WSPA

February 16, 2021

Attachment: WSPA Comments on Ecology's Draft 4-Factor Analysis Chapter

Introduction Comments:

Page 5, Paragraph 2. According to the regulation cited in the previous paragraph, the emission reductions resulting from the 4-factor process and other reductions from things such as plant closures, and rules on the books with future applicability dates, are used to establish the reasonable progress goals. This is WSPA's understanding of the rule. However, the way the Ecology text of this paragraph gives the impression that the reasonable progress goals are set, then emission reductions found to accomplish the goals. WSPA requests this paragraph be edited to better conform to EPA's Regional Haze regulations.

Page 5, Paragraph 2. Ecology needs to edit this paragraph for clarity. As written, a reader could get the impression that area and mobile sources do not contribute to regional haze. There are multiple analyses that show their contribution to haze, including the modeling that has been done for this SIP. Due to not having fixed locations or having very small emissions, they are not evaluated via the Q/d process. Ecology needs to clarify why it is not addressing area and mobile sources at this time.

Page 6, Paragraph 1. Ecology needs to explain why it is committing to the use of a RACT regulation development process for the refineries. As previously stated in our opening remarks, Ecology needs to be open to other regulatory mechanisms to evaluate visibility-impacting emissions and reasonable emission reductions which consider RACT-criteria. Voluntary emission reductions presented in an Agreed Order is one example. The language in the draft chapter suggests that there is a dispute between Ecology and the petroleum refining source category operators; WSPA is not aware that this is the case.

Source Screening Analysis (Q/d) Comments:

Page 7. Ecology needs to explain the Q/d processes more clearly. WSPA requests that Ecology include discussions on deferring sources with large Q/d values while including other sources with much smaller Q/d values.

Page 7, Paragraph 1. WSPA requests the Q/d table (Table 1) should be referenced here to give context for the 'scores' discussed in the last sentence. For example, what does the 'score' of 685

mean? Further, the reference to a score of 685 differs from the use of '80% score' equal to 6.7, in the third paragraph later on the page.

Page 7, Paragraph 5. Ecology needs to provide clarification here. Specifically, were three minor sources removed from consideration or two? WSPA requests simply naming the plants removed from consideration and providing the reasons for doing so to lend clarity here.

Page 7, Paragraph 6. (Describing initial screening step): Ecology needs to provide more clarity here. Specifically, it is unclear what is being said and what is the conclusion in last sentence.

Page 7, Paragraph 7. (Describing the second screening step):WSPA is unclear what second evaluation is being referred to in the first sentence. Further, would not the Q/d process effectively eliminate the 1,121 small sources from consideration, essentially leaving only sources with Air Operating Permits for further evaluation?

Page 7, Paragraph 8. WSPA interprets this paragraph to say that using a Q/d of 10 or more yields 16 sources, yet in the third paragraph 17 sources are discussed. What is the source of this difference? Further, the paragraph goes on to state that two of these sources are removed, which would leave 15. Please clarify. Is Ecology stating two separate Q/d evaluations were conducted using differing methods and that what resulted was essentially the same list of sources? Based on this section of the chapter, it is not clear what was done to select the sources that were evaluated.

Table 1. There are two plants that are bolded. What does the bolding mean? Why isn't this noted in the text discussing the Q/d evaluation?

Source Specific 4-factor Analysis Section Comments:

Facility Specific 4-Factor Analyses: Refinery Section:

Page 40, Paragraph 3. Ecology needs to compare the records on both the age of the federal Clean Air Act and the refineries. Not all of them existed before the federal Clean Air Act came into existence. Did Ecology mean the 1970 amendments to the Act? It would be more direct to simply identify when the refineries were built and perhaps when any major expansions/modifications occurred. Ecology's reliance on what are now obsolete facility names is confusing The ownerships have changed through time. It would be more accurate to use current ownership names.

Page 42, Paragraph 5. Ecology states that two of the three refineries with FCCUs did not submit information on FCCU controls. But Ecology asked for information on projects in a specific date range and the referenced FCCUs were outside of the requested date range. It is also our

understanding all the PSD cost analyses for these projects are available in Ecology's permit files. Otherwise, an inquiry to the refineries requesting this information is another available option.

Page 42, Last Paragraph. Ecology states the SCR cost estimates from the companies differed from what is estimated by the EPA's Control Cost Manual. WSPA suggests a discussion on what is different and its importance in the analysis will be useful to provide context. The below paragraphs discuss specific considerations for discussion within the document:

The capital cost estimates provided by members include site specific factors and costs that are not reflected in the EPA control cost manual's calculations. Members engaged engineering consultants to help evaluate project scopes plus site-specific issues such as physical space for new emission controls, need for new foundations or demolition and relocation of other existing equipment or piping to make space for SCR controls, safety requirements for the use of ammonia at the refinery, feasibility of using one or a number of ammonia storage tanks, and the anticipated capital costs to accomplish these changes.

Page 42, Last Paragraph. This paragraph contains two very separate discussions, one discussion is about costs of controls. The other is a decision to utilize the state RACT process to develop a NO_x control rule rather than other approaches to getting emission reductions. This discussion should include Ecology's rationale for not using the other options to get emission reductions available under state law.

Table 7. How does Ecology explain the factor of 10 differences in cost effectiveness for installation of SCR between its estimates and those provided by the refineries? Will the proposed RACT Rule development process be used to further refine these costs and possibly change the current emission control proposal?

