~~(Complaints and student)~~) Initiating conduct (~~(process)~~) proceedings. (1) Complaints. Any member of the university community may (~~(file))~~ submit a complaint (~~(against))~~ that a student (~~(for violations of))~~ or recognized or registered student organization violated the standards of conduct (~~(for students)~~).

(2) ~~A student conduct officer, or designee, may review and investigate any complaint to determine whether it appears to state a violation of the standards of conduct for students. If a conduct officer determines that a complaint appears to state a violation of the standards of conduct, she or he considers whether the matter might be resolved through agreement with the accused or through alternative dispute resolution proceedings involving the complainant and the accused. The complainant and the accused are informed of university options for alternative dispute resolution and may request that the matter be addressed using alternative dispute resolution techniques. Generally, the accused and complainant must agree to the use of alternative dispute resolution techniques. If the accused and the student conduct officer reach an agreed resolution of the complaint, the disposition is final; there is no right to appeal from an agreed disposition.~~

(3) ~~If the conduct officer has determined that a complaint has merit and if).~~ In addition, the university may initiate conduct proceedings when it receives any direct or indirect report of conduct that may violate the standards of conduct.

(2) Decision not to refer the matter for hearing. After reviewing the initial information, if the conduct officer determines that further conduct proceedings are not warranted, the conduct officer dismisses the matter. If the conduct officer decides not to initiate a conduct proceeding when requested by a complainant, the conduct officer must notify the complainant in writing of the decision, the reasons for the decision, and how to seek review of the decision. Conduct matters

may be reopened if new relevant information becomes known.

(3) Notice of informational meeting. After reviewing initial information regarding a possible student conduct violation, if the student conduct officer decides conduct proceedings are warranted, the student conduct officer sends the respondent, or parties as appropriate, written notice of an informational meeting. The notice must, at a minimum, briefly describe the factual allegations or issues involved, the specific standard of conduct provision(s) the respondent is alleged to have violated, the range of possible sanctions for such violations, and the time, date, and place of the meeting. In addition, information regarding the student conduct process and student rights, as required by WAC 504-26-504 (Interpretation—Policies, procedures, and guidelines) must be provided. Any request to change or extend the time or date of the informational meeting should be addressed to the conduct officer.

(4) Purpose of informational meeting. The purpose of the informational meeting is to provide the respondent with information on the conduct process and their rights and responsibilities, and to determine next steps, if any, in resolving the matter. During the informational meeting, the respondent may provide names of witnesses to the conduct officer to potentially contact. In cases involving Title IX, an informational meeting is also offered to a complainant.

(5) Agreement and alternative dispute resolution. A conduct officer may resolve a matter by agreement. Agreements may be reached directly or through alternative dispute resolution. In cases where agreement is not reached directly, before referring the matter to a hearing, the conduct officer must consider, and make a written determination, whether alternative dispute resolution is appropriate to resolve the matter. Alternative dispute resolution must not be used in matters involving sexual misconduct or sexual harassment. When resolution of a matter is reached by agreement or alternative dispute resolution, the agreement must be in writing and signed by the parties and the conduct officer. In the agreement, the parties must be advised in writing that:

(a) The disposition is final and they are waiving any right to a hearing on the matter, including any right to appeal; and

(b) If any party decides not to sign the agreement, and the matter proceeds to a hearing, neither the agreement nor a party's refusal to sign will be used against either party at the hearing.

(6) Referral for adjudication. After the informational meeting, if the conduct officer determines that a conduct hearing is warranted, and the matter is not resolved through agreement or alternative dispute resolution, the matter is handled through either a conduct officer hearing (or referred for a) (brief adjudication) in accordance with WAC 504-26-402, or conduct board hearing (full adjudication) in accordance with (chapter 504-04 WAC.

(a) If the possible or recommended sanction is suspension for greater than ten instructional days, expulsion, revocation of degree, or loss of recognition of a student organization, the matter is referred for a full adjudication in accordance with chapter 504-04 WAC.

(b) Matters other than those listed in (a) of this subsection are heard by a conduct officer, unless the conduct officer

exercises his or her discretion to refer the matter for a full adjudication.

(4) The student conduct officer provides complainants who have been targets of alleged misconduct or who feel victimized thereby with names of university and community advocates or resources who may be able to help the complainant address his or her concerns about the behaviors and provide support to the complainant throughout the conduct process. Upon request, a university advisor from the office of the dean of students is available to the complainant and the accused student to assist in understanding the student conduct process. Due to federal privacy law, the university may not disclose to the complainant any sanctions taken against the accused student, unless the complainant was the victim of a violent crime for which the accused was found responsible as defined under the Family Educational Rights and Privacy Act (FERPA) (20 U.S.C. Sec. 1232g; 34 C.F.R. Part 99), or the accused student consents to such disclosure.

(5) All notifications and service under this chapter are delivered either by electronic mail or other electronic means, delivered personally, or sent via regular U.S. mail. Notifications sent via regular U.S. mail are sent to the party's last known address or the address on file with the university registrar. The student or recognized student organization is responsible for maintaining an updated mailing address on file with the registrar. Deadlines described in this chapter begin the date the notification is sent via electronic means, personally delivered, or placed in regular U.S. mail.

(6) Throughout the conduct process, the complainant and the accused student have the right to be assisted by an advisor they choose, at their own expense. Upon request, a university advisor from the office of the dean of students is available to the complainant and the accused student to assist in understanding the student conduct process. Except in full adjudications pursuant to chapter 504-04 WAC, the complainant and/or the accused student is responsible for presenting his or her own information, and therefore, during the hearing, advisors are not permitted to address the board, witnesses, conduct officers or any party or representatives invited by the parties to the hearing, nor to participate directly in any university conduct board hearing, conduct officer hearing, or other aspect of the conduct process. An advisor may communicate with the accused and recesses may be allowed for this purpose. A student should select as an advisor a person whose schedule allows attendance at the scheduled date and time for the scheduled meeting or hearing. The scheduling conflicts of an advisor are not considered good cause for a delay and do not entitle either party to a delay.

(7) Determinations in student conduct matters are made on the basis of a "preponderance of the evidence," that is, whether it is more likely than not that the accused student violated the standards of conduct for students.

(8) Formal rules of process, procedure, and/or technical rules of evidence, such as are applied in criminal or civil court, are not used in conduct board or conduct officer proceedings. Relevant evidence, including hearsay, is admissible if it is the type of evidence that reasonable members of the university community would rely upon in the conduct of their affairs. The chair of the university conduct board and/or the conduct officer shall have the discretion to determine admis-

sibility of evidence)) WAC 504-26-403. In determining which process is appropriate, the conduct officer considers factors including, but not limited to, the nature and severity of the allegations, the respondent's past contacts with the center for community standards, and the range of possible sanctions that could be imposed. A student may request that a conduct board hear the case, but the final decision regarding whether to refer the matter to the conduct board for hearing is made by the conduct officer and is not subject to appeal.

AMENDATORY SECTION (Amending WSR 17-13-049, filed 6/15/17, effective 7/16/17)

WAC 504-26-402 Conduct officer ~~((actions))~~ hearings (brief adjudications). ~~(((1) Any student alleged by a conduct officer to have violated any provision of standards of conduct for students is notified of the basis for the charge or charges and of)) (1) The majority of student conduct matters are adjudicated through conduct officer hearings. However, conduct officer hearings are not used to adjudicate matters in which the respondent faces possible sanctions of suspension for more than ten instructional days, expulsion, or revocation of degree or when a recognized or registered student organization faces possible loss of recognition. In addition, conduct officer hearings generally are not used to adjudicate matters in which the respondent faces allegations of sexual misconduct, as that term is defined in WAC 504-26-221.~~

(2) Notice of hearing. The conduct officer must provide the parties with written notice no later than ten calendar days prior to the conduct officer hearing. The notice must, at a minimum, briefly describe the factual allegations or issues involved, the specific standard of conduct provision(s) the respondent is alleged to have violated, the range of possible sanctions for such violations, and the time, date, and place of ((a conference between the student and the conduct officer through one of the procedures in WAC 504-26-401(5).)) the hearing. In addition, information regarding the student conduct process and student rights, as required by WAC 504-26-504 must be provided. The notice must also include:

(a) A jurisdiction statement if the alleged behavior occurred off campus and information regarding the right to challenge jurisdiction in accordance with WAC 504-26-015;

(b) Information regarding the right to request recusal of a conduct officer under WAC 504-26-125; and

(c) Any request to extend the time ~~((and/or))~~ or date of the conduct officer conference/hearing should be addressed to the conduct officer ~~((or presiding officer, as applicable.~~

(2) In order that any informality in disciplinary proceedings not mislead a student as to the seriousness of the matter under consideration, the student is informed of the potential sanctions involved at the initial conference or hearing)).

(3) ((After a review of the evidence and interviewing the student(s) involved in the case,)) Hearing and possible outcomes. Conduct officer hearings are brief adjudications conducted in accordance with RCW 34.05.482 through 34.05.494. The hearing allows the conduct officer to review available information, hear the parties' view of the matter, render a decision regarding responsibility, and impose sanctions, as appropriate.

(a) Before the hearing begins, the conduct officer must inform the respondent that:

(i) All respondents are presumed "not responsible" for pending charges;

(ii) The university must prove all violations by a preponderance of the evidence, meaning that it is more likely than not that the violation occurred; and

(iii) The parties have the right to have an advisor present at the hearing.

(b) Upon conclusion of the hearing, the conduct officer may take any of the following actions:

~~(((a)))~~ (i) Terminate the proceeding and enter a finding that the ~~((accused student or recognized student organization))~~ respondent is not responsible for the alleged conduct violation;

~~(((b)))~~ (ii) Dismiss the ~~((investigation,))~~ matter with no finding regarding responsibility, in which case the matter may be reopened at a later date if relevant new information ~~((that was unknown to the conduct officer arises))~~ becomes known;

~~(((c)))~~ (iii) Find the respondent responsible for any violations and impose ~~((appropriate))~~ sanctions ~~((as provided in WAC 504-26-405. Such sanctions are subject to the student's right of appeal as provided in these standards of conduct))~~ within the limitations described in subsection (1) of this section; or

~~(((d)))~~ (iv) Refer the matter ~~((for a full adjudication in accordance with chapter 504-04 WAC.~~

~~(4) The conduct officer may consider the student's past contacts with the office of student conduct in determining an appropriate sanction and/or deciding whether to refer the case for a full adjudication.~~

~~(5) The student is notified in writing of the determination made by)) to the conduct board.~~

(4) Notice of decision and right to appeal. The conduct officer notifies the parties in writing of the decision within ten ~~((business))~~ calendar days of the ~~((proceeding. The notice))~~ conduct officer hearing. This is the initial order of the university and includes information regarding the ~~((student's))~~ parties' right to appeal ~~((pursuant to WAC 504-26-407))~~ under WAC 504-26-420.

AMENDATORY SECTION (Amending WSR 16-08-014, filed 3/28/16, effective 4/28/16)

WAC 504-26-403 Conduct board ~~((proceedings))~~ hearings (full adjudications). ~~(((1) Any student charged by a conduct officer with a violation of any provision of the standards of conduct for students that is to be heard by a conduct board is provided notice as described in WAC 504-26-401(5).~~

(2) The written notice shall be completed by the conduct officer and shall include:

(a) The specific complaint, including the university policy or regulations allegedly violated;

(b) The approximate time and place of the alleged act that forms the factual basis for the charge of violation;

(c) The time, date, and place of the hearing;

(d) A list of the witnesses who may be called to testify, to the extent known;

(e) A description of all documentary and real evidence to be used at the hearing, to the extent known, including a statement that the student shall have the right to inspect his or her student conduct file.

(3) Time for hearings.

(a)) (1) Conduct board hearings are used in matters in which the respondent faces possible sanctions of suspension for more than ten instructional days, expulsion, or revocation of degree and matters in which a recognized or registered student organization faces possible loss of recognition. In addition, conduct board hearings are generally used to adjudicate matters in which the respondent faces allegations of sexual misconduct, as that term is defined in WAC 504-26-221. Other matters may be referred to a conduct board in the discretion of the conduct officer.

(2) Adoption of model rules of procedure. Conduct board hearings are full adjudications governed by the Administrative Procedure Act, RCW 34.05.413 through 34.05.476, and chapter 10-08 WAC, Model rules of procedure, except as otherwise provided in this chapter. In the event of a conflict between the rules in this chapter and the model rules, this chapter governs.

(3) Notice of hearing. Notice to the parties of a conduct board hearing must comply with model rule WAC 10-08-040 and standards of conduct rule WAC 504-26-035. In addition, information regarding the student conduct process and student rights, as required by WAC 504-26-504 must be provided.

(4) Time for conduct board hearings. The conduct board hearing is scheduled not less than ((seven)) ten calendar days after the ((student has)) parties have been sent notice of the hearing(, except in the case of interim suspensions as set forth in WAC 504-26-406).

((b)) In accordance with WAC 10-08-090, requests to extend the time and/or date for hearing must be addressed to the ((chair of the university conduct board, and must be copied to the office of student conduct)) presiding officer. A request for extension of time is granted only upon a showing of good cause.

((4)) University conduct board hearings are conducted by a university conduct board. A goal of the hearing is to have an educational tone and to avoid creation of an unduly adversarial environment. The hearings are conducted according to the following guidelines, except as provided by subsection (6) of this section:

(a) Procedures:

(i) University conduct board hearings are conducted in private.

(ii) The complainant, accused student, and his or her advisor, if any, are allowed to attend the entire portion of the university conduct board hearing at which information is received (excluding deliberations). Admission of any other person to the university conduct board hearing is at the discretion of the university conduct board chair and/or the student conduct officer.

(iii) In university conduct board hearings involving more than one accused student, the student conduct officer, at his or her discretion, may permit joint or separate hearings.

(iv) In university conduct board hearings involving graduate students, board memberships are comprised to include

graduate students and graduate teaching faculty to the extent possible.

(v) The complainant, the accused student, and the student conduct officer may arrange for witnesses to present pertinent information to the university conduct board. The conduct officer tries to arrange the attendance of possible witnesses who are identified by the complainant. Complainant witnesses must provide written statements to the conduct officer at least two weekdays prior to the hearing. Witnesses identified by the accused student must provide written statements to the conduct officer at least two weekdays prior to the conduct hearing. The accused student is responsible for informing his or her witnesses of the time and place of the hearing. Witnesses provide information to and answer questions from the university conduct board, the complainant, and the accused student, as appropriate. Questions may be suggested by the accused student and/or complainant to be answered by each other or by other witnesses. Written questions are directed to the conduct board chair, rather than to the witness directly. This method is used to preserve the educational tone of the hearing and to avoid creation of an unduly adversarial environment, and to allow the board chair to determine the relevancy of questions. Questions concerning whether potential information may be received are resolved at the discretion of the chair of the university conduct board. The chair of the university conduct board shall have the discretion to determine admissibility of information.

(vi) Pertinent records, exhibits, and written statements (including student impact statements) may be accepted as information for consideration by a university conduct board)

(5) Subpoenas. Subpoenas may be issued and enforced in accordance with model rule WAC 10-08-120. In determining whether to issue, quash, or modify a subpoena, the presiding officer must give due consideration to state and federal legal requirements including, but not limited to, Title IX, its implementing regulations, and guidance issued by the federal Office for Civil Rights. The party requesting the subpoena has the burden of showing that a subpoena is necessary for full disclosure of all the relevant facts and issues.

(6) Discovery. Depositions, interrogatories, and physical or medical examinations of parties are not permitted in adjudications of student conduct matters. Other forms of discovery may be permitted at the discretion of the ((chair and/or conduct officer).

(vii) Questions related to the order of the proceedings are subject to the final decision of the chair of the university conduct board.

(viii) After the portion of the university conduct board hearing concludes in which all pertinent information is received, the university conduct board shall determine (by majority vote) whether the accused student has violated each section of the standards of conduct for students as charged and what sanctions, if any, are appropriate.

(b) If the accused student is found responsible for any of the charges, the board may, at that time, consider the student's past contacts with the office of student conduct in determining an appropriate sanction.

(c) The accused student or recognized student organization is notified of the conduct board's decision within ten calendar days from the date the matter is heard. The accused stu-

~~dent or recognized student organization shall receive written notice of the decision, the reasons for the decision (both the factual basis therefore and the conclusions as to how those facts apply to the standards of conduct for students), the sanction, notice that the order will become final unless internal appeal is filed within twenty-one days of the date the letter was personally delivered, deposited in the U.S. mail, or electronically mailed, and a statement of how to file an appeal.~~

~~(i) The written decision is the university's initial order.~~

~~(ii) If the student or recognized student organization does not appeal the conduct board's decision before twenty-one calendar days from the date of the decision letter, it becomes the university's final order.~~

~~(5) There is a single verbatim record, such as an audio record, of all university conduct board hearings (not including deliberations). Deliberations are not recorded. The record is the property of the university.~~

~~(6) If an accused student to whom notice of the hearing has been sent (in the manner provided above) does not appear before a university conduct board hearing, the information in support of the complaint is presented and considered in his or her absence, and the board may issue a decision based upon that information.~~

~~(7) The university conduct board may for convenience or to accommodate concerns for the personal safety, well-being, and/or fears of confrontation of the complainant, accused student, and/or other witnesses during the hearing provide separate facilities, and/or permit participation by telephone, audio tape, written statement, or other means, as determined in the sole judgment of the vice president for student affairs or designee to be appropriate)) presiding officer; however, discovery should be limited to help ensure the prompt completion of the adjudication process.~~

(7) Cross-examination. As required by RCW 34.05.449, cross-examination of witnesses is permitted to the extent necessary for full disclosure of all relevant facts and issues. The preferred method of cross-examination in all student conduct matters is through written questions submitted to, and asked by, the presiding officer. Regardless, in no circumstance may the complainant or respondent be permitted to cross-examine each other directly in person or through their representative. The presiding officer may decline to ask cross-examination questions that are irrelevant, immaterial, or unduly repetitious. All questions submitted by the parties must be retained as part of the agency record, in accordance with RCW 34.05.566.

(8) Decision requirements. Decisions regarding responsibility and sanctions are made by a majority of the conduct board hearing the matter, except that any sanction of expulsion, revocation of degree, or loss of recognition of a recognized or registered student organization requires a supermajority consisting of no more than one "no" vote.

(9) Notice of decision and right to appeal. Within ten calendar days of the completion of the hearing, the conduct board must issue a decision, which is the initial order of the university and must contain the following:

(a) Appropriately numbered findings of fact and conclusions;

(b) The sanction(s) to be imposed, if any, and the rationale for the sanction(s);

(c) Information regarding the parties' right to appeal according to WAC 504-26-420, including the time frame for seeking review; and

(d) Notice that the initial order becomes final unless an appeal is filed within twenty-one calendar days of service of the initial order.

NEW SECTION

WAC 504-26-409 Emergency suspension. (1) Definition. An emergency suspension is a temporary exclusion of a student from all or specified portions of university premises, programs, or activities pending an investigation or student conduct proceeding relating to alleged standards of conduct violations. An emergency suspension may be imposed at any time prior to the issuance of the university's final order in the matter.

(2) Circumstances warranting emergency suspension. Emergency suspension may be imposed only in situations when the vice president for student affairs or campus chancellor (in consultation with the center for community standards), or their designee, has cause to believe that the student:

(a) Has violated any provision of the standards of conduct; and

(b) Presents an immediate danger to the health, safety, or welfare of any part of the university community or the public at large. Conduct that creates an ongoing disruption of, or interference with, the operations of the university and that prevents other students, employees, or invitees from completing their duties or accessing their education or the educational environment, is conduct harmful to the welfare of members of the university community.

(3) Procedure. The vice president for student affairs or campus chancellor, or their designee, ordering an emergency suspension must send the student a written notice of emergency suspension. The notice must contain the reasons for the decision (both the factual basis and the conclusions as to why those facts constitute a violation of the standards of conduct), and the policy reasons for the emergency suspension. The emergency suspension does not replace the regular hearing process, which must proceed to a conduct officer hearing or conduct board hearing, as applicable, as quickly as feasible. Once a final order is entered, any emergency suspension is lifted and the sanction, if any, set forth in the final order is imposed.

NEW SECTION

WAC 504-26-415 Procedure for academic integrity violations. (1) Initial hearing.

(a) When a responsible instructor finds that a violation of academic integrity has occurred, the instructor must assemble the evidence and, upon reasonable notice to the student of the date, time, and nature of the allegations, meet with the student suspected of violating academic integrity policies. If the student admits violating academic integrity policies, the instructor assigns an outcome in keeping with published course policies and notifies the center for community standards in writing, including the allegations, the student's admission, and the sanctions imposed.

(b) If the instructor is unable to meet with the student or if the respondent disputes the allegation(s) and/or the outcome proposed by the instructor, the instructor must make a determination as to whether the student did or did not violate the academic integrity policies. If the instructor finds that the student was in violation, the instructor must provide the student and the center for community standards with a written determination, the evidence relied upon, and the sanctions imposed.

(c) The student has twenty-one calendar days from the date of the decision letter to request review of the instructor's determination and/or sanction(s) imposed to the academic integrity hearing board.

(2) Review.

(a) Upon timely request for review by a student who has been found by their instructor to have violated the academic integrity policies, the academic integrity hearing board must make a separate and independent determination of whether or not the student is responsible for violating the academic integrity policies and/or whether the outcome proposed by the instructor is in keeping with the instructor's published course policies.

(b) The academic integrity hearing board is empowered to provide an appropriate remedy for a student including arranging a withdrawal from the course, having the student's work evaluated, or changing a grade where it finds that:

(i) The student is not responsible for violating academic integrity policies; or

(ii) The outcome imposed by the instructor violates the instructor's published policies.

(c) Academic integrity hearing board proceedings.

(i) Any student appealing a responsible instructor's finding of an academic integrity violation is provided written notice of an academic integrity hearing board hearing in accordance with WAC 504-26-035. The written notice must include:

(A) The specific complaint, including the university or instructor academic integrity policy or regulation allegedly violated;

(B) The approximate time and place of the alleged act that forms the factual basis for the violation;

(C) The time, date, and place of the hearing;

(D) A list of the witnesses who may be called to testify, to the extent known; and

(E) A description of all documentary and real evidence to be used at the hearing, to the extent known, including a statement that the student must have the right to inspect the documentation.

(ii) Time for hearings.

(A) Academic integrity hearing board hearings are scheduled not less than seven calendar days after the student has been sent notice of the hearing.

(B) Requests to extend the time and/or date for hearing must be addressed to the chair of the academic integrity hearing board, and must be copied to the center for community standards. A request for extension of time is granted only upon a showing of good cause.

(iii) Academic integrity hearing board hearings are conducted according to the following procedures, except as provided by (c)(iv) of this subsection:

(A) Academic integrity hearing board hearings are conducted in private.

(B) The instructor, respondent, and their advisor, if any, are allowed to attend the entire portion of the hearing at which information is received (excluding deliberations). Admission of any other person to the hearing is at the discretion of the academic integrity hearing board chair.

