

Response to Comments
Intalco Aluminum Corporation
Air Quality Agreed Order No. 16499
Public comment period: May 8 – June 10, 2019

This document addresses questions and comments received by the Department of Ecology (Ecology) during the public comment period on draft air quality Agreed Order No. 16499 requiring Alcoa's Intalco aluminum smelter in Ferndale, Washington to install new air pollution control equipment to reduce sulfur dioxide emissions.

We published notice of an opportunity to comment in The Ferndale Record-Journal and on the Ecology website on May 8, 2019. In the notice, we invited public review and provided a 30-day public comment period.

We received comments from eight commenters during the comment period. Comments appear in italicized text followed by Ecology's response in regular text.

1. Comment from Rosemary Trimmer

I fully support using more pollution control equipment and BMPs in order to reduce sulfur dioxide emissions from Alcoa Intalco Works. Clean air quality is a right that our future generations deserve. Please continue to develop the plan with Alcoa Intalco Works and all the other WA State emitters to protect local air quality and ensure that it consistently meets the federal standards.

Response to Rosemary Trimmer

Comment noted.

2. Comment from Mary Teesdale

Please put the scrubber in asap. Also do any other pollution fixes you can.

Response to Mary Teesdale

The agreed order establishes a timeline for Intalco to install a wet scrubber. Under the timeline, the wet scrubber must be in operation by December 31, 2022. This date allows time for permitting, design, and construction of the wet scrubber.

3. Comments from Larry McCarter

I am happy that no judge was required to move this monitoring forward.

Over the last three years I have delivered to Ecology, attempting to document, several photos of the plume that continually hovers over or near the Intalco facility. I would like those communications with the Permit manager to be incorporated in this process.

I am attaching a few of these photos as the emissions seem only to have increased ever since the Tariffs for foreign aluminum were imposed.

Response to Larry McCarter

Comment noted.

Mr. McCarter has submitted a number of photos and a video to Ecology over the past couple of years regarding observations in flights over the Intalco facility. In addition to these photos and video, Mr. McCarter commented on the extent of a plume from Intalco and smoke and haze covering Ferndale. He has also asked about the monitoring of Intalco's emissions, types of pollutants in the emissions, exceedances of permit limits, enforcement actions Ecology has taken, risks to the community, and what Ecology is doing to protect air quality. Here is a summary of Ecology's responses to these comments and questions –

Ecology's Air Quality Program reviewed the photos Mr. McCarter submitted. They thought that the plume Mr. McCarter observed is mostly made of condensation that develops when the cooling evening air comes in contact with the moist warmer exhaust emitted from Intalco's wet scrubbers.

The emissions inside the smelter pots (pots) are treated by dry scrubbers. The emissions that escape the pots are treated by wet scrubbers. Approximately 90% of the emissions from the facility are routed through the dry scrubbers and the remaining 10% are routed to the wet scrubbers. Intalco's smelting operations are typically efficient and steady. The emissions from the smelter are a function of how efficiently the pots are operated. Upsets in the pots lead to less aluminum production and more emissions.

Ecology doesn't typically see visible emissions (opacity), indicating abnormal conditions, from the wet scrubbers. A person certified in opacity readings would be required to evaluate plume conditions. There are a number of critical variables that have to be controlled to get a defensible opacity reading. All monitoring and source testing, including opacity readings, are subject to quality control standards. We are not able to use photographs or video provided by the public to determine a facility's compliance with emission limits or opacity standards.

Intalco must comply with the conditions and emission limits in their Air Operating Permit (AOP). The AOP contains emission limits for all pollutants emitted from the plant. The AOP limits are protective of the national ambient air quality standards and the standards in Ecology's state air regulations. Intalco is required to demonstrate continuous compliance with their AOP limits. Intalco performs source testing and operates ambient monitors for fluoride and SO₂ to determine compliance with the AOP's emission limits and ambient air quality standards. Intalco is required to submit monthly air monitoring reports to Ecology. The monthly reports contain the results of the respective testing and monitoring required in their AOP.

Intalco has had a number of exceedances of their carbon monoxide (CO), total fluoride (TF), and particulate matter (PM) permit limits in 2017, 2018, and 2019.

Most of these exceedances were due to the change in operations and loss of trained personnel when the scheduled curtailment of the smelter was cancelled. Ecology has issued two penalties and an enforcement order to Intalco in response to these exceedances.

