



DEPARTMENT OF
ECOLOGY
State of Washington

Washington State Implementation Plan Revision

*Startup, Shutdown, and Malfunction
Provisions in Chapters 173-400,
173-405, 173-410, and 173-415 WAC*

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Public Review Draft

Publication and Contact Information

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State Implementation Plan (SIP) Revision

Startup, Shutdown, and Malfunction Provisions in Chapters 173-400, 173-405, 173-410, 173-415 WAC

Air Quality Program

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Olympia, Washington

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Acronyms

AOP	Air Operating Permit
CAA	Federal Clean Air Act
BCAA	Benton Clean Air Agency
Ecology	Washington State Department of Ecology
EPA	U.S. Environmental Protection Agency
FEM	Federal Equivalent Method
FIP	Federal Implementation Plan
FRM	Federal Reference Method
LCAA	Local Clean Air Agency
NAAQS	National Ambient Air Quality Standards
NEI	National Emission Inventories
NESHAP	National Emissions Standards for Hazardous Pollutants
NSPS	New Source Performance Standards
NSR	New Source Review
PM	Particulate Matter
PSD	Prevention of Significant Deterioration
RCW	Revised Code of Washington
SIP	State Implementation Plan
SSM	Startup, Shutdown, and Malfunction
TAP	Toxic Air Pollutants
U.S.C.	United States Code
VOC	Volatile Organic Compounds
WAC	Washington Administrative Code

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Executive Summary

The Washington State Implementation Plan (SIP) is composed of some of the air quality rules, plans, and programs adopted by the following agencies to ensure healthy air quality:

- Washington Department of Ecology (Ecology)
- Washington Department of Natural Resources (DNR)
- Energy Facility Site Evaluation Council (EFSEC)
- Seven local clean air agencies (LCAAs)

The SIP includes air pollution control strategies to attain and maintain the national ambient air quality standards (NAAQS). The federal Clean Air Act (CAA) requires states to update their SIP when federal requirements change or when states decide to change their air pollution control strategies to meet the NAAQS. This SIP update addresses recent rule changes that Ecology adopted.

Sierra Club filed rulemaking petition on June 30, 2011 due to concern over how provisions in Environmental Protection Agency (EPA) approved SIPs treated excess emissions during startup, shutdown, and malfunction (SSM). EPA took its final action on the petition on May 22, 2015 as a SIP Call to 45 state and local agencies in 36 states that identified substantial inadequacies in their EPA approved rules. It also articulated EPA's current SSM policy. It set November 22, 2016 as the deadline for states to submit SIP revisions to correct the identified deficiencies.

EPA's 2015 SSM SIP Call specifically identified Ecology's WAC 173-400-107 as significantly inadequate to meet the federal Clean Air Act (CAA) requirements, and directed Ecology to remove it from the SIP.

In 2017, following a rulemaking petition against the SSM SIP Call, EPA decided to review the SSM SIP action. Though EPA is not acting on the SSM SIPs yet, the requirement to submit the SSM SIP revision is still in effect. Ecology adopted two consecutive rulemakings to meet the requirements of the SIP Call, the EPA SSM Policy, and the CAA requirements that supported the policy. Because EPA is reviewing the SSM action, and thus is not acting on SSM SIP revisions, we are submitting the changes in these rules in two separate SIP revisions. This SIP revision focuses on the rule amendments related to the short-term operation modes such as startup, shutdown, scheduled maintenance, and malfunction.

On August 16, 2018, Ecology adopted changes to the excess emissions provisions in Chapter 173-400 Washington Administrative Code (WAC) – the General Air Regulation for Air Pollution Sources. Ecology made the following SSM related changes in Chapter 173-400 WAC that we are requesting EPA to approve in the SIP:

- Set alternative emission standards for some common modes of operations for some source categories, WAC 173-400-040 and 070.

- Laid out the process for defining alternative emission standards for short-term operations of sources such as SSM, WAC 173-400-082.
- Removed the excess emission section (WAC 173-400-107) from the SIP, as required in the SSM SIP Call. Ecology replaced it with state-only provisions in WAC 173-400-108 and 109 that we are not going to include in the SIP because these provisions have the potential to bar enforcement by EPA or others in federal courts through citizen suit.

Similarly, on April 23, 2019, Ecology adopted amendments to the following three statewide industry specific air quality rules:

- Chapter 173-405 WAC - Kraft Pulping Mills,
- Chapter 173-410 WAC - Sulfite Pulping mills, and
- Chapter 173- 415 WAC - Primary Aluminum Plants.

The changes in these three rules align these rules with the August 2018 amendments to Chapter 173-400 WAC, and meet the SSM requirements of the EPA SSM policy, CAA, and the SSM SIP Call.

We are proposing EPA to include parts of these rule amendments in Chapters 173-400, 405, 410, and 415 WAC in the Washington SIP that apply in Ecology jurisdiction. Similarly, we are proposing to include parts of the amendments in Chapter 173-400 WAC in the SIP that apply to Benton Clean Air Agency jurisdiction, at their request.

To meet the federal and state procedural requirements for public involvement, Ecology:

- Invites the public to review and comment on the proposed revision from August 7 through September 13, 2019, and
- Offers opportunity to request a public hearing for September 11, 2019.

We will incorporate the public comments, and provide responses to comments in the final document to be submitted to EPA. Ecology will then request the EPA to approve the proposed revision in the Washington SIP. EPA's approval of this SIP revision keeps our SIP approved programs compliant to the CAA requirements.

Chapter 1. Introduction

Background

The federal Clean Air Act (CAA) §109, authorizes EPA to adopt national ambient air quality standards (NAAQS) for criteria pollutants (carbon monoxide, lead, nitrogen dioxide, ozone, particulate matters, and sulfur dioxide) to protect public health and welfare.

The CAA §110 requires states to adopt the latest NAAQS and submit state implementation plans (SIP) to attain and maintain the NAAQS in their jurisdictions, after public notice and hearing. When EPA approves the inclusion of state and local agency regulations in a SIP, those regulations become federally enforceable. The SIP is a comprehensive set of documents that the state must update when federal requirements change and/or when the state decides to change its air pollution control strategies to meet the NAAQS.

Washington SIP includes some air quality rules, plans, and programs adopted by Ecology, Energy Facility Site Evaluation Council (EFSEC), and seven local clean air agencies (LCAAs). It also contains the Washington State Department of Natural Resources' (DNR's) Smoke Management Plan that EPA approves as necessary to attain and maintain compliance with the NAAQS, and the CAA visibility and regional haze requirements.

Ecology's Director, as the Governor's designee, requests EPA to approve such revisions to the Washington SIP. State and local rules that EPA approves in the SIP as federal rules are enforceable in federal courts.

In response to a rulemaking petition filed by Sierra Club¹ on how provisions in EPA approved SIPs treat excess emissions during startup, shutdown, and malfunction (SSM), EPA took final action on May 22, 2015 as SIP Call, under CAA §110(k)(5).

The SSM SIP Call identified substantial inadequacies in the EPA approved rules of 44 state and local agencies, and articulated the EPA's current SSM policy. It set November 22, 2016 as the deadline for states to submit their SIP revisions that corrects the identified deficiencies in their provisions that apply to excess emissions during periods of startup, shutdown, and malfunction.

In the SSM SIP Call, EPA identified WAC 173-400-107 in the SIP as deficient to meet the CAA requirements and required Ecology to remove it from the SIP. Similarly, the SSM SIP Call identified deficiencies in the rules of two other Washington agencies: Southwest Clean Air Agency (SWCAA) and Energy Facility Site Evaluation Council (EFSEC). These agencies are required to make changes in their rules, and submit their SIP revisions through Ecology.

In 2017, following a rulemaking petition on the SSM SIP Call, EPA under the new administration decided to review the SSM SIP call action. Currently EPA has paused acting on

¹ Sierra Club et al. v. Jackson, No. 3:10-cv-04060-CRB (N.D. Cal. 2011), EPA-HQ-OAR-2012-0322-0039

the SSM SIPs while they conduct this review. The SIP call still requires Ecology to submit our SIP revision.

On April 29 and June 5, 2019, EPA Region-6 and Region-4 offices respectively proposed alternative SSM policies that depart from the EPA's 2015 SSM policy. These regional offices are proposing to withdraw the 2015 SIP call to some of the states in their regions. These alternative SSM policy directions proposed by these EPA regional offices were raised as public comments in the 2015 SSM SIP Call, and EPA justified why they preferred to pursue the 2015 policy direction in the responses to the comments.

Scope and purpose of SIP revision

This SIP revision incorporates in the Washington SIP the changes in the following four rules that Ecology adopted through two separate rulemakings. These rules focus on short-term modes of operations of sources such as startup, shutdown, scheduled maintenance, and malfunction.

- August 16, 2018 adopted:
 - Chapter 173-400 WAC, General Regulations for Air Pollution Sources
- April 23, 2019 adopted:
 - Chapter 173-405 WAC, Kraft Pulping Mills
 - Chapter 173-410 WAC, Sulfite Pulping Mills
 - Chapter 173-415 WAC, Primary Aluminum Plants

All of these rules include additional changes not related to startup, shutdown, and malfunction. We limited the focus of this SIP revision to include excess emission provisions directly related to short-term modes of operations such as SSM in the SIP. We are proposing a separate SIP revision to include rule amendments not related to SSM in the Washington SIP.

I. August 16, 2018 adopted amendments

In response to a petition for rulemaking filed by Sierra Club, EPA required Ecology (and 44 other agencies) to amend our current rules related to the SSM SIP Call according to the CAA §110(k)(5).

In the SSM SIP Call, EPA identified WAC 173-400-107 in the SIP as significantly deficient to meet the CAA requirements; and EPA directed Ecology to remove it from the SIP citing the following reasons:

- i. Existing language in WAC 173-400-407 “could be interpreted to preclude those excess emissions deemed “unavoidable” from being considered violations of the applicable SIP emission limitations, and thus it could preclude enforcement by the EPA or through a citizen suit.” Thus, EPA interpreted it as having an affirmative defense provision under which we can “excuse” excess emissions that occur during certain SSM events from enforcement if the

requisite showing is made by the source. The current EPA's SSM policy does not allow affirmative defense provision in the SIP. We have addressed this in WAC 173-400-109 that replaces WAC 173-400-107 as state-only requirements and thus will not interfere with enforcement by EPA or citizen suit in federal courts.

- ii. The rule language is unclear whether the affirmative defense applies only to actions for monetary penalties or could also be used to bar actions seeking injunctive relief. We have clarified this in WAC 173-400-109 by limiting affirmative defenses to civil penalties under WAC 173-400-230(2).
- iii. The provision applies to startup, shutdown, and scheduled maintenance events, contrary to the EPA's interpretation of the CAA to allow such narrowly defined state-only affirmative defenses only for malfunctions. The current EPA policy does not allow excuses from penalties for excess emissions during reasonably predictable events such as startup, shutdown, and scheduled maintenance. We removed these provisions from WAC 173-400-109 that replaces WAC 173-400-107, which was excusing excess emissions during these planned events.
- iv. The section of WAC 173-400-107 applying to "upsets" is inadequate because the criteria referenced are not sufficiently bounded in a similar way to those recommended in the EPA's SSM Policy for affirmative defenses for excess emissions due to malfunctions. We have aligned the criteria in WAC 173-400-109 to match EPA's criteria.

In addition to identifying specific deficiencies in agencies' rules, the SSM SIP Call elaborated EPA's current SSM policy and interpretation of the CAA. Ecology has made changes to the Chapter 173-400 WAC to meet the following CAA requirements asserted in EPA SIP Call and EPA SSM Policy:

- CAA §302(k) Emission limits in the SIP shall be continuous without automatic or discretionary exemption. This interpretation of the CAA is supported in recent federal court decision in the *Sierra Club v. Johnson* case². This prohibits exemptions from emission standards and excuses from penalties for excess emissions (emissions above emission standards) for normal (reasonably foreseeable) mode of operations such as startup, shutdown, soot blowing, load change, etc.
- CAA §113 and §304. According to EPA SSM policy, affirmative defense provisions in the state air quality rules are not allowed to be in the SIP because they potentially bar EPA and citizens from enforcing violations in federal courts. The SSM SIP call defines the term affirmative defense provisions to mean "a state rule provision in a SIP that specifies particular criteria or preconditions that, if met, would purport to preclude a court from imposing monetary penalties or other forms of relief for violations of SIP requirements in accordance with CAA§113 or §304. This is inconsistent with fundamental legal requirements

² *Sierra Club v. Johnson*, 551 F.3d 1019 (D.C. Cir. 2008)

Revision of SSM provisions in the SIP

of the CAA. This interpretation is supported with the recent federal court decision in *NRDC v. EPA*³.

Ecology began updating the excess emission provisions in 2011, and adopted WAC's 173-400-108 and 109 to replace WAC 173-400-107, which EPA later identified in the SIP Call as significantly inadequate. The change in 2011 was towards meeting the EPA's 1999 SSM Policy and the relevant CAA requirements.

Ecology was working on a SIP revision to replace the WAC 173-400-107, when EPA published its notice of proposed rule for the SSM SIP Call in February 2013. However, these changes were not incorporated in the SIP because EPA issued the notice of proposed rule for the SSM SIP Call in February 2013.

Ecology further refined these two sections to match with the current EPA SSM policy and the current interpretation of the federal Clean Air Act (CAA). Because the EPA SSM policy doesn't allow inclusion of affirmative defense provisions in WAC 173-400-108 and 109 in the SIP, Ecology adopted these provisions as state-only provisions. Therefore, we are not proposing to incorporate these sections in the SIP, so they are not enforceable in federal courts. We also narrowed the scope of the affirmative defense in these state-only provisions by aligning them with EPA affirmative defense criteria.

Chapter 173-400 WAC in the SIP also allows excess emissions (above emission standards in SIP) during some short-term operations of facilities such as SSM, soot blowing, and scheduled maintenance. We have removed those exemptions and, in some cases, replaced them with alternative emission standards. We also laid out the process of requesting and approving source specific alternative emission standards in WAC 173-400-082.

We propose EPA incorporate these changes in Chapter 173-400 WAC in the Washington SIP that applies to Ecology. We are also proposing to include parts of these changes in SIP that applies to Benton Clean Air Agency jurisdictions.

The SSM SIP Call also identified deficiencies in the rules of two other Washington agencies: Southwest Clean Air Agency (SWCAA) and Energy Facility Site Evaluation Council (EFSEC). We expect these agencies to do similar rulemaking in the near future. As Ecology is responsible for setting the minimum emission standard for the state (RCW 70.94.331(2)(b)), these agencies will adopt rules at least as stringent as Ecology's. SWCAA and EFSEC will submit their SIP revisions to address the identified deficiencies in their regulations by the SSM SIP Call. Ecology will submit their SIP revisions to EPA for approval.

³ *NRDC v. EPA*, 749 F.3d 1055 (D.C. Circ. 2014)

II. April 23, 2019 adopted amendments

In this rulemaking, Ecology adopted amendments to:

- Chapter 173-405 WAC – Kraft Pulping Mills,
- Chapter 173-410 WAC – Sulfite Pulping Mills, and
- Chapter 173-415 WAC – Primary Aluminum Plants.

The objective of the changes in these three rules is to align them with the requirements in Chapter 173-400 WAC to meet the 2015 EPA SSM SIP policy and the underlying federal Clean Air Act. We did this through adopting by reference of the following provisions from Chapter 173-400 WAC:

- Removed the excess emission section (WAC 173-400-105(5),) from the SIP, as required in the SSM SIP Call. Ecology replaced this provision by WAC 173-400-107 as of 1993. However, this change was not included in the SIP. Ecology removed WAC 173-400-107 from the SIP because EPA in the SSM SIP Call directed Ecology to remove it from the SIP because these provisions have the potential to bar enforcement by EPA or others in federal courts through citizen suit.
- Replaced the reference to WAC 173-400-105(5), which has the reporting requirements for SSM events prior to WAC 173-400-107 that was adopted in 1993, with the state-only provisions in WAC 173-400-108 and 109 for reporting and enforcement requirements during startup, shutdown, and malfunction events.
- Adopted the alternative visible emission standards for soot blowing and grate cleaning, startup and shutdown, and refractory curing under WAC 173-400-040.
- Adopted the process for defining alternative emission standards for short-term modes of operations of sources such as SSM under WAC 173-400-082.

We are proposing EPA incorporate the amendments to these provisions in the Washington SIP as statewide provisions.

Public involvement

Public notice:

Ecology disseminated the notice for public comment period on the proposed SIP revision as follows:

- Published the notice on newspaper, The Daily Journal of Commerce,
- Posted the notice on Ecology State Implementation Plan - Infrastructure, rule, & program plans web page (<https://ecology.wa.gov/Regulations-Permits/Plans-policies/State-implementation-plans/Infrastructure-SIPs>), and

- Sent e-mail messages for list of subscribers to Rule and SIP, and list of stakeholders of Industrial Section.

Comment period and how to comment:

Ecology invites public comments on the proposed SIP revision from August 7, 2019 through September 13, 2019. The public can submit comments to Ecology using the following methods:

- Online at e-comment (<http://ac.ecology.commentinput.com/?id=5PrRd>)
- Attend the public hearing on September 11, 2019, if requested.
- Mail to Debebe Dererie, Department of Ecology, P.O. Box 47600, Olympia, WA 98504-7600

Public hearing, upon request:

Anyone can request Ecology to hold a hearing on this SIP revision. Ecology scheduled a tentative public hearing for September 11, 2019 at 1:30 p.m. at the Ecology Headquarters in Lacey, and via webinar. Ecology will cancel the public hearing if we do not receive a request by September 6, 2019, and we will announce the cancellation on our Public Input and Event Listing web page (<https://ecology.wa.gov/Events/Search/Listing>). You may request a public hearing online (<http://ac.ecology.commentinput.com/?id=5PrRd>), or by contacting Debebe Dererie at debebe.dererie@ecy.wa.gov or (360) 407-7558.

Further information on the rulemaking:

You may visit the following rulemaking web pages:

- Chapter 173-400 WAC rulemaking (<https://ecology.wa.gov/Regulations-Permits/Laws-rules-rulemaking/Closed-rulemaking/WAC-173-400-July15>)
- Chapter 173-405, 173-410, and 173-415 WAC rulemaking (<https://ecology.wa.gov/Regulations-Permits/Laws-rules-rulemaking/Rulemaking/WAC173-405-410-415>)

What happens with public comments after the comment period?

Ecology will develop a written response to comments we receive during the public comment period. Ecology may change portions of this document in response to the comments received from the public. Depending on the nature of the changes and their significance, the Director of Ecology will decide whether to request EPA's approval. EPA is the agency that makes final determination on whether or not the updated rules meet the federal Clean Air Act requirements. EPA will offer the public another opportunity to comment before taking a final action.

Document's structure

This first chapter provides the background, the scope and purpose of this SIP revision. It also summarizes the public involvement process detailed in Appendix D.

The second chapter analyzes and justifies how the changes we are proposing in the SIP enable Ecology and Benton Clean Air Agency to meet federal and state requirements and protect air quality.

The appendices provide more information of the proposed changes in the SIP.

- Appendix A summarizes the changes in the rules and the proposed changes to EPA in three tables.
 - Table 1 summarizes the SSM related changes in Chapter 173-400 WAC that we are proposing to EPA to approve it in the Washington SIP that apply in Ecology jurisdiction.
 - Table 2 summarizes the SSM related changes in Chapters 173-405, 173-410, and 173-415 WAC that we are proposing to EPA to approve in the Washington SIP that apply statewide.
 - Table 3 summarizes the SSM related changes in Chapter 173-400 WAC that we are proposing to EPA to approve it in the Washington SIP that apply in Benton Clean Air Agency jurisdiction.
- Appendix B provides the anti-backsliding (CAA §110(l)) analysis to demonstrate that the proposed alternative opacity changes in WAC 173-400-040(2) do not interfere with the attainment and maintenance of the particulate matter NAAQS and other CAA objectives.
- Appendix C provides the strikeout rule language that shows the changes in Chapter 173-400 WAC that Ecology adopted on August 16 and October 25, 2018. It also shows the strikeout language for Chapters 173-405, 173-410, and 173-415 WAC. We highlighted the rule texts in different colors to identify the parts of the rule texts that we are proposing to EPA for inclusion in the SIP statewide, Ecology, or BCAA jurisdictions.
- Appendix D presents Benton Clean Air Agency's request for SIP submission to EPA
- Appendix E documents Ecology's efforts for the public involvement process.
- Appendix F documents Ecology's formal adoption of this SIP revision after the public had the opportunity to review and comment on it.

Chapter 2. Changes in Chapters 173-400, 173-405, 173-410, and 173-415 WAC

The analysis below shows the changes that Ecology is proposing to EPA to incorporate in the SIP that applies to Ecology and Benton Clean Air Agency (BCAA) jurisdiction, and the justification that these changes meet the federal Clean Air Act (CAA) requirements and EPA regulations.

Changes for Ecology jurisdiction

Amendments to chapter 173-400 WAC

The rule citations in this analysis refer to parts of the Chapter 173-400 WAC Ecology adopted on August 16 and October 25, 2018, and became effective on September 16 and November 25, 2018.

- **WAC 173-400-030: Definitions**

- The following are new definitions in the rule to clarify their meanings in the rule and guide the implementation.
 - (6) “Alternative emission limit or limitation.” This definition is to clarify the implementation of the provisions for transient (short-term) modes of operation such as startup and shutdown provisions. This include WAC 173-400-040(2), 081 and 082, 107, 108 and 109.
 - (45) “Hog fuel”: This definition is to define what has been used as a ‘term of art’ and clarify the implementation of WAC 173-400-040 (2) and WAC 173-400-070 (2).
 - (83) “Shutdown”: This definition is to clarify the meaning of the term in the rule.
 - (89) “Startup”: We added this definition to clarify the meaning of the term in the rule.
 - (97) “Transient mode of operation”: We added this definition to clarify the meaning of the term as it is used in many parts of this rule that establish emission standards and limitations that apply during short-term operations of sources such as startup, shutdown, soot blowing, grate cleaning, and refractory curing.
 - (100) “Useful thermal energy”: We added this definition to clarify the implementation of the rule in WAC 173-400-040(2)(e); and it is borrowed from the Boiler NESHAPs rules, specifically 40 CFR 63.7575 and 63.11237.
 - (103) “Wigwam” or “silo burner”: We added this definition to clarify the meaning in the implementation of WAC 173-400-070(1).

- (104) "Wood-fired boiler": We added the definition to clarify the implementation of the rule in WAC 173-400-040, and is adapted from the federal rule 40 CFR 63.7575.
- The following are the main amendments to the definitions in this section:
 - (32) "Excess emissions": We revised the definition to clarify that it also includes emissions above limits established in permits or orders, including alternative emission limits.
 - (38) "Federally enforceable". We updated this definition to include emission limitations during startup and shutdown.
- The sequence of the definitions changed due to inclusion of new definitions included in the rule. There are also changes in some of the definitions to improve clarity but not to change the meanings. We are proposing to include all the definitions in WAC 173-400-030 in the SIP, **except** the definition for:
 - (96) "Toxic air pollutant (TAP)", because these are not criteria pollutants in the SIP.
- **WAC 173-400-040 General standards for maximum emissions.**

This section has significant changes described below. We are proposing to include these changes in the SIP, except for WACs 173-400-040 (2)(c), (3), (5) and the expression "RCW 70.94.331(2)(c)" in (2)(d).

The main changes focus on the alternative opacity standards during transient modes of operations such as startup, shutdown, and refractories curing of boilers and lime kilns. However, the particulate matter (PM) emission standards in the rule that apply during these periods did not change. We have provided the anti-backsliding (CAA§ 110(l)) demonstration that shows the implementation of these changes in WAC 173-400-040(2) would not interfere with the attainment of the national (NAAQS) or other applicable CAA requirements in Appendix B.

- WAC 173-400-040(1). We gave this subsection a new title of "general requirement," and divided it into three parts without any change in the wording.
- WAC 173-400-040(2) Visible emissions. We have some clarification changes in this subsection. The main changes in this subsection are the three alternative opacity standards for the following modes of operations:
 - Soot blowing and grate cleaning,
 - Startup and shutdown of hog fuel boilers with dry particulate control, and
 - Curing of refractories for boilers and lime kilns.
- WAC 173-400-107 considered the excess emissions during two of the above three modes of operations as for boilers with only dry particulate control. We were excusing these excess emissions if the owner or operator reported them in a timely

manner. This is a conditional exemption, which is not consistent with the EPA SSM policy and the CAA §302(k). We determined that the preferred way to meet EPA’s SSM requirement during these modes of operation is through establishing reasonable alternative emission limitations. Thus, we established an alternative opacity standard of 40 percent during these events, with variances of additional requirements for each type of event.

- We also made changes that recognize alternative opacity standards as components of the continuous emission standards, and clarified that sources to measure opacity according to Ecology Method 9A⁴. This section also specifies the effective date of these alternative emissions to be the effective date of EPA’s removal of the WAC 173-400-107 from the SIP.
- WAC 173-400-040(2)(a) Soot blowing or grate cleaning alternate opacity standard. The current rule in the SIP exempts soot blowing and grate cleaning from the otherwise applicable twenty percent opacity standard for a maximum of 15 minutes in eight consecutive hours. Sources did not have emission limits during these periods. Such exemption is not consistent with the EPA’s SSM policy and the CAA §302(k), which require continuous emission limitations. The court decision in *Sierra Club v. Johnson* case supports this interpretation of the CAA §302(k). Thus, to provide a continuous emission limitation for these sources, we established 40 percent opacity as alternative emission standards for the same duration, a maximum of 15 minutes in eight consecutive hours, during soot blowing and grate cleaning. It also requires sources to notify the permitting authority of their periodic soot-blowing and grate cleaning schedule as a precondition to use this alternative opacity standard. Sources must also maintain records sufficient to demonstrate compliance. Ecology believes the 40 percent opacity standard is sufficiently stringent, as elaborated in the anti-backsliding demonstration in Appendix B.
- WAC 173-400-040(2)(b) This revision recognizes uncombined water as a possible cause for higher opacity above an alternative standard, if the operator or owner of the source demonstrated that with valid data.
- WAC 173-400-040(2)(d) This revision recognizes alternative opacity limits set according to WAC 173-400-081(4) and 173-400-082 as exceptions to the otherwise applicable twenty percent opacity standard. We are proposing to include this sub-subsection in the SIP, except the phrase “RCW 70.94.331(2)(c)” that was not in the SIP.
- WAC 173-400-040(2)(e) sets a new alternative opacity standard for startup or shutdown. It applies to hog-fuel or wood fired boilers in operation before January 24,

⁴ Ecology Method 9A is a cumulative opacity standard where a violation occurs when there are more than 3 minutes of readings by a certified visible emissions (VE) reader. Readings are taken at 15 second intervals. To show a violation there must be 13 readings above the standard in an hour. To show compliance a VE reader would need to take opacity measurements for an hour.

2018 (existing units), and use only dry particulate controls such as multiclone, fabric filter or dry electrostatic precipitator (DESP). New boilers that come into operation after January 24, 2018 are required to meet the 20 percent opacity standard during startup and shutdown since they can be designed to meet the opacity requirement. This new alternative opacity standard accommodates the boilers that have demonstrated a technological limitation to meet the 20 percent opacity standard during startup and shutdown.