(C) In academic integrity hearings involving more than one respondent, the academic integrity hearing board chair may permit joint or separate hearings at the chair's discretion.

(D) In hearings involving graduate students, board memberships are comprised to include graduate students and graduate teaching faculty to the extent possible.

(E) The responsible instructor and the respondent may arrange for witnesses to present relevant information to the academic integrity hearing board. Witnesses must provide written statements to the conduct officer at least two weekdays before the hearing. The respondent is responsible for informing their witnesses of the time and place of the hearing. Witnesses provide information to and answer questions from the academic integrity hearing board, the responsible instructor, and the respondent, as appropriate. The respondent and/or responsible instructor may suggest written questions to be answered by each other or by other witnesses. Written questions are submitted to, and asked by, the academic integrity hearing board chair. This method is used to preserve the educational tone of the hearing and to avoid creation of an unduly adversarial environment, and to allow the board chair to determine the relevancy of questions. Questions concerning whether potential information may be received are resolved at the discretion of the academic integrity hearing board chair, who has the discretion to determine admissibility of information.

(F) Pertinent records, exhibits, and written statements may be accepted as information for consideration by an academic integrity hearing board at the discretion of the chair.

(G) Questions related to the order of the proceedings are subject to the final decision of the chair of the academic integrity hearing board.

(H) After the portion of the hearing concludes in which all pertinent information is received, the academic integrity hearing board determines (by majority vote) whether or not the respondent is responsible for violating the academic integrity policy and/or whether the outcome proposed by the instructor is in keeping with the instructor's published course policies.

(I) The respondent is notified of the academic integrity hearing board's decision within twenty calendar days from the date the matter is heard. The respondent must receive written notice of the decision, the reasons for the decision (both the factual basis therefore and the conclusions as to how those facts apply to the academic integrity policies), and the sanction.

(iv) If a respondent to whom notice of the hearing has been sent (in the manner provided above) does not appear at the hearing, the information in support of the complaint is presented and considered in the respondent's absence, and the board may issue a decision based upon that information.

(v) The academic integrity hearing board may for convenience, or to accommodate concerns for the personal safety,

well-being, and/or fears of confrontation of any person, provide separate facilities, and/or permit participation by telephone, audio tape, written statement, or other means, as determined in the sole judgment of the chair of the academic integrity hearing board to be appropriate.

(vi) The written decision of the academic integrity hearing board is the university's final order. There is no appeal from findings of responsibility or outcomes assigned by university or college academic integrity hearing boards.

(3) If the reported violation is the respondent's first offense, the center for community standards ordinarily requires the respondent to attend a workshop separate from, and in addition to, any academic outcomes imposed by the instructor. A hold is placed on the respondent's record preventing registration or graduation until completion of the workshop.

(4) If the reported violation is the respondent's second offense, the respondent is ordinarily referred for a full adjudicative hearing in accordance with WAC 504-26-403, with a recommendation that the respondent be dismissed from the university.

(5) If the instructor or academic integrity hearing board determines that the act of academic dishonesty for which the respondent is found responsible is particularly egregious in light of all attendant circumstances, the instructor or academic integrity hearing board may direct that the respondent's case be referred for a full adjudicative hearing, with a recommendation for dismissal from the university even if it is the respondent's first offense.

(6) Because instructors and departments have a legitimate educational interest in the outcomes, reports of academic integrity hearing board and/or conduct board hearings must be reported to the responsible instructor and the chair or dean.

NEW SECTION

WAC 504-26-420 Appeals. (1) Time for appeals. Decisions made by a conduct officer or conduct board become final twenty-one calendar days after the date the decision is sent to the parties, unless an appeal is submitted before that date.

(2) Effect of appeal - Stay. Except in extraordinary circumstances, which must be explained in writing in the conduct officer's or conduct board's initial order, the implementation of an initial order imposing sanctions must be stayed pending the time for filing an appeal and the issuance of the university's final order.

(3) Appeals of conduct officer decisions. Upon receipt of a timely appeal, the appeals board provides the other parties, if applicable, with a copy of the appeal and an opportunity to respond, and conducts a limited review as described below.

(a) Scope of review. Except as required to explain the basis of new information, appeal of a conduct officer decision is limited to a review of the record for one or more of the following purposes:

(i) To determine whether the conduct officer hearing was conducted fairly in light of the charges and information presented, and in conformity with prescribed procedures; devia-

tions from designated procedures are not a basis for sustaining an appeal unless significant prejudice results;

(ii) To determine whether the decision reached was based on substantial information, that is, whether there were facts in the case that, if believed by the fact finder, were sufficient to establish that a violation of the standards of conduct occurred;

(iii) To determine whether the sanction(s) imposed were appropriate for the violation of the standards of conduct that the respondent was found to have committed; or

(iv) To consider new information, sufficient to alter a decision, or other relevant facts not brought out in the original conduct officer hearing, because such information and/or facts were not known to the person appealing at the time of the original conduct officer hearing.

(b) Conversion to conduct board hearing. The appeals board makes any inquiries necessary to ascertain whether the proceeding must be converted to a conduct board hearing in accordance with WAC 504-26-403.

(4) Appeals of conduct board decisions. Upon receipt of a timely appeal, the appeals board provides the other parties, if applicable, with a copy of the appeal and an opportunity to respond.

(a) The appeals board must have and exercise all the decision-making power that the conduct board had, except that the appeals board must give due regard to the conduct board's opportunity to observe the witnesses, if applicable. The appeals board members must personally consider the whole record or such portions of it as may be cited by the parties.

(b) Scope of review. The appeals board conducts a full review in accordance with RCW 34.05.464.

(5) University's right to initiate appeal. The university president or designee, at their own initiative, may request that the appeals board review any initial order. Prior to taking action, the appeals board must notify the parties and allow them an opportunity to explain the matter.

(6) Appeals board decisions.

(a) Actions. After reviewing the record and any information provided by the parties, the appeals board may take the following actions:

(i) Affirm, reverse, or modify the conduct board's or conduct officer's decision, or any part of the decision;

(ii) Affirm, reverse, or modify the sanctions imposed by the conduct board or conduct officer, or any part of the sanctions; or

(iii) Set aside the findings or sanctions, or any part of the findings or sanctions, and remand the matter back to the conduct board or conduct officer with instructions for further proceedings.

(b) Content of decision. The decision includes the outcome, any sanction, and a brief statement of the reasons for the decision. The letter must advise the parties that judicial review may be available. For appeals of conduct board hearings, the decision includes, or incorporates by reference to the conduct board's decision, all matters as set forth in WAC 504-26-403.

(c) Service and effective date of decision. For appeals of conduct officer decisions, the appeals board's decision must be sent to the parties within twenty calendar days of receipt of

the appeal. For appeals of conduct board decisions, the appeals board's decision must be sent to the parties within thirty calendar days of receipt of the appeal, unless the appeals board notifies the parties in writing that additional time (up to ninety calendar days) is needed. The appeals board's decision is the final order of the university, except in the case of remand, and is effective when sent.

(7) Reconsideration of final orders. Within ten calendar days of service of a final order, any party may submit a request for reconsideration. The request must be in writing, directed to the appeals board, and must state the reasons for the request. The request for reconsideration does not stay the effective date of the final order. However, the time for filing a petition for judicial review does not commence until the date the appeals board responds to the request for reconsideration or twenty-one calendar days after the request has been submitted, whichever is sooner. If the appeals board does not respond to the request for reconsideration within twenty-one calendar days, the request is deemed to have been denied.

(8) Stay. A party may request that the university delay the date that the final order becomes effective by requesting a stay in writing to the appeals board within ten calendar days of the date the order was served.

NEW SECTION

WAC 504-26-425 Sanctions. (1) Publication of guidelines for sanctioning. Sanctioning guidelines and other information regarding sanctioning must be published on the center for community standards web site. Guidelines must explain in plain language the types of sanctions that a respondent may face for a particular violation and the factors that are used to determine the sanction(s) imposed for a particular violation. Factors must include, but not be limited to, the following:

(a) Conduct record. Any record of past violations of the standards of conduct, and the nature and severity of such past violations;

(b) Malicious intent. If a respondent is found to have intentionally selected a victim based upon the respondent's perception of the victim's race, color, religion, national or ethnic origin, age, sex/gender, marital status, status as an honorably discharged veteran or member of the military, sexual orientation, genetic information, gender identity/expression, or mental, physical, or sensory disability (including disability requiring the use of a trained service animal), such finding is considered an aggravating factor in determining a sanction for such conduct; and

(c) Impact on victim and/or university community.

(2) Effective date of sanctions. Except as provided in WAC 504-26-420(2), sanctions are implemented when a final order becomes effective. If no appeal is filed, an initial order becomes a final order on the day after the period for requesting review has expired. (See WAC 504-26-420.)

(3) Types of sanctions. The following sanctions may be imposed upon any respondent found to have violated the standards of conduct. More than one of the sanctions listed below may be imposed for any single violation:

(a) Warning. A notice in writing to the respondent that the respondent is violating or has violated institutional regulations.

(b) Probation. Formal action placing conditions upon the respondent's continued attendance, recognition, or registration at the university. Probation is for a designated period of time and warns the student or recognized or registered student organization that suspension, expulsion, loss of recognition, or any other sanction outlined in this section may be imposed if the student or recognized or registered student organization is found to have violated any institutional regulation(s) or fails to complete any conditions of probation during the probationary period. A student on probation is not eligible to run for or hold an office in any recognized or registered student group or organization; they are not eligible for certain jobs on campus including, but not limited to, resident advisor or orientation counselor; and they are not eligible to serve on the university conduct or appeals board.

(c) Loss of privileges. Denial of specified privileges for a designated period of time.

(d) Restitution. Compensation for loss, damage, or injury. This may take the form of appropriate service and/or monetary or material replacement.

(e) Education. The university may require the respondent to successfully complete an educational project designed to create an awareness of the respondent's misconduct.

(f) Community service. Imposition of service hours (not to exceed eighty hours per student or per member of a recognized or registered student organization).

(g) University housing suspension. Separation of the student from a residence hall or halls for a definite period of time, after which the student may be eligible to return. Conditions for readmission may be specified.

(h) University housing expulsion. Permanent separation of the student from a residence hall or halls.

(i) University suspension. Separation of the student from the university for a definite period of time, after which the student is eligible to request readmission. Conditions for readmission may be specified.

(j) University expulsion. Permanent separation of the student from the university. Also referred to as university dismissal. The terms are used interchangeably throughout this chapter.

(k) Revocation of admission and/or degree. Admission to or a degree awarded from the university may be revoked for fraud, misrepresentation, or other violation of law or standard of conduct in obtaining the degree, or for other serious violations committed by a student before awarding of the degree.

(l) Withholding degree. The university may withhold awarding a degree otherwise earned until the completion of the process set forth in these standards of conduct, including the completion of all sanctions imposed, if any.

(m) Trespass. A student may be restricted from any or all university premises based on their misconduct.

(n) Loss of recognition. A recognized or registered student organization's recognition (or ability to register) may be withheld permanently or for a specific period of time. A fraternity or sorority may be prohibited from housing first year students. Loss of recognition is defined as withholding university services, privileges, or administrative approval from a recognized or registered student organization. Services, privileges, and approval to be withdrawn include, but are not lim-

ited to, intramural sports (although individual members may participate), information technology services, university facility use and rental, student involvement office organizational activities, and center for fraternity and sorority life advising.

(o) Hold on transcript and/or registration. A hold restricts release of a student's transcript or access to registration until satisfactory completion of conditions or sanctions imposed by a conduct officer or university conduct board. Upon proof of satisfactory completion of the conditions or sanctions, the hold is released.

(p) No contact order. A prohibition of direct or indirect physical, verbal, and/or written contact with another individual or group.

(q) Fines. Previously established and published fines may be imposed. Fines are established each year prior to the beginning of the academic year and are approved by the vice president for student affairs.

(r) Additional sanctions for hazing. In addition to other sanctions, a student who is found responsible for hazing forfeits any entitlement to state-funded grants, scholarships, or awards for a specified period of time, in accordance with RCW 28B.10.902.

(4) Academic integrity violations. No credit need be given for work that is not a student's own. Thus, in academic integrity violations, the responsible instructor has the authority to assign a grade and/or educational sanction in accordance with the expectations set forth in the relevant course syllabus. The instructor's choices may include, but are not limited to, assigning a grade of "F" for the assignment and/or assigning an educational sanction such as extra or replacement assignments, quizzes, or tests, or assigning a grade of "F" for the course.

((ARTICLE)) PART V

ADMINISTRATION AND RECORDS

NEW SECTION

WAC 504-26-504 Interpretation—Policies, procedures, and guidelines. (1) The vice president for student affairs or designee has authority to interpret these rules and develops policies, procedures, and guidelines for the administration of the university's student conduct system that are consistent with the provisions in this chapter. These must be published, at a minimum, on the center for community standards web site and in the university's student handbook. A link to the student handbook or center for community standards web site must be provided to parties prior to any informational meeting or student conduct hearing and must provide the following information:

- (a) Rights in the student conduct process;
- (b) A clear explanation of what to expect during the process;
- (c) Information regarding legal resources available in the community;
- (d) A statement that respondents are presumed "not responsible"; and

(e) A statement regarding the right not to self-incriminate in accordance with WAC 504-26-045.

(2) Definitions from these standards are incorporated into Washington State University's executive policy 15, which prohibits discrimination, sexual harassment, and sexual misconduct.

NEW SECTION

WAC 504-26-510 Good Samaritan policy. A conduct officer may elect not to initiate a conduct proceeding regarding alcohol or other drug violations against a student who, while in the course of helping another person seek medical assistance, admits to the unlawful possession or use of alcohol or drugs, provided that the possession was for personal consumption and the use did not place the health or safety of any other person at risk. In addition, a conduct officer may elect not to initiate a conduct proceeding against a complainant who admits to the possession or use of alcohol or drugs in connection with a report under this policy.

NEW SECTION

WAC 504-26-515 Periodic review and assessment. At the end of each academic year, the center for community standards provides a report to the vice president for student affairs which must include, at a minimum, a numerical breakdown of the types of matters handled and the sanctions imposed. The vice president for student affairs must make the report publicly available, provided all personally identifiable or readily ascertainable student information is removed.

The standards of conduct and the student conduct system as a whole are reviewed every three years under the direction of the vice president for student affairs or designee. The student government council is asked to provide recommendations and input on proposed changes. After completion of any adjudication or other resolution of a student conduct matter, the center for community standards must send a survey to all parties requesting feedback on the process. Feedback results must be reviewed, at a minimum, every three years in connection with the periodic review and assessment.

NEW SECTION

WAC 504-26-520 Conduct hold on student record. When a student leaves the university or completes course work required for a degree after an incident occurs that could result in violations of the standards of conduct, the center for community standards may place a conduct hold on the student's record. A conduct hold may also be placed on the student's account if the student has failed to adequately complete sanctions by the proscribed timeline. A conduct hold may restrict the student from adding or dropping classes, requesting an official transcript, or receiving a degree from the university until the hold is removed. The center for community standards must advise the student of the hold and the process for challenging the hold. A conduct hold under these circumstances is not a sanction and does not imply or assume responsibility for a violation of the standards of conduct.

NEW SECTION

WAC 504-26-525 Good standing. The award of a degree and/or diploma is conditioned upon the student's good standing in the university and satisfaction of all university graduation requirements. "Good standing" means the student has resolved any acts of academic or behavioral misconduct and complied with all sanctions imposed as a result of the misconduct. The university has the sole authority in determining whether to withhold the degree and/or diploma in cases where the student is not in good standing. The university must deny the award of a degree if the student is dismissed from the university based on their misconduct. Neither diplomas nor transcripts are sent until students have resolved any unpaid fees and resolved any acts of academic or behavioral misconduct and complied with all sanctions imposed as a result of misconduct. (See also academic regulation 45 in the university general catalog.)

NEW SECTION

WAC 504-26-530 Recordkeeping and confidentiality. (1) Removal of conduct record. A student may request removal from their record a single disciplinary violation relating to the possession or use of alcohol and/or marijuana, and/or other violation of the university's policies relating to alcohol and drugs. Granting such a request is discretionary, and the student must make such a request in accordance with university policies and procedures.

(2) Conduct records are maintained in accordance with the university's records retention schedule.

(3) The conduct record is confidential and is released only as authorized under the Family Educational Rights and Privacy Act (FERPA) (20 U.S.C. Sec. 1232g; 34 C.F.R. Part 99) and chapter 504-21 WAC, University policy on student education records.

(4) A student may request a copy of their own conduct record at their own reasonable expense by making a written request to the center for community standards.

(5) Personally identifiable student information is redacted to protect other students' privacy, except as otherwise required by law.

(6) A student may authorize release of their own conduct record to a third party in compliance with FERPA by making a written request to the center for community standards.

(7) The university may inform the complainant of the outcome of any conduct proceeding involving a crime of violence as defined by FERPA.

(8) The university informs the complainant of the outcome of any conduct proceeding alleging sexual misconduct. (34 C.F.R. 668.46 (b)(11)(vi)(B).)

(9) The university may not communicate a student's conduct record to any person or agency outside the university without the prior written consent of the student, except as required or permitted by law. Exceptions include, but are not limited to:

(a) The student's parents or legal guardians may review these conduct records if the student is a dependent for tax purposes as defined by FERPA.

(b) The university may release conduct records to another educational institution, upon request, where the student seeks or intends to enroll, as allowed by FERPA.

~~((ARTICLE VI~~~~INTERPRETATION AND REVISION))~~REPEALER

The following sections of the Washington Administrative Code are repealed:

- WAC 504-26-005 Good standing.
- WAC 504-26-101 Convening boards.
- WAC 504-26-102 Policies.
- WAC 504-26-103 Decisions.
- WAC 504-26-200 Jurisdiction of the standards of conduct for students.
- WAC 504-26-301 Malicious intent.
- WAC 504-26-302 Responsibility for guests.
- WAC 504-26-303 International and national exchange programs.
- WAC 504-26-304 Recognized student organization conduct.
- WAC 504-26-305 Violation of law and university discipline.
- WAC 504-26-4031 Procedure for formal (full) adjudicative proceedings.
- WAC 504-26-404 Procedure for academic integrity violations.
- WAC 504-26-405 Sanctions.
- WAC 504-26-406 Interim suspension.
- WAC 504-26-407 Review of decision in brief adjudications.
- WAC 504-26-408 Interim measures.
- WAC 504-26-501 Records.
- WAC 504-26-601 Interpretations.
- WAC 504-26-602 Periodic review.

**WSR 18-20-116
PROPOSED RULES
NOXIOUS WEED
CONTROL BOARD**

[Filed October 3, 2018, 7:34 a.m.]

Original Notice.

Preproposal statement of inquiry was filed as WSR 18-16-010.

Title of Rule and Other Identifying Information: Chapter 16-750 WAC, State noxious weed list and schedule of monetary penalties, the Washington state noxious weed control

board (WSNWCB) is proposing to amend the state noxious weed list for 2019.

Hearing Location(s): On November 6, 2018, at 1:00 p.m., at the Coast Wenatchee Center Hotel, 201 North Wenatchee Avenue, Wenatchee, WA 98801.

Date of Intended Adoption: November 26, 2018.

Submit Written Comments to: Wendy DesCamp, WSNWCB, P.O. Box 42560, Olympia, WA 98504-2560, email wdescamp@agr.wa.gov, or noxiousweeds@agr.wa.gov, fax 360-902-2094, by November 5, 2018.

Assistance for Persons with Disabilities: Contact Deanna Painter, phone 360-902-2061, TTY 800-833-6388, email dpainter@agr.wa.gov, by October 30, 2018.

Purpose of the Proposal and Its Anticipated Effects, Including Any Changes in Existing Rules: The Washington state noxious weed list provides the basis for noxious weed control efforts for county noxious weed control boards and other entities. It also provides guidelines for WSNWCB. This proposal makes a few amendments to WAC 16-750-011. Specifically, the board is considering:

1. Amending the designation regions of nineteen Class B noxious weeds:

- Undesignate Brazilian elodea, *Egeria densa*, in Cowlitz County and designate Brazilian elodea, *Egeria densa*, in Pacific and Snohomish counties.
- Undesignate Eurasian watermilfoil, *Myriophyllum spicatum*, in Cowlitz County and designate Eurasian watermilfoil, *Myriophyllum spicatum*, in Mason County and Kittitas County except for the Columbia River.
- Undesignate hoary alyssum, *Berteroa incana*, in Spokane and Ferries [Ferry] counties.
- Undesignate indigobush, *Amorpha fruticosa*, in Skamania County.
- Undesignate hawkweeds (*Hieracium*): All nonnative species and hybrids of the Wall subgenus (*Hieracium*) in Skamania and Clark counties.
- Undesignate hawkweeds (*Hieracium*): All nonnative species and hybrids of the Meadow subgenus (*Pilosella*) in Skamania County and designate hawkweeds (*Hieracium*): All nonnative species and hybrids of the Meadow subgenus (*Pilosella*) in Ferry County.
- Undesignate meadow knapweed, *Centaurea x moncktonii*, in Skamania and Clark counties.
- Undesignate spotted knapweed, *Centaurea stoebe*, in Skamania and Clark counties.
- Undesignate shiny geranium, *Geranium lucidum*, in Skamania County.
- Designate butterfly bush, *Buddleja davidii*, in San Juan and Grays Harbor counties.
- Designate camelthorn, *Alhagi maurorum*, in Walla Walla County.
- Designate Dalmatian toadflax, *Linaria dalmatica* ssp. *dalmatica*, in Cowlitz, Kittitas, and Franklin counties.
- Designate European coltsfoot, *Tussilago farfara*, in Adams, Lincoln, Benton, and Franklin counties.
- Designate fanwort, *Cabomba caroliniana*, in Grays Harbor County.
- Designate grass-leaved arrowhead, *Sagittaria graminea*, in Mason County.

- Designate hairy willow-herb, *Epilobium hirsutum*, in Walla Walla County.
- Designate houndstongue, *Cynoglossum officinale*, in Douglas and Franklin counties.
- Designate diffuse knapweed, *Centaurea diffusa*, in Mason County.
- Designate purple loosestrife, *Lythrum salicaria*, in Mason County.

2. Updating the scientific name of five noxious weeds.

Designation changes in Mason County are by request of the Mason County noxious weed control board and intended to better match the distribution/threat of these noxious weeds. Each of these noxious weeds, Eurasian watermilfoil, grass-leaved arrowhead, diffuse knapweed, and purple loosestrife, are already being controlled in the county. Ferry County requested undesignating hoary alyssum to better match the distribution of this noxious weed in the county.

Undesignating nine Class B noxious weed[s] eases control requirements of these species in particular counties. In these counties, county weed boards will have the option to require control at the local level.

Designation changes of designating thirteen Class B noxious weeds are intended to better match the distribution/threat of these noxious weeds. Class B noxious weeds are generally designated where they are absent, limited, or pose a serious threat to health, agriculture, or natural areas so the economic impact is not unreasonable. European coltsfoot and fanwort and [are] not known to occur in the counties they are proposed for designation and the other Class B noxious weed designations have very limited distribution.