Of the pollutants released by Intalco operations, sulfur dioxide (SO₂) is thought to cause the highest air quality impacts in the area. There are two air monitoring stations located near the Intalco smelter. These monitors are located in the area projected to have the highest SO₂ impacts. These stations continuously monitor the air quality near Ferndale on Kickerville Road and Mountain View Road. These stations became part of Ecology's Ambient Air Monitoring Network on January 1, 2017 and have recorded exceedances of the 1-hour National Ambient Air Quality Standard for Sulfur Dioxide (SO₂) during the past year.

4. Comment from Janet Migaki

I continuously see air pollutants rise up and out of Intalco----- as a community member, I need to know that Alcoa is being monitored and held to basic pollution regulations, to include upgrades to keeping releases to a minimum. The new pollution control equipment, scrubbers are necessary, and should be required. I would very much like to be informed as to the progress of this Draft Agreed Order.

Response to Janet Migaki

Comment noted. Intalco must comply with the conditions and emission limits in their Air Operating Permit (AOP). The AOP contains emission limits for all pollutants emitted from the plant. Intalco is required to demonstrate continuous compliance with their AOP limits. Intalco performs source testing and operates ambient monitors for fluoride and SO₂ to determine compliance with the AOP emission limits and ambient air quality standards. Intalco is required to submit monthly air monitoring reports to Ecology. The monthly reports contain the results of the respective testing and monitoring required in their AOP.

A copy of the AOP can be found on Ecology's website at:

<https://fortress.wa.gov/ecy/industrial/UIPermit/ViewDocument.aspx?DocumentId=113>.

Ecology will add you to our interested parties list for future Ecology notifications regarding Intalco. You may also be interested in joining Ecology's listserv for information regarding SO₂ nonattainment. To join the listserv see the following link:

<http://listserv.ecology.wa.gov/scripts/wa-ECOLOGY.exe?SUBED1=SO2-ATTAINMENT>

5. Comments from Barry Wenger

Please hold a public meeting and hearing in Whatcom County to help inform and educate the public about the proposed Intalco SO₂ scrubber, as well as the interaction of the numerous emissions created by our two local refineries, the aluminum smelter, railroad-related emissions, the I-5 corridor, airport traffic, and a multitude of commercial vessel traffic all upwind of many of our citizens. Some residents are aware of the climate implications from the refineries' activities, but few understand the health risks from the air they breathe daily or Intalco's role in both climate and air pollution. There are many questions about the cumulative effect of multiple pollution sources and the "toxic soup" created by the chemical reactions that occur in the atmosphere and that may pollute the environment via precipitation, other mechanisms of air deposition, or from atmospheric inversions. A question and answer period would be most helpful as part of such a hearing.

As a retired state environmental planner with 26-years experience in Cherry Point issues and a resident of Whatcom County who enjoys many of the outdoor recreational opportunities afforded locally, I am concerned about my and the public's constant exposure to numerous pollutants created by Intalco in addition to the various upwind sources. Then there is the fact that Whatcom County is also downwind of the Shell and Tesoro refineries in Anacortes, increasing the pollution burden here which I have personally physically experienced in Bellingham.

Concerns and questions regarding Agreed Order 16449:

Human health effects

Cumulative Impacts

The cumulative impact from the refineries and Intalco for individual pollutants as well as pollutants created in the atmosphere, especially PM 10 and PM 2.5 are also of concern. What steps is Ecology taking to measure and evaluate VOCs, ash, chemicals used in production and the "toxic soup" these industries create? As you know, BP supplies the coke burned by Intalco, so all of these industries are interrelated and contribute to compromise health, particularly of those most vulnerable to pollution including children and elders.

Questions:

***Action 3: Regional Haze Rule.** It would appear that under certain situations, Intalco would not have to install the scrubber even though there have already been numerous SO2 exceedances over many years. In a 2015 report Ecology stated:*

"Design values measured at the monitors operated by the refineries are low while the monitor operated by Intalco shows design values that often exceed the 1-hr SO2 standard." (7)

Obviously, the public expects the least exposure to this harmful pollutant that is possible through regulation.

Additionally, while some of the data available to the public is difficult to decipher, SO2 one-hour exceedances appear to go back to at least 2010 while Intalco has a pattern of both late reporting and reporting violations raising questions about the integrity of any self-reported data. It would be helpful to understand what monitoring Ecology is doing directly.

***Action 1.** The timeline for completion is overly generous while the cost, according to the press (6) is \$15M, a fraction of Alcoa's 2018-reported revenue of \$13.4 billion. Whatever can be done to reduce the timeline for installation and operation of the scrubber should be done.*

BACT

Nowhere can I find whether or not wet scrubbers meet Best Available Control Technology standards. I am assuming NSR is not triggered under these circumstances, but would appreciate information as to the efficacy of wet scrubber technology in this application. As there are only nine smelters across the entire country, Intalco is expected to be a Whatcom neighbor for many years. Having the plant run as cleanly as possible as soon as possible is a priority for citizens and trust it is the State's as well.