- The main reason for setting this alternative emission standard is that these dry particulate controls have a recognized difficulty to effectively control boiler emissions during startups and shutdowns. Safe and effective operation of these controls require stable higher minimum temperature to avoid the chance of having condensed water in the flue gas. This is difficult to meet during the early parts of the startup process and late parts of the shutdown process. As explained in Appendix B, manufacturers of DESP and fabric filters do not recommend operators to engage these dry particulate controls when the flue gas temperature is below a specific level (usually acid dew point). This makes the excess emissions during startup and shutdown of this specific sub-group of boilers unavoidable.
- Currently, we excuse these excess visible emissions (above 20 percent opacity) during startup and shutdown of hog fuel boilers with dry particulates controls as unavoidable excess emissions under WAC 173-400-107. For us to excuse the excess emissions during startup and shutdown from penalties, we require the sources to report the excess emission in a timely manner and demonstrate the excess emission was unavoidable.
- In recognition of this challenge to meet the 20 percent opacity continuously, we set this alternative opacity standard at 40 percent. The alternative standard provides two compliance options for this group of boilers. These units are required to either meet 40 percent opacity standard, or follow a work practice standard. The work practice standard requires the use of clean fuels (as identified in Table 3 in 40 CFR Part 63, Subpart DDDDD) during startup and shutdown. This sub-subsection also sets the conditions for using this alternative standard, what constitutes clean fuels, and the record keeping requirements to demonstrate compliance.
- WAC 173-400-040(2)(f). Furnace refractory alternative emission standard. This new alternative emission standard sets requirements that boilers and lime kilns shall meet when they install or repair their refractory materials. During refractory curing, temperatures in the firebox are limited to allow for drying and curing of the refractory materials and mortars. The controlled heating process reduces the chance for the refractory to spall and fail prematurely. During this period, the flue gas temperature will be at or below the dew point, leading to uncombined water in the flue gas. Once the boiler and control device temperatures are hot enough, the operator can engage the PM controls. The requirements include
 - One working day prior notification to the permitting authority

- The use of clean fuel
- Use of manufacturer’s instructions during refractory curing
- Limiting the opacity to 40 percent (using Ecology Method 9A) for the maximum duration of 36 hours.
- WAC 173-400-040(7) Sulfur dioxide (SO₂): Ecology deleted the second paragraph in the rule because it exempts sources from the 1-hour SO₂ emission standard of 1000 ppm if the owner or operator demonstrates that there is no feasible method to meet this requirement. If sources cannot meet this requirement, the owner or operator can request an alternative emission limitation according to WAC 173-400-082. This deleted section was not in the SIP, and thus we are not proposing any change in the SIP related to this subsection.
- **WAC 173-400-070 Emission standards for certain source categories.**

The main changes in this section are described below:

- 173-400-070(1) Wigwam and Silo burners: The following are the main changes:
 - The use of a wigwam or silo burner will be illegal as of January 1, 2020. There is one unit that has a valid permit to operate, but it is currently not operating. The permit expires after January 1, 2020.
 - We replaced the undefined term “wood waste” by the newly defined term “waste wood” to represent the materials to be disposed in a wigwam or silo burner for clarity and consistency purpose.
 - We changed the requirements that wigwam and silo burners should meet to Part 62 Subpart III, from the previous requirement to meet Part 60 Subpart DDDD. This is because the Part 62, Subpart III is the appropriate federal rule that replaced the emission guideline to control the emissions from commercial and industrial solid waste incineration (CISWI).
 - Ecology deleted the exemption from meeting the visible emission standard during startup of wigwam and silo burners. Instead, we require them to meet the 20 percent opacity standard at all times, as in WAC 173-400-040.
- WAC 173-400-070(2) Hog fuel boilers. We removed the exemption from the visible emission limitation during soot blowing and grate cleaning. Instead, the new alternative emission standard in WAC 173-400-040(2)(a)(ii) will apply. However, we continue to require these sources meet the particulate emission standard in WAC 173-400-050(1). The change in this section is to ensure that we have continuous emission limitations for hog-fuel boilers, as required in the CAA §302(k).
- WAC 173-400-070(3) Orchard heating. We removed the exemption during startup of orchard heating to have continuous emission limitations as required by the CAA

§302(k). This change will take effect once EPA approves removing WAC 173-400-107 from the SIP.

- WAC 173-400-070(5) Catalytic cracking units. We deleted the provision that sets the particulate matter and opacity requirements for the catalytic cracking units because the federal rule (40 CFR 60.102a) we adopt by reference in WAC 173-400-115 has more stringent requirements for catalytic cracking units than the requirements in the deleted rule. This federal rule (40 CFR 60.102a) sets a particulate matter emission standard of 0.040 grains/dscf standard, which is significantly more stringent than the deleted rule that sets it at 0.20 grains/dscf. Similarly, 40 CFR 60.102a (d) provides a formula for setting site-specific opacity limits based on the PM emission rate measured during a source test. We expect this to be lower because of the more stringent PM standard. We deleted this subsection to simplify compliance by reducing duplication of the federal requirements in our rule.
- WAC 173-400-070(5). Other waste wood burners. We changed the requirements that existing other waste wood burners shall meet from Part 60 Subpart DDDD (emission guideline for CISWI) to Part 62, Subpart III (CISWI federal plan for CISWI). We did this because the emission guideline (Part 60 Subpart DDDD) turned in to federal plan (Part 62 Subpart III). We also included the new 40 CFR Part 60 Subpart CCCC as the appropriate federal NSPS rule that we adopted by reference in WAC 173-400-115 to control emissions from new CISWI sources. We also replaced the undefined term “wood waste” with the newly defined term “waste wood.” We propose EPA include in the SIP all the changes in this subsection.
- WAC 173-400-070(7) Sulfuric acid plants. We deleted the requirements for the sulfuric acid plants (WAC 173-400-070(7)). We did this because the mandatory federal requirements (40 CFR 60.83) that we have adopted by reference in WAC 173-400-115 sets 0.15 lb sulfuric acid emission per ton of sulfuric acid produced, which is as stringent as the deleted requirement. To the best of our knowledge, all the sulfuric acid plants in the state meet the NSPS applicability date. This federal rule also set an additional 10 percent opacity standard, which is not in the deleted rule. This simplifies compliance by avoiding duplication of federal requirements in our rule. This standard is not in the SIP, and we are not proposing to include this change in the SIP.
- We propose EPA include all the changes in the SIP, except the requirements for municipal solid waste landfills in WAC 173-400-070(6), which is not in the existing SIP. We are also proposing to remove from the SIP the requirements for catalytic cracking units in WAC 173-400-070(5) that we have deleted from the rule to avoid duplication of federal requirements.
- **WAC 173-400-081 Emission limits during startup and shutdown.**

We propose to include all the changes in this section in the SIP. This section applies to new source review. The changes in the rule, detailed below, are mainly to clarify the requirements

that apply when establishing alternative emission limitations for startup and shutdown of new sources.

- WAC 173-400-081(1). The change clarifies the applicability of the section when establishing emission limitations by rule, permit or order for new sources.
 - WAC 173-400-081(2). This change clarifies the requirement to set alternative emission limitations for startup or shutdown, as part of control technology determination, if the source is not capable of achieving the otherwise applicable emission standard during these period.
 - WAC 173-400-081(4). The change includes additional requirements for sources to meet when the established alternative emission standard is above the emission limits in the SIP. We do this through the specific requirements of WAC 173-400-082 for the source to follow under this condition.
- **WAC 173-400-082 Alternative emission limit that exceeds an emission standard in the SIP.**

We designed this new section to set the scope and process requirements for establishing alternative emission limits for transient modes of operations that exceed the emission standards in the SIP. This includes emission standards for opacity, sulfur dioxide, and particulate matter. We designed the requirements in this rule to meet EPA's recommended criteria for developing appropriate alternative emission limitations during startup and shutdown. The requirements also include Ecology's steps in processing such a request, as outlined in state law. This section provides flexibility for sources to set alternative emission limitation that are approvable by EPA. We propose to include this section in the SIP, without exception.

- **WAC 173-400-107 Excess emissions.**

We are proposing to remove this section from the SIP. We changed the end of the effective date of the current version from the effective date of EPA's incorporation of WAC 173-400-108 (excess emission reporting) and WAC 173-400-109 (unavoidable excess emission) in the SIP to the effective date of EPA's removal of the current version from the SIP. Since 2011, Ecology had WAC 173-108 and 109 in the rule to replace WAC 173-400-107 with the effective date dependent on EPA's approval of the proposed replacement. We had done this to meet the EPA's 1999 SSM policy. However, Ecology did not submit this change to EPA for inclusion in the SIP. Consistent with our pre-SSM SIP Call intention, Ecology proposes to remove this section from the SIP. However, as explained below, we are not proposing to replace it with WAC 173-400-108 and 109 in the SIP.

- **WAC 173-400-108 Excess emissions reporting. (State-only requirement not federally enforceable).**

We designed this section is designed to replace the reporting requirements of WAC 173-400-107; however it was submitted for EPA approval in the SIP. This section applies in the context of enforcement at state level, and thus we are not proposing to include it in the SIP.

Thus, we changed the effective date of this section from the effective date of EPA's incorporation of this section and WAC 173-400-109 (unavoidable excess emission) in the SIP, to the effective date of EPA's removal of the WAC 173-400-107 from the SIP. The significant changes in this section include:

- WAC 173-400-108(1). We have separated the notification and reporting requirements for clarification purpose. This subsection outlines the notification requirements. The main change in this subsection is the mechanism to notify the permitting authority, on the excess emissions that represent a potential threat to human health or safety. We specified sources could use a phone or electronic means.
- WAC 173-400-108(2). We changed the timeframe for reporting excess emission that the owner or operator believes unavoidable from "as soon as possible after the excess emissions were discovered" to "within thirty days after the end of the month during which the event occurred". This change defines a reasonable amount of time and will work for both the regulating and regulated communities. Normal practice has this notification include all of the information requested for submittal the first time the permitting agency sees it, rather than the permitting agencies having to ask for it.
- **WAC 173-400-109 Unavoidable excess emissions (State-only requirement not federally enforceable).**

The amendment in this section are to correct the deficiencies in WAC 173-400-107 that EPA identified in the SSM SIP call. This section replaces the enforcement discretion provisions in WAC 173-400-107, which we are proposing to remove from the SIP. This section applies to the state's enforcement staff. We are not proposing to include it in the SIP to avoid potential interference with enforcement by EPA or others in federal court, as expressed in long-standing EPA SSM policy. This position is also consistent with the recent court decision in a *NRDC v. EPA*. There are clarifications and reorganization of criteria/requirements. The significant changes in this section include:

- WAC 173-400-109(1). The change in this subsection is more of clarification and reorganization. We have also deleted the text that one could interpret to require the federal enforcement action to consider the state level criteria when making a decision whether an excess emission is unavoidable or not. Such a reading of the state rule would impermissibly restrict the federal courts' function and authority under CAA §113 and §304. This is consistent with the court decision in *NRDC v. EPA*.
- WAC 173-400-109(3) and (4). Ecology deleted almost all of these two subsections, because excusing excess emissions during planned activities like startup, shutdown, and scheduled maintenance is not consistent with the CAA §302(k) requirement to have continuous emission limitations. Based on EPA's current SSM Policy, Ecology determined that the right approach to regulate excess emissions due to planned activities like startup, shutdown, and scheduled maintenance is through setting appropriate category-specific or source-specific alternative emissions limitations, as they are reasonably predictable. Setting such source-specific or category-specific

alternative emission limitations provides an opportunity for considering unique process characteristics and technological limitations in a source or a source-category. This will lead to consistent compliance and enforcement actions. Event by event analyses that excuse excess emissions during startup and shutdown from enforcement actions leads to inconsistent enforcement decisions. Continuously granted excuses are, in reality, conditional exemptions. Conditional exemptions are inconsistent with the, CAA §302(k), EPA SSM Policy and recent court decision in *Sierra Club v. Johnson*.

- WAC 173-400-109(5). We have strengthened the criteria the permitting authority uses to decide whether excess emissions due to malfunction or upset is unavoidable or not. This minimizes the subjectivity of the decision. We include additional criteria that addressed the expediency and comprehensiveness of the corrective actions to minimize the excess emissions and the impacts of the excess emission on ambient air quality.
- **WAC 173-400-171 Public notice and opportunity for public comment.**
 - The only change in this section that is related to the startup, shutdown and malfunction is in the requirement for public comment period in (3)(o) applicable to setting alternative emission limitations under WAC 173-400-081(4) or 173-400-082. We propose EPA to include this new requirement in the SIP.

Changes that apply statewide

Amendments to chapters 173-405, 173-410, and 173-415 WAC

The rule citations in this part of the analysis refer to parts of the Chapter 173-405, 173-410 and 173-415 WAC that Ecology adopted on April 23, 2019. Even though the rule as a whole is effective as of May 24, 2019, the SSM related provisions would be effective when EPA approves the removal of WAC 173-400-107 from the SIP.

- **WAC 173-405-040, WAC 173-410-040, and WAC 173-415-030 Emission standards.**

The main changes in emission standards in this SIP revision focus on the alternative visible emission (opacity) standards set for short-term modes of operations of sources, and the process of setting alternative emission limitations. We propose EPA to include these changes in the SIP.

Ecology deleted the following provisions that allowed the use of industry specific opacity standards to comply with particulate matter (PM) emissions standards, provided that the industry demonstrate the relationship between opacity and the PM emission:

- WAC 173-405-040(7), (8), and (9), and
- Reference to RCW 70.94.331(2)(c) in WAC 173-410-040(3)(a) and WAC 173-415-030(3)(b).

We deleted these provisions because no sources regulated under these rules have used them, and EPA has not approved them in the SIP. There is no established and reliable relationship between PM and opacity that we can use for different sources in an industry. Because they were not included in the SIP, we are not proposing any action in relation to their deletion.

The changes in opacity standards in these rules include:

- Ecology is removing the exemptions for excess emissions above the otherwise applicable visible emissions (opacity) standard of 20 percent opacity standard during the following short term activities because they are not consistent with the 2015 EPA SSM policy and the CAA §302(k) that requires continuous emission limitations:
 - Soot blowing and grate cleaning, according to WAC 173-405-040(6)(b) WAC 173-400-040(2)(a)(i),
 - Startup shutdown, according to WAC 173-400-107(4), and
 - Scheduled maintenance that applies to exempt excess emissions during curing of refractories for boilers and lime kilns, according to WAC 173-400-107(5).
- We set alternative emission standards by adopting by reference the following requirements in Chapter 173-400 WAC:
 - Soot blowing and grate cleaning: We set 40 percent alternative opacity standard for the same maximum duration of 15 minutes in eight consecutive hours by adopting the requirements in WAC 173-400-040(2)(a)(ii).
 - Startup and shutdown of hog-fuel boilers: By adopting WAC 173-400-040(2)(e) in these three rules, we are setting two compliance options for hog fuel or wood fired boilers. These apply to hog fuel or wood-fired boilers operational before January 24, 2018, and that use dry particulate matters emission control devices.
 - i. The first compliance option is 40 percent opacity standard until the boiler starts supplying useful thermal energy.
 - ii. Second compliance option requires the use of a work practice standard that involves:
 - a) Using clean fuels
 - b) Including the equipment manufacturer's recommended procedure
 - c) Engaging all applicable pollution control devices to meet the 20 percent opacity within four hours after the boiler starts supplying useful thermal energy.
 - Refractories curing for boilers and lime kilns: We are setting 40 percent opacity standard for a maximum of 36 hours by adopting the requirements in WAC 173-400-040(2)(f).

- The analyses provided in Appendix B to demonstrate that the amendments to opacity standards in WAC 173-400-040(2) will not interfere with the attainment and maintenance of the NAAQS and other federal CAA requirements apply to the sources regulated under Chapter 173-405, 173-410, and 173-415 WAC.

We also adopted the requirements for setting facility specific alternative emission standards for short-term operations such as startup and shutdown, through adoption by reference of the requirements in WAC 173-400-081 (for new sources), and WAC 173-400-082 (for existing sources through permit modifications). Such facility specific alternative emission standards require EPA's approval before they become effective.

Ecology is proposing EPA to include these three sections in the SIP except the following provisions that sets emission standards for total reduced sulfur (TRS):

- WAC 173-405-040(1) (b), (1) (c), (3) (b), (3) (c), and (4), and
- WAC 173-410-040(5).
- **WAC 173-405-077, WAC 173-410-067, and WAC 173-415-075 Excess emissions.**

The following sections of these three rules in the SIP adopted by reference WAC 173-400-105(5) to require sources report to the permitting authority planned short-term operation modes (startup or shutdown), and unplanned short-term operation modes (breakdown or upset):

- WAC 173-405-077
- WAC 173-410-067
- WAC 173-415-070

In August 2005, Ecology deleted WAC 173-415-070 that Ecology did not submit to EPA for inclusion in the SIP. We are reinstated the excess emissions requirements for primary aluminum plants as WAC 173-415-075.

Since August 1993, the reporting and enforcement requirements for excess emissions during startup, shutdown and malfunction have moved to WAC 173-400-107. In 2011, Ecology adopted WAC 173-400-108 (excess emission reporting) and WAC 173-400-109 (unavoidable excess emissions) to replace WAC 173-400-107 to meet EPA's 1999 SSM Policy. However, Ecology did not submit this to EPA for inclusion in the SIP. In the 2015 SSM SIP Call, EPA identified significant deficiencies in WAC 173-400-107 to meet the federal Clean Air Act requirements. In response, Ecology updated WAC 173-400-108 and WAC 173-400-109 to meet EPA's SSM SIP Call. We expect these provisions to be effective when EPA removes WAC 173-400-107 from the SIP, as part of this SIP revision.

We made the following changes in these three rule sections:

- adopted by reference WAC 173-400-108 and WAC 173-400-109, and

- revised title of these rule sections as “excess emissions”:

We are proposing EPA remove these three sections from the SIP, because the state enforcement discretion provisions are not allowed to be in the SIP according to the 2015 EPA SSM policy.

Changes for Benton Clean Air Agency (BCAA) jurisdiction

The Benton Clean Air Agency implements and enforces Chapter 173-400 WAC that is in effect now and including all future amendments, except where specific provisions of BCAA Regulation 1 apply. Regulation 1 of the Benton Clean Air Agency, adopted in April 28, 2017, states this in Section 1.03. Therefore, the analysis of the proposed changes for Ecology jurisdiction discussed in the previous sub-chapter apply in the Benton Clean Air Agency jurisdiction except the following provisions:

- **Chapters 173-405, 173-410, and 173-415 WAC**

These three rules are in the Washington SIP as statewide rules, thus we are not proposing these rules to be in the SIP for BCAA’s jurisdiction separately.

- **WAC 173-400-030 Definitions.**

We are proposing EPA include the same definitions in the SIP that apply to both Ecology and Benton Clean Air Agency, except the following two definitions that we propose to include in Ecology jurisdiction only:

- (40) “Fugitive dust”. BCAA is not implementing this definition, because Regulation 1 has equivalent definition in Section 4.01(A).
- (41) “Fugitive emissions”. BCAA is not implementing this definition, because Regulation 1 has equivalent definition in Section 4.01(B).

- **WAC 173-400-040 General standards for maximum emissions.**

We are proposing EPA include the same provisions that we propose for Ecology jurisdiction be in the SIP that apply for Benton Clean Air Agency except the following provisions, because BCAA has similar provision in its Regulation 1 for fugitive dust and emissions.

- WAC 173-400-040 (4) Fugitive emissions. BCAA is not implementing this subsection, because Regulation 1 has equivalent definition in Section 4.02(B).
- WAC 173-400-040 (9) fugitive dust. BCAA is not implementing this subsection, because Regulation 1 has equivalent definition in Section 4.01(C).

Appendices

Appendix A. SIP revision overview table

The rule citations in this analysis refers to parts of Chapter 173-400 WAC that is adopted on August 16, 2018, except when the citation refers to deleted subsection then refers to the preceding version of Chapter 173-400 WAC that was adopted on May 31, 2016.

Table 1. Summary of the proposed SSM related changes in the SIP for Ecology jurisdiction – Chapter 173-400 WAC adopted on 8/16/2018

Section Citation WAC 173-400	Section title	State effective date	Changes in the rule	Proposed change in the SIP
WAC 173-400-030	Definitions	9/16/2018	Revised	Revise in the SIP
	WAC 173-400-030(96) “toxic air pollutant (TAP)”	9/16/2018	Unchanged	Not in the SIP
WAC 173-400-040	General standards for maximum emissions	9/16/2018	Revised	Revise in the SIP
	WAC 173-400-040(2)(c), and (3)	9/16/2018	Unchanged	Not in the SIP
	WAC 173-400-040(2)(d) that says “RCW 70.94.331(2)(c),” and WAC 173-400-040(5)	9/16/2018	Revised	Not in the SIP
WAC 173-400-070	Emission standards for certain source categories,	9/16/2018	Revised	Revise in the SIP
	Except WAC 173-400-070(5)	7/1/2016	Deleted	Remove from the SIP
	WAC 173-400-070(6)	9/16/2018	Unchanged	Not in the SIP
WAC 173-400-081	Startup and shutdown	9/16/2018	Revised	Revise in the SIP
WAC 173-400-082	Alternative emission limit that exceeds an emission standard in the SIP	9/16/2018	New	Include in the SIP
WAC 173-400-107	Excess emissions	9/20/1993	Revised	Remove from the SIP
WAC 173-400-171	Public involvement, except	9/16/2018	Revised	Revise in the SIP
	WAC 173-400-171 (3)(b) that says “or any increase in emissions of a toxic air pollutant above the acceptable source impact level for that toxic air pollutant as regulated under chapter 173-460 WAC”; WAC 173-400-171(12)	9/16/2018	Unchanged	Not in the SIP

Revision of SSM provisions in the SIP

Table 2. Summary of the SSM related revision to the SIP applicable statewide (Chapters 173-405, 173-410, and 173-415 WAC)

Rule Section Citation	Section title	State effective date	Changes in the rule	Proposed change in the SIP
	Chapter 173-405 WAC Kraft Pulping Mills			
WAC 173-405-040	Emission standard	5/24/2019	Revised	Revise in the SIP
	Except: WAC 173-405-040 (4)	5/24/2019	Revised	Not in the SIP
	WAC 173-405-040(1)(b), (1)(c), (3)(b), and (3)(c)	5/24/2019	Unchanged	Not in the SIP
WAC 173-405-077	Excess emissions	5/24/2019	Revised	Remove from the SIP
	Chapter 173-410 WAC Sulfite Pulping Mills			
WAC 173-410-040	Emission standard	5/24/2019	Revised	Revise in the SIP
	Except: WAC 173-410-040(5)	5/24/2019	Unchanged	Not in the SIP
WAC 173-410-067	Excess emissions	5/24/2019	Revised	Remove from the SIP
	Chapter 173-415 WAC Primary Aluminum Plants			
WAC 173-415-030	Emission standards	5/24/2019	Revised	Revise in the SIP
	Except: WAC 173-415-030(1)	5/24/2019	Revised	Not in the SIP
WAC 173-415-070	Report of Startup, Shutdown, Breakdown or Upset Conditions.	9/10/93	Deleted	Remove from the SIP
WAC 173-415-075	Excess emissions	5/24/2019	New	Not in the SIP

Revision of SSM provisions in the SIP

Table 3. Summary of SSM related revision to SIP applicable to Benton Clean Air Agency's jurisdiction

Rule Section Citation	Section title	State effective date	Changes in the rule	Proposed change in the SIP
WAC 173-400-030	Definitions	9/16/2018	Revised	Revise in the SIP
	Except: WAC 173-400-030 (40) “fugitive dust”, (41) “fugitive emissions”, and (96) “toxic air pollutant (TAP)”	9/16/2018	Unchanged	Not in the SIP
WAC 173-400-040	General standards for maximum emissions	9/16/2018	Revised	Revise in the SIP
	Except: WAC 173-400-040 (2)(c), (3), (4), and (9)	9/16/2018	Unchanged	Not in the SIP
	WAC 173-400-040 (2)(d) that says “RCW 70.94.331(2)(c),”, and WAC 173-400-040(5)	9/16/2018	Revised	Not in the SIP
WAC 173-400-070	Emission standards for certain source categories,	9/16/2018	Revised	Revise in the SIP
	Except: WAC 173-400-070 (5)	7/1/2016	Deleted	Remove from the SIP
	WAC 173-400-070 (6)	9/16/2018	Unchanged	Not in the SIP
WAC 173-400-081	Startup and shutdown	9/16/2018	Revised	Revise in the SIP
WAC 173-400-082	Alternative emission limit that exceeds an emission standard in the SIP	9/16/2018	New	Include in the SIP
WAC 173-400-107	Excess emissions	9/20/1993	Revised	Remove from the SIP
WAC 173-400-171	Public involvement	9/16/2018	Revised	Revise in the SIP
	Except: WAC 173-400-171(3)(b) that says “or any increase in emissions of a toxic air pollutant above the acceptable source impact level for that toxic air pollutant as regulated under chapter 173-460 WAC”; and WAC 173-400 -171(12)	9/16/2018	Unchanged	Not in the SIP

Appendix B. Anti-backsliding (CAA §110(l)) demonstration for the alternative opacity standards in WAC 173-400-040(2)

What is the purpose of this document?

Ecology adopted new alternative visible emissions (opacity) limitations in WAC 173-400-040 that apply during the following short-term operation modes of sources:

- WAC 173-400-040(2)(a) for soot-blowing and grate-cleaning,
- WAC 173-400-040(2)(e) for planned startup or shutdown of hog-fuel or wood-fired boilers with dry particulates control, and
- WAC 173-400-040(2)(f) for refractories curing of boilers and lime kilns.

The federal Clean Air Act (CAA) §110(l) requires this anti-backsliding determination to demonstrate these alternative opacity standards are not going to interfere with the attainment and maintenance of the national ambient air quality standards, regional haze (visibility) goals, or any other federal CAA requirements.

What are the main findings of this demonstration?

This demonstration assesses the potential impacts from the implementation of these three alternative visible emission (opacity) standards set under the Ecology's General Regulations for Air Pollution sources (Chapter 173-400 WAC) adopted on August 16, 2018.

- Emission limitations for soot-blowing and grate cleaning:*** The alternative opacity standard for soot blowing and grate cleaning sets a more stringent standard of 40 percent to replace the exemption in the current rule (WAC 173-400-040(2)(a)) in the SIP. It does not change the allowed duration of a maximum of 15 minutes in every eight consecutive hours. Thus, the alternative standard potentially results in emission reductions from boilers that have opacity above 40 percent during soot blowing and grate cleaning events.
- Emission limitation for planned startup or shutdown of hog fuel or wood-fired boilers:*** Unlike soot blowing and grate-cleaning, the other two alternative opacity standards were conditional exemptions. However, the excess emissions during these periods are routinely excused from enforcement actions, provided the sources report the excess emissions in a timely manner and demonstrate the excess emissions were unavoidable as required under WAC 173-400-107(4).