The scientific name of five Class B noxious weeds will be updated to improve consistency with national taxonomic standards.

Reasons Supporting Proposal: Under RCW 17.10.080, WSNWCB is charged with updating the state noxious weed list on an annual basis to ensure it accurately reflects the noxious weed control priorities and noxious weed distribution.

Statutory Authority for Adoption: RCW 17.10.080.

Statute Being Implemented: Chapter 17.10 RCW.

Rule is not necessitated by federal law, federal or state court decision.

Name of Proponent: WSNWCB, governmental.

Name of Agency Personnel Responsible for Drafting, Implementation, and Enforcement: Brad White, 1111 Washington Street S.E., Olympia, WA 98504, 360-902-1907.

A school district fiscal impact statement is not required under RCW 28A.305.135.

A cost-benefit analysis is not required under RCW 34.05.328. WSNWCB is not one of the agencies listed in this section.

The proposed rule does not impose more-than-minor costs on businesses. Following is a summary of the agency's analysis showing how costs were calculated. An online survey was emailed to about four hundred licensed nurseries and distributed to several nursery and agricultural industry associations to pass along to their members. Participating nurseries do not appear to carry any of the Class B noxious weeds that have proposed designation changes, fifteen of which are already on the Washington state department of agriculture's quarantine list (chapter 16-752 WAC). Of the four species

that are not already on the quarantine list, none are known for being ornamental species. An analysis of the direct economic effects of the proposed rule amendments indicates that costs to small businesses would be negligible or none at all. Proposed undesignations of nine Class B noxious weeds ease control requirements of these species. The thirteen Class B noxious weeds may be designated for control in counties where they are either absent or limited in distribution, so small business[es] in these counties should not be faced with more-than-minor costs to control those noxious weeds.

Based upon the above analysis, WSNWCB concludes that direct minor costs, if any, imposed would affect less than ten percent of small businesses and would not exceed \$100 in lost sales or revenue as a direct result of these proposed rule-making changes. Nor would any of these amendments to the

noxious weed list directly cause the creation of or loss of any jobs. WSNWCB concludes that small businesses will not be disproportionately impacted, nor would the proposed rule changes impose more than a minor cost on businesses in an industry. Therefore, we conclude that a formal small business economic impact statement is not required.

A copy of the detailed cost calculations may be obtained by contacting Wendy DesCamp, P.O. Box 42560, Olympia, WA 98504-2560, phone 360-725-5764, fax 360-902-2094, TTY 800-833-6388, email wdescamp@agr.wa.gov.

October 3, 2018
 Brad White
 Assistant Director

AMENDATORY SECTION (Amending WSR 17-24-035, filed 11/29/17, effective 1/1/18)

WAC 16-750-011 State noxious weed list—Class B noxious weeds.

Name		Will be a "Class B designate" in all lands lying within:	
(1)	blueweed, <i>Echium vulgare</i>	(a)	regions 1, 2, 3, 4, 6
		(b)	region 5, except Spokane County
(2)	Brazilian elodea, <i>Egeria densa</i>	(a)	region 1, except Grays Harbor (and Pacific counties) <u>County</u>
		(b)	region 2, except Kitsap (and Snohomish counties) <u>County</u>
		(c)	King County of region 2, except lakes Dolloff, Fenwick, Union, Washington, and Sammamish, and the Sammamish River
		(d)	region 3, except Wahkiakum (County) <u>and Cowlitz counties</u>
		(e)	regions 4, 5, and 6
(3)	bugloss, annual, <i>Anchusa arvensis</i>	(a)	regions 1, 2, 3, 4, and 6
		(b)	region 5, except Spokane County
(4)	bugloss, common, <i>Anchusa officinalis</i>	(a)	regions 1, 2, 3, and 6
		(b)	All of region 4 except those areas lying within the Entiat River Valley between the Columbia River confluence and Stormy Creek in Chelan County
		(c)	region 5, except Spokane County
(5)	butterfly bush, <i>Buddleja davidii</i>	(a)	<u>Grays Harbor County of region 1</u>
		(b)	<u>San Juan County of region 2</u>
		(c)	Cowlitz County of region 3
(6)	camelthorn, <i>Alhagi maurorum</i>	(a)	regions 1, 2, 3, 4, (and) <u>5, and 6</u>
		((b))	<u>region 6, except Walla Walla County</u>)
(7)	common fennel, <i>Foeniculum vulgare</i> (except bulbing fennel, <i>F. vulgare</i> var. <i>azoricum</i>)	(a)	region 1, except Jefferson County
		(b)	region 2, except King and Skagit counties
		(c)	region 3, except Clark County
		(d)	regions 4, 5, and 6
(8)	common reed, <i>Phragmites australis</i> (nonnative genotypes only)	(a)	regions 1, 2, 3, and 4
		(b)	region 5, except Grant County
		(c)	Asotin, Columbia, and Garfield counties of region 6

Name		Will be a "Class B designate" in all lands lying within:	
(9)	Dalmatian toadflax, <i>Linaria dal- matica</i> ssp. <i>dalmatica</i>	(a)	regions 1 ((and)) , <u>2, and 3</u>
		(b)	((region 3, except Cowlitz County
		(e))	Adams, <u>Kittitas</u> , and Lincoln counties of region 5
		((d))	Benton, <u>Franklin</u> , and Walla Walla counties of region 6
		<u>(c)</u>	
(10)	Eurasian watermilfoil, <i>Myriophyl- lum spicatum</i>	(a)	region 1, except Pacific ((and Mason counties)) <u>County</u>
		(b)	Island and San Juan counties of region 2
		(c)	Clark ((and Cowlitz counties)) <u>County</u> of region 3
		(d)	Chelan and Okanogan counties, and all lakes with public boat launches except Fan Lake in Pend Oreille County of region 4
		(e)	Adams and Lincoln counties of region 5
		(f)	<u>Kittitas County of region 5, except the Columbia River</u>
		<u>(g)</u>	Asotin, Columbia, and Garfield counties of region 6
(11)	European coltsfoot, <i>Tussilago far- fara</i>	(a)	regions 1, 2, 3, ((and)) <u>4, 5, and 6</u>
		((b))	region 5, except Adams, Grant, and Lincoln counties
		(e)	region 6, except Benton and Franklin counties))
(12)	fanwort, <i>Cabomba caroliniana</i>	(a)	regions <u>1</u> , 2, 4, 5, and 6
		(b)	((region 1, except Grays Harbor
		(e))	region 3, except Cowlitz County
(13)	gorse, <i>Ulex europaeus</i>	(a)	region 1, except Grays Harbor and Pacific counties
		(b)	regions 2, 3, 4, 5, 6
(14)	grass-leaved arrowhead, <i>Sagit- taria graminea</i>	(a)	region 1 ((, except Mason County))
		(b)	region 2, except Snohomish County
		(c)	regions 3, 4, 5, and 6
(15)	hairy willow-herb, <i>Epilobium hir- sutum</i>	(a)	regions 1, 3, and 4
		(b)	region 2, except Thurston and Whatcom counties
		(c)	region 5, except Klickitat County
		(d)	((Asotin, Columbia, and Garfield counties of)) region 6, <u>except Benton and Franklin counties</u>
(16)	hawkweed oxtongue, <i>Picris hiera- cioides</i>	(a)	regions 1, 2, 4, 5, and 6
		(b)	region 3, except Skamania County
(17)	hawkweed, orange, <i>Hieracium aurantiacum</i>	(a)	regions 1, 3, and 6
		(b)	region 2, except Whatcom County
		(c)	region 4, except Pend Oreille and Stevens counties
		(d)	region 5, except Kittitas and Spokane counties
(18)	hawkweeds: All nonnative species and hybrids of the Meadow subgenus (<i>Pilosella</i>), including, but not limited to, mouseear (<i>Hieraci-umpilosella</i>), pale (<i>H. lactucella</i>), queen-devil (<i>H. glomeratum</i>), tall (<i>H. piloselloides</i>), whiplash (<i>H. flagellare</i>), yellow (<i>H. caespitosum</i>), and yellow-devil (<i>H. x floribundum</i>)	(a)	region 1
		(b)	region 2, except Thurston County
		(c)	region 3, except Cowlitz ((County)) <u>and Skamania counties</u>
		(d)	((Chelan, Douglas, and Okanogan counties of)) region 4, <u>except Pend Oreille and Stevens counties</u>
		(e)	region 5, except Klickitat and Spokane counties
		(f)	region 6

Name		Will be a "Class B designate" in all lands lying within:	
(19)	hawkweeds: All nonnative species and hybrids of the Wall subgenus (<i>Hieracium</i>), including, but not limited to, common (<i>Hieracium lachenalii</i>), European (<i>H. sabaudum</i>), polar (<i>H. atratum</i>), smooth (<i>H. laevigatum</i>), spotted (<i>H. maculatum</i>), and wall (<i>H. murorum</i>)	(a)	regions 1, ((3,7)) 5, and 6
		(b)	region 2, except King, Skagit ₂ and Whatcom counties
		(c)	<u>region 3, except Clark and Skamania counties</u>
		(d)	region 4, except Stevens County
(20)	herb-Robert, <i>Geranium robertianum</i>	(a)	regions 4, 5, and 6
(21)	hoary alyssum, <i>Berteroa incana</i>	(a)	regions 1, 2, 3, and 6
		(b)	region 4, except Pend Oreille ((County and those areas lying north of Highway 20 in Ferry County)) <u>and Ferry counties</u>
		(c)	region 5, except Klickitat ((County)) <u>and Spokane counties</u>
(22)	houndstongue, <i>Cynoglossum officinale</i>	(a)	regions 1, 2, and 3
		(b)	Chelan ((County)) <u>and Douglas counties</u> of region 4
		(c)	Yakima, Grant and Adams counties of region 5
		(d)	Benton ((County)) <u>and Franklin counties</u> of region 6
(23)	indigobush, <i>Amorpha fruticosa</i>	(a)	regions 1, 2, and 4
		(b)	Lewis ((and Skamania counties)) <u>County</u> of region 3
		(c)	region 5, except Klickitat County
(24)	knapweed, black, <i>Centaurea nigra</i>	(a)	regions 1, 2, 3, 4, 5, and 6
(25)	knapweed, brown, <i>Centaurea jacea</i>	(a)	regions 1, 2, 3, 4, 5, and 6
(26)	knapweed, diffuse, <i>Centaurea diffusa</i>	(a)	region 1((, except Mason County))
		(b)	region 2
		(c)	region 3, except Cowlitz County
		(d)	Adams County of region 5
(27)	knapweed, meadow, <i>Centaurea x moncktonii</i>	(a)	regions 1 and 4
		(b)	region 2, except Whatcom County
		(c)	Thurston County of region 2, except below the ordinary high-water mark of the Nisqually River
		(d)	<u>Lewis and Wahkiakum counties</u> of region 3((, except Cowlitz County))
		(e)	region 5, except Kittitas and Klickitat counties
		(f)	region 6, except Franklin and Walla Walla counties
(28)	knapweed, Russian, ((<i>Aeroptilon</i>)) <u><i>Rhaponticum repens</i></u>	(a)	regions 1, 2, and 3
		(b)	Ferry and Pend Oreille counties of region 4
		(c)	Lincoln, Spokane, and Whitman counties of region 5
		(d)	Adams County of region 5, except for the area west of Highway 17 and north of Highway 26
		(e)	Asotin and Garfield counties of region 6
(29)	knapweed, spotted, <i>Centaurea stoebe</i>	(a)	region 1, except Grays Harbor
		(b)	region 2, except Whatcom County

		Will be a "Class B designate" in all lands lying within:
Name		
		(c) <u>Lewis and Wahkiakum counties of region 3</u> (except Cowlitz County)
		(d) Ferry County of region 4
		(e) Adams, Grant and Yakima counties of region 5
		(f) region 6, except Columbia and Walla Walla counties
(30)	knotweed, Bohemian, <i>Polygonum x bohemicum</i>	(a) Island County of region 2
		(b) Skamania County of region 3
		(c) region 4, except Stevens County
		(d) region 5, except Whitman and Yakima counties
		(e) region 6
(31)	knotweed, giant, <i>Polygonum sachalinense</i>	(a) region 2, except King, Pierce, and Snohomish counties
		(b) region 3, except Cowlitz and Lewis counties
		(c) regions 4, 5, and 6
(32)	knotweed, Himalayan, (<i>Polygonum polystachyum</i>) <u><i>Persicaria wallichii</i></u>	(a) region 1, except Pacific County
		(b) region 2, except King and Pierce counties
		(c) Cowlitz, Lewis and Skamania counties of region 3
		(d) region 4, except Stevens County
		(e) regions 5 and 6
(33)	knotweed, Japanese, <i>Polygonum cuspidatum</i>	(a) Island, San Juan, and Whatcom counties of region 2
		(b) Skamania County of region 3
		(c) region 4, except Okanogan and Stevens counties
		(d) region 5, except Spokane County
		(e) region 6
(34)	kochia, (<i>Koehia</i>) <u><i>Bassia scoparia</i></u>	(a) regions 1, 2, and 3
		(b) Stevens and Pend Oreille counties of region 4
		(c) Adams County of region 5
(35)	lesser celandine, <i>Ficaria verna</i>	(a) Snohomish County of region 2
		(b) Skamania County of region 3
		(c) Pend Oreille and Stevens counties of region 4
(36)	loosestrife, garden, <i>Lysimachia vulgaris</i>	(a) regions 1, 2, 3, 4, 5, 6
(37)	loosestrife, purple, <i>Lythrum salicaria</i>	(a) Clallam (and), Jefferson, <u>and Mason</u> counties of region 1
		(b) region 2, except Kitsap, Pierce, Skagit, and Snohomish counties
		(c) Clark, Lewis, and Skamania counties of region 3
		(d) region 4, except Douglas County
		(e) region 5, except Grant and Spokane counties
		(f) Columbia, Garfield, and Walla Walla counties of region 6
(38)	loosestrife, wand, <i>Lythrum virgatum</i>	(a) Clallam and Jefferson counties of region 1
		(b) region 2, except Kitsap, Pierce, Skagit, and Snohomish counties
		(c) Clark, Lewis, and Skamania counties of region 3

Name		Will be a "Class B designate" in all lands lying within:
		(d) region 4, except Douglas County
		(e) region 5, except Grant and Spokane counties
		(f) Columbia, Garfield, and Walla Walla counties of region 6
(39)	Malta starthistle, <i>Centaurea melitensis</i>	(a) regions 1, 2, and 3
		(b) region 4, except T36 R38 in the area contained within Hwy 395/Hwy 20, Pingston Creek Road, and Highland Loop Road in Stevens County
		(c) region 5, except Klickitat and Whitman counties
(40)	parrotfeather, <i>Myriophyllum aquaticum</i>	(a) region 1, except Pacific County
		(b) regions 2, 4, 5, and 6
		(c) Clark and Skamania counties of region 3
(41)	perennial pepperweed, <i>Lepidium latifolium</i>	(a) regions 1, 2, and 4
		(b) region 3, except Clark and Cowlitz counties
		(c) Kittitas, Lincoln and Spokane counties of region 5
		(d) Columbia and Garfield counties of region 6
(42)	poison hemlock, <i>Conium maculatum</i>	(a) Clallam, Mason, and Pacific counties of region 1
		(b) region 2, except King, Skagit, and Whatcom counties
		(c) Clark and Skamania counties of region 3
		(d) Chelan and Pend Oreille counties of region 4
		(e) Grant, Kittitas and Lincoln counties of region 5
(43)	policeman's helmet, <i>Impatiens glandulifera</i>	(a) region 1, except Pacific County
		(b) region 2, except Pierce, Thurston, and Whatcom counties
		(c) regions 3, 4, 5, and 6
(44)	puncturevine, <i>Tribulus terrestris</i>	(a) regions 1, 2, and 3
		(b) Ferry, Pend Oreille, and Stevens counties of region 4
		(c) region 5, except Grant, Klickitat, and Yakima counties
(45)	Ravenna grass, <i>Saccharum ravennae</i>	(a) Cowlitz County of region 3
		(b) region 4, except Chelan County
		(c) region 5, except Grant and Yakima counties
		(d) region 6, except Benton County
(46)	rush skeletonweed, <i>Chondrilla juncea</i>	(a) regions 1 and 3
		(b) region 2, except Kitsap County
		(c) region 4, except all areas of Stevens County south of Township 29
		(d) Kittitas and Yakima counties of region 5, and Adams County, except those areas lying east of Sage Road, the western border of Range 36
		(e) Asotin County of region 6
(47)	saltcedar, <i>Tamarix ramosissima</i> (unless intentionally planted prior to 2004)	(a) regions 1, 3, 4, and 5
		(b) region 2, except King and Thurston counties
		(c) region 6, except Benton and Franklin counties
(48)	Scotch broom, <i>Cytisus scoparius</i>	(a) regions 4 and 6
		(b) region 5, except Klickitat County

Name		Will be a "Class B designate" in all lands lying within:	
(49)	shiny geranium, <i>Geranium lucidum</i>	(a)	regions 1, 4, 5, and 6
		(b)	regions 2, except Thurston County
		(c)	region 3, except Clark (County) and Skamania counties
(50)	spurge flax, <i>Thymelaea passerina</i>	(a)	region 4, except Okanogan County
		(b)	regions 5 and 6
(51)	spurge laurel, <i>Daphne laureola</i>	(a)	region 1, except Clallam and Jefferson counties
		(b)	region 2, except King, Kitsap, and Pierce counties
		(c)	region 3, except Skamania County
		(d)	regions 4, 5, and 6
(52)	spurge, leafy, <i>Euphorbia</i> ((<i>esula</i>)) <u><i>virgata</i></u>	(a)	regions 1, 2, 3, and 4
		(b)	region 5, except Spokane and Whitman counties
		(c)	region 6, except Columbia and Garfield counties
(53)	spurge, myrtle, <i>Euphorbia myrsinites</i>	(a)	region 1, except Clallam and Jefferson counties
		(b)	region 2, except King, Kitsap, Pierce, and Whatcom counties
		(c)	regions 3, 5, and 6
		(d)	region 4, except Okanogan and Stevens counties
(54)	sulfur cinquefoil, <i>Potentilla recta</i>	(a)	region 1
		(b)	region 2, except Pierce and Thurston counties
		(c)	region 3, except Lewis and Skamania counties
		(d)	Adams, Grant, Lincoln, and Whitman counties of region 5
		(e)	region 6, except Asotin County
(55)	tansy ragwort, ((<i>Senecio</i>)) <u><i>Jacobaea vulgaris</i></u>	(a)	Island and San Juan counties of region 2
		(b)	Clark and Wahkiakum counties of region 3
		(c)	regions 4 and 6
		(d)	region 5, except Klickitat County
(56)	thistle, musk, <i>Carduus nutans</i>	(a)	regions 1, 2, 3, and 6
		(b)	region 4, except Douglas and Ferry counties
		(c)	region 5, except Kittitas County
(57)	thistle, plumeless, <i>Carduus acanthoides</i>	(a)	regions 1, 2, 3, 5, 6
		(b)	region 4, except those areas north of State Highway 20 in Stevens County
(58)	thistle, Scotch, <i>Onopordum acanthium</i>	(a)	regions 1, 2, and 3
		(b)	region 4, except Douglas County
		(c)	region 5, except Spokane and Whitman counties
(59)	velvetleaf, <i>Abutilon theophrasti</i>	(a)	regions 1, 2, 3, and 4
		(b)	region 5, except Yakima County
		(c)	region 6, except Franklin County
(60)	water primrose, <i>Ludwigia hexapetala</i>	(a)	regions 1, 2, 4, 5, and 6
		(b)	region 3, except Cowlitz County
(61)	white bryony, <i>Bryonia alba</i>	(a)	regions 1, 2, 3, and 4
		(b)	region 5, except Whitman County
		(c)	Benton County of region 6

Name		Will be a "Class B designate" in all lands lying within:	
(62)	wild chervil, <i>Anthriscus sylvestris</i>	(a)	regions 1, 4, and 6
		(b)	region 2, except Island and Whatcom counties
		(c)	Wahkiakum and Lewis counties of region 3
		(d)	region 5, except Whitman County
(63)	yellow archangel, <i>Lamiastrum galeobdolon</i>	(a)	Clallam County of region 1
		(b)	Island, San Juan, Skagit, and Whatcom counties of region 2
		(c)	Skamania and Wahkiakum counties of region 3
		(d)	regions 4, 5, and 6
(64)	yellow floating heart, <i>Nymphoides peltata</i>	(a)	regions 1, 2, and 6
		(b)	region 3, except Cowlitz County
		(c)	region 4, except Stevens County
		(d)	region 5, except Spokane County
(65)	yellow nutsedge, <i>Cyperus esculentus</i>	(a)	regions 1 and 4
		(b)	region 2, except Skagit and Thurston counties
		(c)	region 3, except Clark County
		(d)	region 5, except Klickitat and Yakima counties
		(e)	region 6, except Franklin and Walla Walla counties
(66)	yellow starthistle, <i>Centaurea solstitialis</i>	(a)	regions 1, 2, and 3
		(b)	region 4, except T36 R38 in the area contained within Hwy 395/Hwy 20, Pingston Creek Road, and Highland Loop Road in Stevens County
		(c)	region 5, except Klickitat, and Whitman counties

WSR 18-20-118
PROPOSED RULES
HEALTH CARE AUTHORITY

[Filed October 3, 2018, 8:02 a.m.]

Original Notice.

Preproposal statement of inquiry was filed as WSR 18-03-132.

Title of Rule and Other Identifying Information: WAC 182-535-1270 Oral health connections pilot project.

Hearing Location(s): On November 6, 2018, at 10:00 a.m., at the Health Care Authority (HCA), Cherry Street Plaza, Sue Crystal Conference Room 106A, 626 8th Avenue, Olympia, WA 98504. Metered public parking is available street side around building. A map is available at www.hca.wa.gov/documents/directions_to_csp.pdf or directions can be obtained by calling 360-725-1000.

Date of Intended Adoption: Not sooner than November 7, 2018.

Submit Written Comments to: HCA Rules Coordinator, P.O. Box 42716, Olympia, WA 98504-2716, email arc@hca.wa.gov, fax 360-586-9727, by November 6, 2018.

Assistance for Persons with Disabilities: Contact Amber Loughheed, phone 360-725-1349, fax 360-586-9727, telecom-

munication relay services 711, email amber.loughheed@hca.wa.gov, by November 2, 2018.

Purpose of the Proposal and Its Anticipated Effects, Including Any Changes in Existing Rules: This rule making is necessary to implement SSB 5883 which directs the agency to develop and implement a three-year pilot program to test the effect that enhanced dental benefits for adult medicaid clients with diabetes and pregnant medicaid clients have on access to dental care, health outcomes, and medical care costs. The pilot program must include enhanced reimbursement rates for specific current dental terminology codes for participating providers and an increase in the allowable number of periodontal treatments to up to four per calendar year.