Exposure and air modeling

I also question the following: "SO₂ typically dissipates very quickly, but people living or working close to the plant may have been exposed to short-term levels that pose a risk to those with preexisting breathing or health issues. At this time, we have no evidence that elevated levels of SO₂ have reached Ferndale or other nearby communities." (1)

A 2015 Ecology report "Analysis of Sulfur Dioxide (SO₂) Monitoring Data and Meteorology at March and Cherry Points" also noted monitoring issues:

"There are siting concerns for all three monitors, in that they may not capture SO₂ concentrations associated with wintertime outflow winds from the Frazer River Valley... Intalco's present SO₂ monitoring concentrations are nearly twice those observed at the BP and Phillips 66 monitors. Due to operating characteristics of the Intalco facility that can coincide with the Fraser River Valley outflow winds, if a monitor were placed southwest of the facility, there is a possibility that it could regularly exceed the SO₂ standard unless the facility takes steps to reduce SO₂ emissions." (7)

What air modeling has been done and under what weather conditions? While the predominant air flow goes from SW to NE, weather systems including the Fraser River outflow from the Northeast, periods of calm, Pineapple Express and convergence zones all occur to expose everyone in the vicinity over time. Additionally, as stated above, SO₂ combines with other pollutants to form PM 2.5, so arguing that it dissipates ignores another very serious health hazard created by SO₂.

Habitat and Wildlife, Orcas and Salmon and Cherry Point Herring

SO₂ is a major factor for ocean acidification and its contribution to PM 2.5 is also an environmental issue according to the EPA:

Environmental Damage

Particles can be carried over long distances by wind and then settle on ground or water. Depending on their chemical composition, the effects of this settling may include:

- *making lakes and streams acidic*
- *changing the nutrient balance in coastal waters and large river basins*
- *depleting the nutrients in soil*
- *damaging sensitive forests and farm crops*

- *affecting the diversity of ecosystems*
- *contributing to acid rain effects.” (3)*

Cherry Point Herring, a major source of food for Chinook salmon, in turn the food source for the endangered Orcas, are also endangered. SO2 must be controlled aggressively to minimize further degradation of our coastal waters. In addition, Lake Terrell is a state-owned significant wildlife preserve directly a short distance downwind from Intalco which receives a great deal of recreation. It is the headwaters of Terrell Creek which is an important coastal salmonid stream which has received a large amount of public funds and restoration effort as well as houses the region’s largest Great Blue Heron rookery.

Whatcom County is also a major farming region and the nutrient depletion of our soil is both a health and economic concern.

Visibility impairment

According to the EPA, “Fine particles (PM2.5) are the main cause of reduced visibility (haze) in parts of the United States, including many of our treasured national parks and wilderness areas.”

How is haze factored into your regulation of this facility?

Tribal rights and Environmental Justice

What considerations have been given to the effects of the SO2 pollution and health effects on the Lummi Nation? With their lands a few miles from Intalco, their protection must be a factor, yet I see no mention of this requirement. In addition, the Lummi Nation’s treaty rights may be affected due to adverse impacts on the adjacent freshwater and marine fisheries and related cultural activities.

Opacity

What opacity rules apply and what opacity monitoring is done? The plume is visible 24/7 no matter the weather conditions.

As we are already experiencing increasing dangerous air quality from American and Canadian wildfire smoke and longer fire seasons with rapid climate damage, there is a heightened need to educate the public about industrial air pollution and what can be done to manage it. Since point source air pollution is controllable while wild fires are much more difficult to manage, we urge you to utilize all analytical and regulatory tools to reduce pollution in Whatcom County to protect human health, our habitat and wild life. What are the carrying capacity characteristics for cumulative pollutant exposure and environmental degradation for our air shed and how are they determined?

I look forward to working with the Department of Ecology as an interested party as this effort moves forward.

Response to Barry Wenger

Ecology's responses are listed below by the main topics listed in Mr. Wenger's concerns/questions. We are not planning to hold a public meeting and hearing at this juncture. Ecology plans to conduct additional public outreach related to SO₂ and the non-attainment process. We will continue to communicate with interested parties and provide information as we move forward through this process.

