Chapter 296-857 WAC, LEAD

WAC 296-857-100, Scope, General Information & Application

WAC 296-857-10010, Scope

This chapter applies to all occupational exposures to lead. The Department's intent throughout this chapter is to establish a comprehensive set of standards for employers to minimize worker exposure to lead to the lowest feasible levels.

Note:
Work is typically considered to be covered by this rule when any of the following apply:

- Worker exposure to measurable airborne lead concentrations, 1.5 µg/m³ or greater using the monitoring methods detailed in this rule.
- Work with molten metals containing more than 1 ppm lead.
- Hot work, burning, or other processes which aerosolize materials with 50 ppm lead content, such as with welding and torch cutting (including welding on lead containing metal or where lead containing coatings were used).
- Work which pulverizes materials containing 600 ppm lead, such as use of power tools for cutting, grinding or sanding.
- Any work that manipulates materials at ambient temperature with a content of 5000 ppm (0.5%) or more of lead.
- Work with paints and coatings with more than 1.0 mg/cm² of lead.
- Work which leaves free lead on worker accessible surfaces at a concentration of 4.3 µg/dm² or more.

Note:
Working with any of the following materials is potentially covered by the scope of the rule:

- Lead containing coatings (paint, lacquer, varnish, and so forth)
- Suspect coatings
    - Facility/structure constructed prior to 1978
    - Corrosion protection coatings
        - Structural metal
        - Maritime
- Lead containing products
    - Lead shot or ingots
    - Ammunition (including in powder actuated tool)
    - Fishing sinkers
    - Solder
    - Mortar
    - Lead containing alloys
    - Lead grout
    - Smelting and casting
    - Slag

- Precious metals
- Wallpaper

- Other materials that may contain lead
  - Contaminated soils (including in the ASARCO plume)
  - Older pesticides and pesticide residue

WAC 296-857-10015, Definitions

Action Levels – The action levels are criteria for the Action Rules, which primarily require monitoring of worker exposure and blood lead levels:

- Airborne lead exposures of 10 µg/m³
- Surface contamination of 1000 µg/dm²
- Any handling metals with 20% lead content
- Disturbing any material with .5% lead content (5000 ppm)
- Burning/grinding/blasting any material with 1000 ppm lead content (0.1%)

Burning/Grinding/Blasting – Affecting a material in a way that generates respirable dust, fume, or other fine particulate containing lead. Work activities covered under this term are welding, torch cutting, burning of paint and other coatings, grinding, and abrasive blasting.

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. (See also WAC 296-155-012)

Contracting Employer– An employer, including a lessee or agent, which exercises control over management and record keeping functions relating to a building and/or facility in which activities covered by this rule take place.

Disturbing – Affecting a material in a way that may generate coarse dust, expose inner layers of the material, or otherwise cause worker exposure to lead that is contained in the material.

Exposure – The contact a worker has with lead, whether or not protection is provided by respirators or other personal protective equipment (PPE). Exposure can occur through various routes of entry such as inhalation, ingestion, skin contact, or skin absorption.

Exposure Controls – Requirements in this rule from section WAC 296-857-400, Employer Requirements for Lead Exposure Control, Work Practices, and Protective Equipment, which are required for worker lead exposures at or above the airborne lead permissible exposure limit, 20 µg/m³. Exposure controls may also be required when workers have persistent blood lead levels above the blood lead control level, 10 µg/dL.

Exposure Generator – The employer who exercises control over management and record keeping functions relating to an activity covered by this rule.

Free Lead – Lead containing particulate or residues that are not bound by the surface material in a way that prevents contamination of objects or people touching the surface from being contaminated. This does not include lead contained and well bound in intact coatings and paints. Free lead is measured by wiping the surface with a moist cloth that is analyzed for lead content after wiping.

Handling – Working with a material in a way that does not disturb or aerosolize the material.

High-efficiency particulate air (HEPA) filter – 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

Impacted Employer – An employer who has workers with exposures to lead or in the vicinity of lead work under the control of a facility owner or exposure generator. The impacted employer may or may not be involved in the lead work.

Lead -- Metallic lead and lead compounds, based on the lead content. Lead is the chemical element with atomic number 82 and mined in several mineral forms. Lead metal and compounds are used for a large variety of building and industrial purposes.

Permissible Exposure Limit (PEL) – The criterion for the PEL Rules. A daily exposure to airborne lead of 20 $\mu g/m^3$ TWA_{8e}.

Secondary Permissible Exposure Limit (SPEL) – The criterion for the SPEL Rules. A daily exposure to airborne lead of 50 $\mu g/m^3$ TWA_{8e}.

Surface Contamination – Free lead in the form of dusts or residues covering a surface such that contact with the surface by worker skin or clothes can pick up lead. Surface contamination is what is measured by the surface sampling protocols in this standard involving wiping of the surface with neutral water.

WAC 296-857-10020, Rule Structure

(1) The requirements of this rule are divided into the following hierarchy of requirements consisting of four classifications based on the level to which workers are exposed to lead in the workplace or while performing any work-related task:

(a) **Basic Rules** – Requirements in this rule for any work covered by the scope of the rule. These rules include requirements for cleaning practices, hygiene, personal protective equipment, and hazard communication training.

(b) **Action Rules** – Requirements in this rule which apply for work with exposures at any of the Action Levels described under WAC 296-857-10030, Assessment Criteria. These rules include ongoing exposure monitoring and blood lead testing.

(c) **PEL Rules** – Requirements of this rule for any work with exposure at or above the Permissible Exposure Limit described under WAC 296-857-10030, Assessment Criteria. Employers must also review the applicability of these requirements for workers who have a blood lead level above the blood lead control level.

(d) **SPEL Rules** – Requirements of this rule for any work with exposure at or above the Secondary Permissible Exposure Limit described under WAC 296-857-10030, Assessment Criteria.

(2) To determine which rule classifications apply, employers must assess worker exposure as required under WAC 296-857-20010, Determining which rule classifications apply.

(3) Additional rule sections. In addition to the four rule classifications, some sections of this rule have the following labels to clarify when they apply.

(a) Application—these are sections to follow when determining if work is covered by the rule and which work classification applies.

(b) General—these are sections that apply to all activity covered by the rule.

(c) Limited—these are sections that apply in limited circumstances. These sections will include criteria for when they can be applied.

(4) Rule Requirements Index

The following table lists the rule requirements and applicable rule sections that employers must follow for each rule classification:

TABLE 1

<table>
<tr><th colspan="2" rowspan="2"></th><th colspan="4">Rule Classification</th></tr>
<tr><th>Basic Rules</th><th>Action Rules</th><th>PEL Rules</th><th>SPEL Rules</th></tr>
<tr><td rowspan="10">Requirements</td><td>Monitoring</td><td>--</td><td>20040</td><td colspan="2">20050</td></tr>
<tr><td>Blood lead testing</td><td>30010</td><td colspan="3">30020</td></tr>
<tr><td>Cleaning practices</td><td colspan="2">40010</td><td colspan="2">40030 Based on control plan</td></tr>
<tr><td>Training</td><td>41010 Awareness</td><td colspan="3">41020 Workplace Specific</td></tr>
<tr><td>Hygiene</td><td colspan="2">42010 Hand/Face washing</td><td>42020 Shower, changing, eating Facilities</td><td>42030 Decontamination required</td></tr>
<tr><td>PPE</td><td colspan="2">43010 Hazard assessment, prohibitions</td><td>43030 Weekly change out</td><td>43040 Daily change out</td></tr>
<tr><td>Control Area</td><td colspan="2">--</td><td colspan="2">44020 Post and regulate</td></tr>
<tr><td>Respirators</td><td>--</td><td>45020 Voluntary use</td><td>45030 Half face</td><td>45040 Exposure based</td></tr>
<tr><td>Control Plan</td><td colspan="2">46010 Respond to high blood lead levels</td><td colspan="2">46030 Control plan (tools, work practices), periodic review</td></tr>
</table>

	Exposure Controls	--	47020 Respond to high blood lead levels	47030 Tool and work practices	47040 All feasible controls

Note on Initial Protections:

- For all work falling under this rule there are, at minimum, basic requirements for housekeeping, training, and handwashing.
- For work which involves minor disturbance of lead containing materials, such as using hand tools for cutting or scraping coatings, cleaning up lead containing debris, or handling metals with 20% or more lead content, employers must also conduct blood lead testing and allow voluntary use of respirators, until a comprehensive exposure assessment is completed.
- Respirators must be required and controls put in place for work with a potential for lead exposure above the permissible exposure level (PEL), 20 µg/m³ TWA_{8e}. The following activities are examples of work which can create exposures above the PEL.
    - Using power tools to cut, grind, sand or scrape lead containing coatings or materials
    - Abrasive blasting lead containing coatings or materials
    - Welding or torch cutting metals that contain lead or have been coated with lead containing materials (removing the lead coatings will significantly reduce exposures, but small residual quantities of lead can remain and generate significant exposures)

WAC 296-857-10022, Following compliance protocols--Application

(5) Employers may follow the alternate rules found in section WAC 296-500, Task and Industry Specific Compliance Protocols, for all or part of their work. These protocols are safe harbors covering work tasks or industries where lead hazards are well known.

(6) The following compliance protocols are given:

(a) WAC 296-857-50010, Handling lead containing articles in retail settings

(b) WAC 296-857-50020, Managing lead paint in office and residential settings

(c) WAC 296-857-50030, Incidental Lead Paint in Construction/Renovation, Repair, and Painting (RRP) Work

(d) WAC 296-857-50040, Gun range work

(e) WAC 296-857-50050, Clean areas

(f) WAC 296-857-50060, Well managed blood lead levels

(g) WAC 296-857-50070, Maintenance and Repair Work

WAC 296-857-10030, Assessment Criteria--Application

The following criteria are used for evaluating exposures to lead in the workplace

(1) Blood lead levels

The following table gives the blood lead criteria used in this rule.

TABLE 2

Level	Description
Advisory Level 5 µg/dL	Workers will be advised that their blood lead level is elevated when testing indicates a blood lead level greater than 5 µg/dL.
Control Level 10 µg/dL	Employers must report worker blood leads at or above this level to DOSH, review exposures, work practices and controls and document action plans to reduce exposures when workers are found to have blood lead levels above 10 µg/dL. Exception: When a worker pre-work blood lead level is established using venous blood at a level above 5 µg/dl, the blood lead control level for that worker is 5 µg/dl above their pre-work result. This exception does not affect the removal levels.
Return to Work Level 15 µg/dL	Workers removed from work due to elevated blood lead levels above the multi-test removal level, 20 µg/dL, or single-test removal level, 30 µg/dL, may not be returned to lead work with exposures above any action level until their blood lead level is below the return to work level, 15 µg/dL, in two consecutive monthly tests at least 14 days apart.
Multi-Test Removal Level 20 µg/dL	Workers must be removed from any activities with an action level exposure for workers with blood lead levels at or above 20 µg/dL which persist in follow-up testing conducted 4 to 8 weeks following the first elevated test.
Single-Test Removal Level 30 µg/dL	Workers must be removed from any activities with an action level exposure for workers with a single test results indicating blood lead levels at or above 30 µg/dL.

(2) Airborne lead exposures

(a) An 8-hour workday is the basis for the airborne lead exposure criteria. Compare a worker's complete daily exposure to the equivalent 8-hour exposure (TWA_{8e}).

(b) The equivalent 8-hour exposure is the sum of lead exposure concentrations multiplied by the length of exposure at each concentration, with the sum divided by 8 hours.

Note:
The equivalent 8-hour exposure time-weighted average (TWA_{8e}) is the consistent eight-hour exposure level which has the same airborne exposure as the overall shift exposure of a worker. Computing the TWA_{8e}

$$\mathrm{TWA}_{8e} = \frac{C_1 * T_1 + C_2 * T_2 + \cdots + C_n * T_n}{480\ min}$$

Where:
C_n is the concentration during the nth period during the day
T_n is length of time for the nth period in minutes

All periods of exposure must be included for the complete work shift each day.

(c) The following table gives the airborne lead criteria used in this rule.

TABLE 3

Level	Description
Airborne Action Level 10 µg/m³ TWA_{8e}	• Determine lead exposures for any conditions with the potential of worker exposure at or above 10 µg/m³ TWA_{8e}. • Employers must put in place a program to ensure work is tracked and appropriate work practices are used to limit lead exposures.
Permissible Exposure Limit (PEL) 20 µg/m³ TWA_{8e}	• Employers must put in place a written program to manage workplace controls, including monitoring the effective use of controls. • Employers provide respiratory protection whenever exposure exceeds 20 µg/m³ TWA_{8e} and make sure workers use it. • Hygiene and housekeeping practices must be in place to keep high lead exposures limited to lead control areas. • Employers must make available showers, and upgraded PPE and respirators based on the PEL.
Secondary Permissible Exposure Limit (SPEL) 50 µg/m³ TWA_{8e}	• Lead exposures greater than 50 µg/m³ TWA_{8e} must be controlled by means of feasible engineering and administrative systems. • Employers must make sure workers use effective decontamination procedures. • PPE and respirators must protect workers to the SPEL.

(3) Surface contamination levels

(a) The following criterion is used for determining requirements in this rule based on surface contamination. Surface contamination is free lead in dust or residues on a surface that can be transferred to other surfaces on contact.

(b) Single sample testing is sufficient for determining whether surfaces are contaminated for comparison with this criterion.

TABLE 4

Level	Description
Surface Action Level 1000 µg/dm²	Workers working in areas with surfaces at this level must be provided with hygiene facilities and personal protective equipment.

(4) Material content criteria

(a) Material content is lead contained in a material based on weight.

(b) These criteria are applied when the material is disturbed with the potential to release dust or debris containing lead.

(c) The metals action level also applies when workers directly contact the metal with skin, personal protective equipment, or clothing. If the metal is contained in an article (as defined in Chapter 296-901, Hazard Communications) which prevents direct contact with the lead containing metal, this criterion does not apply.

TABLE 5

Level	Description
Metals Action Level 20% lead	Workers touching metals with a 20% or more lead content must be provided with hygiene facilities and personal protective equipment.
Non-metal Action Level 0.5% lead (5000 ppm)	Workers disturbing any materials with 0.5% lead content must be provided with hygiene facilities and personal protective equipment. This applies to any activity that could release lead or lead compounds from the material in a form that could be inhaled, ingested, or absorbed through the skin of the worker.
Burning/Grinding/Blasting Action Level 1000 ppm lead (0.1%)	Workers welding, burning, or grinding, or otherwise creating aerosols or fumes from materials containing 1000 ppm lead content must be provided with hygiene facilities and personal protective equipment.

WAC 296-857-10040, Multi-employer worksites - Application

(1) Contracting employers must inform contractors and other employers conducting construction or maintenance work about lead containing materials in the facility which may be disturbed by planned work prior to bidding or contracting for work.

(a) Before contracting for work subject to this rule, contracting employers must use due diligence to determine the presence, location, and quantity of lead containing building materials at the work site.

(i) Inspections may follow section WAC 296-857-900, Building Inspections, or other recognized and generally accepted good inspection practices.

(ii) The inspection may assume materials are lead containing without testing or verification, but the contracting employer must specify handling of these materials as if lead containing until thorough sampling and analysis is performed

(b) When communicating information to contractors and workers, contracting employer must identify lead containing materials, including any materials assumed to contain lead.

(i) Contracting employers shall determine the presence, location, and quantity of lead at the work site. Written documentation must be provided for any materials which could reasonably be expected to create an action level exposure during the planned work.

(ii) Past surveys of the facility and information about any lead handling relevant to the planned work activities must be made available in writing.

(iii) For work which will potentially disturb lead containing materials, the contracting employer must make sure a survey is conducted to document potential lead hazards if existing information is insufficient.

(iv) If lead containing materials are present, but cannot be reasonably expected to cause action level exposures, the contracting employer may rely on a simple written cautionary statement to the other employers.

(A) Where labels, signs, posters, or other warnings are placed in the facility to alert the contracting employer's workers or tenants of the presence of lead and placed to be effective notice to the contractor and maintenance workers, no other notice is required.