Reasons Supporting Proposal: This rule making is necessary to implement SSB 5883. See purpose.

Statutory Authority for Adoption: RCW 41.05.021, 41.05.160, SSB 5883.

Statute Being Implemented: RCW 41.05.021, 41.05.160, SSB 5883.

Rule is not necessitated by federal law, federal or state court decision.

Name of Proponent: HCA, governmental.

Name of Agency Personnel Responsible for Drafting: Amy Emerson, P.O. Box 42716, Olympia, WA 98504-2716, 360-725-1348; Implementation and Enforcement: Pixie

Needham, P.O. Box 45502, Olympia, WA 98504-5502, 360-725-9967.

A school district fiscal impact statement is not required under RCW 28A.305.135.

A cost-benefit analysis is not required under RCW 34.05.328. RCW 34.05.328 does not apply to HCA rules unless requested by the joint administrative rules review committee or applied voluntarily.

The proposed rule does not impose more-than-minor costs on businesses. Following is a summary of the agency's analysis showing how costs were calculated. New WAC 182-535-1270 does not impose additional compliance costs or requirements on providers.

October 3, 2018
Wendy Barcus
Rules Coordinator

NEW SECTION

WAC 182-535-1270 Oral health connections pilot project. (1) The oral health connections pilot project is effective for dates of service from January 1, 2019, through December 31, 2021.

(2) The purpose of the oral health connections pilot project is to test the effect that enhanced oral health services have on the overall health of diabetic or pregnant medicaid clients receiving services in Cowlitz, Spokane, and Thurston counties.

(3) To be eligible for the oral health connections pilot project, a client must be:

- (a) Age twenty-one or older;
- (b) Pregnant, diabetic, or both;
- (c) Receiving services under this oral health pilot project in Cowlitz, Spokane, or Thurston counties; and

(d) Referred by a nondental primary health care provider or a designated community organization to a qualified oral health connections pilot project dental provider. For the purposes of this section, a designated community organization is defined as an auxiliary group or groups that partner with the agency and Arcora foundation to implement the oral health connections pilot project.

(4) A client who qualifies for the oral health connections pilot project due to pregnancy may continue receiving services through the duration of the maternity cycle as defined in WAC 182-533-0315, but must actually be pregnant at the start of services.

(5) The following are excluded from the oral health connections pilot project:

- (a) Family planning only and TAKE CHARGE programs under chapter 182-532 WAC;
- (b) Medical care services (MCS) program under WAC 182-508-0005; and
- (c) Clients who are enrolled in both medicaid and medicare.

(6) Under the oral health connections pilot project, the medicaid agency pays an enhanced rate for the following services:

- (a) One comprehensive oral exam, per client, per provider;

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(b) One complete series of intraoral radiographic images per client in a three-year period;

(c) Four bitewing x-rays (radiographs) once per client in a twelve-month period;

(d) Periodontal scaling and root planing - Four or more teeth per quadrant, once per quadrant per client in a two-year period;

(e) Periodontal scaling and root planing - Three or more teeth per quadrant, once per quadrant per client in a two-year period; and

(f) Up to three additional periodontal maintenance visits in a twelve-month period. At least ninety days must elapse following periodontal scaling and root planing or at least ninety days must elapse following initial periodontal maintenance, and then every ninety days afterwards for a total of three additional periodontal maintenance visits per eligible client in a twelve-month period.

(7) The services listed in subsection (6) of this section are the only services the agency pays at the enhanced rate. The agency pays for all other covered dental services at the standard rate.

(8) To receive the enhanced rate, dental providers must:

(a) Be enrolled to participate in the oral health connections pilot project;

(b) Meet the qualifications in WAC 182-535-1070;

(c) Provide the services in Cowlitz, Spokane, or Thurston counties; and

(d) Complete training designed specifically for the oral health connections pilot project.

(9) The agency assigns a special identifier to providers who complete the training in subsection (8)(d) of this section which allows them to receive the enhanced rate.

WSR 18-20-119
PROPOSED RULES
DEPARTMENT OF HEALTH
[Filed October 3, 2018, 8:18 a.m.]

Original Notice.

Preproposal statement of inquiry was filed as WSR 18-12-020.

Title of Rule and Other Identifying Information: WAC 246-490-300 through 246-490-310, establishing parentage on a birth record, and WAC 246-491-990 Vital records fees, the department of health (department) is proposing new rules to chapter 246-490 WAC to include requirements for filing assertions, acknowledgments, denials, and rescissions of parentage; and information to identify the correct subject of a record to process an establishment of parentage court order. The department is proposing amending WAC 246-491-990 to create new fees for filing assertions, acknowledgments, denials, and rescissions of parentage, and clarify existing fees.

Hearing Location(s): On November 7, 2018, at 12:30 p.m., at the Department of Health, Point Plaza East, Room 152/153, 310 Israel Road S.E., Tumwater, WA 98501.

Date of Intended Adoption: November 20, 2018.

Submit Written Comments to: Katitza Holthaus, Department of Health, Center for Health Statistics, P.O. Box 47814, doh/policyreview, fax 360-753-4135, by November 7, 2018.

Assistance for Persons with Disabilities: Contact Thomas Serra, phone 360-236-4328, fax 360-753-4135, TTY 360-833-6388 or 711, email thomas.serra@doh.wa.gov, by November 5, 2018.

Purpose of the Proposal and Its Anticipated Effects, Including Any Changes in Existing Rules: The purpose of the proposed rule is to formalize the procedure in rule for establishing parentage on birth records through assertions, acknowledgments, denials, and rescissions; supplemental information needed to identify the correct subject of a record to process an establishment of parentage court order; and establish new fees for filing assertions, acknowledgments, denials, and rescissions of parentage, and clarify existing fees.

Reasons Supporting Proposal: In 2018, the Washington state legislature passed SB 6037 (chapters 26.26A and 26.26B RCW) Uniform Parentage Act, which replaced existing chapter 26.26 RCW governing parentage. The statute requires the department to adopt rules necessary to carry out the responsibilities of the law.

Statutory Authority for Adoption: Chapters 26.26A and 26.26B RCW.

Statute Being Implemented: Chapters 26.26A and 26.26B RCW.

Rule is not necessitated by federal law, federal or state court decision.

Name of Proponent: Department of health, governmental.

Name of Agency Personnel Responsible for Drafting: Katitza Holthaus, 101 Israel Road S.E., Tumwater, WA 98501, 360-236-4311; Implementation: Kristin Reichl, 101 Israel Road S.E., Tumwater, WA 98501, 360-236-4321; and Enforcement: Jean Remsbecker, 101 Israel Road S.E., Tumwater, WA 98501, 360-236-4307.

A school district fiscal impact statement is not required under RCW 28A.305.135.

A cost-benefit analysis is not required under RCW 34.05.328. The agency did not complete a cost-benefit analysis under RCW 34.05.328. RCW 34.05.328 (5)(b)(vi) exempts rules that set or adjust fees or rates pursuant to legislative standards.

This rule proposal, or portions of the proposal, is exempt from requirements of the Regulatory Fairness Act because the proposal:

Is exempt under RCW 19.85.025(3) as the rules set or adjust fees under the authority of RCW 19.02.075 or that set or adjust fees or rates pursuant to legislative standards, including fees set or adjusted under the authority of RCW 19.80.045.

Is exempt under RCW 34.05.328 (5)(c)(iii).

Explanation of exemptions: By definition under RCW 34.05.328 (5)(c)(iii) the proposed rule does not qualify as a significant rule. The proposed rules establish procedures to establish parentage on birth records. WAC 246-491-990 is exempt under RCW 34.05.310 (4)(f).

October 3, 2018

John Wiesman, DrPH, MPH
Secretary

ESTABLISHING PARENTAGE ON A BIRTH RECORD

NEW SECTION

WAC 246-490-300 Establishing a presumption of parentage with an assertion of parentage. (1) When the individual who gave birth and the individual seeking to establish parentage were married after the birth of the child, the individual seeking to establish parentage shall file an assertion with the department to establish a presumption of parentage consistent with RCW 26.26A.115.

(2) If required to establish a presumption of parentage, the individual shall file an assertion prior to filing a voluntary acknowledgment of parentage with the department.

(3) The assertion may only be filed with the department on the forms provided by the department. The form must be completed and sent to the department along with the applicable fees established in WAC 246-491-990.

NEW SECTION

WAC 246-490-305 Establishing parentage with a voluntary acknowledgment of parentage or denial of parentage. (1) The individual who gave birth and an alleged genetic parent, an intended parent through assisted reproduction, or a presumed parent may use an acknowledgment of parentage that complies with RCW 26.26A.200 through 26.26A.265 to establish parentage. When the completed acknowledgment of parentage form is filed with the department and a denial of parentage is not required, the parent's name will be added to the child's birth record.

(2) If a presumed parent or an alleged genetic parent will not be the parent listed on the child's birth record, the presumed parent or an alleged genetic parent may sign a denial of parentage that complies with RCW 26.26A.200 through 26.26A.265. If the presumed parent or an alleged genetic parent does not sign a denial of parentage, the department shall require a court ordered establishment of parentage to change the birth record. Submission of the court order to the department must comply with the requirements of WAC 246-490-310.

(a) The acknowledgment of parentage and denial of parentage forms are considered completed when both forms are filed with the department.

(b) After both forms are filed, the department will change the child's birth record in accordance with the forms. The individual seeking to establish parentage will be listed as a parent.

(3) An individual who signed an acknowledgment of parentage or denial of parentage form may file a rescission of parentage form on or before sixty days from the time the acknowledgment or denial of parentage forms were filed with the department or the date of the first court proceeding relating to parentage of the child, whichever occurs first. Once a complete rescission that meets the time requirements has been filed with the department, the department will:

(a) Notify the individuals who signed an acknowledgment of parentage or denial of parentage form in writing to the individuals' address listed on the acknowledgment of par-

entage or denial of parentage form that a rescission was filed with the department. Failure to give the notice does not affect the validity of the rescission; and

(b) Change the child's record to the prior record information before the acknowledgment or denial of parentage form was filed.

(4) After a rescission is filed as described in subsection (3) of this section, a new acknowledgment of parentage form may be filed with the department.

(5) After sixty days, a challenge of parentage requires a court proceeding, consistent with chapter 26.26A RCW.

(6) For the purpose of this section, "witnessed" has the same meaning as RCW 26.26A.010. A person signing the witnessed statement must be at least eighteen years of age and not related by blood or marriage to the individuals who sign an acknowledgment of parentage, denial of parentage, or rescission of parentage form.

(7) An acknowledgment of parentage, denial of parentage, or rescission of parentage form must be completed, signed, witnessed or notarized, and submitted to the department with the applicable fee required by WAC 246-491-990. Incomplete forms will not be filed and will be returned.

(8) To receive a birth certificate reflecting the change, a certificate order form must be sent to the department along with the applicable fee required by RCW 70.58.107.

NEW SECTION

WAC 246-490-310 Court ordered establishment of parentage. (1) If parentage is established by court order, the court or parents of the child must submit a certified copy of the court order to the department.

(2) The department may require supplemental information to locate and change the child's birth record to comply with a court order that establishes parentage. The parents listed in the court order must provide the supplemental information. The department may request the following information in order to comply with the court order:

(a) Full name of child, as listed on the child's birth record;

(b) Child's date of birth;

(c) Full name of the individual who gave birth, as listed on the child's birth record;

(d) Full legal name, date of birth, and place of birth for the individual being added as a parent; and

(e) Any additional information needed to locate the birth record.

(3) If the department cannot locate the child's birth record, the department will not change the record until the parents listed in the court order provide the supplemental information requested by the department.

AMENDATORY SECTION (Amending WSR 91-02-049, filed 12/27/90, effective 1/31/91)

WAC 246-491-990 Vital records fees. The department shall collect nonrefundable fees to cover program costs as follows:

~~((1) To prepare a sealed file following amendment of the original vital record~~ \$15.00

~~(2) To review a sealed file~~ \$15.00

~~(3) The director of the division))~~

(1) To prepare a sealed record following an adoption or to search the vital records system for adoption record information. \$15.00

(2) To file an assertion of parentage, an acknowledgment or denial of parentage, or a rescission of parentage. \$18.00

(3) Fee for hospital filed acknowledgments or denials of parentage. \$5.00

(4) To prepare a certificate of birth record information (CBRI) letter or to provide a copy of an assertion of parentage, an acknowledgment or denial of parentage, or a rescission of parentage. \$15.00

(5) The secretary of health may enter into agreements with state and local government agencies to establish alternate fee schedules and payment arrangements for reimbursement of these program costs.

**WSR 18-20-121
PROPOSED RULES
DEPARTMENT OF HEALTH
(Board of Naturopathy)
[Filed October 3, 2018, 8:24 a.m.]**

Original Notice.

Preproposal statement of inquiry was filed as WSR 17-13-095.

Title of Rule and Other Identifying Information: WAC 246-836-150 Full approval of colleges of naturopathic medicine, the board of naturopathy (board) is proposing amendments to streamline the process for nationally accredited colleges of naturopathic medicine to maintain board approval.

Hearing Location(s): On November 16, 2018, at 9:00 a.m., at the Department of Health, Creekside 2 at Center Point, Suite 310, Room 307, 20425 72nd Avenue South, Kent, WA 98032.

Date of Intended Adoption: November 16, 2018.

Submit Written Comments to: Susan Gragg, P.O. Box 47852, Olympia, WA 98504-7852, email <https://fortress.wa.gov/doh/policyreview>, fax 360-236-2901, by November 9, 2018.

Assistance for Persons with Disabilities: Contact Susan Gragg, phone 360-236-4941, TTY 360-833-6388 or 711, email susan.gragg@doh.wa.gov, by November 9, 2018.

Purpose of the Proposal and Its Anticipated Effects, Including Any Changes in Existing Rules: The board is proposing to amend the rule that addresses the process by which naturopathic medical schools maintain board approval. The current rule requires that schools having Council on Naturo-

pathic Medical Education (CNME) accreditation to also renew their board approval no later than every five years. The proposed rule would streamline the process for renewal of approval by exempting CNME-accredited schools from approval renewal so long as they maintain accreditation status.

Reasons Supporting Proposal: The board had previously amended rules to accept accreditation by CNME as meeting the requirements for board approval but the existing language for this rule section requires that approved schools must renew that approval every five years. The proposed rule would eliminate redundancy for both the board and naturopathic medical schools by removing the requirement for approved schools to renew that approval so long as they maintain CNME accreditation. If a school fails to maintain CNME accreditation, that school becomes unapproved and must reapply to the board for formal approval under other existing rules.

Statutory Authority for Adoption: RCW 18.36A.160.

Statute Being Implemented: RCW 18.36A.100, 43.70.-041.

Rule is not necessitated by federal law, federal or state court decision.

Name of Proponent: Washington state board of naturopathy, governmental.

Name of Agency Personnel Responsible for Drafting, Implementation, and Enforcement: Susan Gragg, 111 Israel Road S.E., Tumwater, WA 98501, 360-236-4941.

A school district fiscal impact statement is not required under RCW 28A.305.135.

A cost-benefit analysis is required under RCW 34.05.-328. A preliminary cost-benefit analysis may be obtained by contacting Susan Gragg, Department of Health, P.O. Box 47852, Olympia, WA 98504-7852, phone 360-236-4941, fax 360-236-2901, TTY 360-833-6388 or 711, email susan.gragg@doh.wa.gov.

The proposed rule does not impose more-than-minor costs on businesses. Following is a summary of the agency's analysis showing how costs were calculated. The proposed rule does not impose costs on naturopathic medical schools because recognition of reaccreditation by CNME eliminates redundancies for both the schools and the board.

October 3, 2018
Blake T. Maresh
Executive Director

AMENDATORY SECTION (Amending WSR 12-13-104, filed 6/20/12, effective 7/21/12)

WAC 246-836-150 Full approval of colleges of naturopathic medicine. (1) Full approval of a college of naturopathic medicine is the approval given by the board a program that meets the requirements of RCW 18.36A.100 and this chapter.

(a) ~~Colleges of naturopathic medicine ((seeking full approval shall apply to the board on a form and in a manner prescribed by the board.~~

~~(b) Those naturopathic colleges holding current)) that hold accreditation by the ((CNME need only reference their current CNME accreditation, which will be verified by the~~

~~board)) Council on Naturopathic Medical Education (CNME) as of February 2017 are exempt from the requirement to apply for full approval; however, such colleges shall be subject to all other provisions of this chapter. Colleges of naturopathic medicine that fail to maintain CNME accreditation must seek board approval as outlined in this chapter.~~

(b) Colleges of naturopathic medicine that do not hold CNME accreditation and seek full approval shall apply to the board on a form and in a manner prescribed by the board.

(2) The board may grant full approval to naturopathic colleges which have demonstrated compliance with the standards contained in this chapter and RCW 18.36A.100.

(3) To be eligible for full approval a naturopathic college must have been in continuous operation for a period of at least three years.

(4) After approval by the board, periodic reports may be required. Failure to conform to or maintain established standards may result in loss of approval. With the exception of those schools that continue to maintain CNME accreditation as outlined in subsection (1)(a) of this section, no naturopathic college shall receive full approval for a period longer than five years. Prior to the expiration of the period of approval, the college must apply to the board for renewal of approval using the same criteria required under subsection (1) of this section. The responsibility for renewal rests solely with the naturopathic college. The board shall review the application and make a final decision of approval or disapproval in not more than one hundred twenty days.

(5) If a naturopathic college fails to maintain the required standards or fails to report significant institutional changes, including changes in location, within ninety days of the change, the board may revoke or suspend approval. The board may contact a naturopathic college at any time, either through an evaluation committee or representative, to audit, inspect or gather information concerning the college's compliance with the required standards.

(6) After suspension of approval of a naturopathic college, the board may reinstate approval upon receipt of satisfactory evidence that the college meets the standards of chapter 18.36A RCW and this chapter.

(7) After revocation of approval of a naturopathic college, a college may seek provisional approval, if otherwise qualified.

WSR 18-20-122

PROPOSED RULES

DEPARTMENT OF HEALTH

(Board of Naturopathy)

[Filed October 3, 2018, 8:28 a.m.]

Original Notice.

Preproposal statement of inquiry was filed as WSR 17-08-062.

Title of Rule and Other Identifying Information: WAC 246-836-080 Continuing competency program, the board of naturopathy (board) is proposing to amend the rule section regarding continuing education for naturopathic physicians.

Hearing Location(s): On November 16, 2018, at 9:00 a.m., at the Department of Health, Creekside at Center Point, Suite 310, Room 309, 20425 72nd Avenue South, Kent, WA 98032.

Date of Intended Adoption: November 16, 2018.

Submit Written Comments to: Susan Gragg, P.O. Box 47852, Olympia, WA 98504-7852, email <https://fortress.wa.gov/doh/policyreview>, fax 360-236-2901, by November 9, 2018.

Assistance for Persons with Disabilities: Contact Susan Gragg, phone 360-236-4941, TTY 360-833-6388 or 711, email susan.gragg@doh.wa.gov, by November 9, 2018.

Purpose of the Proposal and Its Anticipated Effects, Including Any Changes in Existing Rules: The board is proposing amendments to WAC 246-836-080 concerning continuing education (CE) requirements for licensed naturopathic physicians. Currently, naturopathic physicians report twenty hours of CE every year. The board has heard from some licensees and stakeholders that they find the current requirements to be unclear, vague, and outdated. The proposed rule amendments would clarify acceptable CE by identifying approved CE providers and acceptable ways for naturopathic physicians to satisfy the requirements, such as allowing a portion to be fulfilled through courses relevant to other health professions if the content is consistent with naturopathic scope of practice. The proposed rule amendments would also change the CE reporting cycle by increasing the number of hours required. The board's proposal would change the requirements from twenty hours every year to sixty every two years; those sixty hours would include a requirement for fifteen hours of pharmacy content.

Reasons Supporting Proposal: The board recognizes that there are many CE programs intended to improve clinical practice and patient care that may not satisfy the requirements of the rule as it is currently written, and while the proposed amendments would increase the number of hours required, they also provide more options currently ineligible for CE credit. These options would give licensees the choice to participate in activities more in line with their individual practices. In addition, the proposed increase from one year to a two year reporting cycle gives providers greater flexibility in choosing courses. The proposed amendments would also bring the naturopathic physician CE requirement more in line with requirements for naturopathic physicians in other states.

Statutory Authority for Adoption: RCW 18.36A.160.

Statute Being Implemented: Chapter 18.36A RCW.

Rule is not necessitated by federal law, federal or state court decision.

Name of Proponent: Washington state board of naturopathy, governmental.

Name of Agency Personnel Responsible for Drafting, Implementation, and Enforcement: Susan Gragg, 111 Israel Road S.E., Tumwater, WA 98501, 360-236-4941.

A school district fiscal impact statement is not required under RCW 28A.305.135.

A cost-benefit analysis is required under RCW 34.05-.328. A preliminary cost-benefit analysis may be obtained by contacting Susan Gragg, Department of Health, P.O. Box 47852, Olympia, WA 98504-7852, phone 360-236-4941, fax

360-236-2901, TTY 360-833-6388 or 711, email susan.gragg@doh.wa.gov.

The proposed rule does not impose more-than-minor costs on businesses. Following is a summary of the agency's analysis showing how costs were calculated. The rules do not impact businesses; these rules pertain only to providers.

October 3, 2018
Blake T. Maresh
Executive Director

AMENDATORY SECTION (Amending WSR 16-06-008, filed 2/18/16, effective 3/20/16)

WAC 246-836-080 Continuing competency program.

(1) General provisions. Each licensed naturopathic physician must complete ~~((twenty))~~ sixty hours of continuing education ~~((per))~~ every two years, as provided in chapter 246-12 WAC, Part 7.

(2)(a) A license holder's first ~~((twenty))~~ sixty hour continuing education requirement is due on the ~~((second))~~ third renewal date after the license is issued. After that, it is due ~~((annually))~~ every other year on the licensee's renewal date.

~~((=))~~ (b) A licensee may begin to accrue continuing education from the date of initial licensure and apply it toward the fulfillment of their first continuing education requirement.

(c) License reissuance. When applying for reissuance of an expired license, a naturopathic physician must attest to sixty hours of continuing education for the two years preceding the reissuance application. Upon reissuance, the licensee's continuing education sequence will resume based on the last active license continuing education cycle.

(3) Licensees must complete a minimum of fifteen continuing education hours over two years on the subject of pharmacology consistent with naturopathic scope of practice in this state. Course content, or a portion thereof, must be designated as pharmacology by an entity listed in subsection (5)(a)(i) or (b)(i) of this section. Examples of eligible pharmacology course content include:

(a) Legend substances as defined in RCW 69.41.010;

(b) Controlled substances in chapter 69.50 RCW;

(c) Biopharmacology, which is the study of medicinal or drug products manufactured in, extracted from, or semi-synthesized from biological sources;

(d) Pharmacognosy, which is the study of medicinal drugs derived from plants or other natural sources;

(e) Contraindications or interactions of drug-to-drug, drug-to-herb, or drug-to-nutrient; or

(f) Other subjects approved by the board.