Human Health Effects/Cumulative Impacts

Ecology and our partners rely on a variety of monitoring, modeling, and compliance tools to evaluate air pollution releases throughout Washington. Ecology has numerous monitors across the state that measure concentration of criteria pollutants in air (PM, NO_x, SO₂, CO, Ozone, and Lead). While the majority of the monitors measure PM, Ecology established SO₂ monitoring sites near Intalco because air dispersion modeling conducted as part of implementing a new NAAQS determined there may be SO₂ concerns near the facility. EPA establishes NAAQS to provide public health protection, including protecting the health of "sensitive" populations such as asthmatics, children, and the elderly. EPA evaluates health impacts from each criteria pollutant separately. EPA does not provide cumulative impacts standards for criteria pollutants. Because Intalco's emissions of sulfur dioxide may directly contribute to monitored levels that threaten to violate NAAQS, Ecology is using the agreed order to begin the process to reduce these emissions.

Ecology does not actively monitor for all possible chemicals near Intalco and the nearby refineries, but we and our partners use several compliance tools to determine if problems potentially exist including:

- Continuous emission monitors on facility stacks
- Fence line benzene monitors at each of the refineries
- Periodic source tests
- Regular reporting of emissions
- Compliance inspections

Additionally, EPA periodically conducts a National Air Toxics Assessment (NATA) to assess the health risk posed by emissions of toxic air pollutants. NATA uses air modeling to estimate the impacts of air toxics emissions from a variety of sources including commercial and industrial facilities, on- and non-road vehicles, wood stoves and other sources. The most recent version of NATA was based on 2014 emissions.

Furthermore, EPA periodically reviews and amends air toxics emission standards from certain types of industrial facilities. As part of this review, EPA conducts residual risk assessments to determine if the emissions standards and technology requirements need to be updated to address public health and environmental risks. EPA recently conducted residual risk assessments for the primary aluminum and petroleum refinery source sectors in 2015. EPA found that the risks from the primary aluminum and refinery source categories were within an acceptable range.

Still, EPA amended the standards to include additional requirements from both the primary aluminum and refinery sectors. For example, EPA required benzene fence line monitoring at refineries beginning in 2018 as way to identify and correct problems.

Regional Haze/Visibility Impairment

Regional haze as defined at 40 CFR 51.300, is “visibility impairment that is caused by the emission of air pollutants from numerous sources located over a wide geographic area.” The Regional Haze Rule requires states to submit state implementation plans (SIPs) to protect visibility in certain national parks and wilderness areas. Progress towards natural visibility conditions will require the accumulation of reductions in air pollution and associated light extinction.

Under a previous Regional Haze Rule Best available Retrofit Technology (BART) determination (<https://www.govinfo.gov/content/pkg/FR-2014-06-11/pdf/2014-13491.pdf>), EPA issued a Federal Implementation Plan for the Intalco facility that did not require the purchase or installation of new air pollution control equipment, but established BART based on existing control technology.

The most recent submission deadline for the submission for SIPs covering the second implementation period is July 31, 2021. Ecology has performed a screening of stationary sources and their contributions to regional haze for the second implementation period. Intalco has been identified as one of those facilities contributing to regional haze and selected for additional evaluations. Current regulatory authority to evaluate Intalco’s emissions is through the use of reasonably available control technology (RACT) and found in RCW 70.94.030 and RCW 70.94.154.

This Agreed Order provides for reductions in SO₂ emissions (a regional haze-causing compound) from the Intalco facility. The addition of a wet scrubber facilitates the reduction of regional haze during the second implementation period and helps achieve the goal of natural visibility conditions.

BACT/Other Control Measures

If EPA designates the area nonattainment, Intalco is required to submit a Notice of Construction Application (WAC 173-400-112) requesting an Order of Approval for installation and operation of a wet scrubber by October 31, 2020. The application must:

- Demonstrate that the modification will comply with all applicable new source performance standards, national emission standards for hazardous air pollutants, national emission standards for hazardous air pollutants for source categories, emission standards adopted under chapter 70.94 RCW and, for sources regulated by an authority, the applicable emission standards of that authority.
- Demonstrate that the modification will achieve LAER for SO₂; and
- Demonstrate that the modification will employ BACT for the other air contaminants not subject to LAER

Mr. Wenger inquired about controls for other pollutants emitted by Intalco. Ecology issued Order of Approval No. 15449, which addresses emissions of particulate matter (PM₁₀), total fluoride (TF), carbon monoxide (CO) and sulfur dioxide (SO₂), on August 30, 2018. The order allows Intalco to convert all 720 of their Side Work Prebake reduction pots (SWPB) to a point feed configuration known as Centerwork Prebake (CWPB). The conversion will eliminate the manual feeding procedures associated with the current SWPB technology and allow the pot doors to remain closed during the feeding operation. The anticipated benefits of the conversion include higher current efficiency, better pot stability, and reduced emissions. The proposed project will not increase production capacity. Pots will be converted to CWPB as they exceed their life and are replaced. The conversion process is projected to begin by the end of 2019 and be completed within 3 years.