(2) Exposure generators, employers controlling activities which may expose workers to lead, must communicate the hazard to other employers with workers at the worksite potentially exposed to lead or in areas adjacent to lead hazards.

(a) When workers are directly exposed to lead through conditions not controlled by their direct employer, the exposure generator must:

(i) Make available assessments of lead exposure to the employer of the workers in writing.

(ii) Coordinate with the workers' employer to make sure the workers' exposure is addressed in compliance with this rule. This may be accomplished by the employer generating the exposure, the workers' direct employer, and/or others at the worksite.

(b) Workers in the vicinity of a lead control area must be provided with information on the lead work and any precautions necessary to protect themselves. The communication with the workers may be coordinated between employers at the worksite.

(3) Where workers are exposed to lead due to work controlled by a contracting employer or exposure generator the impacted employer must do the following:

(a) Make sure workers are protected as required by this rule.

(b) Collect written documentation provided by the contracting employer or exposure generator and make it available to workers when required by this rule.

(c) Make sure workers receive required information and training under this rule. The training may be directly presented to the workers by the contracting employer or other exposure generator.

(d) Make sure potential lead exposures identified by workers are assessed as required in this rule.

(i) The contracting employer or exposure generator are responsible for participating in assessment of exposures under their control. The direct

employer must communicate lead hazard issues to make sure exposures are thoroughly assessed.

(ii) Make sure that any previously unassessed materials are assessed and information provided to the workers as required in this rule.

WAC 296-857-10050, Determining work is not covered by this rule

(1) Employers who have surveyed their work environment and materials in use and not found lead containing materials in the work area that may be impacted by work are not required to do further evaluation.

(a) Minimum requirements for surveying the workplace include:

(i) Review of safety data sheets for materials used in the work.

(ii) Evaluate finish paint and other coatings for residential and commercial spaces constructed prior to 1978.

(iii) Evaluate corrosion protection coatings exposed in the workplace.

(iv) Evaluate work commonly known to involve lead exposures for the employer's industry.

(b) If a worker requests information on lead content of materials in the work place which have been assessed, the employer must make that information available in writing and accurately explained in the language understood by the worker within 1 business day. Existing resources, such as Safety Data Sheets and building inspection records, may be used which demonstrate that there is no significant worker exposure to lead. The employer does not need to conduct new testing or research for materials that have been adequately evaluated and documented prior to the worker's request.

(c) If the worker request identifies materials that have not been previously addressed, the employer must evaluate the materials and provide a written assessment of exposure within 14 days. Interim protection must be provided for any work activity involving these materials with a potential for exposure above an action level.

(2) When work involves lead containing materials, but the employer has determined there is no hazard of inhalation, absorption, or ingestion of lead during the work, the employer must document their assessment.

(a) The assessment must be available to workers in writing, and verbally in their language if necessary, in the workplace.

(b) The assessment must clearly demonstrate that worker lead exposures do not have the potential for an uptake of lead which could raise worker blood lead levels above the blood lead advisory level, 5 µg/dL, without other sources of lead exposure.

(c) The assessment must be based on clearly convincing information, including any combination of the following: objective data about the materials and the work, professional engineering or industrial hygiene assessments, bulk sampling, air monitoring, or surface sampling.

(d) When work involves any activity covered by a presumed exposure level that indicates a requirement for blood lead testing, the assessment must be submitted to state or national blood lead monitoring programs when requested.

(e) General hazard communication requirements apply when this rule does not. Provide information on lead containing materials as required by Chapter 296-901 WAC, Safety Standards for Hazard Communication.

(f) The assessment cannot be considered clearly convincing that the work is not covered by the scope of this rule if there are indications of any of the following circumstances:

(i) Worker exposure to measurable airborne lead concentrations, 1.5 µg/m³ or greater using the monitoring methods detailed in this rule.

(ii) Work with molten metals containing lead more than 1 ppm lead.

(iii) Hot work, burning, or other processes which aerosolize materials with 50 ppm lead content, such as with welding and torch cutting (including welding on lead containing metal or where lead containing coatings were used).

(iv) Work which pulverizes materials containing 600 ppm lead, such as use of power tools for cutting, grinding or sanding.

(v) Any work that manipulates materials at ambient temperature with a content of 5000 ppm (0.5%) or more of lead.

(vi) Work with paints and coatings with more than 1.0 mg/cm² of lead.

(vii) Work which leaves free lead on worker accessible surfaces at a concentration of 4.3 µg/dm² or more.

(viii) Engineering controls are necessary to maintain lead levels below these levels.

WAC 296-857-10060, Implementation Schedule--General

(1) To be determined

WAC 296-857-200, Employer Requirements for Assessing, Classifying, and Monitoring Exposures

WAC 296-857-20010, —Determining which Rule Classification Applies

(1) Employers must make sure all workers are protected by implementing the requirements of this rule that apply to their work. Employers must assess all work and determine which rule classifications apply: Basic Rules, Action Rules, PEL Rules, or SPEL Rules.

(2) The rule classifications at each level of the hierarchy do not need to be implemented separately. For example, training for workers under the PEL Rules may incorporate the requirements of the Action Rules and Basic Rules in a single training program.

(3) There are three circumstances where employers must determine which rules apply to a work activity:

(a) Prior to starting new work processes or when there is a change in materials, work practices, or control measures that may increase lead exposures.
    (i) The decision in this circumstance is based on best available objective data and recognized and generally accepted good safety and health practices in industry consensus documents or published in academic journals.
    (ii) Where the department has provided a presumed exposure level for a task, the employer may rely on that information and should only provide less protection when directly applicable historical data or clearly convincing objective data supports the decision.

(b) At the completion of the exposure assessment of exposures in the work place.
    (i) This assessment is based on direct measurement of exposure representing actual exposure to workers.
    (ii) Exposure assessments for previous work may be used when the work was substantially similar to the current work including materials, work practices, control methods, and employee training.
    (iii) The employer must implement rules at a higher rule level if exposure assessment indicates that the initial protections were not sufficient.

(c) On an ongoing basis as air and blood lead levels are tested.
    (i) Each time new testing is completed the employer must review the results to confirm that exposures are consistent with current rules applied to work tasks and make any increase in protection that is indicated.
    (ii) When work practices, controls, or materials are changed and there is a reasonable possibility of an increase in worker exposure, the employer must make sure a full assessment of the resulting exposure is conducted.

(4) For work that involves more than one type of task the employer may choose to average exposures for the full shift or apply the rules separately for each task.

(a) When exposure is averaged over the full work shift the rule level is based on the full shift exposure and all requirements at that level must be followed for the full shift.

(b) When the rules are applied separately for each task, the assessment must be based on the assessed exposure for the period if done for a full 8 hour shift. This can be based on the measured exposure during the work period averaged over the time of the work period compared to the airborne exposure criteria directly (TWA compared to TWA_{8e}). If exposure is given as an eight hour equivalent time weighted average (TWA_{8e}) then that number must be divided by the time of the measured period and multiplied by 8 hours. (Example: A level of 14.6 µg/m³ TWA_{8e} was measured for a task taking 150 minutes. The projected 8-hour exposure is 14.6/150*480 = 47 µg/m³ TWA_{8e}. The task will require PEL Rules, if the rules are implemented separately for that work.)

(c) The surface contamination and material content action levels are point in time measurements and when rules are triggered by these criteria, those rules must be followed until workers have an opportunity to remove personal protective equipment and wash off lead contamination.

WAC 296-857-20020, Pre-work classification of worker exposure— -- Application

(1) Employers must assess lead and lead compounds found in the workplace and determine worker lead exposure before workers are exposed.

(2) Prior to starting any work that may expose workers to lead, of the employer must determine the expected exposure based on the highest reasonable exposure level that may be generated by the work activity. The exposure assessment must determine whether workers could be exposed above the permissible exposure limit, 20 µg/m³ TWA_{8e}, or the action levels, which will determine which portions of the rule must be implemented in the workplace at the start of work.

(3) Until a comprehensive exposure assessment is completed the provisions of this rule must be applied based on the pre-work determination of worker exposure. A comprehensive assessment must meet the requirements of WAC 296-857-20010, Determining which rule classifications apply.

(4) Employers must protect workers when starting new lead work based on the available objective information and recognized and generally accepted good occupational health practices.

(5) The initial determination may be based on one or more of the following:

(a) Professional engineering or industrial hygiene assessments of objective data available prior to commencing work.

(b) Recognized and generally accepted good safety and health practices in industry consensus documents or published in academic journals.

(c) Safe harbor exposure levels found in section WAC 296-857-800 of this rule.

(d) Following an Industry Compliance Protocol promulgated by the department.

WAC 296-857-20030, Classifying exposure at the start of work—Basic Rules

(1) Employers must evaluate the exposure of workers covered by this rule and classify the exposure into one of four categories based on highest reasonably expected exposure documented by sampling. Sampling must cover worst case scenarios.

(a) Basic Rules Conditions, for exposures determined to be below all of the action levels.

(b) Action Level Conditions, for exposures determined to be below the permissible exposure limit, 20 µg/m³ TWA_{8e} but at or above an action level.

(c) PEL Conditions, for all exposure at or above the permissible exposure limit, 20 µg/m³ TWA_{8e}.

(d) SPEL Conditions, for all exposures at or above the secondary permissible exposure limit, 50 µg/m³ TWA_{8e}.

(2) For exposures at or above the permissible exposure limit, 20 µg/m³ TWA_{8e}, sampling must also provide sufficient information to select appropriate personal protective equipment, respirators, work practices, and controls.

(3) For the purposes of this rule, worker exposure is that exposure which would occur if the worker were not using a respirator.

(4) Employers may use task based assessments and provide protection for each task based on applying the rule for that task as if it was done for the full shift.
(5) Determinations of material content for comparison with the metals action limit may be made by:
    (a) Reference to a safety data sheet,
    (b) Laboratory analysis with an accuracy of 1% for materials with 20% lead content,
    (c) X-ray fluorescence testing, or
    (d) Documentation of source material lead content when the employer generates the metal.
(6) Determinations of material content for comparison to the non-metals action limit or welding/grinding/blasting action limit may be made by:
    (a) Reference to a safety data sheet,
    (b) Laboratory analysis with an accuracy of .1% for materials with 0.1% to 0.5% lead content,
    (c) X-Ray fluorescence testing, or
    (d) For the non-metals action limit, screening by colorimetric testing or other methods allowed by the Washington Department of Commerce for determining work is covered under the renovation, repair, and painting rules, Chapter 365-230 WAC
(7) Classification can be done through any of the following methods for assessment of airborne exposures.
    (a) Full-shift exposure monitoring
        (i) Air samples collected from the breathing zone of representative workers drawn through the full shift are a direct measurement of exposure.
            (A) Samples must be collected and analyzed using the methods given in WAC 296-857-600, Lead Sampling and Analysis, or other accredited methods with as good or better accuracy.
            (B) Sampling and analytical error must be taken into account when interpreting results, but are otherwise directly comparable to the exposure criteria of this rule.
        (ii) Monitoring must start when a new work activity starts and initial samples necessary to make the exposure classification must be analyzed and reported to workers promptly.
        (iii) Partial shift sampling used to estimate exposures requires additional documentation.
            (A) Documentation of the shift work must be provided to show that the period of sampling is representative of the highest exposure for the shift.
            (B) For any period of the shift that is treated as having no exposure, there must be clear documentation of activities and rationale for this assessment.
    (b) Past monitoring of work may be used with the following additional documentation about the work at the time of monitoring and the current work:

(i) Training of the workers must be consistent.
(ii) Work methods must be consistent
(iii) Materials must be consistent
(iv) The prior monitoring must have been conducted within the past 12 months.

(c) Exposure assessments provided in Compliance Protocols promulgated by the department may be relied on for short term projects lasting less than one week or as provided for in the Model Exposure Control Plan. Additional assessments of conditions and exposures must be conducted as given in the Model Exposure Control Plan.

(d) Any other objective information (other than direct monitoring of the work currently or within the last 12 months) which clearly demonstrates the level of exposure can be used to establish exposure in the following circumstances:
(i) Where objective information clearly demonstrates exposures cannot be at or above an action level, this assessment can be relied on permanently. The documentation must be retained throughout the activity and made available to workers during training and at their request.
(ii) For exposures possibly at or above an action level, objective information can be relied on while conducting direct measurement of worker exposure. The accuracy and applicability of the objective information must be assessed, and worker protective clothing and equipment must be selected based on the highest reasonably expected exposure level indicated by the objective information as a whole.

WAC 296-857-20040, Monitoring of worker exposure over time—Action Rules

(1) Employers must evaluate the exposure of workers who are exposed at or above an action level at least every six months by direct measurement of representative worker exposure.
(2) Periodic exposure monitoring must use the procedures given in WAC 296-857-20030.
(3) Reducing exposure monitoring frequency may be done when a lowering of exposure is demonstrated by two or more consecutive exposure evaluations made at least seven days apart showing that airborne exposures are below the action level, 10 µg/m³ TWA_{8e}.
(a) If the lead exposure during the work is found to be at or above a material content action level, airborne monitoring may be stopped. A review of work conditions must be done at least every six months to determine if there is any indication of increased airborne lead exposures or any increase in worker blood lead levels.
(b) If there is no indication of exposure above any action level, the employer may review conditions and if appropriate reclassify the work as Basic Rules activity.
(4) If an exposure assessment indicates the exposure has increased, continued monitoring must be performed at the schedule for the new, elevated level of exposure.

WAC 296-857-20050, Monitoring of worker exposure over time—PEL and SPEL rules

(1) Employers must evaluate the exposure of workers who are exposed at or above the permissible exposure limit, 20 µg/m³ TWA_{8e}, at least every three months by direct measurement of representative worker exposure.

WAC 296-857-20060, Notifying workers of exposure monitoring results—General

(1) Provide written notification of exposure monitoring results to workers represented by the exposure evaluation within five business days after the results become known to the employer.

(2) When worker exposure monitoring results are above the permissible exposure limit, 20 µg/m³ TWA_{8e}, also provide written notification to workers of all the following within fifteen business days after the results become known to the employer:

(a) Actions being taken to reduce exposures and an implementation schedule.

(b) Any reason why exposures can't be lowered to below the permissible exposure limit, 20 µg/m³ TWA_{8e}.

Note:

- Corrective actions include exposure controls and any repairs to exposure controls. For examples of exposure controls, see Table 1 in another chapter, Respiratory hazards, chapter 296-841 WAC.
- Employers can notify affected workers either individually or post the notifications in areas readily accessible to affected workers.
- Posted notification may need specific information that allows affected workers to determine which monitoring results apply to them
- Notification may be:
  - In any written form, such as hand-written or e-mail;
  - Limited to the required information, such as exposure monitoring results.
- When notifying workers about corrective actions, the employer's notification may refer them to a separate document that is available and provides the required information.

WAC 296-857-20070, Exposure records—General

(1) Establish and keep complete and accurate records for all exposure monitoring conducted under this chapter. Make sure the exposure record includes at least:

(a) The name and unique identifier of

(i) The worker sampled;

(ii) All other workers and/or job duties or tasks represented by the sampled worker

(b) A description of the methods used to obtain exposure monitoring results and evidence of the method's accuracy

(c) A description of the procedure used to obtain representative worker exposure monitoring results;

(d) The date, number, duration, location, and result of each sample taken;

(e) Any environmental variables that could affect exposure concentration measurements, for example, temperature, humidity, altitude, and wind speed;

(f) The type of respirators and other protective equipment worn, if any;
(g) Exposure controls in use and work practices, for example, ventilation systems, enclosures, use of wet methods, and specific work practices.

(2) All exposure assessments, whether through direct monitoring of exposure, use of recent monitoring of previous work, or use of other objective information sources, must be kept to show worker exposure history.
(3) Keep worker exposure records for at least thirty years.

