PUBLIC EMPLOYEES FOR ENVIRONMENTAL RESPONSIBILITY • ROCKY MOUNTAIN

Colorado Department of Health and the Environment
Air Pollution Control Division
4300 Cherry Creek Drive South
Denver, CO 80246

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Colorado Minor Source NSR Modeling Guideline for Air Quality Permits (April 2023) Comments, comments submitted via web portal: https://cdphe.commentinput.com/?id=PmtMD

On behalf of Public Employees for Environmental Responsibility (PEER) and Earthjustice we are submitting comments on the Colorado Minor Source NSR Modeling Guideline for Air Quality Permits (April 2023). Thank you for enabling public participation and the opportunity to provide comments.

PEER is an organization dedicated to supporting current and former public employees who seek a higher standard of environmental ethics and scientific integrity within their agencies. We do this by defending whistleblowers, shining the light on improper or illegal government actions, working to improve laws and regulations, and supporting the work of other organizations.

Earthjustice a public interest environmental law organization working to protect people's health, to preserve magnificent places and wildlife, to advance clean energy, and to combat climate change.

Members of PEER and Earthjustice live across the country, many of whom live in Colorado and breathe the air.

The information in these comments and attachments are being submitted with the expectation that they will be part of the administrative record for this decision.

Over the past thirteen years, the Colorado Department of Health and the Environment (CDPHE) has required a modeling analysis in less than 1% of all the permits issued, which according to CDPHE's records is regularly in excess of two thousand permits each year. For the remaining 99% of the permits issued, CDPHE arbitrarily decided that the source complied with the National Ambient Air Quality Standards (NAAQS). That decision was based either on an emission rate that had no basis in science or on an arbitrary and capricious decision of a manager. In short, in 99% of all permits issued, CDPHE failed to meet the legal requirement to ensure that the NAAQS would not be exceeded and therefore was not fulfilling its mandate to protect air quality and human health.

This fundamental flaw in the implementation of the Colorado minor NSR permitting program was at the core of the whistleblower complaint filed with the EPA's Office of the Inspector General. For thirteen years CDPHE failed to enforce a NAAQS verification legal mandate for

thousands of permitted sources thus creating the conditions that lead to the current severe nonattainment status in the Denver North Front Range area.

CDPHE does not resolve this situation with the new 2023 modeling guideline. While it may be the case that with this guidance the percentage of permits that go through modeling might increase, ultimately in those cases which do not require modeling, they will be permitted under the same arbitrary assumption that they will not exceed the NAAQS. Without a qualitative analysis, CDPHE's decision that the source complies with the NAAQS will have no basis in science and therefore it is unlikely to afford any protection to air quality and human health.

The purpose of the new guidance is to explain the acceptable mechanisms by which permit applicants will demonstrate that their project will not negatively affect the attainment or maintenance of the NAAQS. Yet CDPHE is forfeiting its responsibility to provide guidance on how to accomplish that in the majority of the cases, which is those cases when modeling is not required.

Another troubling issue is the statement that flawed permits—those with determinations of NAAQS compliance based on the prior arbitrary standard or those with a complete lack of a determination --- will not be reconsidered nor addressed in any manner and even can be relied on in permits going forward. CDPHE is indicating that it will continue to operate as a permit mill and not as an environmental regulatory agency. It appears that CDPHE's goal is to facilitate the issuance of permits for industry with minimal disruption and not to protect air quality and public health or to enforce existing environmental regulations.

We request that CDPHE conduct an audit of all permits issued since 2010 and allow EPA and the public to see the number of permits that were issued with or without modeling and those without a NAAQS compliance determination.

Another critical issue that should be addressed in the guidance is the cumulative impact that each permit will have on air quality and the NAAQS. CDPHE must conduct a qualitative analysis for those facilities that it decides it will not model. Inside the ozone nonattainment area--north of Denver in Weld, Broomfield, Boulder, Adams and Morgan Counties-- almost any permit application will be surrounded by multiple existing facilities with a lot of emissions. The qualitative analysis should address the issue of how many existing sources are located in the modeling domain of the permitted source. No matter how small the emission rate of the permitted source, when there are a significant number of nearby facilities the cumulative impact is much more likely to exceed the NAAQS.

Because a truly objective, science-based qualitative analysis will not be able to determine if there will not be a NAAQS violation, consequently we expect that all those cases should have to go through modeling, and many of those will not be able to pass modeling. This how the Clean Air Act is set up to protect air quality and public health.