Some of the hog-fuel and wood-fired boilers with dry particulate controls do not engage their dry particulate controls during startup and shutdown until the flue gas temperature in the control device is above the acid dew point. Operators cannot fully control particulate emissions until the flue gas reaches high enough temperature. This is a safety issue verified in the manufacturers' recommendations for effective and safe operation of the air pollution control devices. Under the terms of the rules in the SIP, Ecology considered the excess emissions during startup and shutdown of this sub-group of boilers unavoidable; and thus

excusable from enforcement actions, as long as the sources reported in a timely manner. Ecology did not consider such excess emissions during startup and shutdown events violations, as EPA highlighted it in the SSM SIP Call.

Ecology removed such exemptions in the updated WAC 173-400-109 that will replace WAC 173-400-107, which has deficiencies that EPA identified in the SSM SIP call. Instead, we set two compliance options of alternative emission standard: 40 percent opacity standard or work practice standard that require the use of clean fuel during startup or shutdown.

This alternative emission standard for startup and shutdown of hog fuel and wood-fired boiler standards is more protective to air quality because:

- WAC 173-400-109 removes the exemption to the unlimited (opacity and duration) excess emission, and WAC 173-400-040(2)(e) limits the opacity and the duration of startup and shutdown.
- The alternative emission standard is limited to hog-fuel or wood-fired boilers that use only dry particulate controls. All other sources are required to meet the otherwise applicable emission standard of 20 percent continuously, including during startup and shutdown.

c) ***Emission limitation for curing of new refractory materials in boilers and lime kilns.***

Similar to startup and shutdown, we exempted excess emissions during scheduled maintenance that includes drying and curing of new refractory materials in boilers and lime kilns under WAC 173-400-107(5). The manufacturer recommend drying and curing of the new refractory materials at a gradually increasing temperature to ensure adhesion between the refractories and the metallic wall of the boiler. As explained in (b) above, the dry particulate controls are not operational until the temperature is above acid-dew point, as manufacturer recommendation. This makes the excess emission during drying and curing of refractories at lower temperature unavoidable, and thus excusable from enforcement actions.

Ecology removed this exemption to unlimited excess emissions (opacity and duration) during refractory curing in WAC 173-400-109 to replace WAC 173-400-107. Instead, we adopted alternative emission standard that limits the visible emission to 40 percent opacity, and the duration to 36 hours. Thus, the alternative emission standard is more stringent than the current exemption.

Ecology assesses that all three alternative opacity standards set limitations that are more stringent and reduce emissions. The following are the factors that led to this conclusion:

- The state is in attainment for PM_{2.5} and PM₁₀ NAAQS
- The allowed duration (four hours) of startup and shutdown is significantly shorter than the 24-hours averaging time in the PM_{2.5} / PM₁₀ NAAQS, and thus the chance of potentially high PM emission during startup/shutdown reduces significantly when it is distributed over 24 hours.

- The frequency of startup and shutdown is relatively low (three cold startups per year for facilities that we reviewed) compared to the allowed number of exceedances of the PM_{2.5} NAAQS. The PM_{2.5} NAAQS allows the daily average PM_{2.5} concentrations in the ambient air to be above 35 µg/m³ the equivalent of seven times (days) per year, averaged over three years.
- The alternative opacity standards are reasonably stringent, as explained in section IV of this appendix.
- The number of facilities to benefit from these alternative opacity standards are limited.

Similarly, even if one considers the alternative opacity standard for refractory curing as a relaxation of the 20 percent opacity standard in the SIP, Ecology determined that the excess emissions during refractory curing will not contribute to the PM_{2.5} / PM₁₀ NAAQS violation (please see the details in the next sections). The refractory curing occurs once every 3-5 years or longer. Thus, the resulting number of exceedance of the 24-hour PM_{2.5} NAAQS due to refractory curing once in every 3-5 years. This is very low below the allowed seven exceedance per year for the PM_{2.5} NAAQS. Thus, we concluded the alternative opacity standard for refractory curing do not interfere with the attainment of the PM_{2.5} NAAQS.

Ecology also determined that these alternative opacity standards do not interfere with the attainment and maintenance of PM₁₀ NAAQS. We estimated the maximum average PM_{2.5} concentration possible during the four-hours of startup/shutdown was assumed to be 113 µg/m³. We determined this by using the peak ambient PM_{2.5} concentration at the Darrington monitor, which was caused by wildfire smoke on August 22, 2015. The National Emissions Inventory (NEI) (2014) data indicates that the particulate emission from wood burning boilers is mostly (80%) PM_{2.5} (see table 8 in Appendix B). If we assume that the emissions ratio of PM_{2.5} to PM₁₀ (80%) is also valid for ambient concentrations, then the maximum average PM₁₀ concentration during the four-hours of startup and shutdown would be 141 µg/m³, which is significantly lower than the 24 hour average PM₁₀ NAAQS concentration threshold (150 µg/m³). Furthermore, the daily NAAQS concentration threshold for PM₁₀ (150 µg/m³) is approximately four times more than PM_{2.5} (35 µg/m³). Given that the ambient PM_{2.5} concentrations rarely exceed 35 µg/m³ in non-wildfire situation, the likelihood of PM₁₀ exceeding 150 µg/m³ due to hog-fuel boilers is low. Thus, it is safe to conclude that the excess emissions during startup and shutdown of hog-fuel boilers and refractory curing do not interfere with the PM₁₀ NAAQS.

Why is Ecology establishing the alternative opacity limitations?

In the SSM SIP Call (USEPA, 2015), the EPA identified WAC 173-400-107 as substantially inadequate. In addition, EPA specified which SSM policy that states need to comply with. The EPA SSM policy and CAA §302(k) require that SIP approved emission limitations must apply continuously, at all times, without exemption. We have removed the exemptions for excess emissions during startup, shutdown, and scheduled maintenance under the updated WAC 173-400-109. Instead, we adopted alternative visible emission (opacity) standards to meet EPA's SSM policy and the CAA requirements according to the interpretation supported by recent court decisions.

WAC 173-400-040(2)(a) provides an exemption to the 20 percent opacity requirement during soot blowing and grate cleaning for a maximum of fifteen minutes in any eight consecutive hours, which is contrary to EPA SSM policy and CAA§302(k) that require emission limitations to apply continuously. In the current SIP approved state regulation, opacity during soot blowing and grate cleaning can be as high as 100 percent for a maximum of fifteen minutes in any eight consecutive hours. We removed this exemption, and set a tighter opacity standard of 40 percent, without changing the duration, i.e., maximum of fifteen minutes in any eight consecutive hours.

The SIP approved WAC 173-400-107 excuses excess emissions during startup, shutdown and scheduled maintenance, as long as the sources report the excess emissions in a timely manner and provide adequate demonstration that the excess emissions are unavoidable. This is contrary to the current EPA SSM Policy. As will be explained in IV(c) of this appendix, we consider the excess emissions during these specific startup, shutdown and maintenance periods unavoidable, and thus we do not consider them a violation of the emission standard of 20 percent opacity or any other emission limitation in the SIP.

Some sources cannot meet the applicable emission standards in the SIP during some short-term (transient) modes of operations. The current EPA's SSM policy does not allow excuses from penalties (through WAC 173-400-107) for predictable modes of operations like startup, shutdown and scheduled maintenance. Instead, the SSM policy allows states to establish alternative emission limitations for sources to meet during periods of startup, shutdown, and other identified periods with emissions that can exceed the emission limit in the SIP. Accordingly, Ecology set alternative opacity limitations for the following specific modes of operations:

- Soot blowing or grate cleaning of hog-fuel or wood-fired boilers, WAC 173-400-040(a)(ii)
- Curing of new refractory materials in kilns, furnaces and boilers, WAC 173-400-040(2)(f)
- Startup and shut down of hog fuel boilers with dry particulate controls, WAC 173-400-040(2)(e)

What is the potential impact of implementing these alternative visible emission standards on the attainment of PM_{2.5} & PM₁₀ NAAQS?

Opacity is a useful indicator of the particulate matter (PM) concentration in the stack gas. In most cases where directly emitted particulates causes an increased opacity, one can assume that if the opacity is lower, the particulate matter emissions (on mg/dscm or grains/dscf basis) will also be lower. Since there is no precise correlation between opacity and particulate matter concentration that we can apply to hog-fuel boilers and wood-fired boilers (USEPA, 2015), this demonstration uses two weight of evidence type approaches to show that the three alternative visible emissions (opacity) standards changes do not cause violation of the PM_{2.5} and PM₁₀ NAAQS.

The first approach focuses on analyzing the air quality impacts of the potential changes in emissions in terms of the:

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- Extent of the opacity changes required compared to the current level.
- Frequency and duration of the occurrence of the excess emission events affected by the alternative opacity standards.
- Number of sources the alternative opacity standards affects.
- Current NAAQS attainment status and PM_{2.5} concentrations in the most sensitive area.

Ecology determined that all of the three alternative visible emissions standards reduces the overall particulates emissions, because:

- They set more stringent limitations when compared to the current practices allowed in the rule and in the SIP.
- In spite of the changing alternative opacity standards, none of the criteria pollutant emissions standards or pollutant limits in permits are changing.

The second approach focuses on summarizing the potential changes in emissions in terms of the effect of removing the current exemption and WAC 173-400-107 from the SIP that excuses excess emissions during startup, shutdown and scheduled maintenance.

To understand the extent of the potential changes in particulate emissions due to these alternative opacity standards, we analyzed each of them separately below and summarized the changes in table 5.

a) Soot-blowing and grate cleaning, WAC 173-400-040(2)(a)

WAC 173-400-040(2)(a) in the SIP provides a carte blanche exemption to the 20 percent opacity requirement during soot blowing and grate cleaning for a maximum of fifteen minutes in any eight consecutive hours. Under the exemption, the visible emission (opacity) during soot blowing and grate cleaning can be up to 100% for the entire 15 minute period and not be considered a violation.

As required in the current EPA's SSM policy and CAA §302(k), Ecology removed this exemption and adopted an alternative opacity standard that applies during soot blowing and grate cleaning at 40 percent without changing the duration allowed for soot-blowing and grate-cleaning, i.e., maximum of 15 minutes in any eight consecutive hours. The alternative opacity standard of 40 percent that we are proposing for inclusion in the SIP is more stringent than the current exemption in the SIP allowing unlimited (up to 100 percent) opacity.

This alternative opacity standard affects all boilers that have or may have visible emission higher than 40 percent opacity during soot blowing, and solid fuel burning boilers with visible emission higher than 40 percent opacity during grate cleaning. The specific types of sources that we expect to benefit from this alternative standard are those small units equipped with only a multiclone as their particulate control. This 40 percent opacity standard (using Ecology Method 9A that use 3-minutes in one hour) for soot blowing and grate cleaning is reasonably stringent than the 60 percent opacity (using EPA Method 9 that use 6-minutes average) set in 40 CFR 49.124 that applies to Indian Reservations in EPA region 10.

Ecology assesses that the alternative emission limitation for soot blowing and grate cleaning results in emissions reduction because:

- It is a more stringent opacity standard compared to the 100 percent opacity limit (exemption) in the current rule in the SIP, and
- The total duration of applicability of this more stringent opacity standard is the same as the allowed duration in the current rule in the SIP i.e., about 250 hours or more than 10 days a year as shown in table 5.

The alternative visible emission standard for soot blowing and grate cleaning reduces particulates emissions from all boilers with visible emissions above 40 percent opacity. However, the emission reduction potential of this alternative emission standard might be relatively small, due to the fewer number and smaller sizes of facilities that may use this alternative standard.

b) Curing of refractory material in boilers and lime kilns, WAC 173-400-040(2)(f)

Refractory curing is part of the initial startup of a new built boiler or kiln, and a periodic activity during the life of the unit. The refractory material lining in the firebox or kiln wears away with use of the boiler or kiln. When the refractory material has eroded enough, the owner must replace it or risks failure of the boiler or kiln's structure. The refractory material is 'fire brick', a special heat resistant brick. Installation of the refractory material uses a fire resistant mortar, which is usually wet when applied.

Operators apply heat to the new refractory materials and other critical metal components in a controlled manner to draw the entrained water out of the mortar and refractories. This strengthens the chemical bond between the refractories the critical metal components. Operators slowly increase the heat in the unit until the unit is at its normal operating temperatures. During parts of this slow heating process, but before the unit is at the normal operating conditions, there will be periods of increased opacity due to fuel combustion in the unit at lower temperatures.

According to the current rule in the SIP, i.e., WAC 173-400-107(5), we excused the visible emission during curing of new refractory materials installed in boilers, kilns and furnaces from enforcement action, as long as the sources report the excess emission (above 20 percent opacity) in a timely manner and adequately demonstrate that is the excess emissions were unavoidable. We traditionally considered excess emissions from refractory curing unavoidable, if the facility could not operate the installed air pollution control devices during part or all of the refractory curing process.

However, the current EPA's SSM policy does not allow such excuses of excess emissions from enforcement action. Instead, the SSM policy recommends establishing alternative opacity limitations to regulate such unavoidable excess emissions above the steady state emission standard in the SIP. Accordingly, Ecology is set an alternative emission standard of 40 percent opacity for a maximum of 36 hours, during refractory curing. The standard also requires sources to use clean fuels, follow manufacturer's recommendations, and engage

emission controls at the earliest possible time to minimize emissions during the curing process.

We determined that 36 hours duration is sufficient based on manufacturer instruction. We have also reviewed EPA's Instructional Manual for Clarification of Startup in Source Categories Affected by NSPS (1979) that evaluated the time it allowed for various units in different NSPS categories to perform refractory curing. Noting that our proposal only affects boilers and kilns, this EPA document indicates that refractory curing at lime kilns associated with lime manufacturing and kraft pulp mills would take 3 – 5 days, while for large MSW incinerators, curing would take 2 – 3 days and for petroleum refinery process heaters curing would take 'a number of days'.

Ecology concluded that this alternative opacity standard reduces particulate matter emissions during refractory curing for the following reasons:

- It limits the visible emission at 40 opacity, as opposed to the current rule (WAC 173-400-107(5)) in the SIP that allowed up to 100 percent opacity, provided the source sufficiently demonstrate the excess emission was unavoidable
- There will be better combustion characteristics and lower emissions during refractory curing, due to the new requirement to use clean fuels (listed in 40 C.F.R. Part 63 subpart DDDDD).
- It requires sources to use manufacturer's instruction and engage pollution control devices as soon as possible during the refractory curing.

While this emission standard covers many sources, the occurrence is infrequent; and thus the emission reduction is relatively small.

c) Startup and shut down of hog fuel and wood fired boilers with dry particulate controls, WAC 173-400-040(2)(e)

Similar to the refractory curing analyzed above, the current rule (WAC 173-400-107(4)) in the SIP, excuses excess emissions during startup and shutdown, as long as the sources report the excess emission (above 20 percent opacity) in time and adequately demonstrate that it is an unavoidable emission.

There are hog-fuel boilers and wood-fired boilers that use add-on dry particulate matter controls (multiclones)⁵, dry electrostatic precipitators (ESPs) and baghouses) that have excess emissions during startup and shutdown. The boiler operators do not normally engage these air pollution control devices until the flue gas temperature in the ESP or baghouse is

⁵ Multiclones are devices consisting of an array of small diameter cyclones. These devices are installed between a wood fired boiler and any following control device. Their primary purpose of the device is to collect unburnt fuel and hot cinders and reinject them into the boiler firebox to complete combustion. In conjunction with an ESP or baghouse, a multiclone also reduces the grain loading on the baghouse or dry ESP may reduce the chance of hot embers entering the baghouse causing a fire. There are installations of small hog fuel boilers that utilize a multiclone as its only particulate control device.

above the acid dew point. Those small hog-fuel or wood-fired boilers that only have a multiclone for control have reduced particulate removal efficiency during startup due to low flue gas flows. These units are usually too small for cost effective installation of an additional control device.

These sources do not normally engage their dry ESPs and baghouse because the equipment manufacturers recommend this operating practice to ensure the safe operation, and mechanical and electrical integrity of these air pollution control devices (Institute of Clean Air Companies, 2015). The consequences of engaging dry electrostatic precipitator (DESP) before the flue gas temperature gets above the acid dew point temperature include:

- Decline of particulate collection efficiency due to the fouling of the electrodes,
- Potential spikes in particulate matter, and
- Potential combustion and explosion due to unburned combustibles in the flue gas.

Similarly, engaging a baghouse at low temperature results in increasing accumulation of moisture and ash particle on the filter bag surface. This accumulation quickly builds up and plugs the filter bags. Because of the nature of the particles and the presence of moisture and higher temperature, the accumulated ash is not easy to remove. Moreover, the acid condensation due to the operation of the baghouse below the acid dew point temperature can lead to premature failure of the filter bags and the parts of the structure that hold them up.

The SSM SIP Call recognizes these practices and the related higher emissions during startup and shutdown as well as other EPA regulations (USEPA, 2015; USEPA, 2017) issued or revised after the SSM SIP Call. In these documented instances, we considered the excess emissions during startup and shutdown of hog-fuel and wood fired boilers with these dry particulate matter controls unavoidable. Based on this, we excused them from enforcement actions if the sources report the excess emissions in a timely manner, according to the current rule (WAC 173-400-107(4)) in the SIP.

However, current EPA SSM policy does not allow such exemptions. Thus, Ecology removed that exemption, and set an alternative visible emission standard under WAC 173-400-040(2)(e). We will use this alternative standard to accommodate this subset of hog-fuel boilers and wood fired boilers in Washington that currently and historically have excess emissions during startup and shutdown, and we have previously excused through WAC 173-400-107(4) in the SIP. The alternative emission standard provides the following two options for a source to use to demonstrate compliance with the alternative emission standard:

- a) Meet a maximum of 40 percent opacity, or
- b) Follow a specified work practice standard that requires the use of clean fuel during startup and shutdown.

There are about forty major sources and twenty more non-major wood-fired or hog fuel boilers in the state. Many of these units currently use wet emission controls, which this alternative standard does not cover. Moreover, some of these boilers with dry particulate

controls may not need to use this alternative standard as they are subject to the 20 percent standard during startup and shutdown by terms of their NSR permits, or already meet the 20 percent opacity limit during startup and shutdown. Ecology determined that these hog fuel/wood fired boilers that meet the 20 percent opacity during startup and shutdown, were not doing so to reduce their opacity during the startup and shutdown, but to meet other requirements. Their meeting the 20 percent opacity during startup and shutdown is side benefit of complying with other federal and state requirements not affected by this alternative visible emission standard. As a result, Ecology concludes such boilers will continue to meet the 20 percent opacity during startup and shutdown, and we don't expect an emission reduction or increase due to this alternative emission.

However, we would require the hog-fuel and wood-fired boilers with dry particulate controls that are not meeting the 20 percent opacity standard during startup and shutdown, would be required to comply with one of the two options (40 percent opacity or use clean fuel) in WAC 173-400-040(2)(e) that we are proposing for inclusion the SIP. We have reviewed the startup and shutdown reports of some hog-fuel boilers that include the opacity and duration data during startup, shutdown, and malfunctions. Some of these plants have opacity that goes up to 100 percent during these periods, especially during cold startups after a relatively longer maintenance shutdown. We currently excuse this from enforcement action under WAC 173-400-107(4). Some of the hog-fuel boilers in this subgroup provided detailed opacity data that we have reviewed. They have up to three planned shutdowns per year that are accompanied with cold startups, and their opacity readings were well above forty percent for up to two and half hours. They also had as many as four unplanned shutdown or warm startup in a year with a relatively lower opacity and shorter duration.

The hog-fuel or wood-fired boilers not meeting the 20 percent opacity will continue to make some operating changes during startup and shutdown to reduce their visible emissions during startup and shutdown. This may include the use of clean fuels, and using startup and shutdown procedures that result in engaging their dry emission controls earlier in the startup process and disengaging them later in the shutdown process.

The emission reduction from alternative emission standard for startup and shutdown is limited to a small group of hog-fuel and wood-fired boilers with dry particulate controls that currently have higher visible emissions (especially those above 40 percent opacity) during these periods. Based on the opacity data we reviewed from these hog-fuel/wood-fired boilers, the proposed opacity limits is reasonably stringent. This will result in emission reductions from this sub-group of hog-fuel and wood-fired boilers. During the rulemaking process, we had public comments that explained the challenge to meet this alternative standard (both 40 percent opacity and use of clean fuel), which may also indicate the stringency of the alternative emission standard.

These alternative limitations have more stringent (40 percent) opacity requirements than the current unconditional exemption (for soot blowing and grate cleaning) and de-facto conditional exemptions (for startup, shutdown and scheduled maintenance in WAC 173-400-107) with easier

conditions to meet. Therefore, Ecology expects all the three alternative visible emission standards to reduce particulates emissions by establishing more stringent opacity limits to replace the conditional and unconditional exemptions from meeting the 20 percent opacity standard under the current rule in the SIP.

Table 4 Summary of the changes in the alternative visible emission (opacity) standards

Description	Soot blowing and grate cleaning	Refractory curing	Startup and shutdown
Rule we are proposing to include in the SIP	WAC 173-400-040(2)(a)	WAC 173-400-040(2)(f)	WAC 173-400-040(2)(e)
Proposed Standard requirements	<ul style="list-style-type: none"> ○ 40 percent opacity ○ Maintain records 	<ul style="list-style-type: none"> ○ 40 percent opacity ○ Use clean fuels ○ Maximum 36-hrs ○ Use manufacturer’s instructions 	<ul style="list-style-type: none"> ○ 40 percent opacity ○ Until the start of supplying useful thermal energy ○ Maintain records
Alternative requirements in the proposed standard			<ul style="list-style-type: none"> ○ Use clean fuels ○ Operate all CEMS ○ Engage controls in 1-hr of feeding non-clean fuel ○ Max. for four hours after the start of supplying useful energy ○ Startup & shutdown plan
Current standard in the SIP	No limit	Excusable if sources demonstrate the excess emissions as unavoidable, WAC 173-400-107(5)	Excusable if sources demonstrate the excess emissions as unavoidable, WAC 173-400-107(4)

Table 5: Potential effect of the alternative opacity standards in terms of total duration of excess emissions (We changed the emission limits from the current unlimited opacity to 40 percent opacity)

Description	Soot blowing and grate cleaning	Refractory curing	Startup and shutdown
Rule we are proposing to include in the SIP	WAC 173-400-040(2)(a)	WAC 173-400-040(2)(f)	WAC 173-400-040(2)(e)
Sources affected by the proposed rule	Boilers that have opacity above 40%	All boilers and lime kilns that have opacity	Hog-fuel/wood-fired boilers that have dry particulates controls only, and opacity

Description	Soot blowing and grate cleaning	Refractory curing	Startup and shutdown
	during soot blowing	above 40% during refractory curing	above 40% during startup/shutdown.
Duration per event	Maximum 0.25-hr	Maximum 36-hrs	About 4-hrs
Frequency per year	1005 events per year (= 3 events/day x 335 days/year)	Once in 3-5 years	Planned: max. 3 per year Unplanned max. 4 per year
Total duration per year	251-hrs /year (= 1005 events. x 0.25-hr)	Max. 36-hrs/year	Max. 28-hrs/year (= 4-hr x 7 events max.)

What if some of these alternative visible emission standards are considered relaxation of the opacity standard in the SIP? What is the impact on the attainment of PM_{2.5}/PM₁₀ NAAQS?

The alternative opacity standards refractory curing, and startup and shutdown of hog-fuel and wood-fired boilers could be considered relaxation of the 20 percent opacity standard in the SIP, because there is no unconditional exemption stated in the rule for these periods.

However, as explained in the previous section, Ecology concludes all the three alternative visible emissions standards will result in reducing potential particulates emissions during the defined modes of operations, because the alternative standards are ultimately more stringent

- We are replacing the current unconditional exemption of excess emission during soot blowing and grate cleaning under WAC 173-400-040(2)(i) with the 40 percent opacity standard for the same durations of 15 minutes in eight consecutive hours under WAC 173-400-040(2)(a)(ii).
- We are replacing the current the conditional (rather de-facto) exemption of excess emissions during startup, shutdown, and scheduled maintenance under WAC 173-400-107(4) and (5) with more stringent alternative emissions standards of:
 - 40 percent opacity for four-hours, or use of work-practice standard that require the use of clean fuels during startup and shutdown of hog fuel and wood-fired boilers, and
 - 40 percent opacity standards and use of clean fuels during refractories curing of boilers and lime kilns.

As a result, we expect PM emissions to reduce, not increase as facilities work to avoid enforcement for excess emissions during these events. Under the standard practice, Ecology considers these excess emissions unavoidable, and thus excusable from penalties if the source report to the permitting agency in a timely manner.

We are not changing any of the criteria pollutant emissions standards and limits in the permits. Thus, Ecology is not allowing an increase in overall particulates emissions due to the implementation of these alternative visible emissions standards.

This demonstration focuses on evaluating air quality impact during the short-term excess emissions periods of refractory curing, and startup and shutdown of hog-fuel boilers with dry particulates controls. As these two alternative opacity standards do not apply during the same period, i.e. the periods of applicability of the two alternative opacity standards do not overlap⁶, the analysis focuses on showing whether or not the highest emissions allowed in each of the proposed alternative standards do not interfere with the attainment of the PM_{2.5} and PM₁₀ NAAQS.

Ecology concludes that the short-term excess emissions during refractory curing and startup and shutdown of hog-fuel boilers with dry particulate controls do not interfere with the attainment of PM_{2.5} and PM₁₀ NAAQS because of the following factors:

- Currently, Washington does not have any nonattainment area for any criteria pollutants, and the ambient air quality in the state is improving in spite of the economic growth in the state. During 2014-2016 period, the highest 24-hour PM_{2.5} design value in the state where hog-fuel or wood-fired boilers are operating is 30 µg/m³, which is lower than the 35 µg/m³ NAAQS (Appendix B). We measured this in the Darrington area.
- In the PM_{2.5} and PM₁₀ maintenance areas, the main source of particulates pollution are residential wood burning during the winter season and fugitive dust emissions (refer to the EPA approved maintenance plans). In 2014, the National Emission Inventory (NEI) for Washington shows residential wood as the main (88 to 89 percent) source of PM_{2.5} and PM₁₀ pollution, not point sources (Appendix A).
- The adopted alternative visible emissions standard of 40 percent opacity is significantly stringent as demonstrated below.
 - As an alternative to the 40 percent standard for startup and shutdown of hog-fuel/wood-fired boilers with dry particulate controls, Ecology provided an option equivalent to the boiler MACT emission limitation for startup. This may be the preferred option for the facilities that have been reporting excess opacity (above 20 percent) emissions during startup and shutdown. Thus, we consider the 40 percent

⁶ In a boiler where the refractory had been replaced, we expect the owner to invoke the refractory curing approach for the cold startup of the boiler, rather than the startup requirements.

opacity standard more difficult to meet for these facilities, and thus more stringent than the boiler MACT standard.

- We still have a couple of sources that have concern that they may not be able to comply with the 40 percent opacity standard. We assess that they can make some improvements by changing their fuel or procedures during startup and shutdown.
- We also concluded that the 40 percent opacity standard (using Ecology Method 9A that use 3 minutes in one hour) is reasonably stringent. We compared this to the 60 percent opacity standard (using EPA Method 9 that use 6 minutes average) in 40 CFR 49.124 that applies to Indian Reservations in EPA Region 10, even though the measurement methods are not the same. We have also seen EPA's approval of 60 percent opacity standard for startup and shutdown for another state in 2014, though the opacity measurement method was different.
- The rule (WAC 173-400-040) sets general standards for maximum emissions, but the permits are generally more stringent than the rule. Moreover, the emission limits in the permits are generally established based on BACT with ambient air quality impacts determined by air quality modeling that considers the specific air quality conditions in the area the source is located. Such permit limits undergo a thorough public comment process. The change in the rule does not imply a direct increase in emissions of criteria pollutants and violation of NAAQS, as there is another layer of review to maintain the NAAQS.