WAC 296-857-300, Employer Requirements for Blood Lead Monitoring, Medical Removal, and Medical Records

WAC 296-857-30010, Monitoring worker blood lead levels – Basic Rules – Availability of blood lead testing for workers

(1) Employers must make blood lead testing available to workers when requested by the worker at no cost to the worker and at a reasonable time and place:
(a) Prior to the worker starting lead work, when feasible,
(b) Within three months of starting lead work,
(c) Following any spill or other exposure incident which may have resulted in an exposure at or above an action level, or
(d) At any time for workers who have not had a blood lead test within the previous 3 years.
(2) Follow-up on blood lead testing must be conducted for elevated blood lead levels as specified in WAC 296-857-30020.
(3) Provide medical removal benefits if blood lead levels are found above the single test or multi-test blood lead removal levels.

Exception:
Exception, medical removal is not required when:

- The employer has reassessed exposures in the work area and convincingly confirmed that ongoing exposures remain below all action levels, and
- A physician performs a medical examination and concludes that there is a source of the blood lead not associated with the workplace. The worker has the right to request a second opinion per WAC 296-857-60040

WAC 296-857-30020, Monitoring worker blood lead levels – Action, PEL, SPEL Rules – Monitoring program

(1) Conduct ongoing blood lead monitoring for workers exposed at or above any lead action level more than 10 days per year.
(a) A day of exposure to the airborne lead action level includes:
(i) Any day with a total exposure of 10 $\mu g/m^3$ TWA_{8e} or greater.
(ii) Any day with any task lasting 30 minutes or more that has been assessed as requiring PEL rules or SPEL rules.
(b) A day of exposure to the material content or surface contamination action levels is counted for each day with 1 hour of work. Work is timed from beginning the

contact or disturbance activity to the time when the worker accesses washing facilities where personal protective equipment can be doffed properly and the worker can thoroughly wash off lead contamination.

(2) Employers must make initial blood lead testing available, to establish a baseline blood lead level.
   (a) Blood testing must be available to the worker prior to starting lead work if the lead exposure is reasonably anticipated.
   (b) For exposures that were not anticipated, blood lead testing must be made available within 2 days of discovering exposures to lead could have been at or above the action level, 10 µg/m³ TWA_{8e}.
   (c) If the worker baseline test was collected prior to the worker conducting any lead work and shows an elevated blood lead level, greater than the advisory level, 5 µg/dL, the employer should provide information on potential exposures to lead outside work and recommended that the worker follow-up with prior employers regarding exposure to lead and their rights.

(3) Blood lead testing must be made available at no cost to workers and at a reasonable time and place.

(4) Employers must make sure workers receive blood testing results within 5 days of receiving them from the medical providers.

(5) Any blood lead test indicating blood lead levels above the advisory level, 5 µg/dL, must be communicated to the worker along with information on the medical significance of elevated blood leads including information in this standard.

(6) The employer must review exposures, work practices and controls in response to any blood lead test indicating blood lead levels above the blood lead control level, 10 µg/dL, or for any blood lead level result indicating an increase in blood lead level of 5 µg/dL or more if a baseline test indicated a blood lead level greater than 5 µg/dL.
   (a) The employer must create a written plan for reducing blood lead levels through new or corrected controls or work practices and provide it to worker within 15 days of receiving the blood lead testing results.
   (b) For workers not exposed above the airborne lead permissible exposure level, 20 µg/m³ TWA_{8e}, the employer may rely on improvements to workplace procedures covered by the PEL rules: housekeeping, training, work practices, and hand/face washing, for six months. Engineering controls that are in place must be reviewed for proper operation.
   (c) For workers exposed above the airborne lead permissible exposure level, 20 µg/m³ TWA_{8e}, or for workers who have had a blood lead level above the blood lead control level, 10 µg/dL, for more than six months, the employer must also include improvements to workplace procedures covered by the SPEL rules: feasible improvements to controls, respirators, and decontamination procedures in the workplace review.

(7) Follow-up testing is required in the following circumstances

(a) If worker exposures may be at or above any action level, a follow-up test must be made available every 2 months for 6 first six months and every 6 months after that.
(b) If a worker stops participating in lead work, either because of the conclusion of work or moving to another position, a follow-up test must be made available within 2 weeks after completing work.
(c) If a worker blood lead level is greater than the blood lead control level, 10 µg/dL, testing must be made available every 2 months.
(d) If a worker has been medically removed, provide blood lead testing monthly until 2 consecutive tests show the worker's blood lead level has decreased to below the return to work level, 15 µg/dL.
(e) If the worker was given an initial test, but monitoring of work clearly documents there was no exposure at or above any action level, and the workers blood lead level is below the advisory level, 5 µg/dL, then no follow-up test is required.

(8) Employers must report to DOSH any blood lead level results at or above the blood lead control level, 10µg/dL .
(a) The report to DOSH must be made within 24 hours of receipt of the blood level results.
(b) Reporting must be done in a manner consistent with WAC 296-27-031(5):
(i) By telephone to the department's toll-free telephone number, 1-800-4BE-SAFE (1-800-423-7233) or in person to the Labor and Industries' Division of Occupational Safety and Health (DOSH) office located nearest to the site of the incident (if the office is open during the reporting time period);
(ii) By telephone to the OSHA toll-free telephone number, 1-800-321-OSHA (1-800-321-6742);
(iii) To DOSH by any other means.
(c) You must provide DOSH with the following information for each elevated blood lead level:
(i) The establishment name;
(ii) The location of the lead work;
(iii) The time and date of the lead work;
(iv) The type of reportable event (i.e., an elevated blood lead level);
(v) The number of employees who have elevated blood lead levels;
(vi) The names of the employees who have elevated blood lead levels;
(vii) Your contact person and their phone number; and
(viii) A brief description of the related lead work.

(9) Employers may retest for any blood lead level of 20 µg/dL or greater.
(a) The worker must be informed immediately if the employer is delaying medical removal until a retest is done.
(b) The retest must be completed within 14 days.
(c) The second result may be substituted for the original result.
(d) Medical removal must be initiated within 14 days of the original test if blood lead levels requiring removal are confirmed.

WAC 296-857-30030, Selecting a medical physician—General

(1) Select a medical physician who will conduct or supervise examinations and consultations.
   (a) Initial, periodic, and second opinion examinations must be performed of supervised by a medical physician.
   (b) Physicians performing review of a second opinion examination must be licensed to practice in Washington and board certified in either occupational medicine or toxicology.

(2) Make sure the physician follows the protocols in WAC 296-857-700, Medical Protocols, for all examinations under this standard.

(3) Make sure the physician has the following information.
   (a) A copy of this chapter (WAC 296-857-100 through WAC 296-857-900)
   (b) A description of the duties of the worker being evaluated and how these duties relate to lead exposure.
   (c) The anticipated or representative exposure monitoring results for the worker being evaluated, including monitoring results pertaining to any other toxic substances, if applicable.
   (d) A description of the personal protective equipment (PPE) each worker being evaluated uses or will use.
   (e) Information from previous employment-related examinations, such as prior blood lead determinations and written medical opinions, when the employer has access to this information and it's not available to the examining physician.
   (f) Instructions that the written opinions the physician provides to the employer be limited to the following information:
      (i) The physician's opinion about whether or not the worker has medical conditions that would put the worker at increased risk for material impairment to health from exposure to lead (other than elevated blood lead levels);
      (ii) Any recommended special protective measures or limitations for the worker's exposure to lead;
      (iii) Any recommended limitation on the use of respirators, including a determination of whether the worker can wear a powered air-purifying respirator when an physician determines the worker can't wear a negative-pressure respirator;
      (iv) Whether the worker's blood lead result is any one of the following:
         (A) Above the advisory level, 5 µg/dL;
         (B) Above the action level 10 µg/dL, follow-up will be required at this level;
         (C) Above the chronic removal level, 20 µg/dL for a second test within 12 months, which indicates the worker must be removed from exposure.
         (D) Above the acute removal level, 30 µg/dL, for any single test, which indicates the worker must be removed from exposure.

(v) Instruction to advise the worker of any occupational or non-occupational medical condition that dictates further medical examination or treatment.

Note:
Medical evaluations and exams are also required for respirator use under Chapter 296-842 WAC, Respirators, and other substance specific rules. It is appropriate to have the examination requirements of any or all of these rules covered in a single examination. Coordinate with the physician to make sure this is done efficiently.

WAC 296-857-30040, Workers may request a second opinion—General

(2) The employer must inform workers of the right to a second opinion including the following information:
   (a) The worker may select the medical physician who will conduct the second opinion examination.
   (b) The worker has 15 working days from the employer arranged examination or the notice of their right to a second opinion examination to request the second opinion examination, whichever is later.
   (c) The worker must request the second opinion examination in writing and initiate steps to make an appointment from their chosen physician within the 15-day period.
   (d) The employer will pay for the second opinion examination, as long as the worker meets the requirement to request and arrange for the appointment in a timely manner.
   (e) The employer must inform the worker how the second opinion examination will be paid for if the worker does not request and arrange for the examination in a timely manner (employers may offer to pay for examinations not required in this rule).

(3) When a second opinion examination is conducted, the same information provided for the employer selected examination must be provided to the worker's physician.

(4) If the second opinion examination results and recommendations are consistent with the employer's arranged examination, then those results will be followed.

(5) If the second opinion examination results differ from the employer arranged examination results, work with the worker, employer's physician, and worker's physician to resolve the differences between the two examination results or recommendations.

(6) If the two physicians cannot resolve the differences, the employer may need to bring in a third physician, selected with the consent of the worker and worker's physician.
   (a) The third physician must be board certified in occupational medicine or toxicology.
   (b) The third physician may mediate the results discussion or conduct a third examination.

(c) The third physician's results and recommendations will be used unless the worker and employer agree to follow one of the two previous results.

WAC 296-857-30050, Medical removal requirements – Action, PEL, SPEL Rules

(1) The employer must provide medical removal benefits and remove the worker from areas where lead exposure is at or above any action level when any of the following occur:
   (a) A physician recommends removal from lead exposures due to a medical condition that puts the worker at increased risk for material impairment to health from exposure to lead identified during a medical exam conducted under the provisions of this rule,
   (b) Results from a periodic blood test show the worker's blood lead level (BLL) is above the single-test blood lead removal level, 30 µg/dL,
   (c) Results from a periodic blood test show the worker's blood lead level is above the multi-test blood lead removal level, 20 µg/dL, when the worker's blood lead level remains at or above this level during follow-up testing.
      (i) Follow-up testing must be done between 4 and 8 weeks following the test indicating blood lead levels above the multi-test blood lead removal level, 20 µg/dL.
      (ii) If no follow-up test is made available to the worker within 8 weeks, it is presumed that the worker blood lead level has remained above the multi-test blood lead removal level, 20 µg/dL and medical removal benefits must be provided.

(2) Follow any protective measures or limitations specified for the worker during temporary removal by employer's physician's written determination.
   (a) When the worker seeks a 2nd opinion, continue to follow the employer's physician's written opinion until either:
      (i) Complete the process for 2nd and 3rd physician opinions, or,
      (ii) The employer and the worker reach an agreement consistent with the recommendations of one of the physicians.

(3) The employer may elect to retest for any blood lead result greater than 20 µg/dL. If the retest is not conducted within 14 days, temporarily remove the worker from exposure to lead at or above any action level.

(4) Continue the worker's temporary removal until one of the following occurs:
   (a) Results from 2 consecutive blood tests show the worker's blood lead level has decreased to below the return to work level, 15 µg/dL.
   (b) The worker's lead related work concludes. For example, the worker's hiring agreement specifies work on a single project and the project has been completed.
   (c) A final medical determination has been completed. Follow the physician's recommendations, including special protective measures and any limitations on the worker' exposure to lead, and do either of the following:
      (i) Return the worker to their former job status, when indicated; or,

(ii) Permanently remove the worker from work with lead exposure at or above the action level, 10 µg/m³ TWA_{8e}.

Note:
When returning the worker to their former job status, the employer may apply terms established by a collective bargaining agreement to make sure the worker's current and previous rights to a specific job classification or position that existed before removal are fulfilled.
Some options for removal, if recommended by the physician, may include:

- Reducing the worker's daily exposure time
- Transferring the worker to another job, if available.

(5) Provide medical examinations and consultations to obtain a final medical determination, when the worker has not been returned to their former job status by the end of 18 months of temporary removal. This provides the employer with a concluding written opinion.

(a) For a final medical determination, do all the following:

(i) Follow the Medical Examination Process and the content as detailed in WAC 296-857-700, Medical Protocols.

(ii) Include the worker's medical record as described in Medical Records, WAC 296-857-30070, as part of the information the employer provides to the physician for this final medical determination

Note:
When a final medical determination allows a worker with a BLL above 10 µg/dL to return to his or her former job status, temporary removal is not automatically required when the worker's blood lead level is above the long term removal level, 20 µg/dL unless specified by a written opinion.

(6) Maintain medical removal benefits throughout the temporary medical removal period. These include the worker's current pay rate, seniority, and other employment rights and benefits as though the worker had not been removed.

(a) Also provide medical removal benefits to a worker when:

(i) The employer chooses to medically remove the worker, or place other limitations on the worker; and,

(ii) Medical removal or limitations aren't required by this chapter.

Note:
The employer may choose to provide medical removal benefits for workers who refuse to participate in blood testing, medical examinations, or medical consultations made available to them during the removal period.
If the employer is required to provide medical removal benefits and the worker will receive compensation for lost pay from other sources, the employer may reduce the medical removal

benefit obligation to adjust for the amount provided by these sources at the time the worker receives such compensation.

- This reduction in the medical removal benefit obligation doesn't include worker's compensation payments the worker receives for treatment-related expenses.
- Examples of other sources are:
    - Public or employer-funded compensation programs providing compensation for lost wages, including worker's compensation programs;
    - Employment by another employer, made possible by the worker's removal.

WAC 296-857-30060, Medical removal benefits—General

(1) The employer must provide up to eighteen months of medical removal protection benefits on each occasion that a worker is removed from exposure to lead or otherwise limited pursuant to this chapter. Removal from lead exposure means that the worker is not doing any work with exposure at or above any action level.

(2) For the purposes of this section, the requirement that an employer provide medical removal protection benefits means that the employer must maintain the earnings, seniority and other employment rights and benefits of a worker as though the worker had not been removed from normal exposure to lead or otherwise limited. Workers may be assigned to work without lead exposure if the worker's earnings and rights are maintained.

(3) Medical removal benefits are required when:

(a) A worker's blood lead level is determined to be greater than the single-test removal level, 30 µg/dL.

(b) A worker's blood lead level is determined to be greater than the multi-test removal level, 20 µg/dL, in a follow-up to an initial elevated blood lead test.

(c) A worker is determined by a physician or other licensed health care professional to be at risk for permanent material impairment due to lead exposure.

(d) An employer elects to remove a worker from lead exposure due to any other health concern.

(4) Medical removal benefits may be discontinued when the worker blood lead level is below the return-to-work level, 15 µg/dL, in two consecutive monthly tests or when cleared to return to work by a physician or other licensed health care professional.

(5) Medical removal benefits may be terminated for workers hired on a temporary or project basis for work that has concluded unless,

(a) When the worker contract period concludes, the employer continues with the lead related tasks, medical removal benefits must continue.

(b) A worker's occupation specifically involves lead and their ongoing elevated blood lead levels or other medical conditions related to lead exposure will prevent gainful employment with another employer, the exposing employer must continue medical removal benefits under this section.

(6) During the period of time that a worker is removed from normal exposure to lead or otherwise limited, the employer may condition the provision of medical removal protection benefits upon the worker's participation in follow-up medical surveillance made available pursuant to this section.

(7) If an industrial insurance claim (worker's compensation) is filed for a worker lead-related disability, then the employer shall continue to provide medical removal protection benefits pending disposition of the claim. To the extent wage replacement payments are made during the period of removal, the employer's medical removal protection payment obligation shall be reduced by such amount. The employer shall receive no credit for workers' compensation payments received by the worker for treatment related expenses.

(8) Other credits. The employer's obligation to provide medical removal protection benefits to a removed worker shall be reduced to the extent that the worker 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 worker's removal.

