

**BEFORE THE AIR QUALITY CONTROL COMMISSION
STATE OF COLORADO**

IN THE MATTER OF PROPOSED REVISIONS TO REGULATION NO. 7 AND
REGULATION NO. 22

**REBUTTAL STATEMENT OF THE BOARD OF COUNTY COMMISSIONERS OF
WELD COUNTY, COLORADO**

EXECUTIVE SUMMARY

This Rebuttal Statement is submitted on behalf of the Board of County Commissioners of Weld County (“Weld County”) in connection with the above-captioned hearing and pursuant to C.R.S. §§ 24-4-101 et seq., §§ 25- 7-101 et seq., 5 CCR 1001-1, and the Filing Requirements for Parties circulated by the Air Quality Control Commission (“Commission”). Weld County appreciates the opportunity to participate in this rulemaking regarding revisions to Regulation No. 7 and No. 22 (“Proposed Rule”) proposed by the Colorado Department of Public Health and Environment’s Air Pollution Control Division (“the Division”). As the largest oil and gas producing county in the state, Weld County has a keen interest in the efficient, effective, and common-sense regulation of oil and gas production for the protection of the environment, public health, and the economic prosperity of over 325,000 Weld County residents.

This rulemaking concerns the following greenhouse gas (“GHG”) emission reduction requirements for operations in the upstream and midstream segments of the oil and gas (“oil and gas”) industry:

- Air pollution control requirements (Regulation 7, Part D, Section II);
- Midstream segment requirements pertaining to leak detection and repair (“LDAR”), compressor rod packing, pneumatic controllers, pigging and blowdown operations, and long-term planning for midstream fuel combustion equipment (Regulation 7, Part D, Sections II and III; Regulation 22, Part B, Section III);
- Upstream segment intensity program (Regulation 7, Part D, Sections II and VI; Regulation 22, Part B, Section IV); and
- Inventory revisions related to the proposed requirements above (Regulation 7, Part D, Section V).

Weld County continues to support the Division’s flexible intensity-based GHG emission reduction program particularly given the diverse emission profiles of the state’s operators and the high level of controls already mandated by the state. An intensity program would allow operators to examine and implement the most cost-effective measures to meet the state’s reduction goals.

We also generally support the City and County of Denver in their recommendations to provide more safeguards for the intensity program as Colorado implements an innovative regulatory approach. Weld County continues to be concerned that additional command and control regulations, as well as components of the Proposed Rule, are not cost effective. The adoption of an intensity “plus” program that includes command and control requirements negates the key benefit of an intensity program, that being operator flexibility to identify and implement the emission reduction measures that are best suited to their specific operations.

In part to further support the intensity program, and in part to ensure that the Commission and all parties are evaluating the practical implications of these proposed regulations, Weld County requests the Division revise the Economic Impact Analysis (“EIA”) submitted with its PHS to more accurately present both the total cumulative cost effectiveness and the cost effectiveness of individual rule proposals. For example, one of the Division’s cumulative cost effectiveness values excludes the intensity program costs, but includes the benefits of the intensity program (i.e., emissions reductions). Instead, Weld County requests that the Division revise the cumulative cost effectiveness to remove this or revise the calculation by appropriately excluding both the intensity program benefits and the costs. When the intensity program is not considered with the rest of the rule changes, the cumulative cost changes from the misleading value that was reported (\$8.50/mtCO₂e) to \$78.26/mtCO₂e. Since this value is similar to the social cost of carbon, this means that, without the intensity program the proposed rule has no net benefit to society¹ and further evaluation shows that the intensity program is the portion of the rule that provides the most net benefits.

However, the rule revisions would provide greater net benefit to society if portions of the proposed rule that have low benefits and high costs were not adopted. Specifically, Weld County opposes the proposals for enclosed combustion device (“ECD”) testing, enhanced LDAR, and well unloading that would provide very small emissions reductions at very high costs. The emission reductions for the LDAR program for example is less than retiring a single mid-sized natural gas boiler. The anticipated costs to implement ECD testing, enhanced LDAR, and well unloading programs coupled with the very small emissions reductions equate to the emissions reduction costs that range from \$128/mtCO₂e (for well unloading) to \$284/mtCO₂e (for the ECD testing). These costs are far greater than the social cost of carbon (which ranges from \$76/mtCO₂e to \$83/mtCO₂e depending on the emissions reduction year). Common sense indicates that the ECD testing, upstream LDAR and well unloading controls are not cost-effective emission reduction measures and should not be adopted. Colorado would be better served through evaluation of regulatory measures that would provide GHG emissions reductions, which is why Weld County supports the adoption of an intensity program with limited revisions.