(4) Suicide prevention requirements. As part of continuing education, a licensed naturopathic physician must complete a board-approved one-time training that is at least six hours long in suicide assessment, treatment, and management. This training must be completed by the end of the first full continuing education reporting period after January 1, 2016, or the first full continuing education reporting period after initial licensure, whichever is later.

(a) Until July 1, 2017, a board-approved training must be an empirically supported training in suicide assessment, including screening and referral, suicide treatment, and sui-

cide management, and meet any other requirement in RCW 43.70.442.

(b) Beginning July 1, 2017, training accepted by the board must be on the department's model list developed in accordance with rules adopted by the department that establish minimum standards for training programs. The establishment of the model list does not affect the validity of training completed prior to July 1, 2017.

(c) A board-approved training must be at least six hours in length and may be provided in one or more sessions.

(d) The hours spent completing the training in suicide assessment, treatment, and management under this subsection count toward meeting any applicable continuing education requirements.

(e) Nothing in this subsection is intended to expand or limit the naturopathic scope of practice.

~~((4))~~ (5) Categories of creditable continuing education.

(a) Category 1. A licensee is required to obtain a minimum of twenty hours over two years in this category; however, all sixty hours may be earned in this category. Category 1 credit hours and activities include:

(i) Live-attended, both in-person and remote-attendance, education related to the naturopathic scope of practice in this state approved or offered by the following sources:

(A) American Association of Naturopathic Physicians (AANP);

(B) Washington Association of Naturopathic Physicians (WANP);

(C) North American Naturopathic Continuing Education Accreditation Council (NANCEAC) through the Federation of Naturopathic Medicine Regulatory Authorities (FNMRA); or

(D) Naturopathic medicine academic institutions and scholarly organizations approved by the board according to WAC 246-836-150.

(ii) Prerecorded education meeting the requirement in (a)(i) of this subsection related to the naturopathic scope of practice in this state. To qualify for credit under this section the course must require the licensee to pass an examination in order to complete the course.

(iii) Completion of a one year residency accredited by the council on naturopathic medical education (CNME) meets the full two year continuing education requirement.

(iv) Licensees completing a medical marijuana continuing education course approved by the department may claim the hours designated by the course provider for this activity. This activity can only be claimed once during a two year continuing education cycle.

(v) Licensees completing the suicide prevention requirement in subsection (4) of this section may claim six hours for this activity. This activity can only be claimed once during a two year continuing education cycle.

(b) Category 2. Category 2 credit hours and activities include:

(i) Live-attended, both in-person and remote-attendance, education relevant to various other health professions, however licensees may only claim those hours that have content consistent with naturopathic scope of practice in this state. Hours must be obtained through an entity that is accredited or

nationally recognized, examples of which include, but are not limited to, courses accredited by:

(A) The accreditation council for continuing medical education (ACCME);

(B) The American Nurses Credentialing Center (ANCC); or

(C) The accreditation council for pharmacy education (ACPE).

(ii) Prerecorded education meeting the requirement in (b)(i) of this subsection, however only content related to naturopathic scope of practice in this state may be claimed. To qualify for credit under this section the course must require the licensee to complete an examination in order to complete the course.

(iii) Teaching, lecturing, or serving as a residency director, which shall equate one full-time work week to one continuing education hour.

(iv) Publishing in a peer-reviewed, scientific journal or textbook. Ten credit hours may be claimed for each paper, exhibit, publication, or chapter. Credit shall be claimed as of the date materials were presented or published.

(c) Category 3. A licensee may claim up to a maximum of five hours over two years in this category. Category 3 credit hours and activities include:

(i) Online study not otherwise specified above;

(ii) Multimedia education (CD/DVD);

(iii) Certification or recertification in basic life support (also known as cardiopulmonary resuscitation);

(iv) Self-study including, but not limited to, board examination preparation or reading papers and publications where an assessment tool is required upon completion; and

(v) Courses in nonclinical practice topics, such as:

(A) Health promotion;

(B) Health care cost management;

(C) Coding;

(D) Regulatory affairs; or

(E) Professional ethics, disciplinary prevention, or jurisprudence. Licensees completing the board's jurisprudence examination may claim two hours for this activity. This activity can only be claimed once during a two year continuing education reporting cycle.

(vi) In-person attendance at a board of naturopathy business meeting. Each meeting counts for one hour. Acceptable documentation is the licensee's presence recorded in the board's minutes.

(6) Documentation. A licensee must submit documentation upon request or audit. Acceptable documentation includes:

(a) Certificates of completion;

(b) Transcripts;

(c) Letters from instructors; or

(d) Other records, which must include participant's name, course title, course content, dates, provider(s) name(s), and signature of sponsor or instructor.

(e) For self-study activities that do not offer documentation, licensees should keep lists with hours spent reading publications, papers, or articles; or hours spent preparing for specialty board examinations.

(7) Waiver or extension. In ~~((emergency))~~ emergent or unusual situations, such as personal or family illness, the

board may ~~((in its discretion, for good cause shown,))~~ waive all or part of the continuing education requirement for a particular ~~((one year))~~ continuing education reporting period for an individual licensee if the board determines there is good cause. The board may also grant the licensee an extension period in order to meet the full requirement if the board determines there is good cause. Licensees requesting an extension must include a detailed plan on how they will obtain the deficient hours. Hours obtained for an extension can only be applied to the extension and cannot be used for any other continuing education reporting cycle. The board may require ~~((such))~~ verification of the ~~((emergency))~~ emergent or unusual situation as is necessary ~~((to prove its existence)).~~

WSR 18-20-123

PROPOSED RULES

HEALTH CARE AUTHORITY

[Filed October 3, 2018, 8:35 a.m.]

Original Notice.

Preproposal statement of inquiry was filed as WSR 18-10-027.

Title of Rule and Other Identifying Information: WAC 182-531-1675 Gender dysphoria treatment program.

Hearing Location(s): On November 6, 2018, at 10:00 a.m., at the Health Care Authority (HCA), Cherry Street Plaza, Sue Crystal Conference Room 106A and B, 626 8th Avenue, Olympia, WA 98504. Metered public parking is available street side around building. A map is available at <https://www.hca.wa.gov/assets/program/Driving-parking-checkin-instructions.pdf> or directions can be obtained by calling 360-725-1000.

Date of Intended Adoption: Not sooner than November 7, 2018.

Submit Written Comments to: HCA Rules Coordinator, P.O. Box 42716, Olympia, WA 98504-2716, email arc@hca.wa.gov, fax 360-586-9727, by November 6, 2018.

Assistance for Persons with Disabilities: Contact Amber Lougheed, phone 360-725-1349, fax 360-586-9727, telecommunication relay services 711, email amber.lougheed@hca.wa.gov, by November 2, 2018.

Purpose of the Proposal and Its Anticipated Effects, Including Any Changes in Existing Rules: The agency proposes the following revisions to WAC 182-531-1675:

- Remove the four component structure.
- Add information about medical necessity.
- Streamline the requirements for qualified health [health] care providers.
- Remove the requirement that each provider be recognized as an agency-designated center of excellence.
- Remove the language regarding developing an individualized treatment plan.
- Remove unnecessary administrative processes for the client and provider including, but not limited to, multiple attestation forms.
- Add facial masculinization procedures and surgeries related to detransitioning, including reversal of gender reassignment surgery to the list of noncovered services.

- Add a requirement for a comprehensive psychosocial evaluation by a medical health provider specializing in adolescent care.
- Add a requirement for prior authorization for clients age seventeen and younger, and expedited prior authorization for clients age eighteen and older.
- Changed "breast reconstruction" to "augmentation mammoplasty."
- Changed "genital electrolysis" to "genital hair removal."

Reasons Supporting Proposal: See purpose.

Statutory Authority for Adoption: RCW 41.05.021, 41.05.160.

Statute Being Implemented: RCW 41.05.021, 41.05.160.

Rule is not necessitated by federal law, federal or state court decision.

Name of Proponent: HCA, governmental.

Name of Agency Personnel Responsible for Drafting: Amy Emerson, P.O. Box 42716, Olympia, WA 98504-2716, 360-725-1348; Implementation and Enforcement: Tonja Nichols, P.O. Box 45502, Olympia, WA 98504-5502, 360-725-1658.

A school district fiscal impact statement is not required under RCW 28A.305.135.

A cost-benefit analysis is not required under RCW 34.05.328. RCW 34.05.328 does not apply to HCA rules unless requested by the joint administrative rules review committee or applied voluntarily.

The proposed rule does not impose more-than-minor costs on businesses. Following is a summary of the agency's analysis showing how costs were calculated. The updates to WAC 182-531-1675 do not impose additional compliance costs or requirements on providers.

October 3, 2018

Wendy Barcus

Rules Coordinator

AMENDATORY SECTION (Amending WSR 15-16-084, filed 7/31/15, effective 8/31/15)

WAC 182-531-1675 Washington apple health—Gender dysphoria treatment program. (1) Overview of the gender dysphoria treatment program.

(a) The medicaid agency covers the following services, consistent with the program rules described in Title 182 WAC, to treat gender dysphoria:

(i) Medical services including, but not limited to:

(A) Presurgical and postsurgical hormone therapy;

(B) Prepuberty suppression therapy(⊖);

(ii) Mental health services; and

(iii) Surgical services including, but not limited to:

(A) Anesthesia;

(B) Labs;

(C) Pathology;

(D) Radiology;

(E) Hospitalization;

(F) Physician services; and

(G) Hospitalizations and physician services required to treat postoperative complications of procedures performed under ~~((component four))~~ this section.

(b) ~~((The agency's gender dysphoria treatment program has four components. Prior authorization is required for services provided in component four only. Any medicaid provider can refer a client to component one. These components are not intended to be sequential and may run concurrently to meet the client's medical needs. The components are as follows:~~

~~(i) Component one—Initial assessment and diagnosis of gender dysphoria;~~

~~(ii) Component two—Mental health and medical treatment;~~

~~(iii) Component three—Presurgical requirements for prior authorization for component four; and~~

~~(iv) Component four—Gender reassignment surgery.~~

~~(e) All services under this program must be delivered by providers who meet the qualifications in subsection (2) of this section.~~

~~(d) The agency evaluates requests for clients under age twenty-one according to the early and periodic screening, diagnosis, and treatment (EPSDT) program described in chapter 182-534 WAC. Under the EPSDT program, a service may be covered if it is medically necessary, safe, effective, and not experimental.~~

~~(e)) Surgical services to treat gender dysphoria are covered for clients who have a diagnosis of gender dysphoria made by a provider who meets the qualifications outlined in chapter 182-502 WAC.~~

~~(c) Under this program, the agency pays only for medically necessary services. Medical necessity is defined in WAC 182-500-0070 and determined under WAC 182-501-0165 and 182-501-0169.~~

~~(d) The agency covers transportation services under the provisions of chapter 182-546 WAC.~~

~~((~~¶~~) (c) Any out-of-state care(~~, including a presurgical consultation,~~) must be approved as an out-of-state service under WAC 182-501-0182.~~

~~(f) Clients enrolled with an agency-contracted managed care organization (MCO) plan are subject to the respective plan's policies and procedures for coverage of these services.~~

~~(2) **Qualified health care providers for gender dysphoria treatment.**~~

~~(a) Providers must meet the qualifications outlined in chapter 182-502 WAC.~~

~~(b) Each provider must be recognized as an agency-designated center of excellence (COE). COE is defined in WAC 182-531-0050. To be a COE, all providers must complete an agency form attesting that they:~~

~~(i) Possess knowledge about current community, advocacy, and public policy issues relevant to transgender people and their families (knowledge about sexuality, sexual health concerns, and the assessment and treatment of sexual disorders is preferred);~~

~~(ii) Endorse the *Standards of Care for the Health of Transsexual, Transgender, and Gender-Nonconforming People, Version 7* as developed by the World Professional Association for Transgender Health (WPATH); and~~

~~(iii) Agree to provide services consistent with this section. The agency's forms are available online at <http://www.hea.wa.gov/medicaid/forms/Pages/index.aspx>.~~

~~(e) Diagnosis in component one must be made or confirmed by a COE provider who is a board-certified physician, a psychologist, a board-certified psychiatrist, or a licensed advanced registered nurse practitioner (ARNP).~~

~~(d) Mental health professionals who provide component two mental health treatment described in subsection (4)(d) of this section, or who perform the psychosocial evaluation described in subsection (5)(a)(iii) of this section must:~~

~~(i) Meet the requirements described in WAC 182-531-1400;~~

~~(ii) Sign the agency's form (HCA 18-493) attesting that they:~~

~~(A) Are competent in using the *Diagnostic Statistical Manual of Mental Disorders, Fifth Edition* (DSM-5) and the *International Classification of Diseases* for diagnostic purposes;~~

~~(B) Are able to recognize and diagnose coexisting mental health conditions and to distinguish these from gender dysphoria;~~

~~(C) Have completed supervised training in psychotherapy or counseling;~~

~~(D) Are knowledgeable of gender nonconforming identities and expressions, and the assessment and treatment of gender dysphoria; and~~

~~(E) Have completed continuing education in the assessment and treatment of gender dysphoria. This may include attending relevant professional meetings, workshops, or seminars; obtaining supervision from a mental health professional with relevant experience; or participating in research related to gender nonconformity and gender dysphoria; and~~

~~(iii) Be a board-certified psychiatrist, a psychologist, or a licensed:~~

~~(A) Psychiatric ARNP;~~

~~(B) Psychiatric mental health nurse practitioner;~~

~~(C) Mental health counselor;~~

~~(D) Independent clinical social worker;~~

~~(E) Advanced social worker; or~~

~~(F) Marriage and family therapist.~~

~~(e) Any surgeon who performs gender reassignment surgery must:~~

~~(i) Be a board-certified or board-qualified:~~

~~(A) Urologist;~~

~~(B) Gynecologist;~~

~~(C) Plastic surgeon;~~

~~(D) Cosmetic surgeon; or~~

~~(E) General surgeon;~~

~~(ii) Have a valid medical license in the state where the surgery is performed; and~~

~~(iii) Sign the agency's form (HCA 18-492) attesting to specialized abilities in genital reconstructive techniques and produce documentation showing that they have received supervised training with a more experienced surgeon.~~

~~(f) Any medical provider managing hormone therapy, androgen suppression, or puberty suppression for clients diagnosed with gender dysphoria must:~~

~~(i) Be either of the following:~~

~~(A) A licensed, board-certified, or board-qualified:~~

~~(I) Endocrinologist;~~

~~(II) Family practitioner;~~

~~(III) Internist;~~

(IV) Obstetrician/gynecologist;

(V) Pediatrician;

(VI) Naturopath; or

(B) A licensed ARNP or a licensed physician's assistant; and

(ii) Sign the agency's form (HCA 18-494) attesting to specialized abilities managing hormone therapy in treating gender dysphoria. The specialized abilities may be proved by producing documentation showing supervised training with a more experienced physician, and attesting attendance at relevant professional meetings, workshops, or seminars.

~~(3) **Component one—Initial assessment and diagnosis of gender dysphoria.** The purpose of component one is to assess and diagnose the client, and refer the client to other qualified providers as needed for additional medically necessary services. A health professional who meets the qualifications in subsection (2)(c) of this section must assess the client and:~~

~~(a) Confirm the diagnosis of gender dysphoria as defined by the *Diagnostic Statistical Manual of Mental Disorders, Fifth Edition (DSM-5)*;~~

~~(b) Determine the gender dysphoria is not the result of another mental or physical health condition, and refer the client to other specialists if other health conditions are indicated;~~

~~(c) Develop an individualized treatment plan for the client;~~

~~(d) Refer the client to qualified providers for the component two services described in subsection (4) of this section; and~~

~~(e) Assist and support the client in navigating component two and component three requirements, and provide services consistent with WPATH guidelines and WAC 182-531-1675.~~

~~(4) **Component two—Mental health and medical treatment.**~~

~~(a) Clients enrolled with an agency managed care organization (MCO) plan are subject to the respective plan's policies and procedures for coverage of these services.~~

~~(b) Mental health and medical treatment are covered after a health professional who meets the qualifications in subsection (2)(c) of this section has diagnosed, or confirmed the diagnosis of, gender dysphoria as defined by the DSM-5 criteria.~~

~~(c) Medical treatment in component two covers androgen suppression, puberty suppression, continuous hormone therapy, and laboratory testing to monitor the safety of hormone therapy. Some of these prescriptions may be subject to prior authorization as required by pharmacy policy in chapter 182-530 WAC. Medical treatment must be prescribed by a COE provider who meets the requirements in subsection (2)(a), (b), and (f) of this section.~~

~~(d) The agency covers mental health treatment for the client and the client's spouse, parent, guardian, child, or person with whom the client has a child in common if the treatment is:~~

~~(i) Medically necessary;~~

~~(ii) Provided according to the provisions of WAC 182-531-1400; and~~

~~(iii) Provided by a health professional who meets the requirements in subsection (2)(a), (b), and (d) of this section.~~

~~(5) **Component three—Presurgical requirements.**~~

~~(a) To proceed to component four gender reassignment surgery, the client must:~~

~~(i) Be age eighteen or older, unless allowed under EPSDT as described in subsection (1)(d) of this section;~~

~~(ii) Be competent to give consent for treatment and have this competency documented in clinical records; and~~

~~(iii) Undergo a comprehensive psychosocial evaluation that must do all of the following:~~

~~(A) Be conducted by two mental health professionals for genital surgery and one mental health professional for chest surgery. These mental health professionals must meet the qualifications described in subsection (2)(d) of this section.~~

~~(B) Confirm the diagnosis of gender dysphoria, document that professionals performing the evaluation believe the client is a good candidate for gender reassignment surgery, and document that surgery is the next reasonable step in the client's care.~~

~~(C) Evaluate the client for the presence of coexisting behavioral health conditions (substance abuse problems, or mental health illnesses), which could prevent the client from participating in gender dysphoria treatment including, but not limited to, gender reassignment surgery and postsurgical care.~~

~~(D) Document that any coexisting behavioral health condition is adequately managed.~~

~~(b) The surgeon who will perform the gender reassignment surgery and who meets the qualifications outlined in subsection (2)(a), (b), and (c) of this section, must complete a presurgical consultation. When the presurgical consultation is completed, the surgeon must forward the report of the consultation to the other treatment team members.~~

~~(c) The client must have received continuous hormone therapy as required by the treatment plan to meet treatment objectives. For exceptions, see subsection (6)(b) of this section.~~

~~(d) The client must have lived in a gender role congruent with the client's gender identity immediately preceding surgery as required by the treatment plan to meet treatment objectives. For exceptions, see subsection (6)(b) of this section.~~

~~(e) The client's medical record must document that the client met the requirements in (a) through (d) of this subsection.~~

~~(f) A member of the treatment team must write a referral letter and submit it to the agency along with the prior authorization request for surgery. The contents of the referral letter or its attachments must include:~~

~~(i) Results of the client's psychosocial evaluation, as described in (a)(iii) of this subsection;~~

~~(ii) Documentation that any coexisting behavioral health condition is adequately managed;~~

~~(iii) A description of the relationship between the mental health professionals and the client, including the duration of the professional relationship, and the type of evaluation and therapy or counseling to date;~~

~~(iv) A brief description of the clinical justification supporting the client's request for surgery;~~

~~(v) An assessment and attestation that the provider believes the client is able to comply with the postoperative~~

requirements, has the capacity to maintain lifelong changes, and will comply with regular follow up;

(vi) A statement about the client's adherence to the medical and mental health treatment plan;

(vii) A description of the outcome of the client's hormone therapy;

(viii) A copy of the client's signed informed consent according to the requirements under WAC 182-531-1550, or written acknowledgment of the permanent impact on male and female reproductive capacity if WAC 182-531-1550 is not applicable;

(ix) A statement that all the members of the treatment team will be available to coordinate or provide postoperative care as needed;

(x) A description of the surgical plan. See subsection (6)(d) and (e) of this section, covered and noncovered procedures. The description must:

(A) List all planned surgical procedures, including any listed in subsection (6)(e) of this section, with clinical justification; and

(B) Provide a timeline of surgical stages if clinically indicated; and

(xi) Signatures from the following treatment team members:

(A) The two mental health professionals for genital surgery and one mental health professional for chest surgery who completed the responsibilities described in subsection (4)(d) of this section and (a)(iii) of this subsection;

(B) The medical provider who has managed the care;

(C) Any surgeon performing the procedures; and

(D) The client.

(6) Component four – Gender reassignment surgery.

(a) The agency requires prior authorization for component four. Subsection (5) of this section lists the documentation that is required to be submitted with the authorization requests. Surgeries are not required to be completed at the same time. Surgeries may be performed in progressive stages.

(b) If the client fails to complete all of the requirements in subsection (5) of this section, the agency will not authorize gender reassignment surgery unless the clinical decision-making process is provided in the referral letter and attachments described in subsection (5)(f) of this section.

(c) A client preparing for gender reassignment surgery must be cared for by a treatment team consisting of:

(i) One of the mental health professionals described in subsection (2)(d) of this section, if mental health services are part of the treatment plan;

(ii) The medical provider who managed the medical care in component two and component three; and

(iii) Any surgeon performing the procedures.

(d) The agency covers the following procedures in component four with prior authorization:

(i) Abdominoplasty;

(ii) Belphearoplasty;

(iii) Breast reconstruction (male to female);

(iv) Bilateral mastectomy with or without chest reconstruction;

(v) Cliteroplasty;

(vi) Colovaginoplasty;

(vii) Colpectomy;

(viii) Genital surgery;

(ix) Genital electrolysis as required as part of the genital surgery;

(x) Hysterectomy;

(xi) Labiaplasty;

(xii) Laryngoplasty;

(xiii) Metoidioplasty;

(xiv) Orchiectomy;

(xv) Penectomy;

(xvi) Phalloplasty;

(xvii) Placement of testicular prosthesis;

(xviii) Rhinoplasty;

(xix) Salpingo oophorectomy;

(xx) Scrotoplasty;

(xxi) Urethroplasty;

(xxii) Vaginectomy; and

(xxiii) Vaginoplasty.

(e) For the purposes of this section, the agency will review on a case-by-case basis and may pay for the following noncovered services under exception to rule:

(i) Cosmetic procedures and services)) **Authorization.**

(a) Age seventeen and younger:

(i) The agency requires prior authorization for all surgical services to treat gender dysphoria, including genital hair removal when medically necessary to prepare for surgery to treat gender dysphoria, for clients age seventeen and younger. The agency evaluates requests for these clients according to the early and periodic screening, diagnostic and treatment (EPSDT) program described in chapter 182-534 WAC. Under the EPSDT program, a service may be covered if it is medically necessary, safe, effective, and not experimental.