(9) The employer shall take the following measures with respect to any worker 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 worker has been returned to his or her former job status:

(a) The employer shall make available to the worker a medical examination pursuant to this section to obtain a final medical determination with respect to the worker;

(b) The employer shall assure that the final medical determination obtained indicates whether or not the worker may be returned to his or her former job status, and if not, what steps should be taken to protect the worker's health;

(c) Where the final medical determination has not yet been obtained, or once obtained indicates that the worker may not yet be returned to his or her former job status, the employer shall continue to provide medical removal protection benefits to the worker until either the worker is returned to former job status, or a final medical determination is made that the worker is incapable of ever safely returning to his or her former job status.

(d) Where the employer acts pursuant to a final medical determination which permits the return of the worker to his or her former job status despite what would otherwise be an unacceptable blood lead level, later questions concerning removing the worker again shall be decided by a final medical determination. The employer need not automatically remove such a worker pursuant to the blood lead level removal criteria provided by this section.

WAC 296-857-30070, Medical records—General

(1)

IMPORTANT:
This section applies any time a medical record is created related to worker lead exposure.

(1) Establish and maintain accurate medical records for each worker receiving a blood test, medical examination, or consultation for lead exposure and make sure the records include the following:

(a) The worker's name and unique identifier;

(b) A description of the worker's duties;
(c) A copy of the licensed health care professional's (LHCP's) written opinions;
(d) The anticipated or representative worker exposure monitoring results provided to the LHCP for the worker;
(e) A copy of the results of biological monitoring, including blood lead testing;
(f) A copy of medical examination results including required medical and work histories;
(g) A copy of any worker medical complaints related to lead exposure;
(h) A description of laboratory procedures used;
(i) A copy of any standards or guidelines used to interpret test results, or references to such standards or guidelines.

(2) Establish and maintain accurate medical removal records for each occasion that temporary medical removal occurs, and make sure the records include the following:
(a) The name and unique identifier of the worker removed;
(b) The date the worker was medically removed;
(c) A statement of whether or not removal was due to a blood lead level (BLL) above 30 µg/dL;
(d) A brief description of how each removal was or is being accomplished;
(e) The date the worker was returned to their former job status.

(3) Maintain medical records for the duration of employment plus thirty years.

(4) Maintain each worker's medical removal records for at least the duration of the worker's employment.

Note:
The medical provider may keep these records for the employer.
Medical removal records may be kept as part of the worker's medical record.
Medical records, except for physicians' written opinions, may be accessed only with the worker's written consent.

WAC 296-857-400, Employer Requirements for Lead Exposure Control, Work Practices, and Protective Equipment

WAC 296-857-40010, Cleaning practices—Basic Rules

(1) Employers must keep the workplace as free as practicable of lead dust and debris.
(a) Use vacuuming or other cleaning methods that minimize airborne contamination from cleaning.
(b) Clean and dispose of contaminated items in ways that prevent further exposure in the workplace.

(c) When cleaning with any vacuum cleaner or vacuum system, use and empty the vacuum cleaner in a way that minimizes the release of lead back into the workplace. The vacuum discharge must be HEPA filtered or the discharge must be routed in a manner that does not expose workers to lead.

(d) When using wet cleaning, such as mopping, the work practices need to ensure free lead is removed from the surface.

(i) Frequent changes of scrubbing materials or rinse water are necessary to ensure lead is not redeposited on the surface being cleaned.

(ii) Use clean and dirty rinse buckets for mops and wipes (2-bucket method).

(iii) Use disposable mops, rags, and wipes when appropriate to reduce recontamination of surfaces.

(2) When the employer has demonstrated vacuuming, wet cleaning, or other cleaning methods that minimize airborne contamination are ineffective, the following methods may be used to clean up lead contamination:

(a) Shoveling, brushing, dry or wet sweeping;

(b) Compressed air with an effective ventilation system specifically designed to capture dust produced by the compressed air cleaning process.

(3) Four-sample surface testing may be used to demonstrate cleaning effectiveness.

(4) To prevent unnecessary exposure and accidental spills, keep containers tightly covered when not in use.

WAC 296-857-40020 Cleaning practices—Action Rules

Note: There are no additional requirements for cleaning practices in action level conditions. Follow the basic requirements, WAC 296-857-40010, Cleaning practices—Basic.

WAC 296-857-40030, Cleaning practices—PEL and SPEL Rules

Note: In addition to the basic requirements, when exposures are above the PEL, the employer must address cleaning practices and procedures as part of their lead exposure control plan. See section WAC 296-857-46030, Exposure control plan.

WAC 296-857-41010, Training – Basic Rules – Awareness training

(1) For work covered by this rule employers must inform workers about lead in the workplace, the health effects of lead, basic precautions for workers to protect themselves from lead, and any work practices that have been put in place to prevent or minimize lead exposure.

(2) Make a copy of this chapter (Chapter 296-857 WAC, Lead) readily available to all workers exposed to lead. A copy of the rule may be posted in the work area or on company network or computer resources. A link to the rule or DOSH lead topic page that is readily accessible is sufficient for workers with network access.

(3) Post the current WISHA lead safety poster in lead work areas, where workers report to work, or with other WISHA posters. Make sure it is available for review by all workers with lead exposure.

(4) Provide the following training for work covered by this rule:

(a) Operations and locations in the work area where lead is present.
(b) Methods and observations that may be used to detect the presence or release of lead in the work area. For example, a warning sign posted outside of exposure control areas or labels identifying lead-containing materials.
(c) Health hazards associated with lead, including the symptoms and effects of exposure such as:
(i) Reproductive health effects on both males and females.
(ii) Hazards to the developing fetus and children.
(iii) Physical hazards of lead compounds, if any.
(d) Provide training about personal protective equipment and first aid for workers exposed to lead compounds that may cause eye or skin irritation, such as lead arsenate or lead azide.

(5) For construction work, the competent person for work covered by this rule must receive sufficient training to be able to identify and correct lead hazards in the workplace.

WAC 296-857-41020, Training – Action Rules – Workplace specific training

(1) Basic training given in section WAC 296-857-41010, Training—Basic rules.
(2) Steps workers can take to protect themselves from lead, including at least the following:
(a) Appropriate work practices.
(b) Exposure controls.
(c) Emergency procedures.
(d) Personal protective equipment.
(e) Additional precautions for pregnant workers.
(f) Other procedures determined by the employer.
(g) Details of the hazard communication program for the facility.
(3) Additional training that:
(a) Informs workers about the contents of this chapter.
(b) Informs workers about the specific nature of the job assignment and operations that could result in exposure to lead at or above the AL. This includes characteristics of the operation such as the types of materials involved, equipment, and exposure controls.
(i) Exposure controls include local exhaust system ventilation and work practices, such as work practices related to PPE use, housekeeping, and lunchroom use.
(c) Informs workers about the purpose of blood testing, medical examinations, and consultations.
(d) Describes how the employer is fulfilling the blood testing, medical examination and consultation, and medical removal requirements of this chapter.
(e) Instructs workers to not practice chelation to remove lead from their bodies except under direction of a physician.
(f) Informs about content of the current exposure control plan.
(g) Informs about the worker's right to access records.

WAC 296-857-41030, Training – PEL and SPEL Rules

Note: In addition to the basic and action requirements, when exposures are above the PEL, the employer must inform workers about the lead exposure control plan. See section WAC 296-857-46030, Exposure control plan.

WAC 296-857-42010, Hygiene—Basic and Action Rules – Hand and face washing.

(1) Employers must provide facilities for workers to wash their hands and face to protect themselves from lead exposure.

(2) Provide hand and face washing facilities that meet the requirements in these separate chapters:

(a) For general industry applications, go to the safety and health core rules' section, Provide convenient and clean washing facilities, WAC 296-800-23025.

(b) For construction work, go to the safety standards for construction work section, Sanitation, WAC 296-155-140.

(3) Locate hand and face washing facilities near or next to work activities with lead exposure.

(4) Make sure workers wash their hands and faces at break times and at the end of the work shift. Hands and faces need to be washed prior to using bathroom facilities, eating, drinking, smoking, or other similar activities.

Exception:
When drinking water is supplied for hydration related to heat stress, handwashing is not necessary when a hands-free fountain is used in a manner and location that prevents ingestion of lead.

(5) Effective hand and face washing requires that the methods used to free up lead on the hands or face and provide a mechanism for removing the lead. Thorough scrubbing and rinsing or wiping are generally both necessary to effectively clean hands and faces. Objective wipe tests can be used to verify effective handwashing.

(6) Provide gloves and other appropriate skin protection when workers contact lead compounds that may be absorbed through the skin.

Note:

- When workers wash while showering at the end of the work shift (turn to WAC 296-857-42030) they will meet this requirement to wash their hands and faces at the end of the work shift.
- When work activities are located in areas where exposures are above the permissible exposure limit, 20 µg/m³ TWA_{8e}, the location of handwashing facilities will also depend on where lunchrooms or eating areas are located (turn to WAC 296-857-42020).

WAC 296-857-42020, Hygiene—PEL Rules – Showering, changing, and eating facilities.

(1) Employers must provide the following facilities for workers who are exposed at or above the airborne permissible exposure limit, 20 µg/m³ TWA_{8e}, and keep them as free of lead contamination as feasible:
   (a) Shower facilities;
   (b) Clean change rooms with storage for street clothes separated from storage for protective clothing, work clothes, and protective equipment, to prevent cross-contamination from lead;
   (c) Lunchrooms.

Note:
- Lunchrooms may be located within exposure control areas, but are considered separate from the exposure control area.
- Eating areas may be provided instead of lunchrooms for workers performing construction work.
- Change areas are allowed for workers performing construction work as long as they are kept clean and meet other requirements in this chapter.

(2) Make sure workers do the following before leaving the exposure control area to enter the eating areas or lunchroom:
   (a) Remove protective clothing and equipment, or remove dust from protective clothing and equipment using cleaning methods that don't disperse lead dust, such as vacuums equipped with HEPA filters.
   (b) Wash their hands and faces before eating, drinking, smoking, applying cosmetics, or taking breaks.
   (c) Don't leave the workplace wearing any clothing or equipment worn while working in the exposure control area (including shoes or boots, unless effective shoe covers are used in the exposure control area).

(3) Make sure eating areas such as lunchrooms
   (a) Are located so they are readily accessible to the workers;
   (b) Meet these additional requirements when lunchrooms are provided and located inside exposure control areas:
      (i) Operate with a temperature-controlled, HEPA-filtered air supply;
      (ii) Operate under positive pressure compared to surrounding areas;
      (iii) Are maintained below the airborne action level, 10 µg/m³ TWA_{8e}; and
      (iv) Free lead on accessible surfaces is kept as low as practicable.

WAC 296-857-42030, Hygiene—SPEL Rules – Decontamination

(1) Employers must ensure workers exposed at or above the secondary permissible exposure limit, 50 µg/m³ TWA_{8e}, effectively decontaminate before leaving the worksite including changing clothes and showering.

WAC 296-857-43010, Protective clothing and equipment – Basic Rules

(1) When lead is present, the PPE hazard assessment, required by WAC 296-800-16005, must include evaluation of the following types of PPE:
   (a) Coveralls or similar full-body work clothing;
   (b) Gloves;
   (c) Hats;
   (d) Shoes or disposable shoe covers;
   (e) Face shields or vented goggles, when necessary to prevent eye irritation.
(2) Use impermeable PPE with lead compounds that may be absorbed through the skin.
(3) Make sure PPE is used and maintained properly following the manufacturer's instructions.
   (a) Do not allow cleaning that includes blowing, shaking, or other actions that release lead dust into the air.
   (b) Do not allow workers to clean or launder protective clothing or equipment at home.
(4) Replace or clean protective clothing when there is visible lead-containing contamination.

WAC 296-857-43020, Protective clothing and equipment – Action Rules

Note: There are no additional requirements for protective clothing and equipment in action level conditions. Follow the basic rules.

WAC 296-857-43030, Protective clothing and equipment – PEL Rules

(1) Employers must provide workers with appropriate protective clothing and equipment.
(2) Repair, replace or launder protective clothing at least weekly, and when visibly contaminated or damaged.
(3) Make sure workers put on protective clothing in a clean change room.
(4) Make sure workers remove protective clothing in a change room prior to leaving the work site.
(5) Place contaminated protective clothing that will be cleaned, laundered, or disposed in a closed container that prevents the release of lead located in the change room.
(6) Inform individuals who clean or launder protective clothing about the potentially harmful health effects associated with lead. Provide this information in writing. For example, provide a copy of Health and hazard information about lead, found in WAC 296-857-700.
(7) Label containers of contaminated PPE with the following warning:

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.

WAC 296-857-43040, Protective clothing and equipment – SPEL Rules

(1) Replace or launder protective clothing at least daily.

WAC 296-857-44010, Exposure control areas – Basic and Action Rules

Note: There are no specific requirements for exposure control areas in basic and action level conditions.

WAC 296-857-44020, Exposure control areas – PEL Rules

(1) Employers must identify temporary or permanent exposure control areas, where there is worker exposure to airborne lead at or above the permissible exposure limit, 20 µg/m³ TWA_{8e} or a potential for exposure at this level.

Note:
A potential for exposure exists in areas normally maintained below the permissible exposure limit, 20 µg/m³, by engineering controls or work practices if failure of the controls or work practices could result in exposures above the permissible exposure limit.

(2) Clearly identify the boundaries of exposure control areas from the rest of the workplace in any way that minimizes worker access;

(3) Post signs at access points to exposure control areas that are easy to read (for example, they are kept clean and well lit), including this warning:

DANGER
LEAD WORK AREA
MAY DAMAGE FERTILITY OR THE UNBORN CHILD
CAUSES DAMAGE TO THE CENTRAL NERVOUS SYSTEM
DO NOT EAT, DRINK, OR SMOKE IN THIS AREA

(4) Keep signs and areas near them free of statements that contradict or detract from the warning message.

(5) Allow only authorized personnel to enter exposure control areas.

(6) Make sure food, beverages, tobacco products, and gum are not present or consumed in exposure control areas. In addition, do not allow cosmetics to be present or applied in these areas.

Exception:
A hands-free fountain may be provided in a manner and location that prevents ingestion of lead when drinking water is supplied for hydration related to heat stress.

WAC 296-857-44030, Exposure control areas – SPEL Rules

Note: There are no additional requirements for protective clothing and equipment in SPEL level conditions. Follow the PEL rules.

WAC 296-857-45010, Respirators – Basic Rules

Note: There are no specific requirements for respirators in basic level conditions. Employers may require respirator use or allow voluntary use. When respirators are in use the employers must follow the requirements of chapter 296-842 WAC, Respirators.

WAC 296-857-45020, Respirators – Action Rules – Voluntary Use

(1) Employers may provide respirators for voluntary use by workers whose exposures do not exceed the permissible exposure limit, 20 µg/m³ TWA_{8e}. Lead exposures below the permissible exposure limit can contribute to worker blood lead levels and use of respirators is generally appropriate.

(2) Employers must allow voluntary use of respirators by workers who request it when exposures are at or above the action level, 10 µg/m³ TWA_{8e}, unless the respirator use will create a greater hazard.

(3) Review respirator use to make sure voluntary use of the respirator is safe as required in WAC 296-842-11005(1).

(4) Develop a written respirator program as required by chapter 296-842 WAC, Respirators, and including those elements specifically required in WAC 296-842-11005(3).

Note:
Employers may require use of respirators for exposures below the permissible exposure limit. When the employer requires respirator use, the employer must implement a full respirator program as required in WAC 296-842-11005.

(5) To be effective at protecting workers from lead, air-purifying respirators must have 100 series filters (N, R, or P designation may be determined by other factors in the work environment) or high-efficiency particulate air (HEPA) filters for powered air purifying respirators (PAPR).

(6) Employers may require workers to use respirators at any level of exposure. When this is done, follow the requirements in Chapter 296-842 WAC, Respirators, for required respirators.