We recommend that CDPHE includes in the modeling guideline the requirement that when modeling is not requested, the Division still has the obligation to assess NAAQS compliance through a science-based qualitative analysis and that analysis will be part of the permit record that is available to the public. This can ensure that the public can challenge arbitrary decisions, that there will be some assurance that cumulative impacts of the nearby facilities will be considered, and that most of the projects inside the ozone nonattainment area will most likely have to be modeled.

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"While Regulation No. 3 requires that the Division indicate the "impact, if any" in its preliminary analysis, it does not explicitly require modeling; however, a demonstration of compliance with all National Ambient Air Quality Standards (NAAQS) and Colorado Ambient Air Quality Standards (CAAQS) is required. Thus, the impact analysis can be done using quantitative (modeling) or qualitative (non-modeling) methods, as appropriate…

U.S. EPA approved models and/or methods, as discussed in Section 5, must be used if a numerical estimate (i.e., pollutant concentration in ambient air) of the impact is required, unless specific approval is granted to use a non-EPA approved model. Regulation No. 3 and U.S. EPA are silent as to how a demonstration can be made when modeling is not required, i.e., the qualitative method. The nature of that demonstration is outside the scope of this Guideline."

Comment: It is very problematic and disappointing that CDPHE is not providing any guidance on how to conduct a qualitative analysis of compliance with the NAAQS in those cases when a determination is made by the Permit Modeling Unit that modeling is not required. Not addressing the qualitative analyses will only perpetuate the years-long practice at CDPHE of issuing permits illegally, without any assessment of compliance with the NAAQS.

It appears that CDPHE through this new modeling guidance is once again saying that any facility with an emission rate below a threshold will automatically comply with the NAAQS.

For those facilities with emission rates below the proposed modeling thresholds, CDPHE still has a legal obligation to include in the record of the permit, that is in the Preliminary Analysis document, an explanation of how the source will not exceed the NAAQS. For that purpose, CDPHE should provide guidance on how to conduct an acceptable qualitative analysis that accounts for the factors that influence the final impacts on air quality.

This guidance on qualitative analyses should address questions like, how will the new permitted facility with emission rates below the modeling threshold affect air quality at a location where it is surrounded by numerous existing facilities? How will the combined effect of all the existing emissions along with those of the new source affect air quality? Have previous modeling analyses been conducted for any of the nearby facilities that can inform how the new permitted source will affect air quality? How will meteorology and topography affect the impact of this new source on air quality even if the emission rates are below the modeling threshold?

While a qualitative analysis will include some subjectivity and will depend to a great extent on the professional judgement of the person conducting it, there is important guidance that CDPHE can and should provide to minimize subjectivity and provide a scientific basis for any decision made regarding NAAQS compliance and regarding whether the permit should be issued or not, or whether the case should be referred for a quantitative analysis through modeling.

Remaining silent on the qualitative analysis topic will perpetuate the same pattern at CDPHE of the last thirteen years of issuing permits illegally without meeting the legal requirement of assessing compliance with the NAAQS.

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"If it is unclear whether modeling is warranted, APCD 114 Form process has been established to assist applicants with a determination of when a quantitative modeling analysis is required. The APCD 114 Form and associated instructions can be found here: https://cdphe.colorado.gov/air-emissions/air-quality-modeling-guidance-for-permits"

Comment: The Guideline fails to explain the procedure that CDPHE staff will follow to review the information provided in Form APCD 114 and determine if modeling is needed.

The information requested in Form APCD 114 is a summary of information that the source should already be providing in the APEN, with a few additional questions. The key process that is lacking here is the explanation of how this information be used to make a determination of whether modeling is necessary. For the sake of transparency, a complete procedure should be included in the modeling guidance, otherwise the door remains open for CDPHE management to keep making arbitrary decisions when it comes to modeling. Form APCD 114 should be supplemented with standard procedures describing how the modeling determination will be made, what factors will be taken into account in making the decision, and what happens if modeling is not required.

Some examples of these factors that should be included are the consideration of the existence of nearby facilities and how the cumulative impact of all of them combined with the permitted source will affect air quality. Is the existing background concentration in that area already high? How is the meteorology and the topography in the area? How large is the ambient air boundary? If a determination is made that modeling is not required for the project applying for a permit, does that mean that it will automatically be considered as complying with all the applicable NAAQS?