A 93 percent reduction in Greenhouse Gas (GHG) emissions is anticipated through a reduction in anode effects. Anode effects produce large amounts of perfluorocarbons (PFCs) which have large global warming potential. Reductions in PFC emissions have a significant climate change benefit. Reduction of anode effects is attributed to better pot stability because the point feed control algorithms automate alumina feeding and maintain the alumina in the cryolite solution at optimal concentrations. The SWPB pots are open during the feeding process. Increased fume capture efficiency is expected with the change to CWPB because the pot hoods will be closed while alumina is added. The reduced time that pots are open will create a safer environment for the potline employees through reduced exposure to molten metal, heat, and other potroom emissions.

The Point Feed technology provides better capture of all emissions due to the pot hood remaining closed during the alumina feeding process. Intalco anticipates that the increased capture will result in the following emission reductions:

- 53 percent in particulate matter (PM₁₀);
- 27 percent in total fluoride (TF);
- 24 percent in carbon monoxide (CO); and
- 1 percent in sulfur dioxide (SO₂)

Air Modeling

Three years of meteorological data (2012- 2014) were used in a modeling exercise conducted in 2015 and another 3 years (January 1, 2017- December 31, 2019) of data will be used when modeling again next year. This will adequately capture all the variable meteorological conditions and plume behavior. In the first round of modeling, though Frazer River outflow winds were indeed found to cause a hotspot over water, SW of the facility, but WSW winds were also predicted to cause a hotspot over land, just east of the facility. The only SO₂ monitor at the time (Kickerville Road) was not expected to capture the latter hotspot, and Ecology required Intalco to install a new monitor starting in January 2017. This new monitor at Mountain View Road has since confirmed the modeled hotspot and will very likely show a nonattainment area when 2019 data are complete. The Kickerville Road data do not show nonattainment.

As noted, SO₂ does cause secondary PM_{2.5}, but the emissions of direct PM_{2.5} are low and do not result in high ambient concentrations. As such even if secondary PM_{2.5} is considered, we do not expect a substantial public health risk. Direct emissions of SO₂ are the main concern and Ecology has been partnering with stakeholders to address this.

Salmon and Cherry Point Herring

We agree that SO₂ must be controlled to attain the primary and secondary NAAQS. Attainment of the primary NAAQS is intended to provide public health protection, including protecting the health of "sensitive" populations such as asthmatics, children, and the elderly. While the secondary NAAQS may not be relevant to acid deposition, it is intended to provide protection to plants from direct foliar damage associated with atmospheric SO₂. EPA is currently reviewing the secondary standard. For more information see EPA's website at <https://www.epa.gov/naaqs/nitrogen-dioxide-no2-and-sulfur-dioxide-so2-secondary-air-quality-standards>. By reducing SO₂ emissions to meet the health-based standard, we anticipate there will be benefits for the ecosystem.

Environmental Damage

EPA establishes secondary NAAQS intended to protect against decreased visibility and damage to animals, crops, vegetation, and buildings. In the last review of the sulfur dioxide and nitrogen dioxide secondary standards, EPA acknowledged that the existing secondary standard is neither appropriate nor sufficiently protective of adverse deposition related effects of oxides of sulfur and nitrogen. (Note: EPA's decision on the secondary standards for NO_x and SO_x occurred in 2012). EPA considered setting a secondary standard for SO_x and NO_x that would specifically target the impact of acidic deposition on aquatic acidification effects, but ultimately decided that there was too much uncertainty as to the degree of protection such a standard would provide. Instead, EPA retained existing secondary NAAQS and established a pilot monitoring program to collect information to better link water quality impacts to ambient air quality measurements. Monitors were established in New York, Vermont, Colorado, Wyoming, and North Carolina. The results of the pilot study will be used to inform future reviews of the standard.

As part of the primary aluminum residual risk assessment, EPA used an environmental risk screening analysis to evaluate the ecological impacts of cadmium, PAHs, dioxins/furans, hydrogen fluoride, and mercury. In general, emission levels were below ecological benchmarks.

Carrying Capacity

In air quality terminology, carrying capacity is most analogous to attainment or nonattainment of air quality standards. We use monitoring and modeling data to inform us about combined impacts of many sources of air pollution. In the case of sulfur dioxide impacts near Intalco, Ecology used modeling data to inform where monitoring devices should be placed. We use federal reference method monitors to help us determine if an area is in attainment of air quality standards. The results of the monitoring data near Ferndale suggest that Intalco is a source of sulfur dioxide that needs additional controls. The agreed order is just one step in addressing emissions of sulfur dioxide from this facility.