WAC 296-857-45030, Respirators – PEL Rules

(1) Develop a written respirator program as required by chapter 296-842 WAC, Respirators, and include the following additional requirements:

- (a) That workers use respirators when:
  - (i) They're in an exposure control area and controls are not reducing exposure to below the permissible exposure limit, 20 µg/m³ TWA_{8e}
  - (ii) Responding to emergencies involving lead exposure
  - (iii) Under additional exposure conditions when the employer identifies the need for respiratory protection to prevent the uptake of lead.
- (b) The employer must provide at least a half-face air purifying respirator with 100 series cartridges.
- (c) Workers assigned a half-face or full face negative pressure respirator may request a powered air-purifying respirator (PAPR) when this type of respirator

will provide proper protection and a licensed health care professional (LHCP) allows this type of respirator in their written opinion.

(2) Make sure air-purifying respirators selected have high-efficiency particulate air (HEPA) filters or 100 series filters (N, R, or P designation will be determined by other factors in the work environment).

WAC 296-857-45040, Respirators – SPEL Rules

(1) The basis for selection of respirators is the secondary permissible exposure limit, 50 µg/m³. (This level is used with the assigned protection factor, APF, for determining whether the respirator provides adequate protection.)

(2) Workers may request respirators based on the permissible exposure limit, 20 µg/m³ TWA_{8e}. (Note: This will not always result in a different respirator selection.)

WAC 296-857-46010, Exposure control plan – Basic and Action Rules

Note: A site specific exposure control plan is not required for exposures below the permissible exposure limit, 20 µg/m³ TWA_{8e}. Employers may need to develop a written response for individual employees who have blood lead levels above the control level, 10 µg/dL, and may opt to have a standing program for addressing these conditions.

WAC 296-857-46030, Exposure control plan – PEL and SPEL Rules

(1) Employers must establish and implement a program for controlling worker exposure to lead, by controls, work practices, respiratory protection, and other personal protective equipment for all work with a potential for lead exposures at or above the airborne lead permissible exposure limit, 20 µg/m³ TWA_{8e}.

(2) Employers must train workers exposed above the airborne lead permissible exposure limit, 20 µg/m³ TWA_{8e}, in operation of lead control equipment, work practices, personal protective equipment, and hygiene practices used in their workplace.

(3) Establish and implement a site-specific, written exposure control plan that reflects current work conditions and includes at least the following for exposure control areas:

(a) Identify the individual acting as program administrator or competent person.

(b) A description of each activity releasing lead, for example:

(i) The number of workers exposed (crew size);

(ii) Worker job responsibilities;

(iii) Current exposure controls;

(iv) Materials involved;

(v) Equipment used;

(vi) Operating procedures;

(vii) Maintenance practices.

(c) Air monitoring data which documents the sources of lead emissions;

(d) Worker input on control strategies and priorities;

(e) A report of the technology considered for exposure controls;

(f) A description of what is done, including engineering plans and studies used as a basis for selecting exposure controls, to reduce lead exposures to:

(g) Below the permissible exposure limit, 20 µg/m³ TWA_{8e}, if feasible, or;

(h) The lowest achievable level, when exposures cannot be reduced below the permissible exposure limit.
(i) Relevant work practices, including at least:
(i) Use of personal protective equipment, including respirators;
(ii) Housekeeping;
(iii) Use of change areas, showers, lunchrooms, and handwashing facilities.
(j) A job rotation schedule, when this will be used to reduce airborne exposure. Include the following information:
(i) Name and unique identifier of each worker on the rotation schedule;
(ii) Each worker's daily exposure duration and level at each job or work station location;
(iii) Other information that may help evaluate the reliability of using job rotation to reduce airborne exposure.
(k) Frequent and regular inspections of job sites, materials, and equipment. When construction work is performed, these inspections must be made by a competent person and documented in writing.
(l) Other relevant information.

(4) A competent person is an individual with training and authority to identify lead hazards in the workplace and correct those hazards. Each worker on a construction worksite must be informed of who is the competent person for their work.
(5) A program administrator is the point contact for a team of people with training and authority to identify lead hazards in the workplace and correct those hazards.
(6) Review and update the exposure control plan to make sure it is effective and reflects current work conditions at least every three years.
(a) Existing controls must be evaluated for effectiveness and additional controls should be evaluated for feasibility.
(b) Input must be requested from affected workers.
(c) Update the schedule for implementing new or improved controls, including construction contracts, purchase orders for equipment, and other documentation.
(7) Make the exposure control plan available at the worksite.
(8) Allow affected workers and their designated representatives to review or copy the plan when requested.

WAC 296-857-47010, Exposure controls – Basic Rules

Note:
There are no specific requirements for exposure control areas in basic level conditions.

WAC 296-857-47020, Exposure controls – Action Rules

Note:
There are no specific requirements for exposure control areas in action level conditions, however, if a worker has an elevated blood lead level above the blood lead control level, 10 µg/dL or 5 µg/dL above a baseline level more than 5 µg/dL, the employer must review work conditions and may need to implement exposure controls to reduce the worker's blood lead level.

WAC 296-857-47030, Exposure controls – PEL Rules

(1) Employers must control worker exposure using feasible controls and work practices to reduce worker exposures at or above the airborne permissible exposure limit, 20 µg/m³ TWA_{8e}.

IMPORTANT:
- Respirators and other personal protective equipment (PPE) are not exposure controls.
- Exposure controls include the use of ventilation systems, wet methods, and work practices to reduce airborne exposures. For more examples, see Respiratory hazards, chapter 296-841 WAC.

(2) For exposures below the secondary permissible exposure limit, 50 µg/m³ TWA_{8e}, the employer may rely on administrative controls, work practice modifications, use of portable ventilation, and hand tool modifications for reducing exposure.

(3) When ventilation air is recirculated back into the workplace:
   (a) Use a high-efficiency particulate air (HEPA) filter and a reliable back-up filter.
   (b) Use controls that monitor lead levels in the air returning to the workplace and automatically bypass the system if it fails
   (c) Make sure the bypass controls are maintained and operated according to the manufacturer's specifications.
   (d) Exemption: When hand-held, vacuum-shrouded tools equipped with HEPA filtration are used during construction work, it is not required to monitor lead levels in the tool's exhaust air or have an automatic bypass

WAC 296-857-47040, Exposure controls – SPEL Rules

(1) Employers must implement all feasible controls for exposures at or above the secondary permissible exposure limit, 50 µg/m³ TWA_{8e}.

(2) When mechanical ventilation is used as an exposure control:
   (a) Establish baseline readings for appropriate system performance indicators such as capture velocity, duct velocity, and static pressure which can be used to verify the effectiveness of the system.
   (b) For each indicator, identify values that indicate the system is operating effectively and identify actions that will be taken for measurements outside that range to correct the system performance or otherwise prevent exposure to lead
   (c) Routinely measure, at least every three months, the system performance indicators

(d) In addition to routine measurement, measure within five days of any change in production, process, or control that may result in a change in system performance.
(e) System performance indicators need to be measured each time the system is set up at a job site or when a system that hasn't been used for more than 3 months is put back into operation.

WAC 296-857-500, Task and Industry Specific Compliance Protocols & Safe Harbor Provisions

- The following protocols are provided to give industry or task specific information where there is experience indicating exposures can be moderated through standard controls and good work practices.
- Some of the protocols include safe-harbor provisions. Generally, this is a presumed exposure level which can be used in lieu of direct monitoring for a period of time. If the employer provides personal protective equipment and hygiene facilities consistent with this presumed exposure level and implements the work practices and controls in the compliance protocol, then direct measurement of exposure may be delayed or unnecessary.
- The compliance protocols provided here can be used in place of an employer specific plan. If an employer program differs from these protocols, the criteria and requirements of the main body of this rule will be used to assess compliance.

WAC 296-857-50010, Handling lead containing articles in retail settings—Limited

IMPORTANT:

- This section is a safe harbor compliance protocol. Employers following this section completely will be considered in compliance with the rule for tasks covered.
- If this section is not fully implemented, the employer may be cited from the main body of requirements for this rule.
- In this protocol, the employer assumes workers are covered by the Basic Rules.
    - This protocol covers application of the Basic Rules to workers handling lead containing products for sale in a retail setting.
    - Following this protocol establishes that workers are not covered under the Action, PEL, or SPEL Rules.
    - Portions of the establishment where lead products are not sold might be covered under the Clean Areas compliance protocol.

- It is expected that lead will be generally well controlled in retail settings. These establishments are open to the public and there is limited control on entrance or egress.
- Lead is an integral component in many products and therefore cannot be eliminated in all circumstances.

- This protocol applies to retail areas of a facility open to the customers and to store rooms as long as lead containing products are kept in packaging for sale. This protocol does not cover areas of the facility used for maintenance or repair work which may disturb lead containing materials and does not cover retail gun shops located with gun ranges.
- This protocol allows the employer to use the Basic Rules for handling lead in the establishment covered. The Clean Areas protocol can also be used for some work areas that are free of lead.
- The following conditions must be established by the employer:
    - Lead containing materials must be kept segregated from other materials in the establishment.
        - Where practical, the employer should request that products containing lead be packaged in a manner that prevents lead being released from the materials.
            - Testing of the product packaging to demonstrate that no lead residue is found on the outside can be done by the single sample surface testing to demonstrate they can be handled without concern. However no specific schedule of testing is required.
            - Some products will encase the lead without packaging.
        - Lead containing products should be kept in separate bins or shelf space to prevent contamination of other products.
    - Lead containing materials must be inspected when received in the establishment to look for damage to packaging or the product that could release lead.
    - If the establishment does manufacturing, repair, assembly, or maintenance work involving lead containing products that generate lead aerosols or dust, these activities must be performed in a separate area of the establishment away from the retail space. The establishment must implement controls and protocols to prevent lead contamination of the retail space as part of the written lead control program for these other operations.
    - Housekeeping:
        - Dry sweeping may not be used around lead containing product or areas where these products are stored.
        - Vacuums used must be HEPA filtered.
        - Wet wiping or mopping are preferred cleaning methods. Wipes or mops should be rinsed or replaced regularly and used only in the areas where lead is kept.
        - Periodic surface sampling for lead is recommended to ensure cleaning is effective and lead contamination does not spread to other areas of the establishment.
    - Spills or other unplanned releases of lead in the retail establishment must be handled appropriately following the main body of this rule. If retail workers are removed promptly from the release area and not involved in cleanup, they will remain covered by the Basic Rules sections of this rule. Employers may train

specific workers for response to spills or releases or have clean-up done by another firm.

- Exposure assessment is not required for workers who only handle lead containing materials in the retail activities including receiving, stocking, sales, and housekeeping in the retail activity areas.
    - Basic rules will apply to retail workers in establishments following this protocol.
    - Exposures must be evaluated separately for workers who are involved in other work tasks, such as maintenance or assembly of products with lead components.

WAC 296-857-50020, Managing lead paint in office and residential settings—Limited

IMPORTANT:

- This section is a safe harbor compliance protocol. Employers following this section completely will be considered in compliance with the rule for tasks covered.
- If this section is not fully implemented, the employer may be cited from the main body of requirements for this rule.
- In this protocol, the employer assumes workers occupying the facility are not covered by the lead rule.
    - This protocol covers control of lead paint in office and residential settings to prevent significant exposure to occupants.
    - Workers doing housekeeping and maintenance will be covered by the rule. Other protocols may apply to those activities.

- This protocol is for addressing lead hazards in commercial and residential settings and is specific to exposures for users of the facility who do not normally perform maintenance or construction tasks in the facility.
- In residential settings the department does not have jurisdiction over exposure to residents unless there is a worker-employer relationship. In child occupied facilities the rules of the Department of Commerce and Environmental Protection Agency apply to resident exposures.
- Following this protocol will allow employers to establish that workers occupying the facility for office work are not covered by the rule unless there is an incident causing a significant release and exposure to lead. Workers doing housekeeping work will be covered under the Basic Rules.
- Maintenance, remodeling, and repair work are not addressed by this protocol. Employers may be able to follow other protocols for these workers, including:
    - WAC 296-857-50030, Incidental Lead Paint in Construction/Renovation, Repair, and Painting (RRP) Work
    - WAC 296-857-50070, Maintenance and Repair Work
    - WAC 296-857-50050 Clean Areas
- This protocol covers employees working within a facility that has lead based paint or paint with lead pigments doing work that does not disturb painted surfaces. This may be office work, retail, or other similar activities.
- Employers and building owners may assume paint contains lead or do screening tests to determine lead content. For this protocol it is expected that there may be minor releases

due to normal wear and tear and light repair work in the facility. The building owner or employer must make written documentation of the lead assessment available in the facility for occupants, housekeeping workers, and maintenance workers.

- More comprehensive testing of paint lead content may be needed if any significant repair or remodeling work is not covered by this protocol. This work may be done in the facility if it is separated from non-lead workers by barriers that restrict airflow to surrounding areas and the HVAC system.
- The building owner or employer must make sure the following steps are taken to prevent lead contamination and exposures to occupants of the facility.
    - Maintenance or housekeeping staff must make at least quarterly visual inspections of the facility for damage to lead paint surfaces in occupied areas.
        - The inspection may be conducted as part of other regular activities in the facility.
        - No detailed documentation of the inspection is necessary.
    - Whenever damage is discovered, by inspection, occupant report, or other observations, the building owner or employer must assess the damage and ensure any repair and clean-up is done in a timely manner.
    - Wet wiping debris is the preferred clean-up method. Vacuuming of disturbed material must only be done with a HEPA filtered vacuum.
    - Housekeeping staff must be provided the DOSH lead poster and trained on the following topics:
        - What paint in the facility contains or is assumed to contain lead
        - Proper cleaning methods for paint debris—wet wiping and HEPA filtered vacuums.
        - Reporting procedures for any significant spill they discover or is brought to their attention by facility occupants.

WAC 296-857-50030, Incidental Lead Paint in Construction/Renovation, Repair, and Painting (RRP) Work--Limited

IMPORTANT:

- This section is a safe harbor compliance protocol. Employers following this section completely will considered in compliance with the rule for tasks covered.
- If this section is not fully implemented, the employer may be cited from the main body of requirements for this rule.
- In this protocol, the employer is conducting incidental lead paint work covered by the EPA renovation, repair and painting work rules, or doing similar work.
    - Typical work of this type is limited in duration. This protocol uses conservative estimates of work exposure.
    - Direct monitoring of exposure is not required when it may not be technically feasible in the time frame of the project.

- This protocol is for use by contractors and maintenance operations handling lead containing paint. The following assumptions apply to work under this protocol.
    - The work will be done with hand tools or power tools with HEPA filtered dust collection systems.
    - Lead containing paint abatement is not the purpose of the work.
    - The work occurs in residential or similar construction where the primary lead containing material is finish paint. Typically wood construction with some masonry elements. Painted surfaces are on wood or wallboard substrates. Structural steel is not used.
    - Contractors conducting this work are in compliance with the Department of Commerce and Environmental Protection Agency programs and have certification from them when required.
        - This protocol is not intended for use during work for lead abatement work as defined by the Department of Commerce and Environmental Protection Agency.
        - Lead abatement work may involve greater levels of exposure and firms doing this work will typically be required to have a program consistent with permissible exposure limit requirements.
    - Training required for environmental certification will be supplemented with additional information on WISHA rules, particularly for personal protective equipment, respiratory protection, hygiene practices, and work practices.

- Employers following this protocol must assume paint in structures built before 1978 contains lead in quantities that will require controls and PPE as specified in this protocol. Paint may be tested by collecting samples for laboratory analysis, use of X-ray fluorescence, or following EPA/Department of Commerce rules for colorimetric testing kits. Any paint found to potentially contain 5000 ppm lead or more than 1 mg/cm² of lead on the surface must be treated as a lead containing material under this protocol.

- Require workers disturbing painted surfaces to wear half-face respirators with P100 filters. More protective respirators may be selected. Full face respirators provide eye protection. Workers may request PAPRs with HEPA cartridges. The employer must implement a respiratory protection program as required under Chapter 296-842 WAC, Respirators, including the following items:

    - Identification of a respirator program administrator.
    - Identification of the respirator models and configuration the employer will require for each task performed
    - The process for medical clearance and fit testing of workers

- Provide personal protective equipment including:
    - Safety glasses or goggles (goggles must be used with caustic paint removers and solvents corrosive the eyes), or full face respirators.