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"Modeling may sometimes be required for sources in nonattainment areas. This will occur when the pollutant that must be modeled is not in non-attainment. This also applies even if the pollutant that is not in nonattainment is a precursor to the nonattainment pollutant."

Comment: This wording is extremely confusing. We suggest replacing it with:

"Nonattainment status is pollutant-specific and therefore an area may be in nonattainment status for one specific pollutant and averaging period but at the same time be in attainment for all the other NAAQS. Consequently, a source located in a nonattainment area might be subject to nonattainment NSR provisions for one pollutant but at the same time subject to minor NSR or major PSD provisions for other pollutants. Modeling requirements for those pollutants in attainment status might apply despite the location of the source in a nonattainment area."

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"In some cases, a source may propose to conduct ambient monitoring in lieu of submitting a model assessment to show compliance with the NAAQS. If a source chooses this option, they must obtain approval from the Division. The source may propose a NAAQS monitoring plan to the Division's Gaseous & Meteorological Monitoring Group that ensures non-interference with the NAAQS. Sources should consult with Division staff on the contents of a NAAQS monitoring plan prior to submittal."

Comment: The requirement in Regulation 3 is to verify compliance with the NAAQS prior to issuing the permit. This procedure fails to explain how monitoring is going to fulfill that requirement prior to issuing a permit.

Appendix W to 40 CFR 51 explains in clear terms that monitoring should not be used in lieu of modeling, and that there is only one very specific situation in which that is acceptable. It is only permitted when the regulatory model is not performing adequately for the situation at hand. In that case the regulations state that a demonstration that the model is not performing adequately needs to be submitted prior to resorting to this alternative. The Troutman report indicated that Appendix W is applicable to all sources, major and minor. "In codifying Appendix W, EPA made clear that its modeling guidelines are relevant to both major sources subject to NSR and minor sources subject to permitting programs established in a SIP" at 12.

Importantly, in a situation of multiple facilities in the project area, like the metro front range, the Colorado Guideline does not explain how CDPHE will determine the contribution of the permitted facility to the monitored concentration.

If there is a monitored exceedance, the guidance should explain what actions CDPHE will take if the permit has already been issued. As we have seen with EPA requesting that permits be reopened and the state questioning whether it has the authority to do so, it is essential that CDPHE explain to the permit applicants that permits can be reopened once they have been issued.

Page 11 Comment: I called the listed phone number and it goes to an unnamed mailbox. No one returned my call. It doesn't look like a CDPHE number.

Page 12 Footnote 2 to Table 1 Modeling Thresholds.

[2] Modeling may be required for sources with a proposed emissions rate below the NO2, SO2 and PM2.5 short-term thresholds based upon the conditions described in the Permitting Section Addendum to the Modeling Guideline and in the following circumstances:

1. Sources where a substantial portion of the new or modified emissions have poor dispersion characteristics (e.g., rain caps, horizontal stacks, fugitive releases, or building downwash) in close proximity to ambient air;

2. Sources located in complex terrain (e.g., there is terrain above stack height that is in close proximity to the source);

3. Sources located in areas with poor existing air quality for that pollutant.

Comment: To address the current situation of the cumulative impacts of the many facilities clustered on the metro front range, we recommend adding a fourth item in this footnote.

"Sources located in areas with numerous nearby existing facilities located within the modeling domain of the permitted sources. In those cases, the combined emissions of the new and existing sources could result in a cumulative impact that can exceed the NAAQS, even if the emission rate of the permitted source is below the modeling thresholds."

When the former modeling guidelines were written, the area north of Denver was not as crowded with facilities as it currently is. This situation of a new source with low emission rates being surrounded by numerous nearby facilities was not as common thirteen years ago as it is today. Now it is almost always the case for any new facility permitted inside the ozone nonattainment area and the 2023 Colorado Guideline should address this issue.

Regarding the thresholds in Table 1, the guideline states that they are based on the results of modeling studies done in 2002 and 2010. However, from conversations with a former CDPHE employee, we understand that the consensus at that time was the threshold (hourly NOx and SO2) should be set at 0.46 lb/hr (with the caveats previously provided). There was no consensus for any other number. Please explain to the public where the value in the table came from. Is it possible for you to demonstrate the work and the studies to support an hourly threshold that is 2.5 times the former threshold?