6. Comments from David Frankel

I am writing to respectfully request that the Department of Ecology schedule a public meeting and hearing to inform members of the local community and discuss significant concerns about the proposed Agreed Order 16449 between Ecology and Intalco Aluminum LLC. That agreed order pertains to a specific remedial action — installation, by December 31, 2022, of a wet scrubber to treat emissions from Intalco’s aluminum smelter in Ferndale — that Intalco might be obliged to undertake to address its noncompliance with sulfur dioxide emissions standards under relevant State and Federal law.

It would be very helpful for Ecology to provide such a forum to address legitimate public concerns that this proposed action may not be either adequate or timely to address the range of actual harms to human health and the environment being caused by pollutants from the smelter. These pollutants, in addition to SO₂, include particulate matter and fluorides, each of which presents serious risks alone and in combination. The smelter is also not the only major point source of these and other pollutants. Its effluents mix and react in the atmosphere blanketing northern Puget Sound with emissions from two adjacent oil refineries in Whatcom County, plus others in Skagit County and to the south.

Besides posing health hazards to local residents (including members of the Lummi Nation, whose lands are in close proximity to the smelter), these pollutants precipitate onto and degrade agricultural land and marine ecosystems. They increase ocean acidification and can harm vulnerable fisheries resources such as Cherry Point herring stocks. They also reduce atmospheric visibility and degrade the environment and natural splendor of our nearby National Parks. It is therefore critical that the public receive full information and assurance that Ecology is using every means at its disposal to minimize the associated impacts.

Specific questions and concerns that could usefully be addressed include:

- *Is the current monitoring regime adequate to detect health and environmental hazards from smelter emissions?*
 - *Who is conducting the monitoring?*
 - *If Intalco is performing it itself, are the results corroborated by Ecology? How?*
 - *Where are monitoring stations located?*
 - *How often is air quality sampled?*
 - *What pollutants are being tested for?*
 - *What criteria are applied to determine non-attainment?*
 - *Does this monitoring regime detect persistent conditions of non-attainment?*
 - *Does it adequately measure the combined impacts of other significant point sources — the two refineries in particular — and of reactions between SO₂ and other pollutants in the atmosphere?*
- *Besides installation of the wet scrubber, what other remediation measures did Ecology consider to address SO₂ non-attainment?*
- *Why does the Agreed Order allow Intalco over three years to complete installation of a single wet scrubber at the smelter to address an ongoing SO₂ non-attainment problem that is recurrent and possibly persistent?*

- *Is Ecology contemplating other monitoring or enforcement activities regarding ambient air quality in the region?*
 - *Do these include monitoring and abatement of emissions of other pollutants (including particulates and fluorides) from the Intalco smelter, alone or in combination with emissions from the refineries, especially as the refineries modify or expand their operations to refine tar sands oil?*
- *How and to what extent does Ecology take public health statistics, such as incidences of cancers and asthma and other lung diseases, into account in its decision-making regarding monitoring and enforcement?*

If a public informational meeting and hearing could be scheduled for mid-September at a venue near the smelter, that should allow both Ecology and concerned residents sufficient time to prepare for an informative and fruitful exchange. In the meantime, any guidance that you can provide regarding specific topics and presentation format for public input would help concerned community members to prepare to participate in a discussion that is respectful of Ecology staff and useful to them in performing their important responsibilities.

Thank you for consideration of this request.

Response to David Frankel

Ecology's responses are listed below by the main topics listed in Mr. Frankel's comments. Ecology plans to conduct additional public outreach related to SO₂ and the non-attainment process. We will continue to communicate with interested parties and provide information as we move forward through this process.

Permit Requirements & Ambient Monitoring:

Intalco must comply with the conditions of their Air Operating Permit (AOP). The potlines are subject to Conditions D1 through D26 of the AOP (see the link below). These permit conditions subject Intalco to a production cap of 307, 000 tons of aluminum per year; operational limits; limits, monitoring, recordkeeping and reporting requirements for particulate matter (PM), visible emissions (VE), total fluoride (TF), carbonyl sulfide (COS), sulfur dioxide (SO₂), carbon monoxide (CO), nitrogen oxides (NO_x) and operation and maintenance (O&M) requirements. Intalco is also subject to EPA's new Maximum Achievable Control Technology (MACT) standards for TF, PM and polycyclic organic matter (POM)). Intalco is required to comply with the MACT limits, monitoring, recordkeeping and reporting requirements for those pollutants.

Intalco performs source testing and operates ambient monitors for fluoride and SO₂ to determine compliance with the AOP's emission limits and ambient air quality standards. Intalco is required to submit a monthly air monitoring report which contains the results of all of the monitoring that was done during the month.