  - Disposable overalls or overalls that are laundered per the rule requirements
  - Work boots. For workers scraping or sanding paint, disposable shoe covers or dedicated work boots that are not worn off the worksite.
  - Gloves or a glove combination that provides impermeable protection from lead accumulation on the hands and necessary protection from cuts or other hand hazards.
  - Other personal protective equipment necessary based on other hazards at the worksite.

- Train all workers to the Action Rules level, see WAC 296-857-41020. Work covered under the EPA/Department of Commerce rules must be conducted by workers meeting the minimum training and certification standards of that program, with additional training on worker safety issues.
  - Specific training topics:
    - Health effects of lead
    - Respiratory protection
    - Personal protective equipment
    - Work practices specific to the worksite
    - Limits of work practices (not applicable to work on structural steel or other non-residential, light commercial work)

- The site competent person must be able to recognize lead related hazards and have authority to take action to correct lead issues at the worksite.

- Exposure assessment for this work may rely on the presumption that there is exposure to lead at a level no more than 10 times the permissible exposure limit, 20 µg/m³ TWA_{8e}. While this presumption is used, the employer must meet all requirements of the rule consistent with this level of exposure including:
  - Provide baseline blood lead testing for all workers contacting presumed or actual lead containing coatings or in the vicinity of any work disturbing these materials.
  - Provide follow-up blood lead testing every two months for the first six months and every six months thereafter.
  - Provide a blood lead test at the conclusion of work.
  - Establishing lead control areas around any work disturbing presumed or actual lead containing coatings
  - Require respirator use for all workers disturbing presumed or actual lead containing coatings
  - Provide appropriate personal protective equipment
  - Providing a clean change area and hygiene facilities (including dedicated handwashing, boot cleaning, and showers as necessary) to allow workers to clean themselves and keep their street cloths clean and lead free.

- Employers may elect to conduct exposure assessments to determine actual lead exposure levels and tailor their program under this protocol as indicated by those results.

WAC 296-857-50040, Gun Range Work—Limited

IMPORTANT:

- This section is a safe harbor compliance protocol. Employers following this section completely will be considered in compliance with the rule for tasks covered.
- If this section is not fully implemented, the employer may be cited from the main body of requirements for this rule.
- In this protocol, the employer is provided with initial assessments of exposure and work practice guidance.
    - Gun ranges have a variety of work tasks with exposures to lead and a recent history of blood lead levels which will be affected by this rule.

- This compliance protocol is for use by operators of gun ranges. The protocol covers the operation and maintenance of the gun range and has information related to sales and repair of firearms. Establishments working with firearms, but not including a firing range, may also utilize this plan, although they may not need all elements of this protocol

- This plan is intended to cover lead exposure during the majority of work in and around a gun range, but employers must still complement this plan by establishing some specific policies and procedures.
    - Respirator program
        - A voluntary use program may be used for workers doing general housekeeping, brass collection, and training or range safety functions.
        - A required respirator program will be required for workers cleaning the range, servicing the bullet trap, or working with the ventilation equipment.
    - Specific work procedures for the establishment must be put in place for servicing the bullet traps and ventilation systems. If these functions are done by a contractor, the range must have in place contracts or procedures for ensuring contractors are aware of the lead hazard, capable of operating safely in this environment, and have appropriate safety programs in place.

- The following assumptions apply to work under this plan.
    - The range is properly designed and functioning following generally accepted industry standards.
        - Indoor ranges must be ventilated with sufficient air flow at the shooting stations to draw lead containing fume away from the shooter's breathing zone.
        - Outdoor ranges are designed to prevent blocking air flow or creating turbulence at the shooting stations which might keep lead containing fume in the breathing zone of the shooters.

  - This plan includes all working and maintenance tasks associated with the gun range. Gun range operators who contract parts of this work or allow other employers to use the range may have limited exposures for their direct workers, but must ensure other employers in the gun range facility are aware of the lead hazards and taking appropriate precautions to protect workers. See WAC 296-857-10040, Multiemployer worksites.
  - The gun range is separated from sales, training, and gunsmith operations. The range will have separate hygiene facilities.

- Employers without prior exposure monitoring may rely on WAC 296-857-80020, Safe Harbor Initial Assessment – Gun Ranges. For activities covered by Action, PEL, or SPEL rules, employers must conduct an exposure assessment and ongoing monitoring.

- Facility work zones
  - Activities in the break areas, sales shop, gun range, and gunsmith sections of the facility must be kept separate.
  - Worker break and lunch rooms are to be kept free of lead contamination.
  - The sales shop is a lead work area, but no activities that generate airborne lead are allowed in this area. It is assumed that firearms, other equipment, and work surfaces may be contaminated with lead. Workers must practice appropriate hygiene, particularly diligent hand washing when working in the sales shop.
  - The gun range public spaces, including the entrance foyer and any ancillary spaces used by gun range users without decontaminating, are considered lead contaminated. Appropriate hygiene practices are required, particularly hand washing, and workers working primarily in these areas may want to have dedicated range shoes and clothes.
  - The gun range service areas, including the bullet trap, including the space immediately in front of it, and ventilation system must be designated as lead control areas and access must be limited to properly trained and equipped range personnel.
  - Gunsmith shops and ammunition loading areas are also considered lead control areas. The access to these areas must be limited to properly trained and equipped range personnel. Each control area may have different authorized entrants.

- Housekeeping in clean areas of the facility
  - Break rooms and lunch rooms must be kept free of lead contamination. All accessible surfaces must be maintained with free lead concentrations below 4.3 µg/dm². Other surfaces should be maintained below 43 µg/dm² as practical. Single sample surface sampling of accessible surfaces must be done every six months to ensure surfaces are kept clean.
  - Sales areas must be kept as free as practical of lead contamination. Sampling every six months must be done to make sure lead contamination is being properly controlled. Four sample surface testing can be done to show the lead

contamination is being kept to appropriate levels. If the first sample of the set below 4.3 µg/dm², for any set, the remaining three samples do not need to be analyzed. Surfaces found to be consistently over 43 µg/dm² despite effective cleaning, must be replaced or sealed.

- Public areas of the range must be as free as practical of lead contamination. Sample every three months to make sure lead contamination is properly controlled. Four sample surface testing can be done to show the lead contamination is being kept to appropriate levels. If the first sample of the set is below 4.3 µg/dm², for any set, the remaining three samples do not need to be analyzed. Surfaces found to be consistently over 43 µg/dm² despite effective cleaning, must be replaced or sealed.
- Cleaning of accessible surfaces must be weekly or more frequently if indicated by sampling. Cleaning of surfaces where firearms or ammunition are handled should be done following each activity or shift.
- Wet wiping or mopping are the preferred techniques for cleaning. HEPA filtered vacuums can also be used. Cleaning solution or water and the cleaning media need to be changed out regularly to prevent recontamination or spreading of contamination.

- Housekeeping in lead control areas
  - Lead control areas must be tested every three month using the four sample surface testing protocol. If the first sample of the set is below 27 µg/dm², the remaining samples do not need to be analyzed.
  - Counters and other surfaces used for handling firearms and ammunition must be cleaned after each activity or work shift. Use a fresh wet rag or wipe for each cleaning, rinsing or replacing it occasionally.
  - Floors and other accessible surfaces must be mopped or wiped at least weekly using a wet mop.
    - The mop must be rinsed frequently to make sure contamination is not spread. Use two buckets, one with clean water and detergent and a second for squeezing out the mop.
    - Mop the range floor starting with the shooting stations and moving toward the bullet traps.
    - For ranges that allow tactical training (shooting from prone position and moving down the range, rather than using fixed shooting stations), the floor must be mopped before each training session or shift.
  - Mopping machines designed for lead cleanup work, walk behind or riding styles, are effective at reducing lead contaminations and should be considered for larger ranges.

- Worker blood lead monitoring
  - All workers working in any portion of the range, gunsmith shops, or loading ammunition must be offered a blood lead test prior to starting work.

  - Elevated blood lead levels in the pre-work testing should be discussed with the worker to ensure any non-work exposures are controlled. If the worker blood lead level exceeds the blood lead action level, 10 µg/dL, the worker should be asked to review this information with any prior employer.
  - Workers working in gunsmith shops, ammunition loading, or range maintenance and cleaning must be offered blood lead tests every two months for the first six months of employment and every six months after that.

- Control system monitoring
  - Ventilation systems used to control lead in firing ranges must be commissioned under the supervision of a registered professional engineer with expertise in industrial or environmental contaminant control systems.
  - During commissioning, air flow in the range will be checked to make sure it matches the engineering specifications as designed to minimize lead exposure.
  - Following commissioning, the registered professional engineer must specify a maintenance program and periodic measurements of the system performance (airflow, pressure, etc). The specification must include target values for correct operation of the system and high and low limits that indicate a problem with the system.
  - Following the engineer's schedule, take measurements and record the results. The system and range must be taken out of service if there are readings outside the proper service range until the system is restored to proper function.
  - Conduct scheduled maintenance following the engineered program and document maintenance activities.

- Worker exposure monitoring
  - Housekeeping surface sampling checks and ventilation system monitoring provide documentation of exposure levels for the following workers:
    - Sales staff not working in the range or gunsmithing areas
    - Range desk staff
    - Range safety officers and trainers who primarily monitor activity in the range from a control room or by camera.
  - Initial exposure monitoring must be done for range safety officers, trainers, and other personnel who spend more than 4 hours per day in the range, for workers who do target practice or firearm qualifications while working, and for workers doing minor housekeeping in the range, such as collecting brass.
    - For any of these worker groups found have exposures below the action level, 10 µg/m³ TWA_{8e}, the employer may also rely on the housekeeping checks and ventilation system monitoring to determine ongoing exposure.
    - For workers exposed at or above the action level, 10 µg/m³ TWA_{8e}, ongoing monitoring will be necessary following the requirements in WAC 296-857-20040, Monitoring of worker exposure over time—Action Rules.

If the range ventilation can be improved to reduce exposures below the action level, then further direct exposure monitoring can be suspended.

- Further monitoring will be necessary if any changes in firearms, ammunition, training protocols, or ventilation system are made which could increase exposure to lead.
- Initial and ongoing exposure monitoring must be conducted for workers cleaning the range, servicing the bullet trap, and performing ventilation system maintenance.

WAC 296-857-50050 Clean Areas—Limited

IMPORTANT:

- This section is a safe harbor compliance protocol. Employers following this section completely will be considered in compliance with the rule for tasks covered.
- If this section is not fully implemented, the employer may be cited from the main body of requirements for this rule.
- In this protocol, employers are given a method for establishing that lead exposures are being prevented in a work area with lead present.
    - This protocol allows employers to not implement the requirements of the rule for workers in clean areas who do not have any lead related tasks.
    - Workers doing housekeeping and maintenance may be covered by the rule. Other protocols may apply to those activities.

- This compliance protocol is for establishments which have lead but are successfully controlling lead hazards and may not need to implement the lead rule. For example, an establishment manufacturing products such as weights or batteries will have offices and may have other industrial work not involving lead. This protocol can be used to designate parts of a facility as clean so that workers in those areas are not covered by this rule.
- This protocol may also be used for facilities where lead is present in building materials, but normally undisturbed by activities of the employer. (For example an office located in an older building may have lead based paint on some surfaces or structural materials in the building, but these are not disturbed by the workers.)
- Clean areas include any area of a lead work establishment where workers and other individuals do not use protective equipment, work practices, or controls to prevent lead exposure. Examples of clean areas are common areas used by workers not engaged in lead work, parking lots, and areas accessible to the public. These are areas where workers will not necessarily be trained about lead hazards.
- Lead free areas: The following criteria are used to determine if cleaning is sufficient for clean areas, where the employer assumes no lead exposure occurs, all worker accessible surfaces must be less than 4.3 µg/dm².
    - Single sample testing as described in WAC 296-857-60010 Surface Sampling, may be used for evaluation of clean areas.

  - Sampling must be conducted in worst case conditions, prior to cleaning and representative of surfaces regularly touch by workers.
  - For large facilities where representative sampling will be used a randomization method must be used to determine sample locations.
  - Initial sampling must be done with a minimum of 1 sample per 100 m^2 of the facility taken at locations determined by a randomized process. At least 3 samples must be taken for any contiguous area being cleared. A sample must also be taken where any path from a lead control area enters into the area being cleared.
  - When there is activity which could reintroduce lead into the area, repeat sampling must be conducted every two years with a minimum of 1 sample per 400 m^2 and at least 2 samples from each contiguous area. A sample must also be taken along where any path from a lead control area enters into the area being cleared.
- Lead Cleaning Validation: The following criteria are used to demonstrate that ongoing cleaning is sufficient to maintain minimal lead levels in a facility.
  - Conduct initial sampling as specified for lead free areas.
  - Conduct representative four sample testing to evaluate cleaning in the area where initial sampling indicated elevated lead levels.
  - The area may be considered clean if:
    - No samples are above 43 µg/dm².
    - Third samples are below 27 µg/dm².
    - Fourth samples are not significantly below the third samples.
  - Repeat representative testing every six months unless third samples are below 4.3 µg/dm². If third samples are below 4.3 µg/dm², sampling is repeated every 2 years.
- Note that sampling is for free lead on accessible surfaces. Lead coatings and lead containing materials may be present when lead is well contained and not released to surface sampling.
- When conditions are found that indicate lead being brought into the clean area or released from damaged materials in the area, non-lead workers must be kept from the vicinity of the release until the hazard is abated and sampling in the area of the release indicates the area is clean.
- Maintenance and housekeeping staff working in the clean area may be doing work covered by the rule.

WAC 296-857-50060, Well Managed Blood Lead Levels—Limited

IMPORTANT:

- This section is a safe harbor compliance protocol. Employers following this section completely will be considered in compliance with the rule for tasks covered.
- If this section is not fully implemented, the employer may be cited from the main body of requirements for this rule.

- In this protocol, the employer is given greater flexibility for implementing personal protective equipment, work practices, and lead controls where the employer demonstrates that their program effectively controls employee blood lead levels.
    - This protocol requires submitting documentation of effective blood level management to the department. The department will review submittals and communicate with the employer if there are questions or concerns.
    - Employers will not be subject to scheduled inspections for lead related issues.
    - PEL rules will not be enforced below the Secondary Permissible Exposure Limit.

- This compliance protocol provides a safe harbor for employers who voluntarily submit worksite blood lead records demonstrating that worker blood lead levels are effectively managed. For those employers the requirements of the rule triggered by the permissible exposure limit, 20 µg/m³, will not be enforced below the secondary permissible exposure limit, 50 µg/m³. In addition, the department will not conduct scheduled inspections at the establishment.
- Effective management of blood lead levels is indicated by:
    - Thorough blood lead testing for all workers at the facility with exposure to lead covered by the rule.
        - Baseline tests must be collected for all exposed workers including any workers who may be exposed in the event of a work practice or control failure.
        - Annual tests must be done for all exposed or potentially exposed workers.
        - More frequent testing must be done for all workers meeting the requirements for periodic testing in subsection (7) of WAC 296-857-30020, Monitoring worker blood lead levels.
    - A record of well managed blood lead levels
        - Average blood lead levels for workers exposed above the permissible exposure limit, 20 µg/m³, is below 10 µg/dL and the blood lead levels for each worker in the group is kept below 20 µg/dL.
        - Blood lead levels for the group of all other workers are kept below 10 µg/dL.
        - Infrequent elevated blood leads above 20 µg/dL will not disqualify an employer when:
            - The elevated blood lead is documented as a baseline level prior to work with the company at this facility or any other facility operated by the employer, or,
            - The employer documents the exposure incident responsible for the elevated blood lead level and takes corrective action effectively preventing further exposures.
        - Workers with blood lead levels found above 20 µg/dL must be tested monthly until their blood lead level is below 15 µg/dL for two monthly tests. Medical removal requirements apply as well.