(ii) The following clinical criteria and documentation requirements must be submitted to the agency with the authorization request:

(A) Documentation of two separate comprehensive psychosocial evaluations performed by two separate licensed mental health providers within the twelve months preceding surgery. A mental health provider specializing in adolescent transgender care must perform one of the comprehensive psychosocial evaluations. For a bilateral mastectomy with or without chest reconstruction and laryngoplasty, the agency requires only one comprehensive psychosocial evaluation from a mental health provider specializing in adolescent transgender care. The comprehensive psychosocial evaluation(s) must include:

(I) Confirmation of the diagnosis of gender dysphoria;

(II) Documentation that the professionals performing each evaluation believe that the client is an appropriate candidate for gender reassignment surgery;

(III) Documentation that surgery is the next reasonable step in the client's care;

(IV) Identification of any coexisting behavioral health conditions (substance abuse problems, or mental health illnesses), which could prevent the client from participating in gender dysphoria treatment including, but not limited to, gender reassignment surgery and postsurgical care; and

(V) Documentation that any coexisting behavioral health conditions identified are adequately managed.

(B) Documentation from a primary care provider, or from the provider prescribing hormone therapy to the client if the client is receiving hormone therapy, of medical necessity for surgery and confirmation that the client is compliant with current gender dysphoria treatment; and

(C) Documentation from the surgeon detailing the medical history and physical examination(s) performed within the twelve months preceding surgery, and the surgical plan.

(b) Age eighteen and older:

(i) The agency allows a provider to use the expedited prior authorization (EPA) process for the following medically necessary procedures only when the clinical criteria and documentation requirements in this subsection are met:

(A) Bilateral mastectomy with or without chest reconstruction;

(B) Cliteroplasty;

(C) Colovaginoplasty;

(D) Colpectomy;

(E) Genital surgery;

(F) Hysterectomy;

(G) Labiaplasty;

(H) Laryngoplasty;

(I) Metoidioplasty;

(J) Orchiectomy;

(K) Penectomy;

(L) Phalloplasty;

(M) Placement of testicular prosthesis;

(N) Salpingo-oophorectomy;

(O) Scrotoplasty;

(P) Urethroplasty;

(Q) Vaginectomy; and

(R) Vaginoplasty.

(ii) When using the EPA process for the procedures in this subsection, the following clinical criteria and documentation requirements must be kept in the client's record and made available to the agency upon request:

(A) Documentation of two separate comprehensive psychosocial evaluations performed by two separate licensed mental health providers within the twelve months preceding surgery. For a bilateral mastectomy with or without chest reconstruction and laryngoplasty, the agency requires only one comprehensive psychosocial evaluation. The comprehensive psychosocial evaluation(s) must include:

(I) Confirmation of the diagnosis of gender dysphoria;

(II) Documentation that the professionals performing each evaluation believes that the client is an appropriate candidate for gender reassignment surgery;

(III) Documentation that surgery is the next reasonable step in the client's care;

(IV) Identification of any coexisting behavioral health conditions (substance abuse problems, or mental health illnesses), which could prevent the client from participating in gender dysphoria treatment including, but not limited to, gender reassignment surgery and postsurgical care; and

(V) Documentation that any coexisting behavioral health conditions identified are adequately managed.

(B) Documentation from a primary care provider, or from the provider prescribing hormone therapy to the client if the client is receiving hormone therapy, of medical necessity

for surgery and confirmation that the client is compliant with current gender dysphoria treatment;

(C) Documentation from the surgeon detailing the medical history and physical examination(s) performed within the twelve months preceding surgery, and the surgical plan; and

(D) The agency may recoup any payment made to a provider for procedures listed in this subsection if the provider does not follow the EPA process outlined in WAC 182-501-0163 or keep the required documentation in this subsection. If the required documentation and clinical criteria for EPA is not met, prior authorization is required.

(iii) The agency requires prior authorization for the following medically necessary procedures to treat gender dysphoria:

(A) Abdominoplasty;

(B) Blepharoplasty;

(C) Augmentation mammoplasty; and

(D) Rhinoplasty.

(iv) The following documentation must be submitted to the agency along with the request for prior authorization:

(A) A psychosocial evaluation performed by a licensed mental health provider within the previous twelve months that includes:

(I) Confirmation of the diagnosis of gender dysphoria;

(II) Documentation that the professionals performing each evaluation believes that the client is an appropriate candidate for gender reassignment surgery;

(III) Documentation that surgery is the next reasonable step in the client's care;

(IV) Identification of any coexisting behavioral health conditions (substance abuse problems, or mental health illnesses), which could prevent the client from participating in gender dysphoria treatment including, but not limited to, gender reassignment surgery and postsurgical care; and

(V) Documentation that any coexisting behavioral health conditions identified are adequately managed.

(B) Documentation from a primary care provider or the provider prescribing hormone therapy to the client if the client is receiving hormone therapy, of medical necessity for surgery and confirmation that the client is compliant with current treatment; and

(C) Documentation from the surgeon detailing medical history and physical performed within the twelve months preceding surgery, and the surgical plan.

(v) The agency covers genital hair removal when medically necessary to prepare for surgery. Prior authorization is required. The prior authorization request must include a statement from the provider that genital hair removal is to prepare for bottom surgery.

(3) The agency reviews on a case-by-case basis and may pay for the following noncovered services under WAC 182-501-0160 exception to rule. For clients under age eighteen, the agency evaluates the following services according to the EPSDT program described in chapter 182-534 WAC:

(~~(A)~~) (a) Brow lift;

(~~(B)~~) (b) Calf implants;

(~~(C)~~) (c) Cheek/malar implants;

(~~(D)~~) (d) Chin/nose implants;

(~~(E)~~) (e) Collagen injections;

(~~(F)~~) (f) Drugs for hair loss or growth;

~~((G))~~ (g) Facial or trunk ~~((electrolysis, except for the limited electrolysis described in (d)(ix) of this subsection))~~ hair removal;

~~((H))~~ (h) Facial feminization and masculinization;

~~((I))~~ (i) Face lift;

~~((J))~~ (j) Forehead lift;

~~((K))~~ (k) Hair transplantation;

~~((L))~~ (l) Jaw shortening;

~~((M))~~ (m) Lip reduction;

~~((N))~~ (n) Liposuction;

~~((O))~~ (o) Mastopexy;

~~((P))~~ (p) Neck tightening;

~~((Q))~~ (q) Pectoral implants;

~~((R))~~ (r) Reduction thyroid chondroplasty;

~~((S))~~ (s) Removal of redundant skin;

~~((T))~~ (t) Procedures and surgeries related to detransitioning, including reversal of gender reassignment surgery;

~~((U))~~ (u) Suction-assisted lipoplasty of the waist; ~~((and~~

~~((V))~~ (v) Trachea shave;

~~((W))~~ (w) Voice modification surgery; and

~~((X))~~ (x) Voice therapy.

~~((4))~~ (4) The agency evaluates a request for any non-covered service listed in ~~((e))~~ subsection (3) of this ~~((sub-section))~~ section as an exception to rule under the provisions of WAC 182-501-0160. The justification included in the surgical plan for any of the procedures listed in ~~((e))~~ subsection (3) of this ~~((sub-section))~~ section may be recognized by the agency as meeting the documentation requirements of WAC 182-501-0160.

WSR 18-20-125

PROPOSED RULES

HEALTH CARE AUTHORITY

[Filed October 3, 2018, 9:11 a.m.]

Original Notice.

Preproposal statement of inquiry was filed as WSR 18-15-031.

Title of Rule and Other Identifying Information: WAC 182-551-1860 Concurrent care for hospice clients age twenty and younger.

Hearing Location(s): On November 6, 2018, at 10:00 a.m., at the Health Care Authority (HCA), Cherry Street Plaza, Sue Crystal Room 106A, 626 8th Avenue, Olympia, WA 98504. Metered public parking is available street side around building. A map is available at <https://www.hca.wa.gov/assets/program/Driving-parking-checkin-instructions.pdf> or directions can be obtained by calling 360-725-1000.

Date of Intended Adoption: Not sooner than November 7, 2018.

Submit Written Comments to: HCA Rules Coordinator, P.O. Box 42716, Olympia, WA 98504-2716, email arc@hca.wa.gov, fax 360-586-9727, by November 6, 2018.

Assistance for Persons with Disabilities: Contact Amber Lougheed, phone 360-725-1349, fax 360-586-9727, telecommunication relay services 711, email amber.lougheed@hca.wa.gov, by November 2, 2018.

Purpose of the Proposal and Its Anticipated Effects, Including Any Changes in Existing Rules: The agency is amending WAC 182-551-1860 Concurrent care for hospice clients age twenty and younger, to remove language related to exception to rule and allow for medical necessity review of noncovered services. These changes comply with early and periodic screening, diagnostic and treatment (EPSDT) program rules under 42 C.F.R., Sec. 441, Subpart B, and WAC 182-534-0100 EPSDT.

Reasons Supporting Proposal: See purpose.

Statutory Authority for Adoption: RCW 41.05.021, 41.05.160.

Statute Being Implemented: RCW 41.05.021, 41.05.160.

Name of Proponent: HCA, governmental.

Name of Agency Personnel Responsible for Drafting: Vance Taylor, P.O. Box 42716, Olympia, WA 98504-2716, 360-725-1344; Implementation and Enforcement: Nancy Hite, P.O. Box 42716, Olympia, WA 98504-2716, 360-725-1611.

A school district fiscal impact statement is not required under RCW 28A.305.135.

A cost-benefit analysis is not required under RCW 34.05.328. RCW 34.05.328 does not apply to HCA rules unless requested by the joint administrative rules review committee or applied voluntarily.

The proposed rule does not impose more-than-minor costs on businesses. Following is a summary of the agency's analysis showing how costs were calculated. The revisions to this rule do not impose additional compliance costs or requirements on providers.

October 3, 2018

Wendy Barcus

Rules Coordinator

AMENDATORY SECTION (Amending WSR 17-12-082, filed 6/5/17, effective 7/6/17)

WAC 182-551-1860 Concurrent care for hospice clients age twenty and younger. (1) In accordance with 42 U.S.C. 1396d (o)(1)(C), a client age twenty and younger may voluntarily elect hospice care without waiving any rights to services that the client is entitled to under Title XIX Medicaid and Title XXI Children's Health Insurance Program (CHIP) that are related to the treatment of the client's condition for which a diagnosis of terminal illness has been made.

(2) The related services in subsection (1) of this section and medications requested for clients age twenty and younger are subject to the medicaid agency's specific program rules governing those services or medications.

(3) ~~((If the services in this section include noncovered services listed in WAC 182-501-0070, the provider must request an exception to rule under WAC 182-501-0160.))~~ When a noncovered service is recommended based on the early and periodic screening, diagnosis, and treatment (EPSDT) program, the agency evaluates the request for medical necessity based on the definition in WAC 182-500-0070 and the process in WAC 182-501-0165.

(4) If the medicaid agency denies a request for a covered service, refer to WAC 182-502-0160, billing a client, for when a client may be responsible to pay for a covered service.

WSR 18-20-127
PROPOSED RULES
SUPERINTENDENT OF
PUBLIC INSTRUCTION
 [Filed October 3, 2018, 11:47 a.m.]

October 3, 2018
 Chris P. S. Reykdal
 State Superintendent
 of Public Instruction

Original Notice.

Preproposal statement of inquiry was filed as WSR 18-16-120.

Title of Rule and Other Identifying Information: WAC 392-121-415 Basic education allocation—Deductible revenues.

Hearing Location(s): On November 16, 2018, at 11:00 a.m., at the Office of Superintendent of Public Instruction, Brouillet Room, 600 South Washington Street, Olympia, WA 98501. Those planning to comment during the hearing should arrive by 11:00 a.m.

Date of Intended Adoption: November 20, 2018.

Submit Written Comments to: T. J. Kelly, P.O. Box 47200, Olympia, WA 98504, email thomas.kelly@k12.wa.us, fax 360-664-3683, 360-664-3631, by November 16, 2018.

Assistance for Persons with Disabilities: Contact Kristin Murphy, phone 360-725-6133, fax 360-754-4201, TTY 360-664-3631, email Kristin.murphy@k12.wa.us, by November 9, 2018.

Purpose of the Proposal and Its Anticipated Effects, Including Any Changes in Existing Rules: This proposed rule amendment would remove language that reduces state basic education apportionment payments by proceeds from the sale, rental or lease of stone, minerals, timber, forest products, other crops and matter, and improvements from or on tax title real property managed by a county pursuant to chapter 36.35 RCW.

Reasons Supporting Proposal: The proposed rule amendment would help ensure that local revenue does not offset costs of basic education as prescribed in EHB 2242 (2017). The change would also help ensure that there is equal treatment across all school districts with respect to defining deductible revenue related to forest land.

Statutory Authority for Adoption: RCW 28A.150.290, 28A.710.220.

Rule is not necessitated by federal law, federal or state court decision.

Name of Agency Personnel Responsible for Drafting and Implementation: T. J. Kelly, 600 S.E. Washington, Olympia, WA, 360-725-6301; and Enforcement: Lisa Dawn-Fisher, 600 S.E. Washington, Olympia, WA, 360-725-6292.

A school district fiscal impact statement is not required under RCW 28A.305.135.

A cost-benefit analysis is not required under RCW 34.05.328.

This rule proposal, or portions of the proposal, is exempt from requirements of the Regulatory Fairness Act because the proposal:

Is exempt under RCW 19.85.030.

Explanation of exemptions: No small business economic impact statement has been prepared under chapter 19.85 RCW. The proposed amendment does not have an impact on small business and therefore does not meet the requirements for a statement under RCW 19.85.030 (1) or (2).

AMENDATORY SECTION (Amending WSR 18-10-025, filed 4/24/18, effective 5/25/18)

WAC 392-121-415 Basic education allocation—Deductible revenues. In addition to those funds appropriated by the legislature for basic education allocation purposes, the following locally available general fund revenues shall be included in the computation of the total annual basic education allocation of each school district or charter school pursuant to RCW 28A.150.250 and 28A.150.260 and shall be deducted from payments made pursuant to WAC 392-121-400:

(1) ~~((Proceeds from the sale, rental or lease of stone, minerals, timber, forest products, other crops and matter, and improvements from or on tax title real property managed by a county pursuant to chapter 36.35 RCW;~~

~~(2))~~ Federal in lieu of tax payments made pursuant to RCW 84.72.020; and

~~((3))~~ (2) Proceeds from the sale of lumber, timber, and timber products on military reservations or facilities in accordance with U.S.C. §2665, Title 10, and P.L. 97-99.

~~((4))~~ (3) Local in lieu of tax payments including but not limited to payments made pursuant to RCW 35.82.210, 35.83.040, and 79.19.110.

Otherwise deductible revenues from any of the foregoing sources received by a school district due solely to the district's levy of a capital projects fund or debt service fund excess tax levy shall constitute nongeneral fund revenues and shall not be deducted in the computation of the district's annual basic education allocation for that school year.

WSR 18-20-128
PROPOSED RULES
DEPARTMENT OF
CHILDREN, YOUTH, AND FAMILIES
 [Filed October 3, 2018, 11:47 a.m.]

Original Notice.

Preproposal statement of inquiry was filed as WSR 16-15-052.

Title of Rule and Other Identifying Information: New WAC 110-06-0046 Requirements for license-exempt in-home/relative providers; repealing WAC 110-06-0060 Additional information the department may consider, 110-15-0135 In-home/relative providers—Information provided to DSHS, 110-15-0138 In-home/relative providers—Responsibilities, 110-15-0139 In-home/relative providers—Electronic attendance records—Records retention, 110-15-0140 In-home/relative providers—Ineligibility, 110-15-0143 In-home/relative providers—Background checks—Required persons, 110-15-0145 In-home/relative providers—Background checks—Reasons and notification, 110-15-0150 In-home/relative providers—Background checks—Included information and sources, 110-15-0155 In-home/relative pro-

viders—Background checks—Subsequent steps, 110-15-0160 In-home/relative providers—Background checks—Disqualified providers, 110-15-0165 In-home/relative providers—Background checks—Other disqualifying information and 110-15-0167 In-home/relative providers—Background checks—Disqualified person living with the provider; and amending WAC 110-06-0010 Purpose and scope, 110-06-0020 Definitions, 110-06-0040 Background clearance requirements, 110-06-0041 Requirements, 110-06-0042 Departmental investigation and redetermination, 110-06-0043 Failure to report nonconviction and conviction information, 110-06-0044 Background check fees, 110-06-0045 Noncriminal background checks for individuals under sixteen years of age, 110-06-0050 Department action following completion of background inquiry, 110-06-0070 Disqualification, 110-06-0080 Notification of disqualification, 110-06-0090 Administrative hearing to contest disqualification, 110-06-0100 Request for administrative hearing, 110-06-0110 Limitations on challenges to disqualifications, 110-06-0115 Reconsideration of disqualification, 110-06-0120 Director's list, 110-15-0034 Provider's responsibilities, 110-15-0125 Approved child care providers, and 110-15-0250 Eligible provider capacity and payment.

Hearing Location(s): On November 6, 2018, at 1:00 p.m., at 1110 Jefferson Street S.E., Baker Conference Room, Olympia, WA.

Date of Intended Adoption: December 12, 2018.

Submit Written Comments to: Rules Coordinator, P.O. Box 40975, email dcyf.rulescoordinator@dcyf.wa.gov, fax 360-902-7903, <https://del.wa.gov/PolicyProposalComment/Detail.aspx>, by November 5, 2018.

Assistance for Persons with Disabilities: Contact rules coordinator, phone 360-902-7956, fax 360-902-7903, email dcyf.rulescoordinator@dcyf.wa.gov, by October 31, 2018.

Purpose of the Proposal and Its Anticipated Effects, Including Any Changes in Existing Rules: Proposed changes in chapter 110-06 WAC: (1) Proposed new WAC 110-06-0046 and amended sections in chapter 110-06 WAC clarify which individuals are subject to background checks before a license-exempt child care provider will be authorized to participate in working connections child care, reasons for disqualification, and administrative hearing rights for individuals who are disqualified; (2) proposed amended WAC 110-06-0041 changes the deadline for individuals completing the initial [initial] background check requirement from within seven days of hire to prior to the date of hire.

Proposed changes in chapter 110-15 WAC: (1) Repeal sections that were moved to chapter 110-06 WAC or inserted in proposed amended WAC 110-15-0034, 110-15-0125, and 110-15-0250; (2) clarify license-exempt providers' responsibilities that must be adhered to in order to participate in working connections child care, including limiting capacity, timely submission of correct invoices for payment, use of an electronic attendance system, producing records when requested, and compliance with chapters 110-06 and 110-16 WAC.

Proposed rules also contain nonsubstantive amendments necessary after the decodification of Title 170 WAC and its recodification to Title 110 WAC.

Reasons Supporting Proposal: The department of children, youth, and families (DCYF) is the lead agency for administering the federal child care development fund (CCDF) (CCDF program governed by 42 U.S.C. 9858 et seq.). One of DCYF's primary responsibilities as the lead agency is to ensure Washington state complies with all federal requirements necessary for the continued receipt of CCDF funds. On September 28, 2018, DCYF adopted new chapter 110-16 WAC to comply with the CCDF requirements that license-exempt child care providers participating in working connections child care complete background checks, receive health and safety training, and participate in annual monitoring visits. (WSR 18-20-081, effective November 1, 2018.) The proposed rules make chapters 110-06 and 110-15 WAC consistent with new chapter 110-16 WAC.

Statutory Authority for Adoption: RCW 43.216.055 and 43.216.065, chapter 43.216 RCW.

Statute Being Implemented: Chapter 43.216 RCW.

Rule is necessary because of federal law, 42 U.S.C. 9858 et seq.; 45 C.F.R. Part 98.

Name of Proponent: DCYF, governmental.

Name of Agency Personnel Responsible for Drafting: Judy Jaramillo, License Exempt Services Administrator and Jason Ramynke, Working Connections Administrator, Olympia, Washington, 360-725-4431/360-688-0911; Implementation and Enforcement: DCYF, statewide.

A school district fiscal impact statement is not required under RCW 28A.305.135.

A cost-benefit analysis is not required under RCW 34.05.328. DCYF is not among the agencies required to comply with RCW 34.05.328 (5)[(a)](i). Further, DCYF does not voluntarily make that section applicable to the adoption of this rule.

This rule proposal, or portions of the proposal, is exempt from requirements of the Regulatory Fairness Act because the proposal:

Is exempt under RCW 19.85.061 because this rule making is being adopted solely to conform and/or comply with federal statute or regulations. Citation of the specific federal statute or regulation and description of the consequences to the state if the rule is not adopted: 45 C.F.R. Part 98 establishes minimum health and safety requirements that each lead agency must implement (45 C.F.R. 98.41) and enforce (45 C.F.R. 98.42).

Is exempt under RCW 19.18.030.

Explanation of exemptions: A small business economic impact statement is not required under RCW 19.85.030(1) because the proposed rules impact individuals rather than businesses.

October 3, 2018
Brenda Villarreal
Rules Coordinator

AMENDATORY SECTION (Amending WSR 18-14-078, filed 6/29/18, effective 7/1/18)

WAC 110-06-0010 Purpose and scope. (1) The purpose of this chapter is to establish rules for background

checks conducted by the department of ~~((early learning (DEL or department)))~~ of children, youth, and families (DCYF).

(2) The department conducts background checks on subject individuals who are authorized to:

(a) Care for or have unsupervised access to children receiving early learning services; or

(b) Care for children in the child's or provider's home. These providers, also known as family, friends, and neighbors (FFN) or in-home/relative care providers are exempt from licensing and receive working connections child care (WCCC) subsidies.

(3) The department conducts background checks to reduce the risk of harm to children from subject individuals who have been convicted of certain crimes or who pose a risk to children.

(4) The department's rules and state law require the evaluation of background information to determine the character, suitability, or competence of persons who will care for or have unsupervised access to children receiving early learning services or other agency authorized services.

(5) If any provision of this chapter conflicts with any provision in any chapter containing a substantive rule relating to background checks and qualifications of persons who are authorized to care for or have unsupervised access to children receiving early learning services, the provisions in this chapter shall govern.

(6) These rules implement chapters ~~((43.215))~~ 43.216 and 43.43 RCW, including ~~((DEL)), but not limited to,~~ DCYF responsibilities in RCW ~~((43.215.200, 43.215.205, 43.215.215 through 43.215.218, 43.43.830, and 43.43.832))~~ 43.216.260, 43.216.270 through 43.216.273, and 43.43.830 through 43.43.832.

(7) ~~((Effective date: These rules are initially effective July 3, 2006, and apply prospectively. Effective July 1, 2012;))~~ These rules are amended to allow for increased and continued portability of background check clearances for subject individuals who are authorized to care for or may have unsupervised access to children receiving early learning services.

AMENDATORY SECTION (Amending WSR 18-14-078, filed 6/29/18, effective 7/1/18)

WAC 110-06-0020 Definitions. The following definitions apply to this chapter:

"Agency" has the same meaning as "agency" in RCW ~~((43.215.010(2)))~~ 43.216.010.

"Appellant" means only those with the right of appeal under this chapter.

"Applicant" means an individual who is seeking DCYF background check authorization as part of:

(a) An application for a child care agency license or DCYF certification or who seeks DCYF authorization to care for or have unsupervised access to children receiving early learning services; or

(b) A continuation of a nonexpiring license or renewal of a certificate, or renewal of DCYF's authorization to care for or have unsupervised access to children receiving early learning services, with respect to an individual who is a currently licensed or certified child care provider.