Ecology concludes that the excess emissions during refractory curing do not interfere with the attainment of PM_{2.5}, because it occurs infrequently for any given boiler or kiln. This occurrence of higher visible emission, once in 3-5 years or longer interval, is not significant to the attainment of the PM_{2.5} NAAQS that allows up to seven exceedances a year (based on three years average data) without violating the PM_{2.5} NAAQS.

Similarly, there is very little risk of violating the particulate matter NAAQS during the startup and shutdown of hog-fuel and wood-fired boilers with dry particulate controls because of the short-term increase in particulate matter emissions due to implementing the alternative opacity standard. The following factors reduce the risks of violating of the PM_{2.5} and PM₁₀ NAAQS:

a) **Relatively short duration of startup and shutdown events compared to the 24-hours averaging time in the PM NAAQS:**

The maximum duration of excess emissions during startup and shutdown is about four hours (WAC 173-400-040(2)(e)(iii)(B)). On the other hand, the averaging time for both the PM_{2.5} and PM₁₀ ambient air quality standards is 24 hours. Therefore, the potentially higher particulates concentrations that occur during these four hours of startup or shutdown is averaged with the other 20 hours with lower PM_{2.5} / PM₁₀ concentrations to calculate the daily average PM_{2.5} / PM₁₀ concentration over the 24 hour period. Thus, the daily average PM_{2.5} and PM₁₀ concentrations increases by a maximum of 16.7 percent of the PM concentrations increase during the four hours of startup/shutdown (last row of the table 6).

Table 6 Example to show the effect of higher PM concentration during startup/shutdown on the daily average PM concentration

Description	Duration (averaging time) in hours	Average PM concentration in the ambient air during the event in $\mu\text{g}/\text{m}^3$
Startup or shutdown	4	130
The rest of the day other than startup or shutdown	20	10
The whole day	24	$30 \mu\text{g}/\text{m}^3 = \frac{(130 \mu\text{g}/\text{m}^3 \times 4\text{hrs}) + (10 \mu\text{g}/\text{m}^3 \times 20\text{hrs})}{24 \text{ hrs}}$
Effect of startup or shutdown in the daily PM concentration		16.7% of the concentration difference between the two periods, $20 = \frac{(130-10) \times 4 \text{ hrs}}{24 \text{ hrs}}$

Note: The 4-hours average PM concentration of $130 \mu\text{g}/\text{m}^3$ is taken as an example. The 4-hour average PM concentration is not expected to be this high due to excess emissions at the adopted alternative opacity standard of 40 percent for startup, shutdown or refractories curing.

The $130 \mu\text{g}/\text{m}^3$ of 4-hours average $\text{PM}_{2.5}$ concentration used in the example in table 6 is higher than the maximum observed concentration in Darrington, which Ecology considers the relevant worst scenario in 2014-2016 period in Washington. In spite of such an exaggerated high 4-hours average $\text{PM}_{2.5}$ concentration in the ambient air during the four hours of startup/shutdown period, the daily average PM concentration ($30 \mu\text{g}/\text{m}^3$) is still below the NAAQS level ($35 \mu\text{g}/\text{m}^3$). The main reason for this is the 4-hours duration of such high $\text{PM}_{2.5}$ concentration during such events is small compared to the 24-hour duration used to assess the daily average $\text{PM}_{2.5}$ concentration. The other reason is that the average $\text{PM}_{2.5}$ concentration over the rest of the day (20 hours) is small, in this case $10 \mu\text{g}/\text{m}^3$. This shows that the high 4-hours $\text{PM}_{2.5}$ concentration during the four hours of startup/shutdown have the potential to push the daily particulate concentrations in the ambient air above the daily NAAQS concentration level ($35 \mu\text{g}/\text{m}^3$), only if it happens on days with already high background $\text{PM}_{2.5}$ concentrations.

To estimate the chance of such overlap (between startup/shutdown and days with high background $\text{PM}_{2.5}$ concentration) to happen, we used the daily $\text{PM}_{2.5}$ concentrations monitoring data over three years (2014-2016) at Darrington, which is the area with the highest daily $\text{PM}_{2.5}$ design value where hog-fuel and wood-fired boilers operate.

b) Frequency of startup and shutdown:

Based on documented experience, sources experience 2-3 planned shutdown and startups (that usually involve cold startups) per year. Excess emissions during shutdowns usually happens during cold startups. These cold startups occur less frequently. These sources, experience 3-4 additional startups a year, because of unplanned outages that include upsets/malfunction and electric power interruptions. Malfunction events depend on many factors including the age of the boiler. The startups following an unplanned outage usually involve warm startups that have shorter durations of relatively smaller excess visible emissions. These do not have significant effects when compared to the cold startups.

If we take only the planned startups and shutdowns (because they potentially cause the highest impacts on NAAQS), the frequency of occurrence of excess emissions (20 - 40 percent opacity) due to planned startup and shutdown is a maximum of three per year, i.e., 0.8 percent (=3 days with startup & shutdown events/365 days). However, if we include all the planned startups and unplanned shutdown and the startups following unplanned outages, the frequency of occurrence of startups and shutdowns become a maximum of 1.9 percent (=7/365). We will use these figures in the next step to estimate the probability of such events to overlap with high PM concentration days.

c) What is the chance of having higher PM concentration at Darrington?

Out of the 36 PM_{2.5} monitors in the state with design values for 2014-2016 period (table 9), the first two monitors with the highest PM_{2.5} concentration design values are not relevant for this demonstration. We recorded the highest PM_{2.5} design value on the monitor located on the Yakama Indian Reservation in Toppenish. While the state rule does not apply in this area, EPA has NAAQS compliance responsibility on behalf of the Yakama Nation for this monitor. We recorded the second highest PM_{2.5} design value on another monitor at Yakima County, which does not have hog-fuel and wood-fired boilers operating in the area. The area with the third highest PM_{2.5} design value (Darrington) has operational hog-fuel or wood-fired boilers in the area of the monitor. Design value is a statistic that describes the air quality status of a given location relative to the level of the NAAQS.

As explained in (a) above, the high opacity events of startup or shutdown may push the daily PM concentration to exceed the NAAQS level, only when the high opacity event overlaps with the day of higher PM concentration during the rest of the 20 hours. To estimate the chance of such overlap to happen, we need to estimate the chance of having higher daily PM_{2.5} concentrations at Darrington. We used the hourly and daily PM_{2.5} concentration monitoring data over three years (2014-2016) at Darrington (table 7). In table 7, the first five rows explain the basis for determination of the minimum daily average PM_{2.5} concentration that will cause exceedance of the daily PM_{2.5} concentration level in the NAAQS. Rows 6 to 9 demonstrate how the number of days that exceeded the daily PM_{2.5} concentration level in the NAAQS. The last two rows calculate the chance of exceeding daily PM_{2.5} concentration level in the NAAQS, if we consider only the cold (three) or all (seven) startups cause such exceedances.

The maximum four-hourly PM_{2.5} concentration that occurred at the Darrington PM_{2.5} regulatory monitor during the 2014-2016 period was 113.2 µg/m³, on August 22, 2015, which is likely caused by wildfire smoke including August 23, 2015 (Appendix C). We do not expect such high level of PM_{2.5} concentration in the ambient air due to the startup or shutdown of hog-fuel or wood-fired boilers. In spite of the unlikely occurrence of such high ambient PM_{2.5} concentration due to startup and shutdown of hog-fuel boilers, we assumed this as the highest potential average PM_{2.5} concentration. The minimum daily high PM_{2.5} background concentration (without the excess emissions during startup and shutdown) that is sufficient to push the daily PM_{2.5} concentration exceed the 35.49 µg/m³ is 17.7 µg/m³. Based on the 2014-2016 daily average ambient PM_{2.5} concentration data, we estimate the

chance of having daily PM_{2.5} concentration in the range of 17.7 - 35.49 µg/m³, before the effect of the startup/shutdown event as 6.4 percent (table 7). The days with PM_{2.5} concentrations above 35.49 µg/m³ have already exceeded the NAAQS concentration level, and thus are not affected by the highest PM_{2.5} concentration during startup and shutdown to exceed the NAAQS concentration level.

Table 7. The chance of higher PM_{2.5} day to overlap with the startup/shutdown of hog-fuel and wood-fired boiler based on 2014-2016 monitoring data at Darrington

Description	value	Remark
1. Average daily PM _{2.5} concentration in µg/m ³	6.5 µg/m ³	
2. Highest 4-hr average PM _{2.5} concentration in µg/m ³ . (We assumed this is due to startup/shutdown, though it is most likely caused by wildfire smoke)	113.2 µg/m ³ (August 22, 2015)	Such high ambient PM _{2.5} concentration is not expected due to startup/shutdown of hog fuel boiler emission at 40 % opacity.
3. Potential maximum increase in daily PM _{2.5} concentration due to the highest 4-hr PM _{2.5} concentration	17.8 µg/m ³	(=113.2-6.5)x(4hr/24hr)
4. The daily PM _{2.5} concentration measured	24.3 µg/m ³	
5. Minimum daily concentration that can push the daily PM concentration exceed the NAAQS level due to the highest 4-hr PM _{2.5} concentration.	17.7 µg/m ³	(=35.49 – 17.8) µg/m ³
6. Number of days with daily average PM _{2.5} concentration in the range of 17.7 - 35.49 µg/m ³	66 days	6.4% (=66 days/1028 days)
7. Number of days with daily average PM _{2.5} concentration above 35.49 µg/m ³	8 days	This is lower than the allowed number of days in the PM _{2.5} NAAQS in the three years, i.e. which could go up to 21 days without violating the PM _{2.5} NAAQS. Besides, several of the eight days were due to wildfire smoke.
8. Total number of days in the three years	1096 days	
9. Number of days with valid PM _{2.5} concentration data	1028 days	There were no valid monitoring data for 68 days
10. The chance of the high excess emission events (<i>only the three cold startup events per year</i>) to happen on the day of higher daily PM _{2.5} concentration (without the effect of the excess emissions events)	0.05% (Only three cold startup events per years)	This chance is estimated as the product of the two overlapping events, i.e., 0.052%= 0.82% x 6.4%. Thus, such overlap have the chance of happening once in five years (1920 days).
The chance of the high excess emission events (<i>all seven startup/shutdown events per year</i>) to happen on the day of higher daily PM _{2.5} concentration (without the effect of the excess emissions events)	0.12% (Here, we considered seven excess emission events per years)	Similar to the above calculated as 0.123%= 1.9% x 6.4%. Thus, such overlap have the chance of happening once in about two years (810 days). This is significantly lower than the allowed seven times a year (based on three years average) for the PM _{2.5} NAAQS.

d) What is the chance of the startup and shutdown events to happen on higher PM concentration days?

As explained in (a) in this section, the excess emissions during startup and shutdown of hog fuel boilers with dry particulate control can have the highest potential impact to push the daily PM_{2.5} concentrations above the NAAQS level (35.49 µg/m³). This occurs when the excess emission event overlaps with high ambient PM_{2.5} concentration without the excess emission. As explained in (b) of this section, if we take only the planned startups and shutdowns (because they potentially cause the highest impacts on NAAQS), the frequency of occurrence of excess emissions due to planned startup and shutdown is only three per year, i.e., 0.8 percent = 3/365. Similarly, as explained in (c), the chance of having daily PM concentration high enough (in the range of 17.7 – 35.49 µg/m³), which is sufficient to push the daily PM_{2.5} concentration above the NAAQS level (35 µg/m³), is 6.4 percent (table 7).

We estimated, the chance of these excess emissions during cold startups to overlap with the days that have higher daily average PM_{2.5} concentrations (range of 17.7 to 35.49 µg/m³) and push the daily PM_{2.5} concentration to exceed the 35 µg/m³ is to be 0.05 percent (table 7, the row before the last one). This means, the statistical frequency of such an overlap occurring is once every five years (to be more precise 1920 days). This is low compared to the allowed seven per year exceedance in the PM_{2.5} NAAQS.

Even assuming all the warm-startups and the unplanned shutdowns cause the same level of impact as the cold startups (which is unlikely), the chance of these events overlapping with the days that have higher daily average PM_{2.5} concentrations (range of 17.7 to 35.49 µg/m³) is remote. We estimate the odds of this occurrence pushing the daily PM_{2.5} concentration above the NAAQS level to be 0.12 percent (table 7, the last row). The statistical frequency of such an occurrence is once in more than 2 years (810 days), which is still very low compared to the allowed seven times a year for the daily average PM_{2.5} concentration to exceed the NAAQS level.

This demonstrates that the alternative opacity standard for startup and shutdown of hog-fuel and wood-fired boilers do not interfere with the attainment of the PM_{2.5} NAAQS, even if the alternative opacity standards for startup and shutdown are considered as relaxation of the 20 percent opacity standard in the SIP.

We reviewed multiple publications that showed that particulate emissions concentration from wood-fired boilers of at least 80 percent PM_{2.5}, before air pollution control devices capture part of these particulates (Güntert, Schmid, & Gaegauf, 2005; USEPA, 2003). Particulate control devices tend to have higher emission reduction rate for PM₁₀ than PM_{2.5}. This increases the relative concentrations of PM_{2.5} in the boiler emission after the controls. The 2014 emissions inventories for industrial boilers, commercial/institutional boilers and electric generation boilers in Washington burning biomass (table 8) also support this claim. In spite of this relatively higher concentration of PM_{2.5} in the boiler emissions, the daily concentration level of PM₁₀ NAAQS is four folds larger than PM_{2.5} NAAQS, i.e., 35 versus 150 µg/m³. This makes the risk of the daily PM₁₀ concentrations exceeding the concentrations level in the PM₁₀ NAAQS due to the

implementation of this alternative opacity standards for startup and shutdown of hog-fuel boilers relatively lower. Therefore, it is safe to conclude that the excess emissions during refractory curing as well as startup and shutdown of hog-fuel and wood-fired boilers do not interfere with the PM₁₀ NAAQS.

What is the potential impact of the alternative emissions limitations on the attainment of regional haze goals?

As explained in the 5-year regional haze progress report, Washington met or exceeded the visibility goals set for 2018 based on the visibility levels (daily average concentrations of haze-causing pollutant species) measured in Class I areas and the regional haze precursors emissions reductions during 2010-2014 periods (Newman, 2017). As explained in the previous sections, Ecology concludes that the three alternative visible emissions limitations do not increase emission of criteria pollutants. Thus, they do not interfere with the attainment of the state's visibility goals.

The alternative visible emissions limitations establish more stringent requirements than the current exemption during soot blowing and de-facto exemption (conditional exemption with easier conditions to meet) during refractory curing, and startup and shutdown the specific group of boilers. Even if we consider the emissions limitations for startup and shutdown, and refractory curing as relaxation of the 20 percent opacity limit in the SIP, the chance of the excess emissions during startup and shutdown of hog-fuel and wood-fired boilers to push the daily average PM_{2.5} /PM₁₀ concentrations above the NAAQS level is low. Therefore, the alternative emissions limitations do not interfere with the attainment of the state's visibility goals.

In addition, the alternative opacity limitations, if considered as surrogates for particulate emissions, would allow the emission of small amounts of additional fine PM. The revised IMPROVE formula for reconstructing light extinction assigns very small amount of the total visibility impairment to fine particulates when compared to nitrates and sulfates.

Does the alternative emission meets EPA's recommended criteria?

The alternative opacity limitation for startup and shutdown of hog fuel boilers and wood-fired boilers provide two options with which to comply during startup and shutdown: meet 40 percent opacity, or use clean fuel. Ecology determined that the alternative opacity limitation meets the following EPA's seven criteria recommended for the development of alternative emission limitations.

a) Is the alternative emission limitation applicable to narrowly defined source categories that use specific pollution control strategies?

The alternative opacity limitation is applicable to startup and shutdown of boilers that burn hog-fuel or wood, and use dry particulate matter controls (dry electrostatic precipitator, baghouse and multi-clone). Thus, the source category is narrow in terms of both fuel and pollution control strategies.

b) Is it technically infeasible to use the control strategies of this source category to meet the otherwise applicable emission limit during startup or shutdown periods?

As per manufacturer recommendation, these sources typically follow industry practice and do not use their dry particulate control devices during startup and shutdown until the stack gas temperature reaches the acid dew point. Operators do this to avoid risk of damaging the pollution control devices. Therefore, it is technically infeasible to use the control strategies to reduce the opacity of the boilers' emission during startup and shutdown of such boilers that use dry particulates controls

c) Does the alternative emission limitation requires that the frequency and duration of operation in startup or shutdown mode are minimized to the greatest extent practicable?

The alternative opacity limitation limits the duration of startup and shutdown to a maximum of 4 hours after the start of supplying useful thermal energy. However, it does not set the frequency of startup and shutdown. As these types of sources are mainly industrial or commercial boilers necessary to produce their products, the operators work to maximize the total operational hours and minimize downtime.

d) As part of the justification of the SIP revision, does the state analyzes the potential worst-case emissions that could occur during startup and shutdown based on the applicable alternative emission limitation?

The alternative opacity limitation has two options for use during startup and shutdown: 40 percent opacity, or use of clean fuel as identified in table 3 of 40 CFR 63.7500. In the 110(l) demonstration, we have used the highest PM_{2.5} 4-hours average concentration in three years, for the maximum frequency of seven startup/shutdown events per year, for the maximum allowed duration of four years. Even with these assumptions, the chance of such events causing or contributing to exceedance of the PM_{2.5} NAAQS concentration level was less than once in two years, which is lower than the allowed seven times in a year in the PM_{2.5} NAAQS.

e) Does the alternative emission limitation require that all possible steps are taken to minimize the impact of emissions during startup and shutdown on ambient air quality?

The alternative emission limitation has multiple requirements including operating the emissions monitoring system, using clean fuel, setting a time limit for engaging all pollution control equipment, and engaging particulate matter control within one hour of feeding non-clean fuel. Moreover, the alternative emission standard requires that the source develop and implement a startup and shutdown plan that, if followed, will minimize these periods, and so the impacts, according to manufacturer's recommendation. Compliance inspection staff are capable of determining if boiler operators are following the plan is being followed.

f) Does the alternative emission limitation requires that, at all times, the facility is operated in a manner consistent with good practice for minimizing emissions and the source uses best efforts regarding planning, design, and operating procedures?

The alternative emission limitation requires that the source develop and implement startup and shutdown plan that minimize these periods, and so the impacts, according to control device manufacturer's recommendation.

- g) Does alternative emission limitation require that the owner or operator's actions during startup and shutdown periods are documented by properly signed, contemporaneous operating logs or other relevant evidence?**

The alternative emission limitation includes detailed record keeping requirements to demonstrate compliance with the alternative emission limitations. The recordkeeping requirement includes date and time of the beginning and ending of the startup and shutdown events, the date and time of notification of the permitting authority, and with which of the two alternatives the source chose to comply.

Table 8. 2014 Emission Inventories of **PM_{2.5}** and **PM₁₀** in Washington (NEI, 2014)

SECTOR	PM_{2.5} Primary (Filt + Cond) Emissions TON	PM₁₀ Primary (Filt + Cond) Emissions TON	PM_{2.5} Primary (Filt + Cond) Emissions % of total PM_{2.5}	PM₁₀ Primary (Filt + Cond) Emissions % of total PM_{2.5}	Percent of PM_{2.5} out of PM₁₀ %
Agriculture - Crops & Livestock Dust	21,378	106,659	10.915	27.516	
Bulk Gasoline Terminals	0	0	0.000	0.000	
Commercial Cooking	2,745	2,958	1.402	0.763	
Dust from construction and roads	12,077	87,317	6.166	22.526	
Fires total	123,062	145,100	62.202	37.068	
Fuel Comb - Comm/Institutional - Biomass	541	626	0.276	0.161	87
Fuel Comb - Comm/Institutional - other than Biomass	25	28	0.013	0.007	90
Fuel Comb - Electric Generation - Biomass	30	42	0.015	0.011	71
Fuel Comb - Electric Generation - other than biomass	285	292	0.145	0.075	98
Fuel Comb - Industrial Boilers, ICEs - Biomass	1,174	1,316	0.599	0.339	89
Fuel Comb - Industrial Boilers, ICEs - Other than biomass	499	1,070	0.255	0.276	47
Fuel Comb - Residential - Wood	14,924	14,930	7.620	3.852	100
Fuel Comb - Residential - other than Wood	48	55	0.024	0.014	87
Fuel combustion total	17,526	18,358	8.948	4.736	95
Industrial Processes total	3,389	7,272	1.730	1.876	
Mobile total	8,536	12,084	4.358	3.118	
Solvent - Industrial Surface Coating & Solvent Use	1	1	0.000	0.000	
Waste Disposal	8,380	9,289	4.279	2.396	
Total	197,095	389,039	100	100	

Table 9. **PM_{2.5}** Design Values (DV's) in Washington in 2014 - 2016

PM_{2.5} Monitoring Site	Lat	Long	Type of Monitor	98th %ile 2014	98th %ile 2015*	98th %ile 2016	24hrDV 2016*
Toppenish Yakama Tribe	46.38024	-120.33266	Compliance	39.8	33.9 (42.3)	38.8	38 (40)
Leavenworth Evans St	47.59886	-120.6647	Non-Compliance	35.5	23.2 (26.2)	16.4	25 (26)
Twisp Glover St	48.36451	-120.12113	Non-Compliance	24.8	25.0 (57.8)	22.1	24 (35)
Puyallup 128th St	47.1401	-122.3004	Non-Compliance	24.3	19.9 (21.6)	16.4	20 (21)
Moses Lake Balsam St	47.1303	-119.2737	Non-Compliance	18.6	25 (28.9)	13.1	19 (20)
Tacoma Alexander Ave	47.2656	-122.385	Non-Compliance	20.9	19.5 (20.0)	17.7	19 (20)
LaCrosse Hill St	46.8153	-117.8739	Non-Compliance	13.7	23.4 (36.0)	9.6	16 (20)
Walla Walla 12th St	46.05881	-118.35147	Non-Compliance	13.9	17.2 (27.7)	16.2	16 (19)
Ritzville Alder St	47.128	-118.3819	Non-Compliance	13.3	25.7 (32.6)	9.0	16 (18)
Mesa Peplot Way	46.5754	-119.0021	Non-Compliance	13.7	21.5 (23.6)	12.3	16 (17)
Rosalia Josephine St	47.23136	-117.36856	Non-Compliance	13.3	24.2 (28.0)	10.9	16 (17)
Wellpinit Spokane Tribe	47.88528	-117.98865	Non-Compliance	16.0	15.3 (37.1)	10.7	14 (21)
Yakima 4th Ave	46.59495	-120.51228	Compliance	29.2	32.3	30.6	31
Darrington Fir St	48.2468	-121.6031	Compliance	30.5	28.3	31.0	30
Marysville 7th Ave	48.054315	-122.171529	Compliance	27.2	34.7	22.3	28
Tacoma L Street	47.18631	-122.45154	Compliance	29.7	32.8	22.2	28
Vancouver NE 84th Ave**	45.64336	-122.58737	Compliance	26.7	33.3	23.6	28
Kent Central & James	47.38614	-122.23195	Compliance	21.5	26.2	18.4	22
Wenatchee Fifth St	47.43061	-120.34195	Non-Compliance	29.7	17.2	17.2	21
Lacey College St	47.029396	-122.821548	Non-Compliance	24.4	19.4	16.9	20
Lynnwood 212	47.8064	-122.3167	Compliance	20.8	21.4	17.6	20
Bellingham Yew St	48.76278	-122.44028	Compliance	17.5	19.0	12.1	16
Chehalis Market Blvd	46.66409	-122.96732	Non-Compliance	16.3	19.4	12.9	16
Longview 30th Ave	46.139443	-122.961944	Non-Compliance	17.0	17.4 (18.3)	13.9	16
Seattle Beacon Hill	47.5682	-122.3086	Compliance	15.4	17.6	13.5	16
Shelton W Franklin	47.21355	-123.10081	Non-Compliance	16.4	15.0	13.3	15
Pullman Dexter SE	46.7244	-117.18014	Non-Compliance	15.3	17.1	10.8	14
Anacortes 202 O Avenue	48.52059	-122.61428	Compliance	13.7	14.0	12.6	13
Dayton W Main St	46.318	-117.985	Non-Compliance	14.5	13.4 (14.1)	10.7	13
Port Townsend San Juan Ave	48.12919	-122.77897	Non-Compliance	16.1	13.1	10.3	13
Aberdeen Division St	46.97228	-123.83173	Non-Compliance	12.6	12.6	10.3	12
Bellevue Bellevue Way	47.600863	-122.148397	Non-Compliance	13.8	15.2	7.8	12
Bremerton Spruce Ave	47.592675	-122.62739	Compliance	12.1	13.3	9.8	12
Mt Vernon S Second St	48.4102	-122.3376	Non-Compliance	11.1	14.0	8.2	11

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North Bend North Bend Way	47.49022	-121.77278	Non-Compliance	12.6	14.4	7.5	11
Cheeka Peak	48.29786	-124.62491	Non-Compliance	5.5	7.1	4.6	6

Notes: Official DVs from FEMs and FRMs are in bold. Other values are pseudo-DVs from non-compliance monitors.