        - Workers with a blood lead level greater than 10 µg/dL for more than 4 months must have their case reviewed by a physician.
- To qualify for this safe harbor, the employer must submit the following documentation for each establishment for which the safe harbor will be claimed.
    - The employer's lead control programs for the establishment.
    - The employer's assessments of lead exposures for the establishment.
    - Names of all workers onsite during the previous 2 years (including workers of other employers). For each worker indicate whether they are known to have had exposures at any action level, at the permissible exposure limit, or at the secondary permissible exposure limit.
    - The record of all blood lead testing for the establishment for the past 2 years. (Only new testing is required when resubmitting annually.)
    - A report detailing actions taken in response to increased lead exposure or elevated blood lead levels found during the previous year.
- Documentation must be submitted annually to maintain coverage by the safe harbor.
- The documentation is submitted to the department for review using forms and formats supplied by the program. The employer must be responsive to questions from the department regarding the submitted documentation and allow for onsite auditing of the submission by the department.
- If the department reviews the documentation and does not agree that it shows that the establishment qualifies for this safe harbor, the department will notify the employer in writing, including a description of how the documentation fails to qualify. If information in the submission appears to constitute a violation of a WISHA rule, the employer will be informed and asked to provide proof of abatement for serious violations. There is no appeal of this decision, but the employer may amend or add to the record to address the issues raised. The department will provide review of amended information within 30 days and notify the employer of whether they agree or disagree deficiencies have been fixed. Employers may request a consultation for further review of circumstances at the establishment.
- Documentation submitted voluntarily to the department are covered under laws providing the employer confidentiality. The department may use the documentation as the basis for publications, but will not identify individuals or employers. (See RCW 49.17.250, Voluntary compliance program—Consultation and advisory services, and RCW 49.17.210, Research, experiments, and demonstrations for safety purposes—Confidentiality of information—Variances.)
- DOSH compliance will not be provided information about the documentation submitted, although the establishments covered may be provided to be excluded from inspection scheduling. If DOSH compliance initiates an inspection at a covered establishment, the employer must inform the DOSH compliance officer that the establishment has submitted documentation to be covered under this safe harbor. The documentation may be requested by the DOSH compliance officer from the employer and other department sections if an inspection is opened.

WAC 296-857-50070, Maintenance and Repair Work—Limited

IMPORTANT:

- This section is a safe harbor compliance protocol. Employers following this section completely will be considered in compliance with the rule for tasks covered.
- If this section is not fully implemented, the employer may be cited from the main body of requirements for this rule.
- This protocol covers occasional limited duration maintenance and repair work.
    - Work of this type is common for facility maintenance and repair workers who encounter lead-containing materials occasionally during the overall scope of their work.
    - With this protocol, the employer uses a conservative presumed exposure level instead of doing task specific assessment and monitoring for each work activity.

- This compliance protocol provides a safe harbor for employers conducting maintenance and repair work with periodic exposure to lead less than 30 days per year. When following this protocol it is assumed that workers are exposed to the action level for surface contamination and that the Action Rules apply to the work. Further monitoring is not necessary for employers following this compliance protocol.
- Work under this compliance protocol is limited to handling of lead containing materials, and does not cover activities that may disturb or pulverize the materials. Cutting or breaking apart the materials in a manner that does not release lead from the material is allowed. This compliance protocol may involve some exposure or handling of lead containing dust or debris due to wear or breaking down of materials in place between maintenance and repair activities.
- Timing of blood lead testing:
    - Workers must be given the opportunity to have a baseline blood lead test.
    - Blood lead testing must be conducted after employees have been exposed at or above an action level on 10 days in a year.
    - Follow-on blood lead testing must be conducted after each additional 10 days of exposure, but not more often than every 2 months in the first six months of employment and every 6 months thereafter.
- Workers must be provided half-face respirators with 100 series cartridges for voluntary use, unless the respirators would create a hazard.
- Workers must be provided with impermeable gloves, coveralls, and other protective gear as appropriate to prevent contamination of worker skin and street clothes.
- Durable gloves, footwear, and other protective equipment needed for protection from physical hazards may be dedicated to this work and cleaned or stored in impermeable containers between work projects.
- Work under this compliance protocol is limited to situations where handling of lead containing materials is does not occur on more than 30 days in any 12 month period.
- The employer must be able to convincingly demonstrate and document that airborne lead exposures do not exceed the airborne lead action level, 10 $\mu g/m^3$ TWA_{8e}. The surface

contamination action level, 1000 µg/dm², and metal action level, 20% lead content, may be exceeded. (Work which would be limited by the other action levels is not allowed under this protocol.)

- A HEPA filtered vacuum must be provided at the site of work for workers to decontaminate personal protective gear prior to doffing it, unless a change room is provided per WAC 296-857-42020(1)(b).
- Employers working under this protocol must provide hand and face washing facilities at the site of work.
- When visible dust or debris is encountered, it must be cleaned up promptly using wet methods or HEPA vacuuming.
- Waste materials containing lead must be placed in impermeable bags or otherwise contained or removed from the work area to limit worker exposure and contamination of surfaces in the work area.

WAC 296-857-600, Lead Sampling and Analysis

WAC 296-857-60010, Surface Sampling—General

(1) Surface sampling is conducted to determine the amount of free lead dust and debris is found on a surface. This is lead that can be picked up on clothing and skin or disturbed and made airborne with the potential for ingestion or inhalation.

(2) In order to analyze surface samples, use a laboratory with an established analysis protocol with a demonstrated accuracy of ±25% with a confidence level of 95%.

(3) The laboratory analyzing the samples will specify appropriate wiping materials, solvents, and storage containers.

(4) Single Sample Method—appropriate for verifying a surface is clean, has less than 4.3 µg/dm².

(a) Use a template with an area of a square decimeter (10 centimeters squared or a circle of diameter 11.3 centimeters) to determine the sample area.

(i) If the surface configuration prevents using a template, the area sampled must be measured accurately.

(ii) The surface template or measurement method must be documented in the sampling record.

(b) Wipe the entire sampling area evenly with the wipe material and repeat wiping in several directions.

(c) Submit the wipe material to the laboratory for analysis.

(d) If a square decimeter was sampled the laboratory analysis result can be compared directly to the level of 4.3 µg/dm² to determine if the surface was clean.

(e) If the sampling surface was a different area, the surface density must be computed based on the actual area sampled.

(5) Four Sample Method—used to determine the effectiveness of cleaning.

(a) Use a template with an area of a square decimeter (10 centimeters squared or a circle of diameter 11.3 centimeters) to determine the sample area.

(i) If the surface configuration prevents using a template, the area sampled must be measured accurately.
(ii) The surface template or measurement method must be documented in the sampling record.
(iii) Two side-by-side sampling areas will be used, one for samples prior to cleaning and one for samples following cleaning.

(b) Prior to cleaning:
(i) Wipe the entire sampling area evenly with the wipe material and repeat wiping in several directions.
(ii) Submit the wipe material to the laboratory for analysis as sample A.
(iii) Wipe the same sampling area evenly with a second piece of wipe material and repeat wiping in several directions.
(iv) Submit the second wipe material to the laboratory for analysis as sample B.

(c) Following cleaning:
(i) Wipe the entire second, adjacent, sampling area evenly with third piece of wipe material and repeat wiping in several directions.
(ii) Submit the wipe material to the laboratory for analysis as sample C.
(iii) Wipe the same sampling area evenly with a fourth piece of wipe material and repeat wiping in several directions.
(iv) Submit the fourth wipe material to the laboratory for analysis as sample D.

(d) If a square decimeter was sampled the laboratory analysis result of sample A can be compared directly to the key level of 4.3 µg/dm² to determine if the surface was clean. If the surface is clean, the other three samples may not need to be analyzed.

(e) For lead work areas, the result of sample A can be compared to the cleaning level of 27 µg/dm². If the result is below this level, the cleaning of this work area is considered effective and the other three samples may not need to be analyzed.

(f) If the sampling surface was a different area, the surface density must be computed based on the actual area sampled.

(g) Four sample interpretation:
(i) The difference between A and B indicates the accumulated free lead on the surface between cleanings. High values of A, much greater than 27 µg/dm², may represent a significant hazard and the employer may need to address this in their program.
(ii) If the three samples, B, C, and D, are similar in magnitude then the cleaning methods are efficient at removing free lead from the surface. If these samples are elevated, significantly above 4.3 µg/dm² in clean areas or 27 µg/dm² in lead work areas, then it may be necessary to consider sealing or changing the surface material to limit worker exposure to lead contained in the surface. For example, the surface may be coated with a lead containing material or a porous material may have become impregnated with lead.

(iii) If sample D is statistically lower than sample C, it is an indication that cleaning is leaving a significant amount of free lead on the surface and improvements in cleaning are necessary.

Note:
Conversion Table—Surface Sampling
µg/dm² is equivalent to µg/100 cm²

SI	Customary Units
4.3 µg/dm²	40 µg/ft²
27 µg/dm²	250 µg/ft²
43 µg/dm²	400 µg/ft²
1000 µg/dm²	9290 µg/ft²

WAC 296-857-60020, Air Sampling--General

(1) Air sampling is used to determine the quantity of lead in the air breathed by workers.
(2) Samples must be collected from the vicinity of the worker's mouth and nose, within 45 cm (18 inches).
(3) Sampling, using one or more discrete samples, must cover the entire period of lead exposure during the work shift.

Note:

- Sampling other than personal breathing zone sampling may be useful in managing lead exposures. Results of other sampling is considered to be objective data and may be part of the data used to estimate exposures, particularly for negative exposure assessments.
- Lead dust and fume may be carried by air currents and form plumes of greater density. Area samples more than a short distance from workers, may have much higher or lower results and often do not properly represent worker exposure.
- Clearance samples may be most useful in verifying that lead work has been concluded and used to determine that an exposure control area may be opened up for people to enter without concern for lead exposure.

(4) In order to analyze air samples, use a laboratory with an established analysis protocol with a demonstrated accuracy of ±25% with a confidence level of 95%.
(5) The laboratory must use a method capable of detecting 2 µg of lead in a sample.
(6) The laboratory analyzing the samples will specify appropriate sampling media, equipment, and air flow rates.

(7) Sample volumes must be sufficient to detect airborne lead concentrations as low as 1.5 µg/m³ for samples used to establish negative exposure assessments. Lower volume samples may be used for monitoring when higher concentrations of lead are expected.

WAC 296-857-700, Medical Protocols & Information for Physicians—

WAC 296-857-70010, Blood lead testing protocols—General

(1) Collection of blood lead samples may be done by any physician or other licensed health care provider working within the scope of practice of their discipline.

Note:
Occupational medicine is a specialty subject and it is recommended that medical providers familiar with this subject area be selected for services required under this rule.

(2) The U.S. Department of Health and Human Services (HHS), Centers for Medicare and Medicaid Services (CMS), administers a blood lead laboratory monitoring system pursuant to the Clinical Laboratory Improvement Amendments (CLIA) regulations, 42 CFR [Part] 493. Under those regulations, any laboratory that tests human blood lead samples for the purpose of medical diagnosis must maintain satisfactory performance in an accepted proficiency testing program and be accredited by a CLIA-approved accreditation organization. CLIA is administered by regions and states. Blood samples must be submitted to a CLIA-approved laboratory. Results of the analysis will be reported by the laboratory to the Washington Department of Health and to the Adult Blood Lead Epidemiology and Surveillance program.

Note:
Zinc Protoporphyrin (ZPP) testing is not required under this rule for verification or monitoring tests. This test may be requested by a physician conducting a medical examination or reviewing a worker's medical record.

(3) Capillary or venous samples are allowed except for tests done to establish a baseline result used to determine a control level greater than 10 µg/dl

(4) To establish a control blood lead level greater than 10 µg/dL, the baseline test must be collected before any lead work with the employer and must be a venous blood sample. For the worker tested, the blood lead control level will be 5 µg/dL greater than the baseline test or 10 µg/dL, whichever is greater.

Information for Physicians

There are two primary medical services employers are required to provide for workers under this standard: blood lead testing and medical examinations. Medical examinations may be done for

health surveillance purposes to verify exposed workers are, and remain, healthy. This involves a baseline examination and annual checks. Employers may also require a determination of risk for significant material impairment to manage worker medical removal from work involving lead exposure.

Qualifications

Medical physicians may perform worker medical surveillance as allowed under their licensing. Physicians should review the requirements of this rule, and be aware of recommendations for assessing occupational lead exposure through sources such as the Center for Disease Control and Prevention's National Institute for Occupational Safety and Health or the American College of Occupational and Environmental Medicine.

The one circumstance requiring additional credentialing is when resolving a dispute between an initial medical finding and second opinion examination. In this case, the physician reviewing the case must be a board certified occupational medicine physician or toxicologist.

Employer responsibilities

Employers arranging for medical surveillance services for workers are required to ensure these services are provided at no cost to the worker. These services are not to be billed to the worker and the testing and exams must be conducted during paid work time. The worker should not incur travel costs. The employer is responsible for communicating with the worker about their rights and results, but communication from the health care provider is appropriate, and may be preferred when confidential medical information is involved. Significant medical findings not relevant to lead exposure should only be communicated directly to the worker.

Worker rights

- Workers have a right to opt out at any time and resume services at any time.
- Workers with blood lead levels above the removal criteria or who are at risk for significant material impairment due to lead exposure have a right to pay and other benefits while removed from work for health reasons.
    - The single-test blood lead removal level is 30 µg/dL.
    - The multi-test blood lead removal level is 20 µg/dL. If a worker has a blood lead level at or above this criterion, a follow-up test is required 4 to 8 weeks after the initial test and the worker must be medically removed if their blood lead level remains above 20 µg/dL.
    - Worker medical removal benefit rights are also triggered by a medical finding of a risk for significant, permanent material impairment, or when an employer otherwise elects to remove a worker from lead exposure due to medical concerns.
- Workers have a right to request a second opinion, at no cost to the worker, for any medical findings. If the initial opinion and second opinion cannot be resolved, the employer must arrange for review of the case by a board certified occupational medicine or toxicology physician.

- Workers may initiate a workers' compensation claim at any time. The rights for medical removal under this rule are different than the rights to compensation under industrial insurance. The intent of this rule is to identify dangerous lead exposures and manage those exposures to prevent permanent material impairment of workers.

Blood Lead Testing

Employers are required to arrange for blood lead testing for any worker who may possibly be exposed at or above the airborne lead action level, 10 µg/m³ TWA_{8e}. Follow-up testing is required at 2 month intervals for the first six months and every six months thereafter, as long as the worker is or may be exposed to lead at or above 10 µg/m³ TWA_{8e} and does not have elevated blood lead levels. More frequent testing will be required when an elevated blood lead level of 10 µg/dL is found or when increase of 5 µg/dL is found within a 12-month period.

Worker blood levels of 5 µg/dL or more are considered elevated and workers should be advised of this by the employer or physician and provided information on the effects of lead exposure and protecting themselves.

Content of Medical Examinations

When conducting an initial, periodic, or high-blood lead medical examination and consultation, the following elements should be covered. The physician may amend or add to this as dictated by good medical practice. Recent tests or examinations may be relied upon at the discretion of the physician and do not need to be repeated unnecessarily.

- A detailed work history and medical history including:
  - Past and current exposure to lead (occupational and non-occupational activities)
  - Personal habits including smoking, hygiene, and hobbies
  - History of gastrointestinal, hematological, renal, cardiovascular, reproductive, and neurological problems
  - Medications, supplements, vitamins, and review of dietary habits
- A complete physical examination with particular attention to:
  - Gastrointestinal, hematological, renal, cardiovascular, and neurological systems
  - Pulmonary status, if respiratory protection will be used
- A blood pressure measurement
- A blood sample and analysis that determines:
  - Blood lead level (BLL)
  - Hematocrit and hemoglobin determinations, red cell indices, and examination of peripheral smear morphology
  - Blood urea nitrogen
  - Serum creatinine
  - Zinc protoporphyrin levels (ZPP)

- A routine urinalysis with microscopic examination
- Additional tests the examining physician determines are necessary

An unplanned medical examination and consultation in response to unexpected lead exposure

- Content as determined by the examining phycisian
- A pregnancy test or laboratory evaluation of male fertility, if requested by the worker

Medical removal examinations and consultations

- Content as determined by the examining physician
- A pregnancy test or laboratory evaluation of male fertility, if requested by the worker
- A final medical determination within 18 months from when the removal began

2nd opinion and review examinations and consultations

- Medical examinations, consultations, and laboratory tests as necessary to complete the physician's review.