Link to Intalco's AOP:

<https://fortress.wa.gov/ecy/industrial/UIPermit/ViewDocument.aspx?DocumentId=113>

The 1-minute and 1-hour SO₂ monitoring data from Intalco's SO₂ and meteorological (wind speed, wind direction, and ambient temperature) are collected by Ecology and stored in an Ecology database. Intalco personnel do not have access to this database. Following data collection, Ecology Air Quality Program Quality Assurance personnel conduct a thorough quantitative and qualitative review of all SO₂ and meteorological 1-minute and 1-hour ambient air monitoring data, diagnostic information collected from the monitors, and all associated quality control information done by Intalco operational personnel. Intalco operational personnel are required to meet the federal and state requirements for monitoring SO₂ for compliance with the NAAQS and Ecology personnel verify that all quality control is conducted at the required timelines and that all quality control results are within acceptance limits. In addition, Ecology Air Quality Program QA personnel conduct unannounced audits of the SO₂ and meteorological monitors at least twice per calendar year. The results of all of these activities are used by Air Quality Program QA personnel to inform the validity of the resultant 1-hour dataset for comparison to the NAAQS.

SO₂ Nonattainment Process and Timeline

EPA must determine whether an area near Intalco-Ferndale is meeting the 2010 1-Hour National Ambient Air Quality Standard (NAAQS) for SO₂ by December 31, 2020. This standard is met at an ambient air quality monitoring site when its design value does not exceed 75 part per billion (ppb). The design value is a 3-year average of the annual 99th percentile of daily maximum 1-hour average concentrations recorded at the monitoring station (Appendix T of 40 CFR part 50).

Ecology intends to submit a recommendation to EPA on how the area should be designated after a public comment period and hearing, currently anticipated in the spring of 2020. EPA will evaluate the three years of data collected in 2017-2019, design value, Ecology's recommendation, and other relevant factors. EPA expects to notify the state and the public about their intended designation in August 2020, providing for the opportunity to review and comment before the final decision.

When EPA designates an area as being in "nonattainment", section 191 of the Clean Air Act (CAA) gives states 18 months, after the effective date of the designation, to develop a plan for pollution controls that will ensure future attainment. Under CAA section 192, this plan must include measures that will bring the nonattainment area into attainment as expeditiously as practicable, but no later than five years from the effective date of designation (March 2026).

The plan must include:

- adoption and implementation of emission control measures representing reasonably available control measures and reasonably available control technology (RACM/RACT)
- reasonable further progress toward attainment of the NAAQS
- base-year and projected emission inventories
- enforceable emissions limitations and control measures
- contingency measures

The attainment is achieved when the area's 3-year design value is no greater than 75 ppb throughout the entire nonattainment area by the statutory attainment date.

Nonattainment dates at-a-glance:

- December, 2020: EPA finalizes the area designation
- March, 2021: Effective date of the designation
- September 2022: Attainment plan is due to EPA
- March 2026: Statutory attainment date

Agreed Order Timeline

The timeline for completing the wet scrubber was based on multiple factors and steps that would need to be completed prior to operation of the wet scrubber. Some of the time factors include design, fabricating and construction of the unit, permitting, and public notice. The wet scrubber unit needs to be designed and engineered for this location and the properties of the air emissions being treated. Infrastructure for wastewater and solids management will also need to be engineered and constructed at the site. The agreed order requires the engineering design to be submitted to Ecology for review and approval.

There are unique site specific ducting and infrastructure complexities at the facility which will require additional ducting and design in order to add the new unit to the existing air emissions treatment system. Once the design is approved, Intalco will also need to obtain the necessary permits. The environmental permits required will include a Notice of Construction (NOC) air permit and a possible modification to their National Pollutant Discharge Elimination System (NPDES) permit. The NOC permit is required before purchase of equipment or the start of any construction. An NOC permit typically takes between 6-12 months which includes a public comment period. The wet scrubber will create a new wastewater discharge that will need to be treated and managed under the existing NPDES waste water permit.

Public Health Data and Enforcement

While Ecology does not evaluate site-specific health outcome data when making regulatory decisions, we rely on air quality standards and risk assessment tools that consider public health impacts.

EPA establishes ambient air quality standards in part by evaluating epidemiological studies of populations exposed to ambient air pollutants. These studies inform policy makers of potential public health effects associated with air pollution at various levels. EPA sets NAAQS at levels considered to protect public health and safety with an ample margin of safety.