*** DVs at sites affected by 2015 wildfires were calculated with wildfire exceedances excluded. The original DV including wildfire exceedances is listed in parenthesis**

**** Vancouver DVs are estimates based on combined data from the Vancouver NE Vancouver Plaza Dr and Vancouver NE 84th Ave sites.**

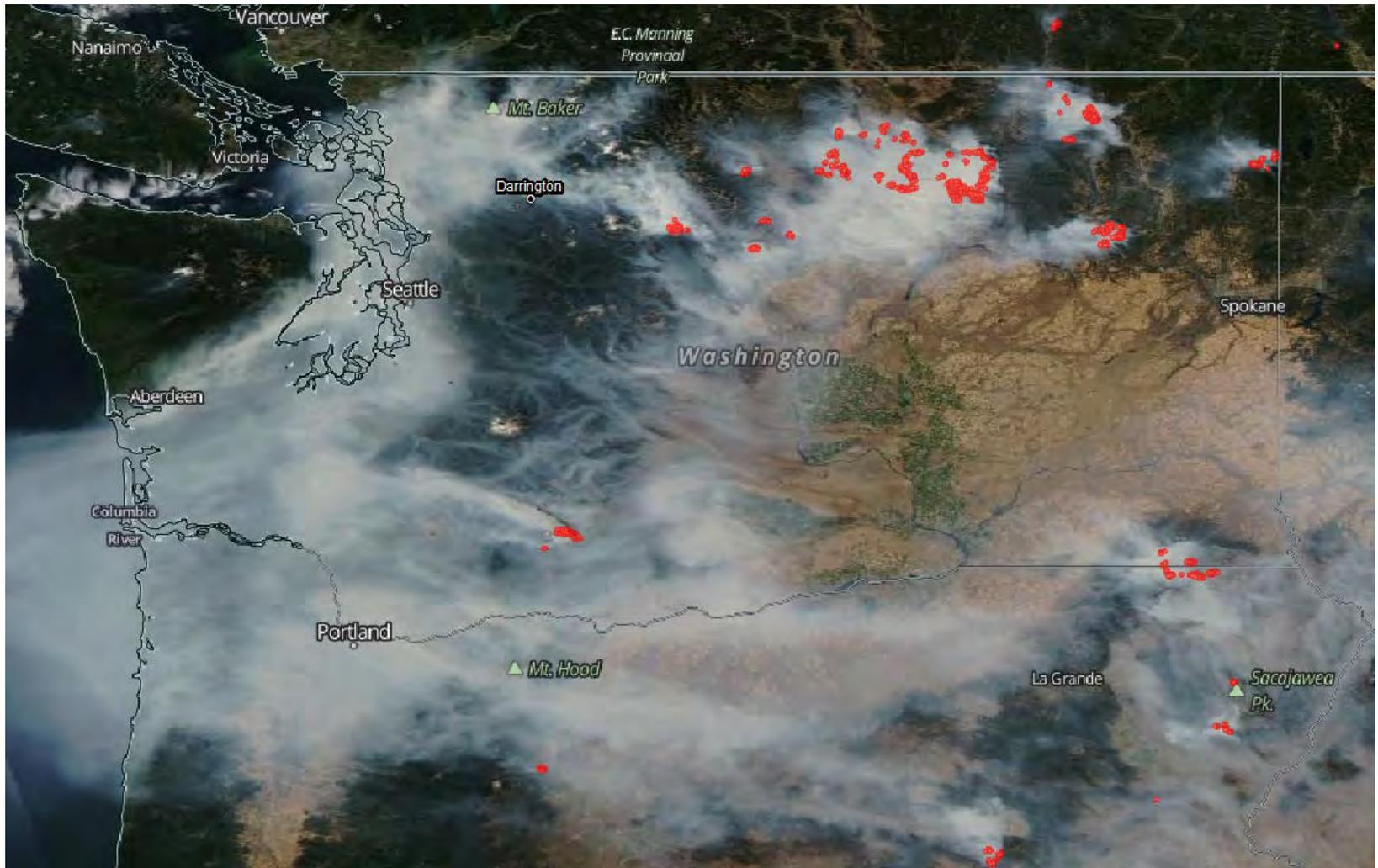


Figure 1. Aqua/MODIS image showing smoke over Washington on August 22, 2015, with fire locations shown in red.



Figure 2. Aqua/MODIS image showing smoke over the Darrington PM_{2.5} monitor on August 22, 2015 with fire locations shown in red.

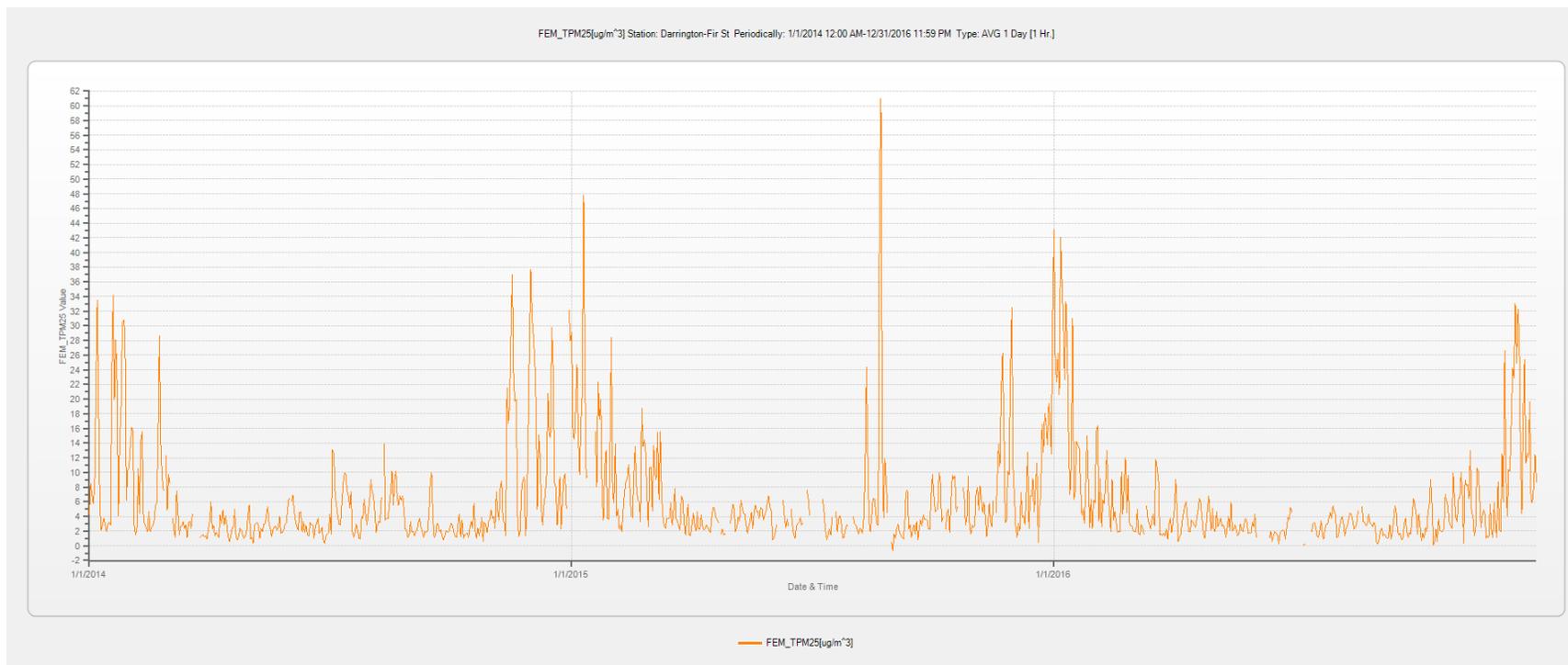


Figure 3. Daily average PM_{2.5} concentrations at Darrington in 2014-2016

Appendix C. strikeout rule language

Appendix B includes the strikeout rule texts that Ecology adopted in two rulemaking processes. In order to clarify our proposed SIP action, we highlighted the rule texts as specified below. We are proposing to include the rule texts in Chapter 173-400 WAC in the SIP that applies in:

- Ecology and Benton Clean Air Agency jurisdictions to have no (or white) highlight,
- Ecology jurisdiction only to be highlighted in turquoise

We are proposing to exclude parts of Chapter 173-400 WAC texts that are highlighted in gray from the SIP that apply in both Ecology and BCAA jurisdictions. When we are not proposing any SIP action on the whole section of the rule, we did not include the rule text of the section here. The only exception is for WAC 173-400-107 through 109, which is highlighted in gray and we are proposing to keep them out of the SIP. We are proposing the Chapters 173-405, 173-410, and 173-415 WAC are in the SIP as statewide rules, and thus we did not highlight the texts in turquoise

I. Chapter 173-400 WAC adopted 8/16/2019

WAC 173-400-030 Definitions. The definitions in this section apply statewide except where a permitting authority has redefined a specific term. Except as provided elsewhere in this chapter, the definitions in this section apply throughout the chapter:

(1) **"Actual emissions"** means the actual rate of emissions of a pollutant from an emission unit, as determined in accordance with (a) through (c) of this subsection.

(a) In general, actual emissions as of a particular date shall equal the average rate, in tons per year, at which the emissions unit actually emitted the pollutant during a two-year period which precedes the particular date and which is representative of normal source operation. Ecology or an authority shall allow the use of a different time period upon a determination that it is more representative of normal source operation. Actual emissions shall be calculated using the emissions unit's actual operating hours, production rates, and types of materials processed, stored, or combusted during the selected time period.

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(b) Ecology or an authority may presume that source-specific allowable emissions for the unit are equivalent to the actual emissions of the emissions unit.

(c) For any emissions unit which has not begun normal operations on the particular date, actual emissions shall equal the potential to emit of the emissions unit on that date.

(2) **"Adverse impact on visibility"** is defined in WAC 173-400-117.

(3) **"Air contaminant"** means dust, fumes, mist, smoke, other particulate matter, vapor, gas, odorous substance, or any combination thereof. "Air pollutant" means the same as "air contaminant."

(4) **"Air pollution"** means the presence in the outdoor atmosphere of one or more air contaminants in sufficient quantities, and of such characteristics and duration as is, or is likely to be, injurious to human health, plant or animal life, or property, or which unreasonably interferes with enjoyment of life and property. For the purposes of this chapter, air pollution shall not include air contaminants emitted in compliance with chapter 17.21 RCW, the Washington Pesticide Application Act, which regulates the application and control of the use of various pesticides.

(5) **"Allowable emissions"** means the emission rate of a source calculated using the maximum rated capacity of the source (unless the source is subject to federally enforceable limits which restrict the operating rate, or hours of operation, or both) and the most stringent of the following:

(a) The applicable standards as in 40 C.F.R. Part 60, 61, 62, or 63;

(b) Any applicable SIP emissions (~~(limitation)~~) standard including those with a future compliance date; or

(c) The emissions rate specified as a federally enforceable approval condition, including those with a future compliance date.

(6) **"Alternative emission limit" or "alternative emission limitation"** means an emission limitation that applies to a source or an emissions unit only during a specifically defined transient mode of operation. An alternative emission limitation is a component of a continuously applicable emission limit. An alternative emission limit may be a numerical limit or a design characteristic of the emission unit and associated emission controls, work practices, or other operational standard, such as a control device operating range.

(7) **"Ambient air"** means the surrounding outside air.

~~((+7))~~ (8) **"Ambient air quality standard"** means an established concentration, exposure time, and frequency of occurrence of air contaminant(s) in the ambient air which shall not be exceeded.

~~((+8))~~ (9) **"Approval order"** is defined in **"order of approval."**

~~((+9))~~ (10) **"Attainment area"** means a geographic area designated by EPA at 40 C.F.R. Part 81 as having attained the National Ambient Air Quality Standard for a given criteria pollutant.

~~((+10))~~ (11) **"Authority"** means any air pollution control agency whose jurisdictional boundaries are coextensive with the boundaries of one or more counties.

~~((+11))~~ (12) **"Begin actual construction"** means, in general, initiation of physical on-site construction activities on an emission unit that are of a permanent nature. Such activities include, but are not limited to, installation of building supports and foundations, laying underground pipe work and construction of permanent storage structures. With respect to a change in method of operations, this term refers to those

on-site activities other than preparatory activities which mark the initiation of the change.

~~((12))~~ (13) **"Best available control technology (BACT)"** means an emission limitation based on the maximum degree of reduction for each air pollutant subject to regulation under chapter 70.94 RCW emitted from or which results from any new or modified stationary source, which the permitting authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes and available methods, systems, and techniques, including fuel cleaning, clean fuels, or treatment or innovative fuel combustion techniques for control of each such pollutant. In no event shall application of the "best available control technology" result in emissions of any pollutants which will exceed the emissions allowed by any applicable standard under 40 C.F.R. Part 60 and Part 61. Emissions from any source utilizing clean fuels, or any other means, to comply with this paragraph shall not be allowed to increase above levels that would have been required under the definition of BACT in the federal Clean Air Act as it existed prior to enactment of the Clean Air Act Amendments of 1990.

~~((13))~~ (14) **"Best available retrofit technology (BART)"** means an emission limitation based on the degree of reduction achievable through the application of the best system of continuous emission reduction for each pollutant which is emitted by an existing stationary facility. The emission limitation must be established, on a case-by-case basis, taking into consideration the technology available, the costs of compliance, the energy and nonair quality environmental impacts of compliance, any pollution control equipment in use or in existence at the source, the remaining useful life of the source, and the degree of improvement in visibility which may reasonably be anticipated to result from the use of such technology.

~~((14))~~ (15) "**Brake horsepower (BHP)**" means the measure of an engine's horsepower without the loss in power caused by the gearbox, alternator, differential, water pump, and other auxiliary components.

~~((15))~~ (16) "**Bubble**" means a set of emission limits which allows an increase in emissions from a given emissions unit in exchange for a decrease in emissions from another emissions unit, pursuant to RCW 70.94.155 and WAC 173-400-120.

~~((16))~~ (17) "**Capacity factor**" means the ratio of the average load on equipment or a machine for the period of time considered, to the manufacturer's capacity rating of the machine or equipment.

~~((17))~~ (18) "**Class I area**" means any area designated under section 162 or 164 of the federal Clean Air Act (42 U.S.C., Sec. 7472 or 7474) as a Class I area. The following areas are the Class I areas in Washington:

- (a) Alpine Lakes Wilderness;
- (b) Glacier Peak Wilderness;
- (c) Goat Rocks Wilderness;
- (d) Mount Adams Wilderness;
- (e) Mount Rainier National Park;
- (f) North Cascades National Park;
- (g) Olympic National Park;
- (h) Pasayten Wilderness; and
- (i) Spokane Indian Reservation.

~~((18))~~ (19) "**Combustion and incineration units**" means units using combustion for waste disposal, steam production, chemical recovery or other process requirements; but excludes outdoor burning.

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~~((+19+))~~ (20)(a) "**Commence**" as applied to construction, means that the owner or operator has all the necessary preconstruction approvals or permits and either has:

(i) Begun, or caused to begin, a continuous program of actual on-site construction of the source, to be completed within a reasonable time; or

(ii) Entered into binding agreements or contractual obligations, which cannot be canceled or modified without substantial loss to the owner or operator, to undertake a program of actual construction of the source to be completed within a reasonable time.

(b) For the purposes of this definition, "necessary preconstruction approvals" means those permits or orders of approval required under federal air quality control laws and regulations, including state, local and federal regulations and orders contained in the SIP.

~~((+20+))~~ (21) "**Concealment**" means any action taken to reduce the observed or measured concentrations of a pollutant in a gaseous effluent while, in fact, not reducing the total amount of pollutant discharged.

~~((+21+))~~ (22) "**Criteria pollutant**" means a pollutant for which there is established a National Ambient Air Quality Standard at 40 C.F.R. Part 50. The criteria pollutants are carbon monoxide (CO), particulate matter, ozone (O₃) sulfur dioxide (SO₂), lead (Pb), and nitrogen dioxide (NO₂).

~~((+22+))~~ (23) "**Director**" means director of the Washington state department of ecology or duly authorized representative.

~~((+23+))~~ (24) "**Dispersion technique**" means a method that attempts to affect the concentration of a pollutant in the ambient air other than by the use of pollution abatement equipment or integral process pollution controls.

~~((+24+))~~ (25) "**Ecology**" means the Washington state department of ecology.

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~~((+25+))~~ (26) "**Electronic means**" means email, fax, FTP site, or other electronic method approved by the permitting authority.

(27) "**Emission**" means a release of air contaminants into the ambient air.

~~((+26+))~~ (28) "**Emission reduction credit (ERC)**" means a credit granted pursuant to WAC 173-400-131. This is a voluntary reduction in emissions.

~~((+27+))~~ (29) "**Emission standard,**" ~~((and))~~ "**emission limitation**" and "**emission limit**" means a requirement established under the federal Clean Air Act or chapter 70.94 RCW which limits the quantity, rate, or concentration of emissions of air contaminants on a continuous basis, including any requirement relating to the operation or maintenance of a source to assure continuous emission reduction and any design, equipment, work practice, or operational standard adopted under the federal Clean Air Act or chapter 70.94 RCW.

~~((+28+))~~ (30) "**Emission threshold**" means an emission of a listed air contaminant at or above the following rates:

Table 10. Emission threshold for air contaminant

Air Contaminant	Annual Emission Rate
Carbon monoxide:	100 tons per year
<u>Fluorides:</u>	<u>3 tons per year</u>
<u>Hydrogen sulfide (H₂S):</u>	<u>10 tons per year</u>
<u>Lead:</u>	<u>0.6 tons per year</u>
Nitrogen oxides:	40 tons per year
((Sulfur dioxide:	40 tons per year))
Particulate matter (PM):	25 tons per year of PM emissions
	((15 tons per year of PM-10 emissions)) 10 tons per year of PM-2.5
	<u>15 tons per year of PM-10 emissions</u>

Air Contaminant	Annual Emission Rate
((Volatile organic compounds:	40 tons per year
Fluorides:	3 tons per year
Lead:	0.6 tons per year))
<u>Reduced sulfur compounds (including H₂S):</u>	<u>10 tons per year</u>
<u>Sulfur dioxide:</u>	<u>40 tons per year</u>
Sulfuric acid mist:	7 tons per year
((Hydrogen sulfide (H₂S):	10 tons per year))
Total reduced sulfur (including H ₂ S):	10 tons per year
((Reduced sulfur compounds (including H₂S):	10 tons per year))
<u>Volatile organic compounds:</u>	<u>40 tons per year</u>

~~((+29))~~ (31) **"Emissions unit"** or **"emission unit"** means any part of a stationary source or source which emits or would have the potential to emit any pollutant subject to regulation under the federal Clean Air Act, chapter 70.94 or 70.98 RCW.

~~((+30))~~ (32) **"Excess emissions"** means emissions of an air pollutant in excess of any applicable emission standard or an emission limit established in a permit or order, including an alternative emission limit.

~~((+31))~~ (33) **"Excess stack height"** means that portion of a stack which exceeds the greater of sixty-five meters or the calculated stack height described in WAC 173-400-200(2).

~~((+32))~~ (34) **"Existing stationary facility (facility)"** is defined in WAC 173-400-151.

~~((+33))~~ (35) **"Federal Clean Air Act (FCAA)"** means the federal Clean Air Act, also known as Public Law 88-206, 77 Stat. 392, December 17, 1963, 42 U.S.C. 7401 et seq., as last amended by the Clean Air Act Amendments of 1990, P.L. 101-549, November 15, 1990.

~~((34))~~ (36) "**Federal Class I area**" means any federal land that is classified or reclassified Class I. The following areas are federal Class I areas in Washington:

- (a) Alpine Lakes Wilderness;
- (b) Glacier Peak Wilderness;
- (c) Goat Rocks Wilderness;
- (d) Mount Adams Wilderness;
- (e) Mount Rainier National Park;
- (f) North Cascades National Park;
- (g) Olympic National Park; and
- (h) Pasayten Wilderness.

~~((35))~~ (37) "**Federal land manager**" means the secretary of the department with authority over federal lands in the United States.

~~((36))~~ (38) "**Federally enforceable**" means all limitations and conditions which are enforceable by EPA, including those requirements developed under 40 C.F.R. Parts 60, 61, 62 and 63, requirements established within the Washington SIP, requirements within any approval or order established under 40 C.F.R. 52.21 or under a SIP approved new source review regulation, ~~((and))~~ emissions limitation orders issued under WAC 173-400-081(4), 173-400-082, or 173-400-091.

~~((37))~~ (39) "**Fossil fuel-fired steam generator**" means a device, furnace, or boiler used in the process of burning fossil fuel for the primary purpose of producing steam by heat transfer.

~~((38))~~ (40) "**Fugitive dust**" means a particulate emission made airborne by forces of wind, man's activity, or both. Unpaved roads, construction sites, and tilled land are examples of areas that originate fugitive dust. Fugitive dust is a type of fugitive emission.

~~((+39+))~~ (41) **"Fugitive emissions"** means emissions that could not reasonably pass through a stack, chimney, vent, or other functionally equivalent opening.

~~((+40+))~~ (42) **"General process unit"** means an emissions unit using a procedure or a combination of procedures for the purpose of causing a change in material by either chemical or physical means, excluding combustion.

~~((+41+))~~ (43) **"Good engineering practice (GEP)"** refers to a calculated stack height based on the equation specified in WAC 173-400-200 (2)(a)(ii).

~~((+42+))~~ (44) **"Greenhouse gases (GHGs)"** includes carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride.

~~((+43+))~~ (45) **"Hog fuel"** (hogged fuel) means waste wood that is reduced in size to facilitate burning.

(46) **"Incinerator"** means a furnace used primarily for the thermal destruction of waste.

~~((+44+))~~ (47) **"In operation"** means engaged in activity related to the primary design function of the source.

~~((+45+))~~ (48) **"Mandatory Class I federal area"** means any area defined in Section 162(a) of the federal Clean Air Act 42 U.S.C., 7472(a)). The following areas are the mandatory Class I federal areas in Washington:

- (a) Alpine Lakes Wilderness;
- (b) Glacier Peak Wilderness;
- (c) Goat Rocks Wilderness;
- (d) Mount Adams Wilderness;
- (e) Mount Rainier National Park;
- (f) North Cascades National Park;
- (g) Olympic National Park; and

(h) Pasayten Wilderness;

~~((46))~~ (49) **"Masking"** means the mixing of a chemically nonreactive control agent with a malodorous gaseous effluent to change the perceived odor.

~~((47))~~ (50) **"Materials handling"** means the handling, transporting, loading, unloading, storage, and transfer of materials with no significant chemical or physical alteration.

~~((48))~~ (51) **"Modification"** means any physical change in, or change in the method of operation of, a stationary source that increases the amount of any air contaminant emitted by such source or that results in the emissions of any air contaminant not previously emitted. The term modification shall be construed consistent with the definition of modification in Section 7411, Title 42, United States Code, and with rules implementing that section.

~~((49))~~ (52) **"National Ambient Air Quality Standard (NAAQS)"** means an ambient air quality standard set by EPA at 40 C.F.R. Part 50 and includes standards for carbon monoxide (CO), particulate matter, ozone (O₃), sulfur dioxide (SO₂), lead (Pb), and nitrogen dioxide (NO₂).

~~((50))~~ (53) **"National Emission Standards for Hazardous Air Pollutants (NESHAP((S)))"** means the federal rules in 40 C.F.R. Part 61.

~~((51))~~ (54) **"National Emission Standards for Hazardous Air Pollutants for Source Categories"** means the federal rules in 40 C.F.R. Part 63.

~~((52))~~ (55) **"Natural conditions"** means naturally occurring phenomena that reduce visibility as measured in terms of light extinction, visual range, contrast, or coloration.

~~((53))~~ (56) **"New source"** means:

(a) The construction or modification of a stationary source that increases the amount of any air contaminant emitted by such

source or that results in the emission of any air contaminant not previously emitted; and

(b) Any other project that constitutes a new source under the federal Clean Air Act.

~~((54))~~ (57) **"New Source Performance Standards (NSPS)"** means the federal rules in 40 C.F.R. Part 60.

~~((55))~~ (58) **"Nonattainment area"** means a geographic area designated by EPA at 40 C.F.R. Part 81 as exceeding a National Ambient Air Quality Standard (NAAQS) for a given criteria pollutant. An area is nonattainment only for the pollutants for which the area has been designated nonattainment.

~~((56))~~ (59) **"Nonroad engine"** means:

(a) Except as discussed in (b) of this subsection, a nonroad engine is any internal combustion engine:

(i) In or on a piece of equipment that is self-propelled or serves a dual purpose by both propelling itself and performing another function (such as garden tractors, off-highway mobile cranes and bulldozers); or

(ii) In or on a piece of equipment that is intended to be propelled while performing its function (such as lawnmowers and string trimmers); or

(iii) That, by itself or in or on a piece of equipment, is portable or transportable, meaning designed to be and capable of being carried or moved from one location to another. Indicia of transportability include, but are not limited to, wheels, skids, carrying handles, dolly, trailer, or platform.

(b) An internal combustion engine is not a nonroad engine if:

(i) The engine is used to propel a motor vehicle or a vehicle used solely for competition, or is subject to standards promulgated under section 202 of the federal Clean Air Act (42 U.S.C., Sec. 7521); or

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(ii) The engine is regulated by a New Source Performance Standard promulgated under section 111 of the federal Clean Air Act (42 U.S.C., Sec. 7411); or

(iii) The engine otherwise included in (a)(iii) of this subsection remains or will remain at a location for more than twelve consecutive months or a shorter period of time for an engine located at a seasonal source. A location is any single site at a building, structure, facility, or installation. Any engine (or engines) that replaces an engine at a location and that is intended to perform the same or similar function as the engine replaced will be included in calculating the consecutive time period. An engine located at a seasonal source is an engine that remains at a seasonal source during the full annual operating period of the seasonal source. A seasonal source is a stationary source that remains in a single location on a permanent basis (i.e., at least two years) and that operates at that single location approximately three months (or more) each year. This paragraph does not apply to an engine after the engine is removed from the location.

~~((+57))~~ (60) **"Notice of construction application"** means a written application to allow construction of a new source, modification of an existing stationary source or replacement or substantial alteration of control technology at an existing stationary source.

~~((+58))~~ (61) **"Opacity"** means the degree to which an object seen through a plume is obscured, stated as a percentage.

~~((+59))~~ (62) **"Outdoor burning"** means the combustion of material in an open fire or in an outdoor container, without providing for the control of combustion or the control of the emissions from the combustion. ~~((Wood-waste))~~ Waste wood disposal in wigwam burners or silo burners is not considered outdoor burning.

~~((+60))~~ (63) **"Order"** means any order issued by ecology or a local air authority pursuant to chapter 70.94 RCW, including,

but not limited to RCW 70.94.332, 70.94.152, 70.94.153, 70.94.154, and 70.94.141(3), and includes, where used in the generic sense, the terms order, corrective action order, order of approval, and regulatory order.

~~((61))~~ (64) "**Order of approval**" or "**approval order**" means a regulatory order issued by a permitting authority to approve the notice of construction application for a proposed new source or modification, or the replacement or substantial alteration of control technology at an existing stationary source.

~~((62))~~ (65) "**Ozone depleting substance**" means any substance listed in Appendices A and B to Subpart A of 40 C.F.R. Part 82.

~~((63))~~ (66) "**Particulate matter**" or "**particulates**" means any airborne finely divided solid or liquid material with an aerodynamic diameter smaller than 100 micrometers.

~~((64))~~ (67) "**Particulate matter emissions**" means all finely divided solid or liquid material, other than uncombined water, emitted to the ambient air as measured by applicable reference methods, or an equivalent or alternative method specified in Title 40, chapter I of the Code of Federal Regulations or by a test method specified in the SIP.

~~((65))~~ (68) "**Parts per million (ppm)**" means parts of a contaminant per million parts of gas, by volume, exclusive of water or particulates.

~~((66))~~ (69) "**Permitting authority**" means ecology or the local air pollution control authority with jurisdiction over the source.

~~((67))~~ (70) "**Person**" means an individual, firm, public or private corporation, association, partnership, political subdivision, municipality, or government agency.

~~((68))~~ (71) "**PM-10**" means particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers as measured by a reference method based on 40 C.F.R.

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Part 50 Appendix J and designated in accordance with 40 C.F.R. Part 53 or by an equivalent method designated in accordance with 40 C.F.R. Part 53.

~~((+69+))~~ (72) "**PM-10 emissions**" means finely divided solid or liquid material, including condensable particulate matter, with an aerodynamic diameter less than or equal to a nominal 10 micrometers emitted to the ambient air as measured by an applicable reference method, or an equivalent or alternate method, specified in ~~((Appendix M of))~~ 40 C.F.R. Part 51, Appendix M (in effect on the date in WAC 173-400-025) or by a test method specified in the SIP.

~~((+70+))~~ (73) "**PM-2.5**" means particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers as measured by a reference method based on 40 C.F.R. Part 50 Appendix L and designated in accordance with 40 C.F.R. Part 53 or by an equivalent method designated in accordance with 40 C.F.R. Part 53.