"Authorized" or "authorization" means approval by ~~((DEL))~~ DCYF to care for or have unsupervised access to children receiving early learning services or to work in or reside on the premises of a child care agency or certified facility.

"Certification" or "certified by ~~((DEL))~~ DCYF" means an agency that is legally exempt from licensing that has been certified by ~~((DEL))~~ DCYF as meeting minimum licensing requirements.

"Conviction information" means criminal history record information relating to an incident which has led to a conviction or other disposition adverse to the subject individual.

~~(("DEL"))~~ "DCYF" or "department" means the department of ~~((early learning-~~

~~Director's list" means a list of crimes, the commission of which disqualifies a subject individual from being authorized by DEL to care for or have unsupervised access to children receiving early learning services, WAC 170-06-0120))~~ children, youth, and families.

"Disqualified" means ~~((DEL))~~ DCYF has determined that a person's background information prevents that person ~~((from being licensed or certified by DEL or))~~ from being authorized by ~~((DEL))~~ DCYF to care for or have unsupervised access to children receiving early learning services.

"Early learning service(s)" for purposes of this chapter means the early childhood education and assistance program ~~((and)), head start, licensed child care, and license-exempt child care services.~~

"In-home/relative provider" or "family, friends, and neighbors provider" or "FFN provider" means an individual who is exempt from child care licensing standards, meets the requirements of chapter 110-16 WAC, and is approved for working connections child care (WCCC) payments under WAC 110-15-0125.

"Licensee" means the individual, person, organization, or legal entity named on the child care license issued by DCYF and responsible for operating the child care facility or agency.

"Negative action" means a court order, court judgment or an adverse action taken by an agency, in any state, federal, tribal or foreign jurisdiction, which results in a finding against the subject individual reasonably related to the subject individual's character, suitability and competence to care for or have unsupervised access to children receiving early learning services. This may include, but is not limited to:

(a) A decision issued by an administrative law judge.

(b) A final determination, decision or finding made by an agency following an investigation.

(c) An adverse agency action, including termination, revocation or denial of a license or certification, or if pending adverse agency action, the voluntary surrender of a license, certification or contract in lieu of the adverse action.

(d) A revocation, denial or restriction placed on any professional license.

(e) A final decision of a disciplinary board.

"Nonconviction information" means arrest, pending charges, founded allegations of child abuse, or neglect pursuant to chapter 26.44 RCW, or other negative action adverse to the subject individual.

"Nonexpiring license" or "nonexpiring full license" means a ~~(full)~~ license that is issued to a licensee following the initial licensing period, as provided in ~~((WAC 170-151-087, 170-295-0095, or 170-296A-1450))~~ chapter 110-300 WAC, as appropriate.

"Secretary's list" means a list of crimes, the commission of which disqualifies a subject individual from being authorized by DCYF to care for or have unsupervised access to children receiving early learning services, WAC 110-06-0120.

"Subject individual":

(a) Means an individual who:

(i) Is seeking a background check authorization or upon whom the department may conduct a background check authorization;

(ii) Is sixteen years of age or older;

(iii) Is an in-home/relative provider or is employed ~~(by)~~, contracted with, or ~~((volunteering))~~ volunteers to provide early learning services; and

(iv) Will care for or have unsupervised access to children receiving early learning services; and

(b) Includes, but is not limited to, the following:

(i) Personnel, including employees and staff;

(ii) Contractors, including contracted providers;

(iii) Temporary workers;

(iv) Assistants;

(v) Volunteers;

(vi) Interns;

(vii) Each person who is sixteen years of age or older residing on, or moving into, the premises where early learning services are provided;

(viii) All other individuals who are sixteen years of age or older who will care for or have unsupervised access to children receiving early learning services;

(ix) All owners, operators, lessees, or directors of the agency or facility, or their designees;

(x) Applicants ~~(- As used in this definition, "applicant" means an individual who is seeking a DEL background check authorization as part of:~~

~~(A) An application for a child care agency license or DEL certification or who seeks DEL authorization to care for or have unsupervised access to children receiving early learning services; or~~

~~(B) A continuation of a nonexpiring license or renewal of a certificate, or renewal of DEL's authorization to care for or have unsupervised access to children receiving early learning services, with respect to an individual who is a currently licensed or certified child care provider; and);~~

(xi) Licensees ~~(- As used in this definition, "licensee" means the individual, person, organization, or legal entity named on the child care license issued by DEL and responsible for operating the child care facility or agency); or~~

(xii) In-home/relative providers and their household members who are sixteen years of age or older.

"Unsupervised access" means:

(a) A subject individual will or may have the opportunity to be alone with a child receiving early learning services at any time and for any length of time; and

(b) Access to a child receiving early learning services that is not within constant visual or auditory range of the

~~((licensee, an employee)) individual authorized by ((DEL, nor a relative or guardian of the child receiving early learning services)) DCYF.~~

AMENDATORY SECTION (Amending WSR 18-14-078, filed 6/29/18, effective 7/1/18)

WAC 110-06-0040 Background clearance requirements. This section applies to all subject individuals other than in-home/relative providers.

(1) ~~((Effective July 1, 2012, all new))~~ Subject individuals associated with early learning services applying for a first-time background check must complete the background check application process through ((DEL)) DCYF to include:

(a) ~~((Completion of))~~ Submitting a completed background check application;

(b) Completing the required fingerprint process; and
~~((b) Payment of))~~ (c) Paying all required fees as provided in WAC ((170-06-0044)) 110-06-0044.

(2) All ~~((other))~~ subject individuals who have been previously qualified by the department to have unsupervised access to children in care((, prior to July 1, 2012, must submit a new background check application no later than July 1, 2013. The subject person)) and are renewing their applications must:

(a) Submit the new background check application through ((DEL)) DCYF;

(b) Submit payment of all required fees as provided in WAC ((170-06-0044;)) 110-06-0044; and

(c) ~~((Complete the required fingerprint process if the subject individual has lived in Washington state for fewer than three consecutive years prior to July 1, 2013;~~

~~((d))~~ Complete the required fingerprint process if the subject individual lives or has lived outside of Washington state since the previous background check was completed.

(3) Each subject individual completing the ~~((DEL))~~ DCYF background check process must disclose:

(a) Whether he or she has been convicted of any crime;

(b) Whether he or she has any pending criminal charges; and

(c) Whether ~~((there is))~~ he or she has been subject to any negative action((s, to which he or she has been subject)), as defined by WAC ((170-06-0020)) 110-06-0020.

(4) A subject individual must not have unsupervised access to children in care unless he or she has obtained ~~((DEL))~~ DCYF authorization under this chapter.

(5) A subject individual who has been disqualified by ~~((DEL))~~ DCYF must not be present on the premises when early learning services are provided to children.

AMENDATORY SECTION (Amending WSR 18-14-078, filed 6/29/18, effective 7/1/18)

WAC 110-06-0041 Requirements for early learning service providers. (1) ~~((An agency, licensee, certified facility or))~~ This section applies to all providers other than in-home/relative providers.

(2) Early learning services providers must require a subject individual to complete the ((DEL)) DCYF background check application process:

(a) ~~((Within seven days of))~~ Prior to the date of hire;

(b) By the date a subject individual age sixteen or older moves onto the premises; or

(c) By the date a subject individual who lives on the premises turns sixteen years old.

~~((2) The early learning services provider must keep on-site a copy of each subject individual's background check clearance authorization.~~

~~(3) The early learning services provider must update the provider portal in the DEL system to verify the subject individuals associated with their program.~~

~~(4) The early learning services provider must verify annually that each subject individual who is required to have a background check has either obtained a department clearance or has applied for a department background check through the DEL system. The verification must be submitted with the licensee's annual license fee and declarations.))~~

AMENDATORY SECTION (Amending WSR 18-14-078, filed 6/29/18, effective 7/1/18)

WAC 110-06-0044 Background check fees. This section applies to all subject individuals other than in-home/relative providers.

(1) Subject individuals associated with early learning services must pay for the cost of the background check process. The fees include:

(a) Fingerprint process fees as defined by the ~~((WSP, FBI))~~ Washington state patrol, Federal Bureau of Investigation, and the ((DEL)) DCYF fingerprint contractor; and

(b) The ~~((DEL))~~ DCYF administrative fee of:

(i) ~~((The cost of administration of the portable background check clearance based upon electronic submission has been determined to be))~~ Twelve dollars ((for any background check application received in the period after June 30, 2012, therefore the fee)) for an electronic submission ((is twelve dollars for the described period)); or

(ii) ~~((The cost of administration of the portable background check clearance based upon a manual paper submission has been determined to be))~~ Twenty-four dollars ((for any background check received after June 30, 2012, therefore the fee for a manual paper-based submission is twenty-four dollars for the described period)) for a paper submission.

(2) DCYF administrative fee payments may be:

(a) By debit or credit card;

(b) In the form of a personal check, cashier's check, or money order, which shall be sent by mail; or

~~((b))~~ (c) By electronic funds transfer ((when available)). As used in this section, "electronic funds transfer" means any transfer of funds, other than a transaction originated by check, draft, or similar paper instrument, which is initiated through an electronic terminal, telephonic instrument, or computer or magnetic tape so as to order, instruct, or authorize a financial institution to debit or credit an account.

(3) The department will not issue a background check clearance authorization to a subject individual:

(a) Who fails to pay the required fees in subsection (1) of this section; or

(b) Whose ~~((check, money order, or electronic funds transfer))~~ payment is reported as having nonsufficient funds

(NSF) or is otherwise dishonored by nonacceptance or non-payment.

An additional processing fee of twenty-five dollars will be charged by the department for any check, money order, or electronic funds transfer that is reported as not having sufficient funds.

AMENDATORY SECTION (Amending WSR 18-14-078, filed 6/29/18, effective 7/1/18)

WAC 110-06-0045 ((Noncriminal)) Background checks for minor individuals under sixteen years of age.

(1) When applicable within ~~((Title 170))~~ chapter 110-300 WAC, an agency, licensee, or certified facility must have subject individuals complete the required ~~((DEL noncriminal))~~ DCYF minor individual background check application process for subject individuals:

(a) Fourteen to sixteen years of age, ~~((within seven days after the subject individual starts to work in the))~~ prior to the date of hire by a licensed or certified child care.

(b) Thirteen to sixteen years of age residing in a licensed or certified family home child care.

(c) Thirteen to sixteen years of age, within seven days after moving into the licensed family home child care.

(2) A subject individual identified in subsection (1)(a), (b) or (c) of this section must not have unsupervised access to children in child care.

~~(3) ((The licensee must verify annually that each subject individual who is required to have a noncriminal background check has either obtained a department clearance or has applied for a department noncriminal background check. The verification must be submitted with the licensee's annual license fee and declarations.~~

~~(4))~~ When conducting a ~~((noncriminal))~~ minor individual background check, the department:

(a) Requires the minor's parent or guardian to sign the noncriminal background check application;

(b) Does not review convictions or pending charges for immediate disqualification for crimes under WAC ~~((170-06-0050(1)))~~ 110-06-0050(1), unless the conviction was the result of prosecution of the juvenile as an adult; and

(c) Does not immediately disqualify an individual for a conviction under WAC ~~((170-06-0070))~~ 110-06-0070 (1) and (2), unless the conviction was the result of prosecution of the juvenile as an adult.

NEW SECTION

WAC 110-06-0046 Requirements for license-exempt in-home/relative providers. (1) The background check process must be completed for:

(a) All license-exempt in-home/relative providers who apply to care for a WCCC consumer's child; and

(b) Any individual sixteen years of age or older who is residing with a license-exempt in-home/relative provider when the provider cares for the child in the provider's own home where the child does not reside.

(2) Additional background checks must be completed for individuals listed in subsection (1)(a) and (b) of this section when an individual sixteen years of age or older is newly residing with a license-exempt in-home/relative provider

when the provider cares for the child in the provider's own home where the child does not reside.

(3) The background check process for license-exempt in-home/relative providers requires:

(a) Submitting a completed background check application; and

(b) Completing the required fingerprint process.

(4) Each subject individual completing the DCYF background check process must disclose:

(a) Whether he or she has been convicted of any crime;

(b) Whether he or she has any pending criminal charges; and

(c) Whether he or she has been subject to any negative actions, as defined by WAC 110-06-0020.

(5) A subject individual must not have unsupervised access to children in care unless he or she has obtained DCYF background check clearance authorization under this chapter.

(6) A subject individual who has been disqualified by DCYF must not be present on the premises when early learning services are provided to children.

(7) DCYF pays for the cost of the background check process. The fees include:

(a) Fingerprint process fees as defined by the Washington state patrol, Federal Bureau of Investigation and the DCYF fingerprint contractor; and

(b) The DCYF administrative fee.

AMENDATORY SECTION (Amending WSR 18-14-078, filed 6/29/18, effective 7/1/18)

WAC 110-06-0070 Disqualification.

Background information that will disqualify a subject individual.

(1) A subject individual who has a background containing any of the permanent convictions on the ~~((director's))~~ secretary's list, WAC ~~((170-06-0120(1)))~~ 110-06-0120(1), will be permanently disqualified from ~~((providing licensed child care,))~~ caring for children or having unsupervised access to children receiving early learning services.

(2) A subject individual who has a background containing any of the nonpermanent convictions on the ~~((director's))~~ secretary's list, WAC ~~((170-06-0120(2)))~~ 110-06-0120(2), will be disqualified from providing licensed child care, caring for children or having unsupervised access to children receiving early learning services for five years after the conviction date.

(3) A subject individual will be disqualified when ~~((their))~~ his or her background contains a negative action, as defined in WAC ~~((170-06-0020))~~ 110-06-0020 that relates to:

(a) An act, finding, determination, decision, or the commission of abuse or neglect of a child as defined in chapters 26.44 RCW and ~~((388-15))~~ 110-30 WAC.

(b) An act, finding, determination, decision, or commission of abuse or neglect or financial exploitation of a vulnerable adult as defined in chapter 74.34 RCW.

~~((Background information that may disqualify a subject individual.))~~

(4) A subject individual who has a "founded" finding for child abuse or neglect will not be authorized to care for or

have unsupervised access to children during the administrative hearing and appeals process.

(5) Background information that may disqualify a subject individual. A subject individual may be disqualified for other negative action(s), as defined in WAC ~~((170-06-0020))~~ 110-06-0020 which reasonably relate to his or her character, suitability, or competence to care for or have unsupervised access to children receiving early learning services.

~~((5))~~ (6) A subject individual may be disqualified from caring for or having unsupervised access to children if the individual is the subject of a pending child protective services (CPS) investigation.

~~((6) A subject individual who has a "founded" finding for child abuse or neglect will not be authorized to care for or have unsupervised access to children during the administrative hearing and appeals process.))~~

(7) The department may also disqualify a subject individual if that person has other nonconviction background information that renders him or her unsuitable to care for or have unsupervised access to children receiving early learning services. Among the factors the department may consider are:

(a) The subject individual attempts to obtain a license, certification, or authorization by deceitful means, such as making false statements or omitting material information on an application.

(b) The subject individual used illegal drugs or misused or abused prescription drugs or alcohol that either affected their ability to perform their job duties while on the premises when children were present or presented a risk of harm to any child receiving early learning services.

(c) The subject individual attempted, committed, permitted, or assisted in an illegal act on the premises. For purposes of this subsection, a subject individual attempted, committed, permitted, or assisted in an illegal act if he or she knew or reasonably should have known that the illegal act occurred or would occur.

(d) Subject to federal and state law, the subject individual lacks sufficient physical or mental health to meet the needs of children receiving early learning services.

(e) The subject individual had a license or certification for the care of children or vulnerable adults terminated, revoked, suspended or denied.

AMENDATORY SECTION (Amending WSR 18-14-078, filed 6/29/18, effective 7/1/18)

WAC 110-06-0090 Administrative hearing to contest disqualification. (1) A subject individual may request an administrative hearing to contest the department's disqualification decision under WAC ~~((170-06-0070))~~ 110-06-0070.

(2) The ~~((licensee or prospective employer))~~ early learning services provider cannot contest the department's decision on behalf of any other person, including a prospective employee.

(3) The administrative hearing will take place before an administrative law judge employed by the office of administrative hearings, pursuant to chapter 34.05 RCW, and chapter ~~((170-03))~~ 110-03 WAC.

REPEALER

The following section of the Washington Administrative Code is repealed:

WAC 110-06-0060 Additional information the department may consider.

AMENDATORY SECTION (Amending WSR 18-14-078, filed 6/29/18, effective 7/1/18)

WAC 110-06-0042 Departmental investigation and redetermination. (1) The department will investigate and conduct a redetermination of the background clearance of a subject individual if the department receives a complaint or information from individuals, a law enforcement agency, or other federal, state, or local government agency.

(2) Subject to the requirements in RCW ((43.215.215)) 43.216.270, the department may immediately suspend or modify the subject individual's background clearance.

(3) Subject to the requirements in RCW ((43.215.300 and 43.215.305)) 43.216.300 and 43.216.305, and based on a determination that a subject individual lacks the appropriate character, suitability, or competence to provide ((child care or)) early learning services to children, the department may disqualify the subject individual from having any unsupervised access to children ((receiving early learning services)).

AMENDATORY SECTION (Amending WSR 18-14-078, filed 6/29/18, effective 7/1/18)

WAC 110-06-0043 Failure to report nonconviction and conviction information. (1) The early learning services provider must report to the department within twenty-four hours if he or she has knowledge of the following with respect to a subject individual ((working in that child care agency or who resigns or is terminated with or without cause)) associated with their services, who has a background check clearance authorization with the department:

(a) Any nonconviction and conviction information for a crime listed in WAC ((170-06-0120)) 110-06-0120;

(b) Any other nonconviction and conviction information for a crime that could be reasonably related to the subject individual's suitability to provide care for or have unsupervised access to children in care; or

(c) Any negative action as defined in WAC ((170-06-0020)) 110-06-0020.

(2) A subject individual who has been issued a background check clearance authorization pursuant to WAC ((170-06-0040)) 110-06-0040 must report nonconviction and conviction information to the department involving a disqualifying crime under WAC ((170-06-0120)) 110-06-0120 against that subject individual within twenty-four hours after he or she becomes aware of the event constituting the nonconviction or conviction information.

(3) A subject individual who intentionally or knowingly fails to report to the department as provided in subsection (1) or (2) of this section may have his or her background check clearance suspended. This penalty will be in addition to any other penalty that may be imposed as a result of a violation of this chapter or ((chapter 170-151, 170-295, or 170-296A

WAC)) of the applicable provisions of any chapter of Title 110 WAC that implement the authority and requirements of chapter 43.216 RCW.

AMENDATORY SECTION (Amending WSR 18-14-078, filed 6/29/18, effective 7/1/18)

WAC 110-06-0050 Department action following completion of background inquiry. As part of the background check process the department will conduct a character, suitability or competence assessment as follows:

(1) Compare the background information with the ((~~DEL~~ director's)) DCYF secretary's list, WAC ((170-06-0120)) 110-06-0120, to determine whether the subject individual must be disqualified under WAC ((170-06-0070)) 110-06-0070 (1) and (2). In doing this comparison, the department will use the following rules:

(a) A pending charge for a crime or a deferred prosecution is given the same weight as a conviction.

(b) If the conviction has been renamed it is given the same weight as the previous named conviction. ((For example, larceny is now called theft.))

(c) Convictions whose titles are preceded with the word "attempted" are given the same weight as those titles without the word "attempted."

(d) The term "conviction" has the same meaning as the term "conviction record" as defined in RCW 10.97.030 and may include convictions or dispositions for crimes committed as either an adult ((or a juvenile)). It may also include convictions or dispositions for offenses for which the person received a deferred or suspended sentence, unless the record has been expunged according to law.

(e) Convictions and pending charges from other states or jurisdictions will be treated the same as a crime or pending charge in Washington state. If the elements of the crime from the foreign jurisdiction are not identical or not substantially similar to its Washington equivalent or if the foreign statute is broader than the Washington definition of the particular crime, the defendant's conduct, as evidenced by the indictment or information, will be analyzed to determine whether the conduct would have violated the comparable Washington statute.

(f) The crime will not be considered a conviction for the purposes of the department when the conviction has been the subject of an expungement, pardon, annulment, certification of rehabilitation, or other equivalent procedure based on a finding of the rehabilitation of the person convicted, or the conviction has been the subject of a pardon, annulment, or other equivalent procedure based on a finding of innocence.

(2) Evaluate any negative action information to determine whether the subject individual has any negative actions requiring disqualification under WAC ((170-06-0070(3))) 110-06-0070(3).

(3) Evaluate any negative action information and any other pertinent background information, including nondisqualifying criminal convictions, to determine whether disqualification is warranted under WAC ((170-06-0070(4), (5) or (7))) 110-06-0070 (5), (6), or (7).

(4) ((Except for the protected contents of the FBI record of arrest and prosecution (RAP) sheet and subject to federal

regulation, the department may discuss the results of the criminal history and background check information with the authorized personnel of the early learning service provider.) If DCYF has reason to believe that additional information is needed to determine the character, suitability or competence of the subject individual to care for or have unsupervised access to children receiving early learning services, additional information will be requested. The subject individual must provide to the department any additional reports or information that it requests.

AMENDATORY SECTION (Amending WSR 18-14-078, filed 6/29/18, effective 7/1/18)

WAC 110-06-0080 Notification of disqualification.

(1) The department will notify the subject individual in writing if he or she is disqualified by the background check.

(2) If the department sends a notice of disqualification, the subject individual will not be authorized to care for or have unsupervised access to children receiving early learning services, or to be present on the early learning service's premises during the hours for which child care is provided.

(3) Any decision by the department to disqualify a subject individual under this chapter is effective immediately upon receipt of written notice from the department to the subject individual.

AMENDATORY SECTION (Amending WSR 18-14-078, filed 6/29/18, effective 7/1/18)

WAC 110-06-0100 Request for administrative hearing. (1) Any subject individual has a right to contest the department's disqualification decision under WAC ((~~170-06-0070~~) 110-06-0070) and must request a hearing within twenty-eight days of receipt of the written disqualification decision, regardless of whether the subject individual requests ((~~that the licensing supervisor review~~)) a department reconsideration of the disqualification under WAC 110-06-0115.

(2) A request for a hearing must meet the requirements of chapter ((~~170-03~~) 110-03) WAC.

(3) Any decision by the department to disqualify a subject individual under this chapter will remain in effect pending the outcome of the administrative hearing or review under chapter ((~~170-03~~) 110-03) WAC, notwithstanding any provision of chapter ((~~170-03~~) 110-03) WAC to the contrary.

AMENDATORY SECTION (Amending WSR 18-14-078, filed 6/29/18, effective 7/1/18)

WAC 110-06-0110 Limitations on challenges to disqualifications. (1) If the disqualification is based on a criminal conviction, the subject individual cannot contest the conviction in the administrative hearing.