EPA uses the residual risk assessment to determine if an existing source poses an unacceptable health risk. These risk assessments quantify the increased cancer risk and non-cancer hazards associated with exposure to source-specific pollutants in the surrounding area. The risks estimated through this process are generally lower than those that could be statistically observed in a given community.

Ecology also uses Ch. 173-460 WAC to ensure that new or modified sources that emit toxic air pollutants do not cause excessive health risks.

7. Comments from Eddy Ury, RE Sources for Sustainable Communities

On behalf of our supporters, we appreciate your consideration of comments regarding the Agreed Order with Intalco Aluminum, LLC (Intalco) to address sulfur dioxide concentrations in violation of National Ambient Air Quality Standards (NAAQS). RE Sources for Sustainable Communities promotes sustainable living and protects the health of northwest Washington's people and ecosystems through the application of science, education, advocacy and action. Our vision is to see people living satisfying lives in accord with the ecosystems we depend on generation after generation.

Sulfur dioxide pollution is a serious concern for human health and living ecosystems in Whatcom County and the greater Salish Sea region. We congratulate Intalco and Ecology for this Agreed Order to install a wet-scrubber that will reduce the concentration of toxic pollutants in our air shed. It is noted that this plan is only agreed to be executed if EPA designates non-attainment for the area in September 2020. Though in such case attainment would be required by March 2026, Intalco has commendably proposed a plan to reach attainment by 2022.

Though we understand this non-attainment designation process is under review due to an excess in 1-hour concentration levels near the facility this year, it should be noted that monitoring from 2017-2018 showed an average of 11 days per year (3% of days) where SO₂ levels were unhealthy for sensitive groups such as asthmatics, and an average of 89 days per year (24%) of only "moderate" air quality with visible haze. Breathing elevated levels of SO₂ causes inflammation and tightening of airways, and can trigger asthma symptoms. We are particularly concerned for workers at Intalco, as well as those living or working near the Cherry Point area who are being exposed to unhealthy levels of SO₂ as well as particulate matter (PM_{2.5}), volatile organic compounds (VOCs), and other toxic air pollutants (TAP) on a daily basis at work and home. Though the concentration of SO₂ may be much lower in Ferndale as it dissipates, atmospheric deposition of sulfur dioxide can cause cumulative adverse impacts across a far broader geographical radius. The proximity of Intalco and its neighboring industries to the Lummi Nation Reservation also poses the issue of Environmental Justice, wherein this pollution is occurring as part of a larger pattern of hazards targeting the health and natural resources of indigenous communities.

We look forward to engaging in this process at future opportunities next year. We are also requesting a public meeting and public hearing to provide our communities with further information and attention from Ecology to address serious concerns for public health regarding this matter.

Response to Eddy Ury, RE Sources for Sustainable Communities

Ecology plans to conduct additional public outreach related to SO₂ and the non-attainment process. We will continue to communicate with interested parties and provide information as we move forward through this process. Below is a brief summary of the nonattainment process and timeline.

EPA must determine whether an area near Intalco-Ferndale is meeting the 2010 1-Hour National Ambient Air Quality Standard (NAAQS) for SO₂ by December 31, 2020. This standard is met at an ambient air quality monitoring site when its design value does not exceed 75 part per billion (ppb). The design value is a 3-year average of the annual 99th percentile of daily maximum 1-hour average concentrations recorded at the monitoring station (Appendix T of 40 CFR part 50).

Ecology intends to submit a recommendation to EPA on how the area should be designated after a public comment period and hearing, currently anticipated in the spring of 2020. EPA will evaluate the three years of data collected in 2017-2019, design value, Ecology's recommendation, and other relevant factors. EPA expects to notify the state and the public about their intended designation in August 2020, providing for the opportunity to review and comment before the final decision.

When EPA designates an area as being in "nonattainment", section 191 of the Clean Air Act (CAA) gives states 18 months, after the effective date of the designation, to develop a plan for pollution controls that will ensure future attainment. Under CAA section 192, this plan must include measures that will bring the nonattainment area into attainment as expeditiously as practicable, but no later than five years from the effective date of designation (March 2026).

The plan must include:

- adoption and implementation of emission control measures representing reasonably available control measures and reasonably available control technology (RACM/RACT)
- reasonable further progress toward attainment of the NAAQS
- base-year and projected emission inventories
- enforceable emissions limitations and control measures
- contingency measures

The attainment is achieved when the area's 3-year design value is no greater than 75 ppb throughout the entire nonattainment area by the statutory attainment date.

Nonattainment dates at-a-glance:

- December, 2020: EPA finalizes the area designation
- March, 2021: Effective date of the designation
- September 2022: Attainment plan is due to EPA
- March 2026: Statutory attainment date