~~((+71+))~~ (74) "**PM-2.5 emissions**" means finely divided solid or liquid material, including condensable particulate matter, with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers emitted to the ambient air as measured by an applicable reference method, or an equivalent or alternate method, specified in 40 C.F.R. Part 51 (in effect on the date in WAC 173-400-025) or by a test method specified in the SIP.

~~((+72+))~~ (75) "**Portable source**" means a type of stationary source which emits air contaminants only while at a fixed location but which is capable of being transported to various locations. Examples include a portable asphalt plant or a portable package boiler.

~~((+73+))~~ (76) "**Potential to emit**" means the maximum capacity of a source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of

operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design only if the limitation or the effect it would have on emissions is enforceable. Secondary emissions do not count in determining the potential to emit of a source.

~~((74))~~ (77) "**Prevention of significant deterioration (PSD)**" means the program in WAC 173-400-700 to 173-400-750.

~~((75))~~ (78) "**Projected width**" means that dimension of a structure determined from the frontal area of the structure, projected onto a plane perpendicular to a line between the center of the stack and the center of the building.

~~((76))~~ (79) "**Reasonably attributable**" means attributable by visual observation or any other technique the state deems appropriate.

~~((77))~~ (80) "**Reasonably available control technology (RACT)**" means the lowest emission limit that a particular source or source category is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility. RACT is determined on a case-by-case basis for an individual source or source category taking into account the impact of the source upon air quality, the availability of additional controls, the emission reduction to be achieved by additional controls, the impact of additional controls on air quality, and the capital and operating costs of the additional controls. RACT requirements for any source or source category shall be adopted only after notice and opportunity for comment are afforded.

~~((78))~~ (81) "**Regulatory order**" means an order issued by a permitting authority that requires compliance with:

(a) Any applicable provision of chapter 70.94 RCW or rules adopted there under; or

(b) Local air authority regulations adopted by the local air authority with jurisdiction over the sources to whom the order is issued.

~~((79))~~ (82) **"Secondary emissions"** means emissions which would occur as a result of the construction or operation of a major stationary source or major modification, but do not come from the major stationary source or major modification itself. Secondary emissions must be specific, well defined, quantifiable, and impact the same general area as the major stationary source or major modification which causes the secondary emissions. Secondary emissions include emissions from any off-site support facility which would not be constructed or increase its emissions except as a result of the construction or operation of the major stationary source or major modification. Secondary emissions do not include any emissions which come directly from a mobile source such as emissions from the tailpipe of a motor vehicle, from a train, or from a vessel.

~~((80))~~ (83) **"Shutdown"** means, generally, the cessation of operation of a stationary source or emission unit for any reason.

(84) **"Source"** means all of the emissions unit(s) including quantifiable fugitive emissions that are located on one or more contiguous or adjacent properties, and are under the control of the same person or persons under common control, whose activities are ancillary to the production of a single product or functionally related groups of products.

~~((81))~~ (85) **"Source category"** means all sources of the same type or classification.

~~((82))~~ (86) **"Stack"** means any point in a source designed to emit solids, liquids, or gases into the air, including a pipe or duct.

~~((83))~~ (87) **"Stack height"** means the height of an emission point measured from the ground-level elevation at the base of the stack.

~~((84))~~ (88) **"Standard conditions"** means a temperature of 20°C (68°F) and a pressure of 760 mm (29.92 inches) of mercury.

~~((85))~~ (89) **"Startup"** means, generally, the setting in operation of a stationary source or emission unit for any reason.

(90) **"State implementation plan (SIP)"** or **"Washington SIP"** means the Washington SIP in 40 C.F.R. Part 52, Subpart WW. The SIP contains state, local and federal regulations and orders, the state plan and compliance schedules approved and promulgated by EPA, for the purpose of implementing, maintaining, and enforcing the National Ambient Air Quality Standards.

~~((86))~~ (91) **"Stationary source"** means any building, structure, facility, or installation which emits or may emit any air contaminant. This term does not include emissions resulting directly from an internal combustion engine for transportation purposes or from a nonroad engine or nonroad vehicle as defined in Section 216(11) of the federal Clean Air Act (42 U.S.C., 7550(11)).

~~((87))~~ (92) **"Sulfuric acid plant"** means any facility producing sulfuric acid by the contact process by burning elemental sulfur, alkylation acid, hydrogen sulfide, or acid sludge.

~~((88))~~ (93) **"Synthetic minor"** means any source whose potential to emit has been limited below applicable thresholds by means of an enforceable order, rule, or approval condition.

~~((89))~~ (94) **"Total reduced sulfur (TRS)"** means the sum of the sulfur compounds hydrogen sulfide, mercaptans, dimethyl sulfide, dimethyl disulfide, and any other organic sulfides emitted and measured by ~~((EPA method 16 in Appendix A to))~~ 40 C.F.R. Part 60, Appendix A, Test Method 16 (in effect on the

date in WAC 173-400-025) or an EPA approved equivalent method and expressed as hydrogen sulfide.

~~((90))~~ (95) **"Total suspended particulate"** means particulate matter as measured by the method described in 40 C.F.R. Part 50 Appendix B.

~~((91))~~ (96) **"Toxic air pollutant (TAP)"** or **"toxic air contaminant"** means any toxic air pollutant listed in WAC 173-460-150. The term toxic air pollutant may include particulate matter and volatile organic compounds if an individual substance or a group of substances within either of these classes is listed in WAC 173-460-150. The term toxic air pollutant does not include particulate matter and volatile organic compounds as generic classes of compounds.

~~((92))~~ (97) **"Transient mode of operation"** means a short-term operating period of a source or an emission unit with a specific beginning and end, such as startup, shutdown, or maintenance.

(98) **"Unclassifiable area"** means an area that cannot be designated attainment or nonattainment on the basis of available information as meeting or not meeting the National Ambient Air Quality Standard for the criteria pollutant and that is listed by EPA at 40 C.F.R. Part 81.

~~((93))~~ (99) **"United States Environmental Protection Agency (USEPA)"** shall be referred to as EPA.

~~((94))~~ (100) **"Useful thermal energy"** means energy (steam, hot water, or process heat) that meets the minimum operating temperature, flow, and/or pressure required by any system that uses energy provided by the affected boiler or process heater.

(101) **"Visibility impairment"** means any humanly perceptible change in visibility (light extinction, visual range, contrast, or coloration) from that which would have existed under natural conditions.

~~((95))~~ (102) **"Volatile organic compound (VOC)"** means any carbon compound that participates in atmospheric photochemical reactions.

(a) Exceptions. The following compounds are not a VOC: Acetone; carbon monoxide; carbon dioxide; carbonic acid; metallic carbides or carbonates; ammonium carbonate, methane; ethane; methylene chloride (dichloromethane); 1,1,1-trichloroethane (methyl chloroform); 1,1,2-trichloro-1,2,2-trifluoroethane (CFC-113); trichlorofluoromethane (CFC-11); dichlorodifluoromethane (CFC-12); chlorodifluoromethane (HCFC-22); trifluoromethane (HFC-23); 1,2-dichloro 1,1,2,2-tetrafluoroethane (CFC-114); chloropentafluoroethane (CFC-115); 1,1,1-trifluoro 2,2-dichloroethane (HCFC-123); 1,1,1,2-tetrafluoroethane (HFC-134a); 1,1-dichloro 1-fluoroethane (HCFC-141b); 1-chloro 1,1-difluoroethane (HCFC-142b); 2-chloro 1,1,1,2-tetrafluoroethane (HCFC-124); pentafluoroethane (HFC-125); 1,1,2,2-tetrafluoroethane (HFC-134); 1,1,1-trifluoroethane (HFC-143a); 1,1-difluoroethane (HFC-152a); parachlorobenzotrifluoride (PCBTF); cyclic, branched, or linear completely methylated siloxanes; perchloroethylene (tetrachloroethylene); 3,3-dichloro-1,1,1,2,2-pentafluoropropane (HCFC-225ca); 1,3-dichloro-1,1,2,2,3-pentafluoropropane (HCFC-225cb); 1,1,1,2,3,4,4,5,5,5-decafluoropentane (HFC 43-10mee); difluoromethane (HFC-32); ethylfluoride (HFC-161); 1,1,1,3,3,3-hexafluoropropane (HFC-236fa); 1,1,2,2,3-pentafluoropropane (HFC-245ca); 1,1,2,3,3-pentafluoropropane (HFC-245ea); 1,1,1,2,3-pentafluoropropane (HFC-245eb); 1,1,1,3,3-pentafluoropropane (HFC-245fa); 1,1,1,2,3,3-hexafluoropropane (HFC-236ea); 1,1,1,3,3-pentafluorobutane (HFC-365mfc); chlorofluoromethane (HCFC-31); 1 chloro-1-fluoroethane (HCFC-151a); 1,2-dichloro-1,1,2-trifluoroethane (HCFC-123a); 1,1,1,2,2,3,3,4,4-nonafluoro-4-methoxy-butane ($C_4F_9OCH_3$ or HFE-7100); 2-(difluoromethoxymethyl)-1,1,1,2,3,3,3-heptafluoropropane ($(CF_3)_2CFCH_2OCH_3$); 1-ethoxy-1,1,2,2,3,3,4,4,4-nonafluorobutane ($C_4F_9OC_2H_5$ or HFE-7200); 2-

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(ethoxydifluoromethyl)-1,1,1,2,3,3,3-heptafluoropropane ((CF₃)₂CF₂OC₂H₅); methyl acetate((τ)); 1,1,1,2,2,3,3-heptafluoro-3-methoxy-propane (n-C₃F₇OCH₃ or HFE-7000); 3-ethoxy-1,1,1,2,3,4,4,5,5,6,6,6-dodecafluoro-2-(trifluoromethyl) hexane (HFE-7500); 1,1,1,2,3,3,3-heptafluoropropane (HFC 227ea); methyl formate (HCOOCH₃); 1,1,1,2,2,3,4,5,5,5-decafluoro-3-methoxy-4-trifluoromethyl-pentane (HFE-7300); dimethyl carbonate; propylene carbonate; trans-1,3,3,3-tetrafluoropropene; HCF₂OCF₂H (HFE-134); HCF₂OCF₂OCF₂H (HFE-236cal2); HCF₂OCF₂CF₂OCF₂H (HFE-338pcc13); HCF₂OCF₂OCF₂CF₂OCF₂H (H-Galden 1040x or H-Galden ZT 130 (or 150 or 180)); trans 1-chloro-3,3,3-trifluoroprop-1-ene; 2,3,3,3-tetrafluoropropene; 2-amino-2-methyl-1-propanol; t-butyl acetate; 1,1,2,2-tetrafluoro-1-(2,2,2-trifluoroethoxy) ethane; and perfluorocarbon compounds that fall into these classes:

(i) Cyclic, branched, or linear completely fluorinated alkanes;

(ii) Cyclic, branched, or linear completely fluorinated ethers with no unsaturations;

(iii) Cyclic, branched, or linear completely fluorinated tertiary amines with no unsaturations; and

(iv) Sulfur containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine.

(b) For the purpose of determining compliance with emission limits, VOC will be measured by the appropriate methods in 40 C.F.R. Part 60, Appendix A (in effect on the date in WAC 173-400-025). Where the method also measures compounds with negligible photochemical reactivity, these negligibly reactive compounds may be excluded as VOC if the amount of the compounds is accurately quantified, and the exclusion is approved by ecology, the authority, or EPA.

(c) As a precondition to excluding these negligibly reactive compounds as VOC or at any time thereafter, ecology or the authority may require an owner or operator to provide

monitoring or testing methods and results demonstrating, to the satisfaction of ecology, the authority, or EPA the amount of negligibly reactive compounds in the source's emissions.

~~((d) The following compounds are VOC for purposes of all recordkeeping, emissions reporting, photochemical dispersion modeling and inventory requirements which apply to VOC and shall be uniquely identified in emission reports, but are not VOC for purposes of VOC emissions limitations or VOC content requirements: Tertiary butyl acetate.))~~

(103) "Wigwam" or "silo burner" means a cone-shaped or cylindrical structure that burns waste wood for disposal. A silo burner is a cylinder and may be made with refractory material rather than metal.

(104) "Wood-fired boiler" means an enclosed device using controlled flame combustion of wood or waste wood with the primary purpose of recovering thermal energy in the form of a steam or hot water boiler that burns wood or waste wood for fuel for the primary purpose of producing hot water or steam by heat transfer. Controlled flame combustion refers to a steady-state, or near steady-state, process wherein fuel and/or air feed rates are controlled.

(105) "Waste wood" means wood pieces or particles generated as a by-product or waste from the manufacturing of wood products, and the handling and storage of raw materials, trees, and stumps. This includes, but is not limited to, sawdust, chips, shavings, bark, pulp, log sort yard waste, and wood materials from forest health logging, land clearing or pruning, but does not include wood pieces or particles containing chemical preservatives such as creosote, pentachlorophenol, or copper-chrome-arsenate.

WAC 173-400-040 General standards for maximum emissions.

(1) **General requirements.**

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(a) All sources and emissions units are required to meet the emission standards of this chapter. Where an emission standard listed in another chapter is applicable to a specific emissions unit, such standard takes precedence over a general emission standard listed in this chapter.

(b) When two or more emissions units are connected to a common stack and the operator elects not to provide the means or facilities to sample emissions from the individual emissions units, and the relative contributions of the individual emissions units to the common discharge are not readily distinguishable, then the emissions of the common stack must meet the most restrictive standard of any of the connected emissions units.

(c) All emissions units are required to use reasonably available control technology (RACT) which may be determined for some sources or source categories to be more stringent than the applicable emission limitations of any chapter of Title 173 WAC. Where current controls are determined to be less than RACT, the permitting authority shall, as provided in RCW 70.94.154, define RACT for each source or source category and issue a rule or regulatory order requiring the installation of RACT.

(2) **Visible emissions.** No person shall cause or allow the emission for more than three minutes, in any one hour, of an air contaminant from any emissions unit which at the emission point, or within a reasonable distance of the emission point, exceeds twenty percent opacity (~~(except+)~~) as determined by ecology method 9A. The following are exceptions to this standard:

(a) Soot blowing or grate cleaning alternate visible emission standard.

(i) This provision is in effect until the effective date of EPA's removal of the September 20, 1993, version of WAC 173-400-107 from the SIP. The opacity emission standard in subsection (2) of this section shall apply except when the emissions occur due to soot blowing/grate cleaning and the operator can

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demonstrate that the emissions will not exceed twenty percent opacity for more than fifteen minutes in any eight consecutive hours. The intent of this provision is to allow the soot blowing and grate cleaning necessary to the operation of boiler facilities. This practice, except for testing and troubleshooting, is to be scheduled for the same approximate times each day and the permitting authority must be advised of the schedule.

(ii) This provision takes effect on the effective date of EPA's removal of the September 20, 1993, version of WAC 173-400-107 from the SIP. For emissions that occur due to soot blowing or grate cleaning of a hog fuel or wood-fired boiler: Visible emissions (as determined by ecology method 9A) shall not exceed twenty percent opacity; except that opacity shall not exceed forty percent for up to a fifteen minute period in any eight consecutive hours. For this provision to apply, the owner or operator must:

(A) Schedule the soot blowing and/or grate cleaning for the same approximate time(s) each day;

(B) Notify the permitting authority in writing of the schedule before using the forty percent standard; and

(C) Maintain contemporaneous records sufficient to demonstrate compliance. Records must include the date, start time, and stop time of each episode, and the results of opacity readings conducted during this time.

(b) When the owner or operator of a source supplies valid data to show that the presence of uncombined water is the only reason for the opacity to exceed twenty percent or an alternative opacity standard established in this section.

(c) When two or more emission units are connected to a common stack, the permitting authority may allow or require the use of an alternate time period if it is more representative of normal operations.

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(d) When an (~~alternate~~) alternative opacity limit has been established per RCW 70.94.331 (2)(c), WAC 173-400-081(4) or 173-400-082.

(e) (~~Exemptions from twenty percent opacity standard.~~

~~(i)) Alternative visible emission standard for a hog fuel or wood-fired boiler in operation before January 24, 2018. This provision takes effect on the effective date of EPA's removal of the September 20, 1993, version of WAC 173-400-107 from the SIP. For emissions that occur due to planned startup or shutdown of a hog fuel or wood-fired boiler with dry particulate matter controls, an owner or operator may use the alternative standard in this subsection when all of the following requirements are met.~~

Note: This subsection does not apply to a combustion unit with wet particulate matter controls.

(i) A planned startup or shutdown means that the owner or operator notifies the permitting authority:

(A) At least twenty-four hours prior to the planned boiler startup or shutdown; or

(B) Within two hours after restarting the boiler for a startup within twenty-four hours after the end of an unplanned shutdown (i.e., malfunction or upset).

Note: A shutdown due to a malfunction is part of the malfunction.

(ii) Startup begins when fuel is ignited in the boiler fire box.

(iii) Startup ends:

(A) When the boiler starts supplying useful thermal energy; or

(B) Four hours after the boiler starts supplying useful thermal energy if the facility follows the work practices in (e)(vi)(B) of this subsection.

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(iv) Shutdown begins when the boiler no longer supplies useful thermal energy, or when no fuel is being fed to the boiler or process heater, whichever is earlier.

(v) Shutdown ends when the boiler or process heater no longer supplies useful thermal energy and no fuel is being combusted in the boiler.

(vi) The facility complies with one of the following requirements:

(A) Visible emissions during startup or shutdown shall not exceed forty percent opacity for more than three minutes in any hour, as determined by ecology method 9A; or

(B) During startup or shutdown, the owner or operator shall:

(I) Operate all continuous monitoring systems;

(II) In the boiler, use only clean fuel identified in 5.b. in Table 3 in 40 C.F.R. Part 63, Subpart DDDDD;

(III) Engage all applicable control devices so as to comply with the twenty percent opacity standard within four hours of the start of supplying useful thermal energy;

(IV) Engage and operate particulate matter control within one hour of first feeding fuels that are not clean fuels; and

(V) Develop and implement a written startup and shutdown plan. The plan must minimize the startup period according to the manufacturer's recommended procedure. In the absence of manufacturer's recommendation, the owner or operator shall use the recommended startup procedure for a unit of a similar design. The plan must be maintained on-site and available upon request for public inspection.

(vii) The facility maintains records sufficient to demonstrate compliance with (e)(i) through (v) of this subsection. The records must include the following:

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(A) The date and time of notification of the permitting authority;

(B) The date and time when startup and shutdown began;

(C) The date and time when startup and shutdown ended;

(D) The compliance option in (e)(vi) of this subsection that was chosen (either (A) or (B)) and documentation of how the conditions of that option were met.

(f) Furnace refractory alternative visible emission standard. This provision takes effect on the effective date of EPA's removal of the September 20, 1993, version of WAC 173-400-107 from the SIP. For emissions that occur during curing of furnace refractory in a lime kiln or boiler, visible emissions (as determined by ecology method 9A) shall not exceed forty percent opacity for more than three minutes in any hour, except when (b) of this subsection applies. For this provision to apply, the owner or operator must meet all of the following requirements:

(i) The total duration of refractory curing shall not exceed thirty-six hours; and

(ii) Use only clean fuel identified in 5.b. in Table 3 in 40 C.F.R. Part 63, Subpart DDDDD; and

(iii) The owner or operator provides a copy of the manufacturer's instructions on curing refractory to the permitting authority; and

(iv) The manufacturer's instructions on curing refractory must be followed, including all instructions on temperature increase rates and holding temperatures and time; and

(v) The emission controls must be engaged as soon as possible during the curing process; and

(vi) The permitting authority must be notified at least one working day prior to the start of the refractory curing process.

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(g) Visible emissions reader certification testing. Visible emissions from the "smoke generator" used ~~((for))~~ during testing and ~~((certification of))~~ certifying visible emission~~((s))~~ readers ~~((per the))~~ are exempt from the twenty percent opacity limit. Testing must follow testing and certification requirements ((of)) in 40 C.F.R. Part 60, Appendix A, Test Method 9 (in effect on the date in WAC 173-400-025) and ~~((ecology))~~ Source Test Methods 9A and 9B ~~((shall be exempt from compliance with the twenty percent opacity limitation while being used for certifying visible emission readers))~~ in Source Test Manual - Procedures for Compliance Testing, state of Washington, department of ecology, as of September 20, 2004, on file at ecology.

~~((ii))~~ (h) Military training exercises. Visible emissions ~~((resulting from))~~ during military obscurant training exercises are exempt from ~~((compliance with))~~ the twenty percent opacity ~~((limitation provided))~~ limit when the following ~~((criteria))~~ requirements are met:

~~((A))~~ (i) No visible emissions shall cross the boundary of the military training site/reservation.

~~((B))~~ (ii) The operation shall have in place methods, which have been reviewed and approved by the permitting authority, to detect changes in weather that would cause the obscurant to cross the site boundary either during the course of the exercise or prior to the start of the exercise. The approved methods shall include provisions that result in cancellation of the training exercise, cease the use of obscurants during the exercise until weather conditions would allow such training to occur without causing obscurant to leave the site boundary of the military site/reservation.

~~((iii))~~ (i) Firefighter training. Visible emissions from fixed and mobile firefighter training facilities ~~((while being used to train firefighters and while complying with the requirements of))~~ occurring during the training of firefighters

are exempt from the twenty percent opacity limit. Compliance with chapter 173-425 WAC is required.

(3) **Fallout.** No person shall cause or allow the emission of particulate matter from any source to be deposited beyond the property under direct control of the owner or operator of the source in sufficient quantity to interfere unreasonably with the use and enjoyment of the property upon which the material is deposited.

(4) **Fugitive emissions.** The owner or operator of any emissions unit engaging in materials handling, construction, demolition or other operation which is a source of fugitive emission:

(a) If located in an attainment area and not impacting any nonattainment area, shall take reasonable precautions to prevent the release of air contaminants from the operation.

(b) If the emissions unit has been identified as a significant contributor to the nonattainment status of a designated nonattainment area, the owner or operator shall be required to use reasonable and available control methods, which shall include any necessary changes in technology, process, or other control strategies to control emissions of the air contaminants for which nonattainment has been designated.

(5) **Odors.** Any person who shall cause or allow the generation of any odor from any source or activity which may unreasonably interfere with any other property owner's use and enjoyment of her or his property must use recognized good practice and procedures to reduce these odors to a reasonable minimum.

(6) **Emissions detrimental to persons or property.** No person shall cause or allow the emission of any air contaminant from any source if it is detrimental to the health, safety, or welfare of any person, or causes damage to property or business.

(7) **Sulfur dioxide.** No person shall cause or allow the emission of a gas containing sulfur dioxide from any emissions unit in excess of one thousand ppm of sulfur dioxide on a dry basis, corrected to seven percent oxygen for combustion sources, and based on the average of any period of sixty consecutive minutes ~~((, except: When the owner or operator of an emissions unit supplies emission data and can demonstrate to the permitting authority that there is no feasible method of reducing the concentration to less than one thousand ppm (on a dry basis, corrected to seven percent oxygen for combustion sources) and that the state and federal ambient air quality standards for sulfur dioxide will not be exceeded. In such cases, the permitting authority may require specific ambient air monitoring stations be established, operated, and maintained by the owner or operator at mutually approved locations. All sampling results will be made available upon request and a monthly summary will be submitted to the permitting authority))~~.

(8) **Concealment and masking.** No person shall cause or allow the installation or use of any means which conceals or masks an emission of an air contaminant which would otherwise violate any provisions of this chapter.

(9) **Fugitive dust.**

(a) The owner or operator of a source or activity that generates fugitive dust must take reasonable precautions to prevent that fugitive dust from becoming airborne and must maintain and operate the source to minimize emissions.

(b) The owner or operator of any existing source or activity that generates fugitive dust that has been identified as a significant contributor to a PM-10 or PM-2.5 nonattainment area is required to use reasonably available control technology to control emissions. Significance will be determined by the criteria found in WAC 173-400-113(4).

WAC 173-400-070 Emission standards for certain source categories. Ecology finds that the reasonable regulation of sources within certain categories requires separate standards applicable to such categories. The standards set forth in this section shall be the maximum allowable standards for emissions units within the categories listed. Except as specifically provided in this section, such emissions units shall not be required to meet the provisions of WAC 173-400-040, 173-400-050 and 173-400-060.

(1) **Wigwam and silo burners.** As of January 1, 2020, it is illegal to use a wigwam or silo burner in Washington. A wigwam or silo burner may operate until midnight December 31, 2019, provided it complies with the following:

(a) All wigwam and silo burners designed to dispose of ~~((wood))~~ waste wood must meet all provisions of WAC 173-400-040 (2), (3), (4), (5), (6), (7), (8), and WAC 173-400-050(4) ~~((or))~~, 173-400-115 ((+)), or 40 C.F.R. Part ((60)) 62, Subpart ((DDD)) III in effect on the date in WAC 173-400-025((+)) as applicable.

(b) All wigwam and silo burners must use RACT. All emissions units shall be operated and maintained to minimize emissions. These requirements may include a controlled tangential vent overfire air system, an adequate underfire system, elimination of all unnecessary openings, a controlled feed and other modifications determined necessary by ecology or the permitting authority.

(c) It shall be unlawful to install or increase the existing use of any burner that does not meet all requirements for new sources including those requirements specified in WAC 173-400-040 and 173-400-050, except operating hours.

(d) The permit authority may establish additional requirements for wigwam and silo burners. These requirements may include, but shall not be limited to:

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(i) A requirement to meet all provisions of WAC 173-400-040 and 173-400-050. Wigwam and silo burners will be considered to be in compliance if they meet the requirements contained in WAC 173-400-040(2), visible emissions. (~~An exception is made for a startup period not to exceed thirty minutes in any eight consecutive hours.~~)

(ii) A requirement to apply BACT.

(iii) A requirement to reduce or eliminate emissions if ecology establishes that such emissions unreasonably interfere with the use and enjoyment of the property of others or are a cause of violation of ambient air standards.

(2) Hog fuel boilers.

(a) Hog fuel boilers shall meet all provisions of WAC 173-400-040 and 173-400-050(1) (~~, except that emissions may exceed twenty percent opacity for up to fifteen consecutive minutes once in any eight hours. The intent of this provision is to allow soot blowing and grate cleaning necessary to the operation of these units. This practice is to be scheduled for the same specific times each day and the permitting authority shall be notified of the schedule or any changes~~)).

(b) All hog fuel boilers shall utilize RACT and shall be operated and maintained to minimize emissions.

(3) Orchard heating.

(a) Burning of rubber materials, asphaltic products, crankcase oil or petroleum wastes, plastic, or garbage is prohibited.

(b) This provision is in effect until the effective date of EPA's removal of the September 20, 1993, version of WAC 173-400-107 from the SIP. It is unlawful to burn any material or operate any orchard-heating device that causes a visible emission exceeding twenty percent opacity, except during the first thirty minutes after such device or material is ignited.

(c) This provision takes effect on the effective date of EPA's removal of the September 20, 1993, version of WAC 173-400-107 from the SIP. It is unlawful to burn any material or operate an orchard-heating device that causes a visible emission exceeding twenty percent opacity as specified in WAC 173-400-040(2).