Communication with Worker and Employer

The results of a medical examination are confidential and only certain information should be communicated openly with the employer.

- The physician's opinion about whether or not the worker has medical conditions that would put the worker at increased risk for material impairment to health from exposure to lead (other than elevated blood lead levels);
- Any recommended special protective measures or limitations for the worker's exposure to lead;
- Any recommended limitation on the use of respirators, including a determination of whether the worker can wear a powered air-purifying respirator when a physician determines the worker can't wear a negative-pressure respirator;
- Whether the worker's blood lead result is any one of the following:
    - Above the advisory level, 5 µg/dL;
    - Above the action level 10 µg/dL, follow-up will be required at this level;
    - Above the multi-test removal level, 20 µg/dL. A follow-up test will be required in 4 to 8 weeks and the worker will be removed from exposure if their blood lead level remains above 20 µg/dL.
    - Above the single test removal level, 30 µg/dL, for any single test, which indicates the worker must be removed from exposure.
- Instruction to advise the worker of any occupational or non-occupational medical condition that dictates further medical examination or treatment.

Other observations, test results, and advice from the physician may be communicated to the worker directly and placed into the worker file or record. Communication with physicians working directly for the employer is appropriate, where the confidentiality of the information will be preserved.

Medical Removal Recommendations
Removing a worker from lead work for medical reasons triggers medical removal benefits for the worker which require the employer to maintain the worker's pay, benefits, seniority and other rights. The employer is encouraged to keep workers on staff with changes in duties to prevent lead exposure, but will still need to pay the worker even if other work is not available.

The blood lead level criteria in this standard have been set based on the risk for significant material impairment in the general working population. These levels are not no-effect levels but recommendations for medical removal should not be based solely on blood lead levels, which may be elevated, but are below the medical removal criteria levels in this rule. If a worker has signs or symptoms of significant material impairment thought to be due to lead exposure, a recommendation for medical removal is appropriate, even with low blood lead levels. Conversely, after 18 months a worker who has been medically removed may be allowed to return to work with blood lead levels above the return to work level, 15 µg/dL, when the physician considers them healthy and expects that the work conditions will not cause the workers blood lead levels to remain above this level (such as when improvements have been made to workplace controls or personal protective equipment). The physician may set conditions for return to work.

This rule does not address reproductive or fetal development issues as these are beyond the jurisdiction of the department to regulate. Workers and employers can be counselled on these issues and medical findings related to them. Employers are encouraged to assess these issues on a case by case basis respecting worker rights to work and privacy.

Recordkeeping
Employers are required to make sure medical records related to this rule are preserved for the length of employment of the worker plus 30 years. Physicians may maintain the records, but must have in place provisions to notify employers and workers if circumstances arise where further retention of the records is in jeopardy, such as closing a practice. For recordkeeping purposes, a sealed copy of the worker records marked as confidential medical records may be submitted to the employer for retention.

WAC 296-857-800, Safe Harbor Initial Assessments

Initial assessments of work activities in various industries
The following subsections provide employers with initial assessments of lead exposure for work activities. The department has developed this information based on inspection history, industry background, and professional assessments.

The assessments in this document are made available for employers to rely on as an initial assessment under the WISHA lead rule for determining initial work practices and controls at the

beginning of work when no information is available or is insufficient. Employers who have information and data characterizing exposure as required in the rule, may rely on their own assessments.

These assessments are for initial startup of work. For activities classified as following the Action, PEL, or SPEL Rules, there will be additional monitoring requirements. When data from monitoring indicates that the assessment should be changed, the employer is responsible for reassessing exposures and making any necessary changes to work practices, personal protective equipment, and exposure controls.

Summary of the rules

The WISHA lead rule is divided into a hierarchy of requirements. The Basic Rules apply most broadly to work activities with even small lead exposures. The Action Rules, PEL Rules, and SPEL rules each apply when there are higher levels of exposure or when workers are found to have elevated blood lead levels.

Table X

		Rule Classification			
		Basic Rules	**Action Rules**	**PEL Rules**	**SPEL Rules**
Requirements	**Monitoring**	--	20040	20050	
	Blood lead testing	30010	30020		
	Cleaning practices	40010		40030 Based on control plan	
	Training	41010 Awareness	41020 Workplace Specific		
	Hygiene	42010 Hand/Face washing		42020 Shower, changing, eating Facilities	42030 Decontamination required
	PPE	43010 Hazard assessment, prohibitions		43030 Weekly change out	43040 Daily change out
	Control Area	--		44020 Post and regulate	
	Respirators	--	45020 Voluntary use	45030 Half face	45040 Exposure based
	Control Plan	46010 Respond to high blood lead levels		46030 Control plan (tools, work practices), periodic review	
	Exposure Controls	--	47020 Respond to high blood lead levels	47030 Tool and work practices	47040 All feasible controls

WAC 296-857-80010, Safe Harbor Initial Assessment -- Building Use, Maintenance, and Renovation

This assessment is for activities associated with operation and use of residential, retail, and office buildings.

Lead has been commonly used in a number of building materials. Paints and other coatings often included lead in pigments or as an additive to control corrosion. Lead was used as flashing in roofing and weatherproofing products. Lead pipes and lead containing solder were common in plumbing for water supply and waste water. Lead counter weights were often used in window and door systems. Lead shielding is found in facilities with medical X-ray systems.

Activities not typically covered by the rule requirements

These workers are in the building but do not work with building materials. If there is damage to building materials these workers will typically be asked to leave the area while building staff effect repairs and conduct cleanup. Hazard communication rules may apply for these workers if there are activities they should avoid, such as hanging pictures on walls with lead based paint, or so they can recognize damage that needs

- Office workers
- Production workers (for processes not using lead)
- Building tenants and visitors

Activities covered by Basic Rules

These workers may have minor exposures to lead in their normal work activities.

- Custodial, sweeping, moping.
- Routine maintenance work

Activities covered by Action Rules

- Renovation and repair work involving standard residential or commercial construction where lead containing paint is present.
- Plumbing work with lead containing pipe or solder materials.
- Handling of lead building components such as counterweights or radiation shielding.

Activities covered by PEL Rules

- Sanding and scraping of lead containing paint to prepare for repainting.
- Soldering or unsoldering piping with lead containing solder.

Activities covered by SPEL Rules

Welding, grinding, or abrasive blasting structural steel with lead coatings.

WAC 296-857-80020, Safe Harbor Initial Assessment – Gun Ranges

This assessment is for activities associated with operation and use gun ranges.

Lead is commonly used as the projectile material for fire arms. Lead is also found in the gun powder and primer material in ammunition. When fired, lead in the gun powder and primer is ejected in a cloud from the muzzle of the firearm. In a gun range there will be a system for catching the projectile which may involve damage to the projectile which can release lead and the collected projectiles are a source of lead.

Activities not typically covered by the rule requirements

- Office workers (accounting, payroll, etc.) who do not enter the range or store

Activities covered by Basic Rules

- Trainers not entering the range.

- Custodial workers not in the range.
- Store clerks and sales staff.

Activities covered by Action Rules

- Gunsmithing.
- Handling ammunition.
- Brass collection.
- Handling firearms used in the range.
- Trainers and range safety officers, when air monitoring shows exposure below the PEL.

Activities covered by PEL Rules

- Trainers and range safety officers with PEL level exposure.
- Range cleaning.
- Casting bullets.

Activities covered by SPEL Rules

- Cleaning bullet traps.
- Berm mining.
- HVAC maintenance, filter replacement.

WAC 296-857-80030, Safe Harbor Initial Assessment – Renovation, Repair, and Painting Work (EPA RRP program)

This assessment is for activities associated residential and commercial construction activities. This work normally involves light activities such as carpentry, building and modifying stud walls, and painting. Lead paint is the most common lead hazard.

Lead has been commonly used in a number of building materials. Paints and other coatings often included lead in pigments or as an additive to control corrosion. Lead was used as flashing in roofing and weatherproofing products. Lead pipes and lead containing solder were common in plumbing for water supply and waste water. Lead counter weights were often used in window and door systems. Lead shielding is found in facilities with medical X-ray systems.

Activities not typically covered by the rule requirements

When a building inspection has been done for lead and no lead has been identified, the work will not be covered by the lead rule. Paint and other materials may be tested to show that they are not above 5000 ppm (0.5%) lead content or greater than 1.0 mg/cm^2. Colorimetric testing is often sufficient for this purpose.

- Any light construction work when the building has been cleared of lead.
- Workers delivering supplies.

Activities covered by Basic Rules

- Workers handling or working with undisturbed paints. This includes removing trim or other building components with hand tools and methods that do not disturb paint.
- Hauling debris from the worksite.
- Other ancillary workers at the site, such as electricians and plumbers, unless there are lead materials associated with their work.

- Clean up where no work has been done to disturb paint.

Activities covered by Action Rules

- Sanding, scraping, and other preparation work for painting, using hand tools.
- Clean up where paint has been disturbed.
- Scraping paint with a heat gun below 1100°F.
- Sanding, scraping, and other preparation work for painting, using HEPA exhausted power tools.

Activities covered by PEL Rules

- Sanding and scraping of lead containing paint to prepare for repainting using power tools.
- Sawing materials with lead containing paint.

Activities covered by SPEL Rules

- Welding, grinding, or abrasive blasting structural steel with lead coatings.

WAC 296-857-80040, Safe Harbor Initial Assessment – Primary Metal Work, Metal Casting and Manufacturing

This assessment is for activities associated with metal manufacturing and casting. This includes work in foundries and in other general industry settings where metals are cast or

Lead is used as a metal for many purposes in industry. Lead is also added to other metals and found as a contaminant in metals. Casting metal parts and performing other metal forming processes with lead containing metals can generate lead exposures due to the release of lead fume and the creation of free lead contamination on surfaces.

Activities not typically covered by the rule requirements

- Room temperature, manual handling of formed metal parts containing less than 5000 ppm (0.5%) lead and no surface contamination

Activities covered by Basic Rules

- Housekeeping workers not in the metal casting or forming areas.
- Handling of lead containing or contaminated metals not above an action level.

Activities covered by Action Rules

- Handling metals containing more than 20% lead content
- Handling materials or work on surfaces with greater than 1000 µg/dm² free lead on the surface
- Using hand tools to trim cast pieces

Activities covered by PEL Rules

- Small castings (manual pours) with exhaust ventilation
- Forming work with metals containing 20% lead.

Activities covered by SPEL Rules

- Any unventilated casting activities
- Large scale casting activities (crane pours assisted pours)
- Ventilation system maintenance, filter replacement.

WAC 296-857-900, Building Inspections—General

This section applies to the communication of information concerning lead hazards in facility construction and maintenance activities. The procedures here are guidelines for a building or facility owner can take to ensure due diligence in identifying and assessing lead hazards that may be encountered during maintenance, renovation, construction, and demolition work in a facility. Where the owner has specific knowledge of lead in the facility, they must communicate potential hazards, even when not covered by this guideline.

Most lead-related construction and maintenance activities involve previously installed building materials. Building owners often are the only and/or best sources of information concerning lead found in the facility. Therefore, they, along with employers of potentially exposed workers, are assigned specific information conveying and retention duties under this rule. Employers and building owners must identify potential lead containing materials that may impact any construction, renovation, demolition, or maintenance work as described in this appendix. If the employer/building owner has actual knowledge, or should have known through the exercise of due diligence, that other materials are lead-containing, they too must be treated as such.

Following this section and other sections of this rule as directed here is a safe harbor for building or facility owners contracting for maintenance, renovation, construction, and demolition work. Building or facility owners or their agents may find further proactive action useful to minimize the impact of lead on the workers and environment. When inspecting a facility for lead it is appropriate to identify other potential hazards, such as asbestos, other metals, and hazardous contents of the facility.

When the building or facility owner is the direct employer of workers there will be additional parts of the rule which will apply to lead exposures.

Paint in residential and commercial facilities

Lead compounds were commonly used as pigments in paint up through the twentieth century. The highest concentration of lead is found in paints with a base pigment containing lead. When lead compounds are only used as tinting pigments the concentration of lead will generally be much lower. Lead based paint was banned for consumer paints in 1978, but is still allowed in paints for other markets.

The Washington State Department of Commerce administers a lead-based paint program addressing residential and child occupied facilities. The focus of that program is finish paints used in these facilities and covers removal (abatement) of lead paint and covers renovation, repair and painting in these facilities. Employers and facility owners doing work covered by the Department of Commerce lead paint program may rely on the inspection and identification protocols specified by the Department of Commerce for determining the presence of lead paint.

Note that the work anticipated by this program is primarily work with finish paints on walls and window frames. Work with structural steel coatings and other lead containing materials will not be properly characterized under this program. Worker protection is not fully addressed in the Department of Commerce program and the rules in this standard must be followed in addition to work practice rules in the Department of Commerce rules.

Assessing Lead in Paint

Both the lead content of the paint and the activity need to be considered in determining the application of the lead rule to work. More aggressive activities will generate higher exposures. When assessing paint related hazards, it must be recognized that paint often contains other toxic elements and compounds and will generally require some level of personal protective equipment, work practices, or engineering control if the paint will be disturbed.

Work Tasks	Inspection and sampling recommendation
Office/business occupancy	Not necessary for normal activities. Not lead work. Colormetric testing of damage debris. Consult Department of Commerce rules for child occupied facilities.
Residential occupancy	Not lead work. Consult Department of Commerce rules.
Maintenance work touching but not expected to disturb painted surfaces	Basic rules. Colormetric testing of paints with a potential to be disturbed.
Residential or commercial renovation and repair work and carpentry.	Action rules or follow the compliance protocol. Colormetric or XRF testing. Consult Department of Commerce rules for child occupied facilities. Consult Department of Ecology rules for disposal of painted materials.
Painting—hand scraping of surface for preparation.	Action rules. Colormetric or XRF testing. Consult Department of Commerce rules for child occupied facilities. Consult Department of Ecology rules for disposal of painted materials.
Painting—sanding of painted surfaces with local exhaust ventilation.	Action rules. Colormetric or XRF testing. Consult Department of Commerce rules for child occupied facilities. Consult Department of Ecology rules for disposal of painted materials.
Painting—power tool surface preparation where control will not effectively prevent dust release.	PEL rules. XRF or laboratory testing. Consult Department of Commerce rules for child occupied facilities. Consult Department of Ecology rules for disposal of painted materials.
Welding or abrasive blasting	SPEL rules. Laboratory testing of coatings

Other Materials

As part of a good faith building lead survey the following materials must be evaluated:

- Plumbing systems looking for lead pipe, lead containing solder, and lead gaskets.

- Lead shielding in facilities used for medical x-rays either currently or in the past.
- Lead ballast or counterweight materials.
- Lead flashing and other roofing components consisting of metallic lead.
- Concrete and mortar aggregate containing lead contamination (ASARCO materials)

These materials may be identified from as-built drawings of the facility or experience of facility owners and maintenance workers. The history of the building may also indicate the presence of some materials, such as lead shielding commonly found in medical suites where x-ray equipment was used. In most cases these materials will be lead metal or alloys and may be identified by simple inspection of the materials. Bulk sampling and analysis of materials can be done to determine the actual lead content or rule out lead as a material.

Facility owners should keep a log of lead containing materials identified in their facility to aid in providing written documentation to contractors doing work in the facility.

Residual Lead from Industrial Processes

- Lead residues from casting lead, gasoline, or other industrial or agricultural processes.
- Lead containing materials
    - Batteries
    - Pesticides
    - Solder
    - Lead and lead alloys

If it is known or suspected that industrial processes were conducted in the building a survey this information needs to be provided to contractors. Single sample surface sampling may be done to further characterize the lead contamination present at the site. Materials being removed from the building with extensive lead residue may need to be tested before disposal or recycling.