Page 15, Figure 2

Comment: The flowchart in Figure 2 describes the modeling review process. It fails to consider the situation in which there are NAAQS modeled violations and then by law, the permit application needs to be denied and returned to the applicant. We are concerned that CDPHE is continuing with the same mindset of the last thirteen years in which all permits must be issued and that rejecting a permit because of adverse air quality impacts is simply not an option.

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"Determination of a background that can "reasonably be assumed to occur" is sometimes difficult. In general, the niche being filled by the background concentration should be defined before a value is selected. Since the background concentration field is usually assumed to be spatially uniform, the background should account for elevated concentration levels that are expected to occur in the receptor grid from non-modeled sources. Alternatively, a variable background field could be used if there is sufficient data to generate one.

For purposes of addressing short-term standards, the total predicted concentration distribution should represent combinations of impact and background that can reasonably be expected to occur simultaneously in the particular application. The Division recognizes that the chance of two independently caused short-term concentration maxima occurring simultaneously at any particular location may be low.

The Division can usually provide a background concentration upon request to account for other background sources, including mobile sources and transport from distant sources. Determination of the nearby sources accounted for by the background concentration can be rather subjective. Consequently, the applicant should review the location and the collection date of the background data with respect to nearby sources to determine how it should be incorporated into the overall modeling procedure."

Comment: EPA has issued several guidance documents discussing methodologies to determine what background concentrations should be used for different pollutants and averaging periods.

CDPHE should cite those EPA documents and incorporate that guidance by reference. There is no reason to ignore EPA's longstanding guidance and instead resorting to vague and subjective language that will open the door to arbitrary decisions.

The guidance should set up transparent and clear processes to direct staff and permit applicants. For instance, what does CDPHE consider a background concentration that can be "reasonably assumed or expected" to occur? Who defines what is "reasonable"? This subjective language in the guidance will not prevent the arbitrary and capricious decisions that have been over the last thirteen years by CDPHE managers.

As an example, review the decisions that the whistleblowers documented of Garry Kaufman--who is still a Deputy Director at CDPHE—in which he approved background concentrations that were fabricated in order to artificially lower the total concentration compared to the NAAQS to issue a permit for a former client. Instead of issuing more specific guidance to prevent it from happening again, CDPHE is now providing subjective and vague guidance and leaving the door open for more abuses of authority and arbitrary decisions.

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"The PMU modeling staff will determine the most representative meteorological data appropriate to use for the facility under review."

Comment: In the past, this determination of meteorological data representativeness has been a source of disagreement and conflict between applicants and CDPHE, but also internally within CDPHE. In the complaint filed with EPA's Office of the Inspector General, the whistleblowers cited several examples in which inadequate meteorological data was purposely selected by CDPHE managers against the recommendation of technical staff, to obtain desired modeled concentrations that would be below the NAAQS.

To prevent these types of situations from happening again, and to remove the subjectivity from the process, CDPHE should include a standard procedure for determining adequacy and representativeness of a meteorological data set in the modeling guidelines.

Page 57 Appendix C

"If the Division determines a proposed source or activity cannot comply with the provisions of Part B, Section III.D., it must deny the permit (see Regulation Number 3, Part B, Section III.F.1). Therefore, if a permit was issued, the Division must conclude the previous permitting action will not cause an exceedance of the NAAQS."

Comment: This statement should be removed from the guidance document. This is incorporating by reference illegally issued permits and not attempting to address the current situation.

The number of illegal permits – those that do not comply with the NAAQS—is likely in the thousands. With this statement CDPHE is arbitrarily concluding that any finalized permitted source automatically complied with the NAAQS, simply because the permit was issued,

regardless of whether an actual analysis was performed or a CDPHE manager capriciously decided to issue the permit.

The broad statement that "**the Division must conclude that the previous permitting action will not cause an exceedance of the NAAQS**" is being used to circumvent the NAAQS compliance requirement because it has been used for permits issued from 2010 all the way to permits issued in 2023. We have seen this in recently permitted Cripple Creek and Victor Gold Mine, which was permitted despite substantial evidence that the facility is causing modeled NAAQS violations and monitored NAAQS exceedances and in the recently issued Colorado Interstate Gas Company, LLC – Greasewood Compressor Station – 950PRB091 (AIRS ID 103-0055) that we brought to your attention.