(4) **Grain elevators.**

Any grain elevator which is primarily classified as a materials handling operation shall meet all the provisions of WAC 173-400-040 (2), (3), (4), and (5).

(5) ~~((Catalytic cracking units.~~

~~(a) All existing catalytic cracking units shall meet all provisions of WAC 173 400 040 (2), (3), (4), (5), (6), and (7) and:~~

~~(i) No person shall cause or allow the emission for more than three minutes, in any one hour, of an air contaminant from any catalytic cracking unit which at the emission point, or within a reasonable distance of the emission point, exceeds forty percent opacity.~~

~~(ii) No person shall cause or allow the emission of particulate material in excess of 0.46 grams per dry cubic meter at standard conditions (0.20 grains/dscf) of exhaust gas.~~

~~(b) All new catalytic cracking units shall meet all provisions of WAC 173 400 115.~~

~~(6))~~ **Other ((~~wood~~) waste wood burners.**

(a) ~~((Wood waste))~~ Waste wood burners not specifically provided for in this section shall meet all applicable provisions of:

(i) ~~WAC 173-400-040((. In addition, wood waste burners subject to WAC 173 400 050(4) or 173 400 115 (40 C.F.R. Part 60, subpart DDDD in effect on the date in WAC 173 400 025) must meet all applicable provisions of those sections))~~ and 173-400-050;

(ii) 40 C.F.R. Part 60, Subpart CCCC (in effect on the date in WAC 173-400-025); and

(iii) 40 C.F.R. Part 62, Subpart III (in effect on the date in WAC 173-400-025).

(b) Such (~~wood~~) waste wood burners shall utilize RACT and shall be operated and maintained to minimize emissions.

~~((7) Sulfuric acid plants.~~

~~No person shall cause to be discharged into the atmosphere from a sulfuric acid plant, any gases which contain acid mist, expressed as H₂SO₄, in excess of 0.15 pounds per ton of acid produced. Sulfuric acid production shall be expressed as one hundred percent H₂SO₄.~~

~~((8))~~ **(6) Municipal solid waste landfills constructed, reconstructed, or modified before May 30, 1991.** A municipal solid waste landfill (MSW landfill) is an entire disposal facility in a contiguous geographical space where household waste is placed in or on the land. A MSW landfill may also receive other types of waste regulated under Subtitle D of the Federal Resource Conservation and Recovery Act including the following: Commercial solid waste, nonhazardous sludge, conditionally exempt small quantity generator waste, and industrial solid waste. Portions of an MSW landfill may be separated by access roads. A MSW landfill may be either publicly or privately owned. A MSW landfill may be a new MSW landfill, an existing MSW landfill, or a lateral expansion. All references in this subsection to 40 C.F.R. Part 60 rules mean those rules in effect on the date in WAC 173-400-025.

(a) Applicability. These rules apply to each MSW landfill constructed, reconstructed, or modified before May 30, 1991; and the MSW landfill accepted waste at any time since November 8, 1987 or the landfill has additional capacity for future waste deposition. (See WAC 173-400-115 for the requirements for MSW landfills constructed, reconstructed, or modified on or after

May 30, 1991.) Terms in this subsection have the meaning given them in 40 C.F.R. 60.751, except that every use of the word "administrator" in the federal rules referred to in this subsection includes the "permitting authority."

(b) Exceptions. Any physical or operational change to an MSW landfill made solely to comply with these rules is not considered a modification or rebuilding.

(c) Standards for MSW landfill emissions.

(i) A MSW landfill having a design capacity less than 2.5 million megagrams or 2.5 million cubic meters must comply with the requirements of 40 C.F.R. 60.752(a) in addition to the applicable requirements specified in this section.

(ii) A MSW landfill having design capacity equal to or greater than 2.5 million megagrams and 2.5 million cubic meters must comply with the requirements of 40 C.F.R. 60.752(b) in addition to the applicable requirements specified in this section.

(d) Recordkeeping and reporting. A MSW landfill must follow the recordkeeping and reporting requirements in 40 C.F.R. 60.757 (submittal of an initial design capacity report) and 40 C.F.R. 60.758 (recordkeeping requirements), as applicable, except as provided for under (d)(i) and (ii).

(i) The initial design capacity report for the facility is due before September 20, 2001.

(ii) The initial nonmethane organic compound (NMOC) emissions rate report is due before September 20, 2001.

(e) Test methods and procedures.

(i) A MSW landfill having a design capacity equal to or greater than 2.5 million megagrams and 2.5 million cubic meters must calculate the landfill nonmethane organic compound emission rates following the procedures listed in 40 C.F.R. 60.754, as

applicable, to determine whether the rate equals or exceeds 50 megagrams per year.

(ii) Gas collection and control systems must meet the requirements in 40 C.F.R. 60.752 (b)(2)(ii) through the following procedures:

(A) The systems must follow the operational standards in 40 C.F.R. 60.753.

(B) The systems must follow the compliance provisions in 40 C.F.R. 60.755 (a)(1) through (a)(6) to determine whether the system is in compliance with 40 C.F.R. 60.752 (b)(2)(ii).

(C) The system must follow the applicable monitoring provisions in 40 C.F.R. 60.756.

(f) Conditions. Existing MSW landfills that meet the following conditions must install a gas collection and control system:

(i) The landfill accepted waste at any time since November 8, 1987, or the landfill has additional design capacity available for future waste deposition;

(ii) The landfill has design capacity greater than or equal to 2.5 million megagrams or 2.5 million cubic meters. The landfill may calculate design capacity in either megagrams or cubic meters for comparison with the exception values. Any density conversions shall be documented and submitted with the report; and

(iii) The landfill has a nonmethane organic compound (NMOC) emission rate of 50 megagrams per year or greater.

(g) Change in conditions. After the adoption date of this rule, a landfill that meets all three conditions in (e) of this subsection must comply with all the requirements of this section within thirty months of the date when the conditions were met. This change will usually occur because the NMOC emission rate equaled or exceeded the rate of 50 megagrams per year.

(h) Gas collection and control systems.

(i) Gas collection and control systems must meet the requirements in 40 C.F.R. 60.752 (b)(2)(ii).

(ii) The design plans must be prepared by a licensed professional engineer and submitted to the permitting authority within one year after the adoption date of this section.

(iii) The system must be installed within eighteen months after the submittal of the design plans.

(iv) The system must be operational within thirty months after the adoption date of this section.

(v) The emissions that are collected must be controlled in one of three ways:

(A) An open flare designed and operated according to 40 C.F.R. 60.18;

(B) A control system designed and operated to reduce NMOC by 98 percent by weight; or

(C) An enclosed combustor designed and operated to reduce the outlet NMOC concentration to 20 parts per million as hexane by volume, dry basis to three percent oxygen, or less.

(i) Air operating permit.

(i) A MSW landfill that has a design capacity less than 2.5 million megagrams or 2.5 million cubic meters on January 7, 2000, is not subject to the air operating permit regulation, unless the landfill is subject to chapter 173-401 WAC for some other reason. If the design capacity of an exempted MSW landfill subsequently increases to equal or exceed 2.5 million megagrams or 2.5 million cubic meters by a change that is not a modification or reconstruction, the landfill is subject to chapter 173-401 WAC on the date the amended design capacity report is due.

(ii) A MSW landfill that has a design capacity equal to or greater than 2.5 million megagrams or 2.5 million cubic meters

on January 7, 2000, is subject to chapter 173-401 WAC beginning on the effective date of this section. (Note: Under 40 C.F.R. 62.14352(e), an applicable MSW landfill must have submitted its application so that by April 6, 2001, the permitting authority was able to determine that it was timely and complete. Under 40 C.F.R. 70.7(b), no source may operate after the time that it is required to submit a timely and complete application.)

(iii) When a MSW landfill is closed, the owner or operator is no longer subject to the requirement to maintain an operating permit for the landfill if the landfill is not subject to chapter 173-401 WAC for some other reason and if either of the following conditions are met:

(A) The landfill was never subject to the requirement for a control system under 40 C.F.R. 62.14353; or

(B) The landfill meets the conditions for control system removal specified in 40 C.F.R. 60.752 (b)(2)(v).

WAC 173-400-081 Emission limits during startup and shutdown. (1) In promulgating technology-based emission standards and (~~making control technology determinations (e.g., BACT, RACT, LAER, BART)~~) establishing emission limits in a permit or order the permitting (~~authorities~~) authority will consider any physical constraints on the ability of a source to comply with the applicable standard during startup or shutdown.

(2) (~~Where~~) When the permitting authority determines, as part of its control technology determination, that the source or source category, when operated and maintained in accordance with good air pollution control practice, is not capable of achieving continuous compliance with an emission limit or standard during startup or shutdown, the permitting authority must include in the (~~standard~~) rule, order, or permit appropriate alternative emission limitations (~~(, operating parameters, or other criteria)~~) to regulate the performance of the source during startup or shutdown conditions.

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(3) In modeling the emissions of a source for purposes of demonstrating attainment or maintenance of national ambient air quality standards, the permitting (~~(authorities)~~) authority shall take into account any incremental increase in allowable emissions under startup or shutdown conditions authorized by an emission limitation or other operating parameter adopted under this rule.

(4) (~~(Any)~~) An emission limitation or other parameter adopted under this (~~(rule)~~) section which increases allowable emissions during a startup or shutdown (~~(conditions)~~) event over levels authorized in Washington's (~~(state implementation plan)~~) SIP shall not take effect until:

(a) Approved by EPA as a SIP amendment; and

(b) The permitting authority has complied with WAC 173-400-082 (4)(c)(i)(A) and (B) and (iv) when applicable.

NEW SECTION

WAC 173-400-082 Alternative emission limit that exceeds an emission standard in the SIP. (1) Applicability. The owner or operator may request an alternative emission limit for a specific emission unit(s) that exceeds a limit in the SIP. The new limit would apply during a clearly defined transient mode of operation. An alternative emission limit established under this section becomes a facility-specific SIP emission standard once EPA approves the new limit in the SIP. This section does not apply to the approval of a revised emission limit that does not exceed a limit in the SIP.

(2) Pollutant scope. An alternative emission limit may be established under this section for any of the following emission standards in Washington's SIP in 40 C.F.R. 52.2470:

(a) Opacity emission standard in:

(i) WAC 173-400-040(2);

(ii) WAC 173-405-040(6);

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(iii) WAC 173-415-030(3); and

(iv) WAC 173-434-130(4).

(b) Sulfur dioxide emission standard in:

(i) WAC 173-400-040(7);

(ii) WAC 173-405-040(11);

(iii) WAC 173-410-040(1);

(iv) WAC 173-415-030(5); and

(v) WAC 173-434-130(3).

(c) Particulate matter emission standards in:

(i) WAC 173-400-050(1) and 173-400-060;

(ii) WAC 173-405-040 (1)(a), (2), (3)(a), and (5);

(iii) WAC 173-410-040(2);

(iv) WAC 173-415-030(2); and

(v) WAC 173-434-130(1).

(d) Emission standards or limits in a local air pollution control authority rule, order, or plan referenced in 40 C.F.R. 52.2470.

(3) Requirements for an owner or operator requesting an alternative emission limit.

(a) The owner or operator may request an alternative emission limit for a specific transient mode of operation for an emission unit that exceeds a standard in the SIP.

(b) A request for an alternative emission limit must be submitted to the permitting authority in writing. The permitting authority shall determine the adequacy of the information.

(c) A request for an alternative emission limit must provide data and documentation sufficient to:

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(i) Specify which emission unit(s) and specific transient mode(s) of operation the requested alternative emission limit is to cover;

(ii) Demonstrate that the operating characteristics of the emission unit(s) prevent meeting the applicable emission standard during the specific transient mode of operation. Operating characteristics may include the operational variations in the emission unit, installed emission control equipment, work practices, or other means of emission control that could affect the frequency, or duration and quantity of emissions during the transient mode of operation;

(iii) Demonstrate why it is not technically feasible to use the existing control system or any practicable operating scenario that would enable the emission unit to comply with the SIP emission standard, and avoid the need for an alternative emission limit;

(iv) Demonstrate that PSD increments, when applicable, and ambient air quality standards in chapter 173-476 WAC will not be exceeded by emissions from the proposed alternative limit;

(v) Determine best operational practices for the emission unit(s) involved;

(vi) Demonstrate that the frequency and duration of the specific transient mode of operation is limited to the shortest practicable amount of time;

(vii) Demonstrate the quantity and impact of the emissions resulting from the specific transient mode of operation are the lowest practicably possible; and

(viii) Demonstrate that the emissions allowed by the alternative emission limit will not exceed an applicable emission standard in 40 C.F.R. Parts 60, 61, 62, 63, or 72 (in effect on the date in WAC 173-400-025). For the purpose of this subsection, an automatic or discretionary exemption in any of these federal rules does not apply.

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(4) Requirements for processing a request for an alternative emission limit.

(a) Completeness determination.

(i) Within sixty days of receiving a request, the permitting authority must:

(A) Notify the applicant that the request is complete or incomplete;

(B) Specify the reason(s) for determining the request is incomplete, if applicable.

(ii) The permitting authority may request or accept additional information after determining a request complete.

(b) Denial. The permitting authority or ecology may deny a request. The denial must include the basis for the denial.

(c) Final determination.

(i) Within ninety days of receipt of a complete application, the permitting authority must:

(A) Initiate notice, a thirty-day public comment period (required by WAC 173-400-171), and a mandatory hearing (when required by RCW 70.94.380) followed as promptly as possible by a final decision; and

(B) Send the draft order and supporting materials electronically to ecology at least thirty days in advance of the public hearing.

(ii) A permitting authority may extend the deadline for making a determination due to the complexity of the request.

(iii) Ecology recommends combining the public comment period for the draft order (permitting authority responsibility) and the ecology approval and SIP hearing (ecology responsibility).

(iv) A permitting authority shall not issue a final order until ecology notifies the permitting authority in writing that

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the proposed alternative emission limit is consistent with the purposes of the Washington Clean Air Act as required by RCW 70.94.380. If on review, ecology denies the request, ecology will inform the permitting authority and the applicant of the reason(s) for the denial; and

(v) The final order shall not be effective until the effective date of EPA's approval of the order as a SIP amendment.

(5) The draft regulatory order must include:

(a) The name or other designation to identify the specific emission unit(s) subject to the alternative emission limit;

(b) A clearly defined specific transient mode of operation during which the alternative emission limit applies, including parameters for determining the starting and stopping point, and when the alternative emission limit applies;

(c) The emission limit for the specific transient mode of operation;

(d) A requirement that the applicable emission unit(s) be operated consistent with good operating practices for minimizing emissions during the time the alternative emission limit applies; and

(e) Monitoring, recordkeeping and reporting requirements sufficient to ensure that the source complies with each condition in the order.

(6) Fees. A permitting authority may assess and collect fees for processing the request for an alternative emission limit according to its fee schedule for processing a permit application.

WAC 173-400-107 Excess emissions. This section is in effect until the effective date of EPA's ((~~incorporation of the entirety of WAC 173-400-108 and 173-400-109 into the Washington state implementation plan as replacement for this section~~))

removal of the September 20, 1993, version of this section from the SIP. This section is not effective starting on that date.

(1) The owner or operator of a source shall have the burden of proving to ecology or the authority or the decision-making authority in an enforcement action that excess emissions were unavoidable. This demonstration shall be a condition to obtaining relief under subsections (4), (5) and (6) of this section.

(2) Excess emissions determined to be unavoidable under the procedures and criteria in this section shall be excused and not subject to penalty.

(3) Excess emissions which represent a potential threat to human health or safety or which the owner or operator of the source believes to be unavoidable shall be reported to ecology or the authority as soon as possible. Other excess emissions shall be reported within thirty days after the end of the month during which the event occurred or as part of the routine emission monitoring reports. Upon request by ecology or the authority, the owner(s) or operator(s) of the source(s) shall submit a full written report including the known causes, the corrective actions taken, and the preventive measures to be taken to minimize or eliminate the chance of recurrence.

(4) Excess emissions due to startup or shutdown conditions shall be considered unavoidable provided the source reports as required under subsection (3) of this section and adequately demonstrates that the excess emissions could not have been prevented through careful planning and design and if a bypass of control equipment occurs, that such bypass is necessary to prevent loss of life, personal injury, or severe property damage.

(5) Maintenance. Excess emissions due to scheduled maintenance shall be considered unavoidable if the source reports as required under subsection (3) of this section and adequately demonstrates that the excess emissions could not have

been avoided through reasonable design, better scheduling for maintenance or through better operation and maintenance practices.

(6) Excess emissions due to a malfunction or upset~~((s))~~ shall be considered unavoidable provided the source reports as required under subsection (3) of this section and adequately demonstrates that:

(a) The event was not caused by poor or inadequate design, operation, maintenance, or any other reasonably preventable condition;

(b) The event was not of a recurring pattern indicative of inadequate design, operation, or maintenance; and

(c) The operator took immediate and appropriate corrective action in a manner consistent with good air pollution control practice for minimizing emissions during the event, taking into account the total emissions impact of the corrective action, including slowing or shutting down the emission unit as necessary to minimize emissions, when the operator knew or should have known that an emission standard or permit condition was being exceeded.

WAC 173-400-108 Excess emissions reporting. (State-only requirement not federally enforceable.) This section takes effect on the effective date of EPA's ~~((incorporation of the entirety of WAC 173-400-108 and 173-400-109 into the Washington state implementation plan as replacement for WAC 173-400-107.~~

~~(1) Excess emissions must be reported to the permitting authority. Excess emissions which represent a potential threat to human health or safety must be reported as soon as possible, but in no case later than twelve hours after the excess emissions were discovered. Excess emissions which the owner or operator of the source believes to be unavoidable, per the criteria under WAC 173-400-109, must be reported to the permitting authority as soon as possible after the excess~~

emissions were discovered. Other excess emissions must be reported to the permitting authority within thirty days after the end of the month during which the event occurred or as part of the routine emission monitoring reports or, for chapter 173-401 WAC sources, as provided in WAC 173-401-615.

(2) For those sources not required to report under WAC 173-401-615,)) removal of the September 20, 1993, version of WAC 173-400-107 from the SIP.

(1) Notify the permitting authority.

(a) When excess emissions represent a potential threat to human health or safety, the owner or operator must notify the permitting authority by phone or electronic means as soon as possible, but not later than **twelve hours** after the excess emissions were discovered.

(b) For all other excess emissions, the owner or operator must notify the permitting authority in a report as provided in subsection (2) of this section.

(2) Report. The owner or operator must report all excess emissions to the permitting authority:

(a) To claim emissions as unavoidable under WAC 173-400-109, the report must contain the information in subsection (4) of this section.

(b) Chapter 173-401 WAC source: As provided in WAC 173-401-615(3) and subsection (4) of this section. Subsection (3) of this section does not apply to a chapter 401 source reporting under WAC 173-401-615.

(c) All other sources:

(i) Within thirty days after the end of the month during which the event occurred; or

(ii) As part of the next routine emission monitoring report.

(3) The report must contain at least the following information:

(a) Date, time, duration of the episode;

(b) Known causes;

(c) For exceedances of ~~((nonopacity))~~ an emission limitation~~((s))~~ other than opacity, an estimate of the quantity of excess emissions;

(d) The corrective actions taken; and

(e) The preventive measures taken or planned to minimize the chance of recurrence.

~~((3))~~ (4) For ~~((any))~~ an excess emission event that the owner or operator claims ~~((to be))~~ was unavoidable under WAC 173-400-109, the report must also include the following information ~~((in addition to that required in subsection (2) of this section))~~:

(a) Properly signed~~((r))~~ contemporaneous records or other relevant evidence documenting the owner or operator's actions in response to the excess emissions event;

(b) Information on whether installed emission monitoring and pollution control systems were operating at the time of the exceedance. If either or both systems were not operating, information on the cause and duration of the outage; and

(c) All additional information required under WAC 173-400-109 ~~((3), (4) or)~~ (5) supporting the claim that the excess emissions were unavoidable.

WAC 173-400-109 Unavoidable excess emissions. (State-only requirement not federally enforceable.) This section takes effect on the effective date of EPA's ~~((incorporation of the entirety of WAC 173-400-108 and 173-400-109 into the Washington state implementation plan as replacement for WAC 173-400-107))~~

removal of the September 20, 1993, version of WAC 173-400-107 from the SIP.

~~(1) Excess emissions determined to be unavoidable under the procedures and criteria in this section are violations of the applicable statute, ((~~regulation~~) rule, permit, or regulatory order. ((Unavoidable excess emissions are subject to injunctive relief but not penalty. The decision that excess emissions are unavoidable is made by the permitting authority, however, in a federal enforcement action filed under 42 U.S.C. § 7413 or 7604 the decision making authority shall determine what weight, if any, to assign to the permitting authority's determination that an excess emissions event does or does not qualify as unavoidable under the criteria in subsections (3), (4), and (5) of this section.))~~

(a) The permitting authority determines whether excess emissions are unavoidable based on the information supplied by the source and the criteria in subsection (5) of this section.

(b) Excess emissions determined by the permitting authority to be unavoidable are:

(i) A violation subject to WAC 173-400-230 (3), (4), and (6); but

(ii) Not subject to civil penalty under WAC 173-400-230(2).

Note: Nothing in a state rule limits a federal court's jurisdiction or discretion to determine the appropriate remedy in an enforcement action.

~~(2)((~~a~~)) The owner or operator of a source shall have the burden of proving to the permitting authority ((~~or the decision-making authority~~)) in an enforcement action that excess emissions were unavoidable. This demonstration shall be a condition to obtaining relief under subsection((~~s (3), (4) and~~)) (5) of this section.~~

~~((~~b~~) Excess emissions that cause a monitored exceedance of any relevant ambient air quality standard do not qualify for relief under this section.~~

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~~(e)) (3) This section does not apply to an exceedance((s)) of an emission standard((s promulgated under)) in 40 C.F.R. Parts 60, 61, 62, 63, and 72, or a permitting authority's adoption by reference of ((such)) these federal standards.~~

~~((d) This section does not apply to exceedance of emission limits and standards contained in a PSD permit issued solely by EPA.~~

~~(3) Excess emissions due to startup or shutdown conditions will be considered unavoidable provided the source reports as required by WAC 173 400 108 and adequately demonstrates that:~~

~~(a) Excess emissions could not have been prevented through careful planning and design;~~

~~(b) Startup or shutdown was done as expeditiously as practicable;~~

~~(c) All emission monitoring systems were kept in operation unless their shutdown was necessary to prevent loss of life, personal injury, or severe property damage;~~

~~(d) The emissions were minimized consistent with safety and good air pollution control practice during the startup and shutdown period;~~

~~(e) If a bypass of control equipment occurs, that such bypass is necessary to prevent loss of life, personal injury, or severe property damage; and~~

~~(f)) (4) Excess emissions that occur due to an upset((s)) or malfunction((s)) during ((routine)) a startup or shutdown event are treated as an upset((s)) or malfunction((s)) under subsection (5) of this section.~~

~~((4) Maintenance. Excess emissions during scheduled maintenance may be considered unavoidable if the source reports as required by WAC 173 400 108 and adequately demonstrates that the excess emissions could not have been avoided through~~

~~reasonable design, better scheduling for maintenance or through better operation and maintenance practices.))~~

(5) Excess emissions due to an upset~~((s))~~ or ~~((equipment))~~ malfunction~~((s))~~ will be considered unavoidable provided the source reports as required by WAC 173-400-108 and adequately demonstrates to the permitting authority that:

(a) The event was not caused by poor or inadequate design, operation, maintenance, or any other reasonably preventable condition;

(b) The event was not of a recurring pattern indicative of inadequate design, operation, or maintenance;

(c) When the operator knew or should have known that an emission standard or other permit condition was being exceeded, the operator took immediate and appropriate corrective action in a manner consistent with safety and good air pollution control practice for minimizing emissions during the event, taking into account the total emissions impact of the corrective action~~((including))~~. Actions taken could include slowing or shutting down the emission unit as necessary to minimize emissions~~((when the operator knew or should have known that an emission standard or permit condition was being exceeded; and))~~;

(d) If the emitting equipment could not be shutdown during the malfunction or upset to prevent the loss of life, prevent personal injury or severe property damage, or to minimize overall emissions, repairs were made in an expeditious fashion;

(e) All emission monitoring systems and pollution control systems were kept operating to the extent possible unless their shutdown was necessary to prevent loss of life, personal injury, or severe property damage~~((-))~~;

~~((e))~~ (f) The amount and duration of the excess emissions (including any bypass) were minimized to the maximum extent possible; and

(g) All practicable steps were taken to minimize the impact of the excess emissions on ambient air quality.

WAC 173-400-171 Public notice and opportunity for public comment. The purpose of this section is to specify the requirements for notifying the public about air quality actions and to provide opportunities for the public to participate in those actions. This section applies statewide except that the requirements of WAC 173-400-171 (1) through (11) do not apply where the permitting authority has adopted its own public notice provisions.

(1) Applicability to prevention of significant deterioration, and relocation of portable sources.

This section does not apply to:

(a) A notice of construction application designated for integrated review with actions regulated by WAC 173-400-700 through 173-400-750. In such cases, compliance with the public notification requirements of WAC 173-400-740 is required.

(b) Portable source relocation notices as regulated by WAC 173-400-036, relocation of portable sources.

(2) Internet notice of application.

(a) For those applications and actions not subject to a mandatory public comment period per subsection (3) of this section, the permitting authority must post an announcement of the receipt of notice of construction applications and other proposed actions on the permitting authority's internet web site.

(b) The internet posting must remain on the permitting authority's web site for a minimum of fifteen consecutive days.

(c) The internet posting must include a notice of the receipt of the application, the type of proposed action, and a statement that the public may request a public comment period on the proposed action.

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(d) Requests for a public comment period must be submitted to the permitting authority in writing via letter, (~~fax~~) or electronic (~~mail~~) means during the fifteen-day internet posting period.

(e) A public comment period must be provided for any application or proposed action that receives such a request. Any application or proposed action for which a public comment period is not requested may be processed without further public involvement at the end of the fifteen-day internet posting period.

(3) Actions subject to a mandatory public comment period.

The permitting authority must provide public notice and a public comment period before approving or denying any of the following types of applications or other actions:

(a) Any application, order, or proposed action for which a public comment period is requested in compliance with subsection (2) of this section.

(b) Any notice of construction application for a new or modified source, including the initial application for operation of a portable source, if there is an increase in emissions of any air pollutant at a rate above the emission threshold rate (defined in WAC 173-400-030) or any increase in emissions of a toxic air pollutant above the acceptable source impact level for that toxic air pollutant as regulated under chapter 173-460 WAC; or

(c) Any use of a modified or substituted air quality model, other than a guideline model in Appendix W of 40 C.F.R. Part 51 (in effect on the date in WAC 173-400-025) as part of review under WAC 173-400-110, 173-400-113, or 173-400-117; or

(d) Any order to determine reasonably available control technology, RACT; or

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(e) An order to establish a compliance schedule issued under WAC 173-400-161, or a variance issued under WAC 173-400-180; or

Note: Mandatory notice is not required for compliance orders issued under WAC 173-400-230.