(2) If the disqualification is based on a finding of child abuse or neglect, or a finding of abandonment, abuse, neglect, exploitation, or financial exploitation of a vulnerable adult as defined in chapter 74.34 RCW, the subject individual cannot contest the finding if:

(a) The subject individual was notified of the finding by the department of social and health services (DSHS) and failed to request a hearing to contest the finding; or

(b) The subject individual was notified of the finding by DSHS and requested a hearing to contest the finding, but the finding was upheld by final administrative order or superior court order.

(3) If the disqualification is based on a court order finding the subject individual's child to be dependent as defined in chapter 13.34 RCW, the subject individual cannot contest the finding of dependency in the administrative hearing.

(4) If the disqualification is based on a negative action as defined in WAC ((~~170-06-0020~~) 110-06-0020) the subject individual cannot contest the underlying negative action in the administrative hearing if the subject individual was previously given the right of review or hearing right and a final decision or finding has been issued.

AMENDATORY SECTION (Amending WSR 18-14-078, filed 6/29/18, effective 7/1/18)

WAC 110-06-0115 Reconsideration of disqualification. (1) Subject to the requirements contained in chapter ((~~170-06~~) 110-06) WAC the department may reconsider an earlier decision to disqualify a subject individual.

(2) ((~~The disqualified subject individual must submit with his or her request for reconsideration a current and complete background check form and fingerprint card pursuant to WAC 170-06-0040.~~

((~~3~~))) For a disqualification based on WAC ((~~170-06-0070(4), 170-06-0070(7)(a), (e), or (e))~~) 110-06-0070(5) or (7)(a), (c), or (e), a disqualified subject individual's request for reconsideration will be granted only if the disqualified subject individual establishes by clear and convincing evidence there has been a change of circumstances since the date of the disqualification that demonstrates there is nothing about the subject individual's character, suitability, or competence that would prevent the subject individual from caring for or having unsupervised access to children receiving early learning services. For purposes of ((~~3~~))) subsection (2) of this ((~~subsection~~) section a disqualification based on a "negative action," WAC ((~~170-06-0070(4), 170-06-0070(7)(e) or (e))~~) 110-06-0070(5) or (7)(c) or (e) does not include a decision, final determination, or finding made by an agency or administrative law judge that relates to:

(a) The commission of abuse or neglect of a child as defined in chapters 26.44 RCW and 388-15 WAC; or

(b) The commission of abuse or neglect of a vulnerable adult as defined in chapter 74.34 RCW.

((~~4~~))) (3) For a disqualification based on any of the circumstances described in WAC ((~~170-06-0070(3), 170-06-0070(7)(b) or (d)~~) 110-06-0070(3) and (7)(b) or (d)), a disqualified subject individual's request for reconsideration will be granted only if the disqualified subject individual establishes by clear and convincing evidence there has been a change of circumstances since the date of the disqualification that demonstrates there is nothing about the subject individual's character, suitability, or competence that would constitute a danger to a child's welfare if the individual is allowed to care for or have unsupervised access to children in care.

~~((5))~~ (4) The department will not reconsider qualifying a subject individual that was disqualified under WAC ~~((170-06-0120(1)))~~ 110-06-0120(1).

~~((6))~~ (5) The department will not reconsider qualifying a subject individual that was disqualified under WAC ~~((170-06-0120(2)))~~ 110-06-0120(2) for a period of five years from the date of the disqualifying conviction.

AMENDATORY SECTION (Amending WSR 18-14-078, filed 6/29/18, effective 7/1/18)

WAC 110-06-0120 ((Director's)) Secretary's list. (1) A subject individual's conviction for any crimes listed in column (a) in the table below will permanently disqualify him or her from authorization to care for or have unsupervised access to children receiving early learning services.

(2) A subject individual's conviction for any crime listed in column (b) in the table below will disqualify him or her from authorization to care for or have unsupervised access to children receiving early learning services for a period of five years from the date of conviction.

(a) Crimes that permanently disqualify a subject individual	(b) Crimes that disqualify a subject individual for five years from date of conviction
Abandonment of a child	Abandonment of a dependent person not against child
Arson	Assault 3 not domestic violence
Assault 1	Assault 4/simple assault
Assault 2	Burglary
Assault 3 domestic violence	Coercion
Assault of a child	Custodial assault
Bail jumping	Custodial sexual misconduct
	Extortion 2
Child buying or selling	Forgery
Child molestation	Harassment
Commercial sexual abuse of a minor	
Communication with a minor for immoral purposes	Identity theft
Controlled substance homicide	Leading organized crime
Criminal mistreatment	Malicious explosion 3
Custodial interference	Malicious mischief
Dealing in depictions of minor engaged in sexually explicit conduct	Malicious placement of an explosive 2
Domestic violence (felonies only)	Malicious placement of an explosive 3

(a) Crimes that permanently disqualify a subject individual	(b) Crimes that disqualify a subject individual for five years from date of conviction
Drive-by shooting	Malicious placement of imitation device 1
Extortion 1	Patronizing a prostitute
Harassment domestic violence	Possess explosive device
Homicide by abuse	Promoting pornography
Homicide by watercraft	Promoting prostitution 1
Incendiary devices (possess, manufacture, dispose)	Promoting prostitution 2
Incest	Promoting suicide attempt
Indecent exposure/public indecency (felonies only)	Prostitution
Indecent liberties	Reckless endangerment
Kidnapping	Residential burglary
Luring	Stalking
Malicious explosion 1	Theft
Malicious explosion 2	Theft-welfare
Malicious harassment	Unlawful imprisonment
Malicious mischief domestic violence	Unlawful use of a building for drug purposes
Malicious placement of an explosive 1	Violation of the Imitation Controlled Substances Act (manufacture/deliver/intent)
Manslaughter	Violation of the Uniform Controlled Substances Act (manufacture/deliver/intent)
Murder/aggravated murder	Violation of the Uniform Legend Drug Act (manufacture/deliver/intent)
	Violation of the Uniform Precursor Drug Act (manufacture/deliver/intent)
Possess depictions minor engaged in sexual conduct	
Rape	
Rape of child	
Robbery	
Selling or distributing erotic material to a minor	
Sending or bringing into the state depictions of a minor	
Sexual exploitation of minors	

(a) Crimes that permanently disqualify a subject individual	(b) Crimes that disqualify a subject individual for five years from date of conviction
Sexual misconduct with a minor	
Sexually violating human remains	
Use of machine gun in felony	
Vehicular assault	
Vehicular homicide (negligent homicide)	
Violation of child abuse restraining order	
Violation of civil anti-harassment protection order	
Violation of protection/contact/restraining order	
Voyeurism	

AMENDATORY SECTION (Amending WSR 18-14-078, filed 6/29/18, effective 7/1/18)

WAC 110-15-0034 Providers' responsibilities. Child care providers who accept child care subsidies must do the following:

- (1) ~~((Comply with:~~
 - ~~(a) All of the DEL child care licensing or certification requirements as provided in chapter 170-295, 170-296A, or 170-297 WAC, for child care providers who are licensed or certified; or~~
 - ~~(b) All of the requirements in WAC 170-290-0130 through 170-290-0167, 170-290-0250, and 170-290-0268, for child care providers who provide in-home/relative care;~~
- (2) ~~Report pending charges or convictions to DSHS as provided in:~~
 - ~~(a) Chapter 170-295, 170-296A, or 170-297 WAC, for child care providers who are licensed or certified; or~~
 - ~~(b) WAC 170-290-0138 (2) and (3), for child care providers who provide in-home/relative care;~~
- ~~(3) Keep)) Licensed or certified child care providers who accept child care subsidies must comply with all child care licensing or certification requirements contained in this chapter, chapter 43.216 RCW and chapters 110-06, 110-300, 110-300A, 110-300B, and 110-305 WAC.~~
- (2) In-home/relative child care providers must comply with the requirements contained in this chapter, chapter 43.216 RCW, and chapters 110-06 and 110-16 WAC.
- (3) In-home/relative child care providers must not submit an invoice for more than six children for the same hours of care.
- (4) All child care providers must use DCYF's electronic attendance recordkeeping system or a DCYF-approved elec-

tronic attendance recordkeeping system as required by WAC 110-15-0126. Providers must limit attendance system access to authorized individuals and for authorized purposes, and maintain physical and environmental security controls.

(a) Providers using DCYF's electronic recordkeeping system must submit monthly attendance records prior to claiming payment. Providers using a DCYF-approved electronic recordkeeping system must finalize attendance records prior to claiming payment.

(b) Providers must not edit attendance records after making a claim for payment.

(5) All child care providers must complete and maintain accurate daily attendance records ((for children in their care, and allow access to DEL to inspect attendance records during all hours in which authorized child care is provided as follows:

(a) Current attendance records (including records from the previous twelve months) must be available immediately for review upon request by DEL.

(b) Attendance records older than twelve months to five years must be provided to DSHS or DEL within two weeks of the date of a written request from either department. Beginning July 1, 2017, or upon ratification of the 2017-19 collective bargaining agreement with SEIU 925, whichever occurs later, the records must be provided)). If requested by DCYF or DSHS, the provider must provide to the requesting agency the following records:

(a) Attendance records must be provided to DCYF or DSHS within twenty-eight ((consecutive)) calendar days of the date of a written request from either department.

~~((c) Failure to make available attendance records as provided in this subsection may:~~

~~(i) Result in the immediate suspension of the provider's subsidy payments; and~~

~~(ii) Establish a provider overpayment as provided in WAC 170-290-0268;~~

~~(4) Keep)) (b) Pursuant to WAC 110-15-0268, the attendance records delivered to DCYF or DSHS may be used to determine whether a provider overpayment has been made and may result in the establishment of an overpayment and in an immediate suspension of the provider's subsidy payment.~~

(6) All child care providers must maintain and provide receipts for billed field trip/quality enhancement fees as follows. If requested by DCYF or DSHS, the provider must provide the following receipts for billed field trip/quality enhancement fees:

(a) Receipts from the previous twelve months must be available immediately for review upon request by ((DEL)) DCYF;

(b) Receipts from one to five years old must be provided ((to DSHS or DEL)) within ((two weeks)) twenty-eight days of the date of a written request from either department((;

~~(5) Allow consumers access to their child at all times while the child is in care;~~

~~(6)).~~

(7) All child care providers must collect copayments directly from the consumer or the consumer's third-party payor, and report to ((DSHS)) DCYF if the consumer has not paid a copayment to the provider within the previous sixty days((;

(7) Follow);

(8) All child care providers must follow the billing procedures(=

(a) As described in the most current version of "*Child Care Subsidies: A Guide for Licensed and Certified Family Home Child Care Providers*"; or

(b) As described in the most current version of "*Child Care Subsidies: A Guide for Family, Friends and Neighbors Child Care Providers*"; or

(c) As described in the most current version of "*Child Care Subsidies: A Guide for Licensed and Certified Child Care Centers*."

(8) Not) required by DCYF.

(9) Child care providers who accept child care subsidies must not:

(a) Claim a payment in any month a child has not attended at least one day within the authorization period in that month((-

(9) Invoice the state no later than one calendar year after the actual date of service;

(10) For both)); however, in the event a ten-day notice terminating a provider's authorization extends into the following month, the provider may claim a payment for any remaining days of the ten calendar day notice in that following month;

(b) Submit an invoice for payment later than one calendar year after the actual date of service; or

(c) Charge consumers the difference between the provider's customary rate and the maximum allowed state rate.

(10) Licensed and certified providers ((and in-home/relative providers;)) must not charge ((subsidized families the difference between the provider's customary rate and the maximum allowed state rate; and

(11) For licensed and certified providers, not charge subsidized families for:

(a) Registration fees in excess of what is paid by subsidy program rules;

(b) Absent days on days in which the child is scheduled to attend and authorized for care;

(c) Handling fees to process consumer copayments, child care services payments, or paperwork;

(d) Fees for materials, supplies, or equipment required to meet licensing rules and regulations; or

(e) Child care or fees related to subsidy billing invoices that are in dispute between the provider and the state)) consumers for:

(a) Registration fees in excess of what is paid by subsidy program rules;

(b) Days for which the child is scheduled and authorized for care but absent;

(c) Handling fees to process consumer copayments, child care services payments, or paperwork;

(d) Fees for materials, supplies, or equipment required to meet licensing rules and regulations; or

(e) Child care or fees related to subsidy billing invoices that are in dispute between the provider and the state.

(11) Providers who care for children in states bordering Washington state must verify they are in compliance with their state's licensing regulations and notify DCYF within ten

days of any suspension, revocation, or changes to their license.

AMENDATORY SECTION (Amending WSR 18-14-078, filed 6/29/18, effective 7/1/18)

WAC 110-15-0125 ((Eligible)) Approved child care providers. ((To receive payment under the WCCC program, a consumer's child care provider must be:)) (1) ((An)) In-home/relative providers. ((Providers other than those specified in subsection (2) of this section must meet the requirements in WAC 170-290-0130; or)) To be approved to receive benefits under the WCCC program, an in-home/relative provider must comply with the applicable requirements contained in this chapter, chapter 43.216 RCW, and chapters 110-06 and 110-16 WAC.

(2) ((A licensed, certified, or DEL contracted provider:

(a)) Licensed providers ((must:

(i) Be currently licensed as required by chapter 43.215 RCW and as described by chapters 170-295, 170-296A, or 170-297 WAC; or

(ii) Meet the provider's)).

(a) To be approved to receive payment under the WCCC program, a licensed provider must comply with the requirements of this chapter, chapter 43.216 RCW, and chapters 110-06, 110-300, 110-300A, 110-300B, and 110-305 WAC.

(b) A provider who cares for a child who is a Washington resident in a state that borders Washington must:

(i) Be licensed to provide care in the bordering state;

(ii) Comply with the bordering state's licensing regulations ((for providers who care for children in states bordering Washington. DSHS pays));

(iii) Comply with the electronic attendance requirements contained in WAC 110-15-0126.

(c) The lesser of the following will be paid to a qualified, licensed child care ((facilities in bordering states)) provider in a state that borders Washington:

((A)) (i) The provider's private pay rate for that child; or

((B) The DSHS)) (ii) The DCYF maximum ((child care)) WCCC subsidy daily rate for the ((DSHS)) DCYF region where the child resides.

((b)) (d) A licensed provider in a state that borders Washington that receives WCCC subsidy payment to care for a child who is a Washington resident is not required or eligible to participate in the early achievers program or to receive quality improvement awards, tiered reimbursements, or other awards and incentives associated with the early achievers program.

(3) Certified providers ((are exempt from licensing but certified by DEL, such as)). To be approved to receive payment under the WCCC program, a certified provider must comply with the certification requirements contained in this chapter, chapter 43.216 RCW, and chapters 110-06, 110-300, 110-300A, 110-300B, and 110-305 WAC. Certified providers include:

((+)) (a) Tribal child care facilities that meet the requirements of tribal law;

~~((ii))~~ (b) Child care facilities on a military installation;
~~((and~~
~~(iii))~~

(c) Child care facilities operated on public school property by a school district

~~(e) New child care providers, as defined in WAC 170-290-0003, who are subject to licensure or are certified to receive state subsidy as required by chapter 43.215 RCW and as described by chapter 170-295, 170-296A, or 170-297 WAC, who received); and~~

(d) Seasonal day camps that contract with DCYF to provide subsidized child care.

(4) Early achievers program requirements for licensed and certified child care providers that receive their first WCCC payment on or after July 1, 2016:

(a) A licensed or certified child care provider that first receives a WCCC subsidy payment on or after July 1, 2016, for providing nonschool age child care ((on or after July 1, 2016, and received no such payments during the period July 1, 2015, through June 30, 2016,)) must complete the following activities to be eligible to receive additional WCCC payments:

(i) Enroll in the early achievers program within thirty days of receiving the ((initial state)) first WCCC subsidy payment. A licensed or certified provider ((who)) that fails to meet this requirement will lose ((eligibility)) DCYF approval to receive ((state)) WCCC subsidy payments for providing nonschool age child care

~~(A) Out of state providers that provide care for children receiving Washington state child care subsidies are neither required nor eligible to participate in early achievers; and~~

~~(B) Out of state providers are not eligible to receive quality improvement awards, tiered reimbursement, or other awards and incentives associated with participation in early achievers.~~

(ii) Adhere to the provisions for participation as outlined in the most recent version of the *Early Achievers Operating Guidelines*. Failure to adhere to these guidelines may result in a provider's loss of eligibility to receive state subsidy payments nonschool age child care;

~~(iii));~~

(ii) Complete level 2 activities in the early achievers program within twelve months of enrollment. A licensed or certified provider ((who)) that fails to meet this requirement will lose ((eligibility)) DCYF approval to receive ((state)) DCYF subsidy payments for providing nonschool age child care;

~~((iv))~~ (iii) Rate at a level 3 or higher in the early achievers program within thirty months of enrollment. ((If an eligible)) A licensed or certified provider that fails to ((rate at a level 3 or higher)) meet this requirement within thirty months of enrollment in the early achievers program, ((the provider)) must complete remedial activities with ((the department)) DCYF and rate at a level 3 or higher within six months of beginning remedial activities. A licensed or certified provider ((who fails to receive a rating within thirty months of enrollment or)) that fails to rate at a level 3 or higher within six months of beginning remedial activities will lose ((eligibility)) DCYF approval to receive ((state)) WCCC subsidy payments for providing nonschool age child care; and

~~((v) Maintain an up to date rating by renewing))~~ (iv) Renew their facility rating every three years and ((maintaining)) maintain a rating level 3 or higher. If a licensed or certified provider fails to renew their facility rating or maintain a rating level 3 or higher, ((they)) the licensed or certified provider will lose ((eligibility)) DCYF approval to receive ((state)) WCCC subsidy payments for providing nonschool age child care.

~~((d) Existing child care providers who are subject to licensure or are certified to receive state subsidy as required by chapter 43.215 RCW and as described by chapter 170-295, 170-296A, or 170-297 WAC, who have received a subsidy payment for a nonschool age child in the period July 1, 2015, through June 30, 2016, must))~~ (b) Licensed and certified providers must comply with the provisions for participation as outlined in the early achievers operating guidelines. Failure to comply with these guidelines may result in a licensed or certified provider's loss of DCYF approval to receive WCCC subsidy payments for providing nonschool age child care.

(5) Early achievers program requirements for licensed and certified child care providers that received a WCCC payment on or between July 1, 2015, and June 30, 2016:

(a) A licensed or certified child care provider that received a WCCC subsidy payment on or between July 1, 2015, and June 30, 2016, for providing nonschool age child care, must complete the following activities to be eligible to receive additional WCCC subsidy payments:

(i) Enroll in the early achievers program by August 1, 2016. A licensed or certified provider ((who)) that fails to meet this requirement will lose ((eligibility)) DCYF approval to receive ((state)) WCCC subsidy payments for providing nonschool age child care;

~~((A) Out of state providers that provide care for children receiving Washington state child care subsidies are neither required nor eligible to participate in early achievers; and~~

~~(B) Out of state providers are not eligible to receive quality improvement awards, tiered reimbursement, or other awards and incentives associated with participation in early achievers.)~~

(ii) Complete level 2 activities in the early achievers program by August 1, 2017. A provider who ((fails)) failed to meet this requirement will lose ((eligibility)) DCYF approval to receive ((state)) WCCC subsidy payments for nonschool age child care; and

(iii) Rate at a level 3 or higher in the early achievers program by December 31, 2019

~~((iv) If an existing))~~ A licensed or certified provider that fails to ((rate at a level 3 or higher)) meet this requirement by December 31, 2019, ((in the early achievers program, the provider)) must complete remedial activities with ((the department)) DCYF and rate at a level 3 or higher by June 30, 2020. A licensed or certified provider ((who)) that fails to receive a rating by December 31, 2019, or fails to rate at a level 3 or higher by June 30, 2020, after completing remedial activities will lose ((eligibility)) DCYF approval to receive ((state)) WCCC subsidy payments for providing nonschool age child care

~~((v) Maintain an up to date rating by renewing)).~~

(b) Licensed and certified providers must renew their facility rating every three years and ~~((maintaining))~~ maintain a rating level 3 or higher. If a licensed or certified provider fails to renew their facility rating or maintain a rating level 3 or higher, ~~((they))~~ licensed or certified providers will lose ~~((eligibility))~~ DCYF approval to receive ~~((state))~~ WCCC subsidy payments for providing nonschool age child care.

~~((e))~~ (6) If a licensed or certified child care provider ~~((serving))~~ receiving WCCC subsidy payment for providing nonschool age ~~((children, as defined in WAC 170-290-0003, and receiving state subsidy payments for nonschool age child care))~~ has successfully completed all level 2 activities and is waiting to be rated, the licensed or certified provider may continue to receive ~~((a state))~~ WCCC subsidy payments pending the successful completion of the level 3 rating activity.

~~((f))~~ ~~DEL contracted~~ DCYF-contracted seasonal day camps have a contract with DEL to provide subsidized child care.

AMENDATORY SECTION (Amending WSR 18-14-078, filed 6/29/18, effective 7/1/18)

WAC 110-15-0250 Eligible provider capacity and payment. (1) DSHS may pay:

(a) Licensed and certified providers for authorized care up to the provider's licensed capacity as determined under WAC ~~((170-297-5625, 170-295-0080, or 170-296A-5700))~~ 110-300B-5700, 110-300A-0080, or 110-305-5625, as appropriate; and

(b) In-home/relative providers for authorized care up to a maximum of six eligible children ~~((as provided in WAC 170-290-0138.~~

~~(2) Licensed providers may not bill the state for more than the number of children they have in their licensed capacity and who are authorized to receive child care subsidies.~~

~~(3) A violation)).~~

(2) A provider authorized to receive subsidy payment must submit an invoice only for children who have been authorized by DSHS to receive subsidy benefits. In addition, a provider must not submit an invoice for a number of children that exceeds the provider's licensed capacity.

(3) Failure to comply with the requirements of subsection (2) of this section may:

(a) Result in the immediate suspension of the provider's subsidy payments; and

(b) ~~((Establish))~~ Result in the establishment of a provider overpayment as provided in WAC ~~((170-290-0268))~~ 110-15-0268.

REPEALER

The following sections of the Washington Administrative Code are repealed:

WAC 110-15-0135 In-home/relative providers—Information provided to DSHS.

WAC 110-15-0138 In-home/relative providers—Responsibilities.

WAC 110-15-0139 In-home/relative providers—Electronic attendance records—Records retention.

WAC 110-15-0140 In-home/relative providers—Ineligibility.

WAC 110-15-0143 In-home/relative providers—Background checks—Required persons.

WAC 110-15-0145 In-home/relative providers—Background checks—Reasons and notification.

WAC 110-15-0150 In-home/relative providers—Background checks—Included information and sources.

WAC 110-15-0155 In-home/relative providers—Background checks—Subsequent steps.

WAC 110-15-0160 In-home/relative providers—Background checks—Disqualified providers.

WAC 110-15-0165 In-home/relative providers—Background checks—Other disqualifying information.

WAC 110-15-0167 In-home/relative providers—Background checks—Disqualified person living with the provider.