During the investigation of the whistleblower complaint, EPA indicated in its July 2022 Report that its review of the eleven examples of illegally issued permits provided by the whistleblowers, showed the same pattern of behavior by which permits were being issued without any documentation in the permit record to support the conclusion that there were no violations of the NAAQS. EPA then recommended to CDPHE to revise all these permits, even if they had been already issued.

CDPHE does not have any obligation to conclude that a previous permitting action will not cause an exceedance of the NAAQS and we do not understand why the agency is taking this position. On the contrary, in light of all the evidence showing that thousands of permits might have been issued illegally, and the public health implication CDPHE has an obligation to investigate and address those NAAQS exceedances.

Page 58 Appendix C

"Modeling or a modeling determination (APCD Form-114) will not be required of a pollutant where the modification sought involves no change in, or only emission reductions of that pollutant from the same emissions point. This position is grounded in the following two principles: *First*, that Regulation 3 requires that the "proposed source or activity" be evaluated against the NAAQS. In the context of a permit modification, the "proposed source or activity" is the modification, not the entire facility/source as modified; and *Second*, that when the existing permit was issued, the Division made a determination, as required by Regulation 3, Part B, of NAAQS compliance based on the emission limits and rates, and operations, identified in the permit and the Division is not reconsidering that determination."

Comment: The emission rate is not the only factor that affects the modeled concentration and therefore looking only at the emission rate can potentially result in permits being issued with NAAQS exceedances. Some examples are the shortening of a stack to address structural issues, a change to a cleaner fuel which results in lower emissions but also in modified stack parameters that can make dispersion of the plume worse. Based on former employee accounts, both of these situations happened at the Cherokee Power and the modeled concentrations did exceed the NAAQS despite the reduction in emissions. A change in location within the facility of a source without any change in emissions can also have the same effect, like re-routing an unpaved road or moving a stationary generator engine from one place to another.

In addition, CDPHE has issued numerous permits, perhaps thousands, without making any determination whatsoever about NAAQS compliance. Stating that "the Division made a

determination, as required by Regulation 3, Part B, of NAAQS compliance based on the emission limits and rates, and operations…" is simply not true. A review of a random sample of Preliminary Analysis documents in previously issued permits will show that most of them are completely silent on the NAAQS section and say absolutely nothing. The NAAQS section is left empty and therefore no determination was made.

Moreover, in the cases in which an emission threshold was cited as the basis for concluding that the NAAQS were not exceeded, the Troutman report and EPA Report state that the use of a single emission rate alone was not adequate nor sufficient to make a NAAQS compliance determination. Therefore, most of those determinations are erroneous and have no basis in science. CDPHE's statement that it will not reconsider those determinations begs the question of what is truly the important goal for CDPHE, is it protecting the air quality and public health by protecting the NAAQS or is it continuing to issue permits at any cost?

We request that CDPHE conduct an audit of all permits issued since 2010 and allow EPA and the public to see the number of permits that were issued with or without modeling and those without a NAAQS compliance determination.

Page 60 Appendix C

"… sources must include in minor modification applications either a determination from PMU of "Modeling Not Required" or a determination from PMU that the proposed source or activity will not interfere with the NAAQS."

Comment: Is a "modeling not required determination" considered by CDPHE to mean that the proposed source or activity will not interfere with the NAAQS? If the answer is yes, then the determination must include a science-based qualitative analysis supporting that decision, and this analysis should be included in the permitting record so that it can be available to the public.

Comment: "Cause or Contribute"
The language of 'causing or contributing' to a NAAQS violation has disappeared from the text substituted with only the word 'causing'. Yet the basis for a modeled violation must comply with the Clean Air Act requirements. Specifically, it is required that modeled violations where the sources impact at a receptor is in excess of the SIL is considered a NAAQS violation. This may be considered a contributing violation. In codifying Appendix W, EPA made clear that its modeling guidelines are relevant to both major sources subject to NSR and minor sources subject to permitting programs established in a SIP and the "cause or contribute" language applies.

Comment: Tailpipe Emissions

Regarding tailpipe emissions from mobile sources, the Division seems to have excused themselves from including their contribution in a modeling analysis.

CDPHE's new guidance on minor sources permits presents a unique opportunity for the state to support leaderships stated priority to protect public health and clean air with improvements in permitting. The state can move away from the policies and processes that reflect past administrations' priorities of facilitating industry growth. We hope that the agency will revisit and address the issues that we have raised before finalizing the proposed guidance.

Sincerely,

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