(f) An order to demonstrate the creditable height of a stack which exceeds the good engineering practice, GEP, formula height and sixty-five meters, by means of a fluid model or a field study, for the purposes of establishing an emission (~~(limitation)~~) limit; or

(g) An order to authorize a bubble; or

(h) (~~(Any)~~) An action to discount the value of an emission reduction credit, ERC, issued to a source per WAC 173-400-136; or

(i) (~~(Any)~~) A regulatory order to establish best available retrofit technology, BART, for an existing stationary facility; or

(j) (~~(Any)~~) A notice of construction application or regulatory order used to establish a creditable emission reduction; or

(k) (~~(Any)~~) An order issued under WAC 173-400-091 that establishes limitations on a source's potential to emit; or

(l) The original issuance and the issuance of all revisions to a general order of approval issued under WAC 173-400-560 (this does not include coverage orders); or

(m) (~~(Any)~~) An extension of the deadline to begin actual construction of a "major stationary source" or "major modification" in a nonattainment area; or

(n) (~~(Any)~~) An application or other action for which the permitting authority determines that there is significant public interest; or

(o) An order issued under WAC 173-400-081(4) or 173-400-082 that establishes an emission limitation that exceeds a standard in the SIP.

(4) Advertising the mandatory public comment period.

(a) Public notice of all applications, orders, or actions listed in subsection (3) of this section must be ~~((given by prominent advertisement in the area affected by the proposal. Prominent advertisement may be by publication in a newspaper of general circulation in the area of the proposed action or other means of prominent advertisement in the area affected by the proposal.))~~ posted on the permitting authority web site for the duration of the public comment period.

(i) The permitting authority may supplement this method of notification by advertising in a newspaper of general circulation in the area of the proposed action or by other methods appropriate to notify the local community. The applicant or other initiator of the action must pay the publishing cost for all supplemental noticing.

(ii) A permitting authority must publish a notice of the public comment period in a newspaper of general circulation in the area of the proposed action until June 30, 2019. We recommend that a permitting authority continue publishing a notice in a newspaper for a project with high interest. The applicant or other initiator of the action must pay this publishing cost.

(b) This public notice can be ~~((published))~~ posted or given only after all of the information required by the permitting authority has been submitted and after the applicable preliminary determinations, if any, have been made.

(c) The notice must be ~~((published))~~ posted or given before any of the applications or other actions listed in subsection (3) of this section are approved or denied. ~~((The applicant or~~

~~other initiator of the action must pay the publishing cost of providing public notice.))~~

(5) Information available for public review.

(a) Administrative record. The information submitted by the applicant, and any applicable preliminary determinations, including analyses of the effects on air quality, must be available for public inspection. A permitting authority may comply with this requirement by making these materials available on its web site or in at least one physical location near the proposed project.

(b) The permitting authority must post the following information on its web site for the duration of the public comment period:

(i) Public notice complying with subsection (6) of this section;

(ii) Draft permit, order, or action; and

(iii) Information on how to access the administrative record.

(c) Exemptions from this requirement include information protected from disclosure under any applicable law including, but not limited to, RCW 70.94.205 and chapter 173-03 WAC.

(6) Public notice components.

(a) The notice must include:

(i) The date the notice is posted;

(ii) The name and address of the owner or operator and the facility;

~~((+ii+))~~ (iii) A brief description of the proposal and the type of facility, including a description of the facility's processes subject to the permit;

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~~((~~iii~~))~~ (iv) A description of the air contaminant emissions including the type of pollutants and quantity of emissions that would increase under the proposal;

~~((~~iv~~))~~ (v) The location where those documents made available for public inspection may be reviewed;

~~((~~v~~) A thirty day period for submitting written comment to the permitting authority;))~~

(vi) Start date and end date for a public comment period consistent with subsection (7) of this section;

(vii) A statement that a public hearing will be held if the permitting authority determines that there is significant public interest;

~~((~~vii~~))~~ (viii) The name, address, and telephone number and email address of a person at the permitting authority from whom interested persons may obtain additional information, including copies of the permit draft, the application, all relevant supporting materials, including any compliance plan, permit, and monitoring and compliance certification report, and all other materials available to the permitting authority that are relevant to the permit decision, unless the information is exempt from disclosure;

(b) For projects subject to special protection requirements for federal Class I areas, as required by WAC 173-400-117, public notice must include an explanation of the permitting authority's draft decision or state that an explanation of the draft decision appears in the support document for the proposed order of approval.

(7) Length of the public comment period.

(a) The public comment period must ~~((extend))~~ consist of a minimum of thirty days and start at least thirty days prior to any hearing. The first day of the public comment period begins on the next calendar day after the permitting authority posts the public notice on their web site.

(b) If a public hearing is held, the public comment period must extend through the hearing date.

(c) The final decision cannot be issued until the public comment period has ended and any comments received during the public comment period have been considered.

(8) **Requesting a public hearing.** The applicant, any interested governmental entity, any group, or any person may request a public hearing within the (~~thirty day~~) public comment period. All hearing requests must be submitted to the permitting authority in writing via letter, (~~fax,~~) or electronic (~~mail~~) means. A request must indicate the interest of the entity filing it and why a hearing is warranted.

(9) **Setting the hearing date and providing hearing notice.** If the permitting authority determines that significant public interest exists, then it will hold a public hearing. The permitting authority will determine the location, date, and time of the public hearing.

(10) **Notice of public hearing.**

(a) At least thirty days prior to the hearing the permitting authority (~~will~~) must provide notice of the hearing as follows:

(i) (~~Give public hearing notice by prominent advertisement in the area affected by the proposal. Prominent advertisement may be by publication in a newspaper of general circulation in the area of the proposed action or other means of prominent advertisement in the area affected by the proposal~~) Post the public hearing notice on the permitting authority web site as directed by subsection (4) and (7) of this section;

(ii) The permitting authority may supplement the web posting by advertising in a newspaper of general circulation in the area of the proposed source or action, or by other methods appropriate to notify the local community; and

~~((ii) Mail))~~ (iii) Distribute by electronic means or via the United States postal service the notice of public hearing to any person who submitted written comments on the application or requested a public hearing and in the case of a permit action, to the applicant.

(b) This notice must include the date, time and location of the public hearing and the information described in subsection (6) of this section.

(c) In the case of a permit action, the applicant must pay all ~~((publishing costs associated with meeting the requirements of this subsection))~~ supplemental notice costs when the permitting authority determines a supplemental notice is appropriate. Supplemental notice may include, but is not limited to, publication in a newspaper of general circulation in the area of the proposed project.

(11) **Notifying the EPA.** The permitting authority must ~~((send))~~ distribute by electronic means or via the United States postal service a copy of the notice for all actions subject to a mandatory public comment period to the EPA Region 10 regional administrator.

(12) Special requirements for ecology only actions.

(a) This subsection applies to ecology only actions including:

(i) A Washington recommendation to EPA for the designation of an area as attainment, nonattainment or unclassifiable after EPA promulgation of a new or revised ambient air quality standard or for the redesignation of an unclassifiable or attainment area to nonattainment;

(ii) A Washington submittal of a SIP revision to EPA for approval including plans for attainment and maintenance of ambient air quality standards, plans for visibility protection, requests for revision to the boundaries of attainment and maintenance areas, requests for redesignation of Class I, II, or

III areas under WAC 173-400-118, and rules to strengthen the SIP.

(b) Ecology must provide a public hearing or an opportunity for requesting a public hearing on an ecology only action. The notice providing the opportunity for a public hearing must specify the manner and date by which a person may request the public hearing and either provide the date, time and place of the proposed hearing or specify that ecology will publish a notice specifying the date, time and place of the hearing at least thirty days prior to the hearing. When ecology provides the opportunity for requesting a public hearing, the hearing must be held if requested by any person. Ecology may cancel the hearing if no request is received.

(c) The public notice for ecology only actions must comply with the requirements of 40 C.F.R. 51.102 (in effect on the date in WAC 173-400-025).

(13) **Other requirements of law.** Whenever procedures permitted or mandated by law will accomplish the objectives of public notice and opportunity for comment, those procedures may be used in lieu of the provisions of this section.

II. Rules adopted on 4/23/2018 and became effective on 5/24/2018

i. Chapter 173-405 WAC Kraft Pulping Mills

WAC 173-405-040 Emission standards. In addition to the general applicability of chapters 173-400 and 173-490 WAC to all emission sources; no kraft pulp mill shall cause or permit air contaminant emissions in excess of the limits listed below. Specific emission standards listed in this chapter will take precedence over the general emission standards of chapter 173-400 WAC.

(1) Recovery furnaces.

(a) The particulate emissions from each recovery furnace stack shall not exceed 0.23 grams of particulate per dry cubic meter at standard conditions (0.10 grains/dscf) corrected to eight percent oxygen averaged over three one hour tests.

(b) The TRS emissions from each recovery furnace stack constructed before January 1, 1970, and for recovery furnaces that have direct contact evaporators, shall not exceed 17.5 ppm corrected to eight percent oxygen for a daily average.

(c) The TRS emissions from each recovery furnace constructed after January 1, 1970, which does not have a contact evaporator, shall not exceed 5.0 ppm corrected to eight percent oxygen for a daily average.

(2) Smelt dissolver tank vent. The particulate emissions from smelt dissolver tank vents shall not exceed 0.15 grams per kilogram (0.30 pounds per ton) of solids fired at the associated recovery furnace.

(3) Lime kilns.

(a) The particulate emission from each lime kiln stack shall not exceed 0.30 grams of particulate per dry cubic meter (0.13 grains/dscf) at standard conditions corrected to ten percent oxygen.

(b) The TRS emissions from any lime kiln stack shall not exceed eighty ppm expressed as hydrogen sulfide for more than two consecutive hours in any one day.

(c) The average daily emission of TRS from any lime kiln stack shall not exceed fifty ppm. After January 1, 1985, TRS emissions from each lime kiln stack shall not exceed twenty ppm corrected to ten percent oxygen for a daily average.

(4) Other TRS emissions units.

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(a) Noncondensibles from digesters, multiple-effect evaporators and condensate stripper system shall ~~((at all times))~~ be treated to reduce the emissions of TRS equal to the reduction achieved by thermal oxidation in a lime kiln.

(b) A backup treatment system or equivalent approved by ecology must be installed to assure continual treatment of noncondensibles.

(5) Other particulate emissions units. The emission of particulates from emissions units other than kraft recovery furnaces, lime kilns, or smelt dissolving tank vents, shall not exceed the following maximums:

(a) 0.46 grams per dry cubic meter at standard conditions (0.2 grains/dscf) corrected to seven percent oxygen, for units which combust wood and wood residue to produce steam and which commenced construction prior to January 1, 1983.

(b) 0.12 grams per dry cubic meter at standard conditions (0.05 grains/dscf) corrected to seven percent oxygen, for units which combust fuel other than wood and wood residue to produce steam, and which commenced construction after January 1, 1983.

(c) 0.23 grams per dry cubic meter at standard conditions (0.1 grains/dscf) corrected to seven percent oxygen in the case of combustion units, for units not classified under (a) or (b) of this subsection.

(6) Opacity.

(a) No person shall cause or allow the emission of a plume from any kraft recovery furnace, smelt dissolver tank, or lime kiln, which has an average opacity greater than thirty-five percent for more than six consecutive minutes in any sixty minute period, except as described in WAC 173-405-040(7).

(b) No person shall cause or allow the emission of a plume, from any emissions unit other than a kraft recovery furnace, smelt dissolver tank, or lime kiln, which has an average opacity greater than twenty percent for more than six consecutive minutes in any sixty minute period(~~(, except that these provisions do not apply when the emissions occur due to soot blowing/grate cleaning and the operator can demonstrate that the emissions will not exceed twenty percent opacity for more than fifteen minutes in any eight consecutive hours. The intent of this provision is to permit soot blowing and grate cleaning necessary to the operation of the boiler facility. This practice, except for testing and trouble shooting, is to be scheduled for the same approximate times each day and ecology~~

~~shall be advised of the schedule)). The emissions unit shall comply with the alternative visible emission standard for:~~

~~(i) Soot blowing or grate cleaning in WAC 173-400-040 (2)(a);~~

~~(ii) Hog fuel or wood fired boiler in operation before January 24, 2018, in WAC 173-400-040 (2)(e); and/or~~

~~(iii) Furnace refractory in WAC 173-400-040 (2)(f).~~

~~(c) There shall be no more than one violation notice issued in any sixty minute period.~~

~~(d) These provisions (of WAC 173-405-040(6)) shall not apply when the presence of uncombined water is the only reason for the opacity of the plume to exceed the applicable maximum.~~

~~(7) ((Each mill may petition for, and ecology may establish by regulatory order, alternate opacity limits for a specific kraft recovery furnace or lime kiln, providing:~~

~~(a) The mill can demonstrate compliance; with all other applicable emission limits; and~~

~~(b) Best practicable operation and maintenance procedures, as approved by ecology, are continuously employed.~~

~~(8) Any person electing to apply for exceptions per the provisions of WAC 173 405 040(7) shall submit a program acceptable to ecology. The program shall include the following information: The amount and concentration of suspended particulate material emitted during best practicable operating procedures, opacity recorded at such emission level, the type of equipment and procedures which will be used to demonstrate compliance and the time required for installation of the equipment.~~

~~(9) The opacity provisions of this chapter shall apply until an application is received by ecology, petitioning for a revised limit as allowed by WAC 173 405 040(7). After a petition is received, enforcement of the opacity provisions will be stayed until the application is rejected or a new limit is established.~~

~~(10))~~ Alternative emission limitation. An owner or operator may request an alternative emission limit (as defined in WAC 173-400-030) under:

(a) WAC 173-400-081 for an action covered under a notice of construction application; or

(b) WAC 173-400-082 for a permit modification.

(8) Operation and maintenance. At all times, including periods of abnormal operation and upset conditions, owners and operators shall, to the extent practicable, maintain and operate any affected facility, including associated air pollution control equipment, in a manner consistent with good air pollution control practice. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to ecology which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.

~~((11))~~ (9) SO₂.

(a) The emission of sulfur dioxide from any recovery furnace or lime kiln shall not exceed five hundred ppm for an hourly average, corrected to eight percent oxygen for a recovery furnace or to ten percent oxygen for a lime kiln.

(b) The emission of sulfur dioxide from any emissions unit other than a recovery furnace or lime kiln shall not exceed one thousand ppm for an hourly average, corrected to seven percent oxygen for combustion units.

~~((12))~~ (10) Source testing. To demonstrate compliance with this chapter, the provisions of WAC 173-400-105 shall apply to all sources to which this chapter is applicable.

[Statutory Authority: Chapter 70.94 RCW. WSR 91-05-064 (Order 90-06), § 173-405-040, filed 2/19/91, effective 3/22/91. Statutory Authority: Chapters 43.21A and 70.94 RCW. WSR 83-09-036 (Order DE 83-13), § 173-405-040, filed 4/15/83. Statutory Authority: RCW 70.94.331 and 70.94.395. WSR 80-11-060 (Order DE 80-15), § 173-405-040, filed 8/20/80.]

WAC 173-405-077 ~~((Report of startup, shutdown, breakdown or upset conditions.))~~ **Excess emissions.** The provisions of WAC ~~((173-400-105(5))~~ 173-400-107, or 173-400-108 and 173-400-109 shall apply to all sources to which this chapter is applicable.

Note: WAC 173-400-107 is in effect until the effective date of EPA's removal of the provision from the SIP.

ii. Chapter 173-410 WAC Sulfite Pulping Mills

WAC 173-410-040 Emission standards. In addition to the general applicability of chapters 173-400 and 173-490 WAC to all emission sources; no sulfite pulping mill shall cause or permit air contaminant emissions in excess of the limits listed below. Specific emission standards listed in this chapter will take precedence over the general emission standards of chapter 173-400 WAC.

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(1) Sulfur dioxide.

(a) The total average daily emissions from a sulfite pulping mill, or a portion of a sulfite pulping mill which practices incineration of the spent sulfite liquor, shall not exceed ten grams of sulfur dioxide per kilogram (twenty pounds per ton) of air dried, unbleached pulp produced.

(b) The total average daily emissions from a sulfite pulping mill, or a portion of a sulfite pulping mill that does not incinerate the spent sulfite liquor, shall not exceed two grams of sulfur dioxide per kilogram (four pounds per ton) of air dried, unbleached pulp produced.

(c) The blow system emissions shall not exceed 0.1 grams of sulfur dioxide per minute, on a fifteen minute average, per kilogram (0.2 pounds per ton) of air dried, unbleached pulp discharged from the digester.

(d) Emissions from the recovery system and acid plant shall not exceed 800 ppm of sulfur dioxide for any hourly average.

(e) Emissions from recovery systems constructed after January 24, 1972, shall not exceed 300 ppm of sulfur dioxide for any hourly average.

(f) Emissions from any emissions unit, other than a recovery system, a blow system or an acid plant, shall not exceed 1000 ppm of sulfur dioxide, corrected to seven percent oxygen in the case of combustion unit, for any hourly average.

(2) Particulate.

(a) Emissions of particulate from recovery systems constructed before January 24, 1972, shall not exceed 0.23 grams per dry cubic meter of exhaust at standard conditions (0.10 grains/dscf) corrected to eight percent oxygen.

(b) Emissions of particulate matter from recovery systems constructed after January 24, 1972, shall not exceed 0.14 grams per dry cubic meter of exhaust at standard conditions (0.06 grains/dscf) corrected to eight percent oxygen.

(c) The emission of particulates from emissions units other than acid plants or recovery systems shall not exceed the following maximums:

(i) 0.46 grams per dry cubic meter at standard conditions (0.2 grains/dscf) corrected to seven percent oxygen, for units which combust wood and wood residue to produce steam and which commenced construction prior to January 1, 1983.

(ii) 0.12 grams per dry cubic meter at standard conditions (0.05 grains/dscf) corrected to seven percent oxygen, for units

which combust fuel other than wood and wood residue to produce steam, and which commenced construction after January 1, 1983.

(iii) 0.23 grams per dry cubic meter at standard conditions (0.1 grains/dscf) corrected to seven percent oxygen in the case of combustion units, for units not classified under (c) (i) or (ii) of this subsection.

(3) Opacity.

(a) No person shall cause or allow the emission of a plume from a recovery system or acid plant which has an average opacity greater than thirty-five percent, for more than six consecutive minutes in any sixty minute period(~~(, except as allowed per RCW 70.94.331 (2)(e))~~).

(b) Visible emissions from units other than acid plants or recovery systems shall comply with WAC 173-400-040(2), except when an alternative opacity limit established under WAC 173-400-081 or 173-400-082 is applicable.

(4) Operation and maintenance. At all times, including periods of abnormal operations and upset conditions, owners and operators shall, to the extent practicable, maintain and operate any affected facility, including associated air pollution control equipment, in a manner consistent with good air pollution control practice. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to ecology which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.

(5) No recovery system shall emit total reduced sulfur (TRS) gases in excess of 17.5 ppm for a daily average.

(6) More restrictive limits. Ecology may set more restrictive emissions limits than the specific limits set in this chapter (after public involvement and hearing), if there is reason to believe that the emission(s) from a source is a cause of public nuisance or a cause of violation of ambient air quality standards. The source shall, within ninety days from notification of the more restrictive limits, achieve operation that will prevent further recurrence of the nuisance or violation.

(7) Source testing. To demonstrate compliance with this chapter, the provisions of WAC 173-400-105 shall apply to all sources to which this chapter is applicable.

(8) Alternative emission limitation. An owner or operator may request an alternative emission limitation (as defined in WAC 173-400-030) under:

(a) WAC 173-400-081 for an action covered under a notice of construction application; or

(b) WAC 173-400-082 for a permit modification.

WAC 173-410-067 (~~((Report of startup, shutdown, breakdown or upset conditions.))~~) **Excess emissions.** The provisions of WAC (~~(173-400-105(5))~~) 173-400-107, or 173-400-108 and 173-400-109 shall apply to all sources to which this chapter is applicable.

Note: WAC 173-400-107 is in effect until the effective date of EPA's removal of the provision from the SIP.

iii. Chapter 173-415 WAC - Primary aluminum plants

WAC 173-415-030 Emission standards. (1) Fluoride.

(a) The emission of total fluorides from a primary aluminum reduction plant shall meet the ((MACT)) requirements ((specified)) in 40 C.F.R. 63 Subpart LL.

(b) In addition to meeting the requirements in (a) of this subsection, the emission of fluorides from a primary aluminum reduction plant shall meet the requirements in chapter 173-481 WAC.

(c) If ((the department)) ecology has reason to believe that adverse fluoride impacts are occurring ((in violation of chapter 173-481 WAC)), a primary aluminum reduction plant must establish, in response to a request from ((the department)) ecology, an ambient air and/or forage monitoring program approved by ((the department)) ecology as required by WAC 173-481-150.

(2) Particulate. Facilities shall reduce the total emission of particulate matter to the atmosphere from the reduction process (potlines) ((shall be reduced)) to the lowest level consistent with reasonably available control technology (RACT) for primary aluminum reduction plants. The emission of solid particulate shall not exceed 7.5 grams per kilogram (fifteen pounds per ton) of aluminum produced on a daily basis. Facilities shall calculate aluminum produced ((shall be calculated by)) using the method in 40 C.F.R. 63.847 (e)(6) used ((to determine)) for determining aluminum production rate ((in 40 C.F.R. 63.847 (e)(6))).

(3) Visible emissions. Visible emissions from any emissions unit in a primary aluminum reduction plant shall not exceed an

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average twenty percent opacity for more than six consecutive minutes in any sixty-minute period. This provision shall not apply:

(a) When the presence of uncombined water is the only reason for the opacity of the plume to exceed twenty percent; or

(b) When an alternate opacity limit has been established under ~~((RCW 70.94.331 (2)(e)))~~ WAC 173-400-040, 173-400-081, or 173-400-082.

(4) Fugitive emissions. Each primary aluminum reduction plant shall use RACT to prevent fugitive emissions. Fugitive dust is included in fugitive emissions.

(5) Sulfur dioxide.

(a) Total emissions of sulfur dioxide from all emissions units shall not exceed thirty grams of sulfur dioxide per kilogram of aluminum produced on a monthly average (sixty pounds per ton). ~~((Those primary aluminum plants which were in excess of the above sulfur dioxide limit on January 1, 1978, will be allowed to emit at the January 1, 1978, level of emissions provided that the owners or operators did demonstrate to ecology by July 1, 1981, by use of modeling and ambient measurements, that the emissions will not cause the ambient standard to be exceeded, and that the limits are placed in a regulatory order(s).))~~

(b) In no case shall any plant cause or permit the emission of a gas containing sulfur dioxide in excess of one thousand parts per million corrected to dry standard conditions for an hourly average.

(6) Operation and maintenance (O&M). At all times, including periods of abnormal operation and upset conditions, owners and operators shall, to the extent practicable, maintain and operate an affected facility, including associated air pollution control equipment, in a manner consistent with good air pollution control practice. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to ecology, which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source. The means for demonstrating ongoing compliance with good O&M may include, but not be limited to: More frequent source testing, prescriptive procedures or inspections, control values for emissions at values less than the applicable regulatory requirements and that function as an investigative trigger rather than as a limit, collection and efficiency requirements, or the use of CEMs.

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(7) Source testing. To demonstrate compliance with this chapter, the testing provisions of chapters 173-400, 173-481 WAC and ~~((MACT))~~ the requirements ((as specified)) in 40 C.F.R. Part 63, Subpart LL shall be ~~((used as))~~ applicable.

(8) Alternative emission limitation. An owner or operator may request an alternative emission limitation (as defined in WAC 173-400-030) under:

(a) WAC 173-400-081 for an action covered under a notice of construction application; or

(b) WAC 173-400-082 for a permit modification.

WAC 173-415-075 Excess emissions. The applicable provisions of WAC 173-400-107, or 173-400-108 and 173-400-109 shall apply to all sources to which this chapter is applicable.

Note: WAC 173-400-107 is in effect until the effective date of EPA's removal of the provision from the SIP.

Appendix D. Benton Clean Air Agency's request for SIP submission



BENTON CLEAN AIR AGENCY

July 16, 2019

Kathy Taylor
Acting Air Quality Program Manager,
Washington State Department of Ecology,
300 Desmond Drive SE
Lacey, WA 98503

Subject: Revision of State Implementation Plan

Dear Kathy

Ecology adopted amendments to the General Air Quality Regulation, Chapter 173-400 Washington Administrative Code (WAC), on August 16 and October 25, 2018. We learned from Air Quality Program staff that Ecology is working to propose EPA include portions of this Chapter 173-400 WAC in the Washington State Implementation Plan (SIP) to ensure parts of these rule amendments are federally enforceable in Ecology's jurisdiction.

Benton Clean Air Agency (BCAA) implements and enforces part of Chapter 173-400 WAC in its jurisdiction, and would like to make those rule amendments, as summarized in the attached table, are federally enforceable. Therefore, BCAA requests Washington State Department of Ecology, as the designated state agency for submitting SIP to EPA, to adopt this revision and submit it to EPA for approval in the Washington SIP that applies to our jurisdiction.

Sincerely,

A handwritten signature in blue ink, appearing to read "Robin Priddy".

Robin Priddy
Executive Director

Enclosure:

- SIP revision Benton Clean Air Agency proposes for our jurisdiction

Table: SIP revision Benton Clean Air Agency proposes for its jurisdiction - Chapter 173-400 WAC adopted on 08/16/2018 and 10/25/2018

Rule Section Chapter	Section title	State effective date	Changes in the rule	Proposed change in the SIP at BCAA jurisdiction
WAC 173-400-025	Adoption of federal rules	9/16/2018	Revised	Revise in the SIP
WAC 173-400-030	Definitions	9/16/2018	Revised Unchanged	Revise in the SIP Not in the SIP
WAC 173-400-040	General standards for maximum emissions	9/16/2018	Revised Unchanged Revised	Revise in the SIP Not in the SIP Not in the SIP
WAC 173-400-050	Emission standards for combustion and incineration units	9/16/2018	Revised	Revise in the SIP
WAC 173-400-060	Emission standards for general process units	11/25/2018	Revised	Not in the SIP
WAC 173-400-070	Emission standards for certain source categories,	9/16/2018	Unchanged Revised	Not in the SIP Revise in the SIP
WAC 173-400-081	Startup and shutdown	9/16/2018	Deleted	Remove from the SIP
WAC 173-400-082	Alternative emission limit that exceeds an emission standard in the SIP	9/16/2018	Deleted	Not in the SIP
WAC 173-400-105	Records, monitoring, and reporting.	9/16/2018	Unchanged	Not in the SIP
WAC 173-400-107	Excess emissions	9/16/2018	Revised	Revise in the SIP
WAC 173-400-109	Unavoidable excess emissions	9/16/2018	Revised	Remove from the SIP
WAC 173-400-171	Public involvement	9/16/2018	Revised New	Not in the SIP Revise in the SIP
WAC 173-400-740	PSD permitting public involvement requirements	9/16/2018	Revised	Revise in the SIP

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Appendix E. Public involvement

This appendix demonstrates Ecology's efforts to meet and exceed both federal and state requirements for public involvement during the development of this SIP revision document through presenting the following records.

- Ecology State Implementation Plan (SIP) website
- Public inputs and events listing on Ecology website
- Public notice on the Seattle Daily Journal of Commerce (DJC) newspaper
- E-mail message to Rule and SIP message subscribers
- Invited public inputs at e-comment website

Appendix F. SIP adoption order

This appendix documents Ecology's adoption of this SIP revision, when we decide to adopt it.