WSPA's preliminary review of the work on estimating costs indicates that Ecology used the included default values and factors almost exclusively. As both EPA's Control Cost Manual and EPA Regional Haze August 2019 guidance state, acquisition of site-specific information is preferable when making estimates. Ecology recognized a preference of site-specific cost information over generic factors on page 37 of the draft 4-Factor analysis when the agency states the following:

> "*This approach does not take into account the site-specific information we requested from the mills and is therefore less accurate and harder to reconcile. According to page 32 of EPA's August 2019 RH guidance document: "We recommend that states exercise caution before accepting or rejecting controls based on generic cost estimates if adequately documented source-specific estimates are available or can be prepared."*

In addition, it appears Ecology used the default 2016 costs the EPA Control Cost Manual's formulas are based on rather than inflating the costs to a more current year, as directed by the Manual. For all of these reasons, WSPA contends that the control cost estimates that appeared in the members' 4-Factory Analyses are more reliable than those appearing in Ecology's Draft 4-Factor Analysis.

Page 42, Last Paragraph. WSPA suggests it would be helpful to have Ecology's discussion about its decision to use the state RACT process to develop a NOX control rule for the refineries match up with the discussion on how controls could be required earlier in this chapter. (Very awkward sentence.)

Tables 7, 8, 12, 15. WSPA requests clarity on whether the "TPY reduced" column indicates the tons no longer emitted or the tons remaining after control? Is Ecology's estimate of tpy reduced based on a potential to emit calculation or the actual emissions that occurred in 2014? WSPA's analysis indicates that the toms reduced column is not based on actual 2014 emissions. Ecology needs to explain why they chose the approach presented or make adjustments to use site-specific actual emissions.

Page 44. Ecology appears to be providing a very short RACT decision summary that does not comport with prior agency RACT analyses (e.g., the 2017 Pulp and Paper and the Refinery Greenhouse Gas RACT analyses). Since it does not meet the process used in the prior agency RACT analyses, WSPA contends this is an incomplete and therefore premature analysis. WSPA recommends the detailed analysis should be part of the proposed RACT rulemaking exercise, similar to what was done for the Refinery Greenhouse Gas RACT rule.

The following comments use the numbering convention of Ecology in its summary RACT analysis:

Item I.d. This statement is premature in light of the need for Ecology to show that emissions from one or both refineries are contributing to the "health disparities." The mere adjacency of the plants and the community do not equate to the implied cause and effect, as can be shown by many dispersion modeling studies. **Item I.e.** It is WSPA's view the health impacts caused by NOx are not an ambient air quality impact. Health impacts from NOx only occur under very high concentrations and should be removed from this list. Ambient air concentrations in the airsheds where refineries operate are compliant with NAAQS, and as such, suggesting a health impact

from point source emissions in these areas cannot be asserted. WSPA submits Ecology has not shown that the concentration of NOx in Anacortes that is attributable to emissions from the

March Point refineries is such that the health impact would occur. Given this, WSPA believes such a statement is inappropriate for this presentation.

Item 2. Availability of additional controls. This evaluation is incomplete in that it does not list or evaluate other controls that can be used, including combustion controls and alternate stack controls, i.e., SNCR, Low NOx and Ultra Low NOx burners. Ecology needs to present an analysis of why "most major US refineries have already installed SCR or Low NOx burners."

Item 3. Emission reductions. The information discussed in this item is also incomplete in that it focuses solely on one possible control and not other available options such as those noted above. WSPA requests a more comprehensive discussion.

Item 3.d. Stating that health impacts will decrease due to a decrease in emissions may not be true. For example, using SCR will reduce stack temperatures, which may affect stack exit velocity and effective stack height; thus, the dispersion characteristics will change. The changed dispersion may even result in higher concentrations at ground level compared to current conditions. Further, WSPA is concerned with the focus on Anacortes. This focus may justify treatment of these refineries differently than the others.

Item 4, Capital and operating cost of controls. Ecology provides a wide range of estimated costs in $/ton reduced that it considers to be cost-effective for RACT. It is not clear what Ecology has selected as criteria for determining if a control is or is not cost effective for RACT. In determining cost effectiveness for NOx control in ozone nonattainment areas, most states, and local agencies in the US (but not California's South Coast AQMD) have chosen to use a NOx control cost effectiveness value in the $1500 – $3000/ton reduced range.[1] Ecology should either consider the approaches and analyses used by these other jurisdictions in their determination of cost effectiveness or justify why a different cost-effectiveness threshold is necessary in Washington.

Page 45, Low-NOx Burners. WSPA believes Low NOx burners and Ultra Low NOx burners have similar combustion characteristics, but due to specific installation issues should not be considered the same technology. Furthermore, Low NOx burners have a long track record of successful retrofit installations. Ultra-Low NOx burners have a less uniform success rate in retrofit applications.

Ecology's analysis should not focus solely on the use of SCR as a control technology but include consideration of Low and Ultra Low NOx burners as appropriate options for NOx control. The discussion should include what boiler or heater fire-box characteristics would favor the use of

[1] See SIP documents for Ozone nonattainment plans for Pennsylvania, New York, Philadelphia, PA, Mojave and Ventura county AQMDs in California as examples

these burners and identify which heaters or boilers at the refineries which meet these characteristics.

Ecology requested that the refineries evaluate installation of Ultra Low NOx burners and not Low NOx burners. Ecology's request of the refineries should be reflected in the agency's final 4-Factor Analysis.

Page 47, Third paragraph. Here and elsewhere, WSPA requests when Ecology provides costs estimated or incurred by other entities to support the use of the Control Cost Manual's calculations that Ecology shows the basis for the calculations and name the installations and specific costs being referenced. Being transparent with this information would greatly help reviewers evaluate, understand and comment on Ecology's work.