¹ This is based on the cumulative cost effectiveness without the intensity program of \$78.26/mtCO₂e being essentially equivalent to the social cost of carbon (which ranges from \$76/mtCO₂e to \$83/mtCO₂e depending on the emissions reduction year). In the event that the value of the benefits are equivalent to the costs, the net benefit is zero.

Regarding the ECD testing and pigging and blowdown requirements, the Division’s Proposed Rule arbitrarily links northern Weld County with requirements in the nonattainment area, but does not explain this decision in Regulation 7’s Statement of Basis, Specific Statutory Authority, and Purpose (“SBAP”) or justify this decision in its Prehearing Statement. Weld County urges the Commission to strike the language linking northern Weld County with these requirements, because there is no demonstration that expansion of controls beyond the existing nonattainment area boundary is warranted and the requirements impose geographically complex regulatory requirements that are inconsistent with any other portion of Regulation 7.

Regarding the three Alternate Proposals that were submitted, Weld County has serious reservations about Environmental Defense Fund’s (EDF’s) Alternate Proposal for monthly LDAR and does not support the proposal for installation of non-emitting pneumatic controllers. Weld County also does not support adoption of Center for Biological Diversity’s (CBD’s) Alternate Proposal to expand the scope of ECD testing, but does support CBD’s proposal for visual inspections of ECD’s. Weld County supports Local Community Organization and Conservation Group’s (LCO_CG’s) Alternate Proposal for Annual Information Reporting.

VOLUMINOUS EXHIBITS

Weld County is not identifying any voluminous exhibits as a part of this Prehearing Statement.

ESTIMATE OF TIME

Given the multiple Alternate Proposals, Weld County requests a total of 40 minutes—for direct testimony, rebuttal testimony, and cross-examination—to provide a meaningful response to these proposals.

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LEGAL, FACTUAL, AND POLICY CONCERNS

Weld County generally supports the Proposed Rule’s emission reduction requirements for oil and gas operations with key exceptions, as set forth more specifically below.

A. Rule Proposals That Are Not Cost Effective Should Not Be Adopted by the Commission

Weld County is disappointed in the lack of actionable information provided in the Division’s EIA and the misleading presentation of information. Related to the cumulative cost effectiveness calculations presented in Table 29 of the Division’s EIA and the associated discussion in the EIA, it is misleading to provide a cost effectiveness calculation² that accounts for

² While the Division uses the phrase “cost effectiveness,” Weld County will use the phrase “abatement cost” instead.

program benefits (i.e., emissions reductions) without including the corresponding costs. The Division's EIA presents the benefits associated with the intensity program without including the costs for the program in Table 29 for the row labeled "Cost Effectiveness without Intensity Costs." Data in this row provides the false impression that the emissions reductions from all rule proposals in aggregate, including the intensity program, can be achieved for significantly less than is actually feasible. The Division should revise its EIA to delete the line in Table 29 that shows the abatement cost (referred to by the Division as "cost effectiveness") is \$8.50/mtCO₂e and all associated text.

Using the estimated program costs for all rule components with all estimated emissions reductions, regardless of the uncertainty of those costs, is the most accurate method to present the cumulative abatement cost. Furthermore, the presentation of the \$8.50 and \$26.01 abatement costs values together provides the erroneous impression that the cumulative abatement cost could range between \$8.50 and \$26.01, which is false. The uncertainty associated with a cumulative abatement cost of \$26.01 could just as easily result in higher abatement cost than lower abatement cost and to present just a lower value is misleading.

If the Division is concerned that the uncertainty associated with the intensity program costs will skew the abatement cost calculations, it would be more accurate to remove the intensity program completely from the Division's cumulative abatement cost calculations (i.e., remove the emissions reductions as well as the costs). This is shown in the last line of Table 1 below. Importantly, without the intensity program, the abatement cost per metric ton of GHG emissions reduced roughly triples from \$26.01/mtCO₂e to \$78.26/mtCO₂e.

It is also important to note that by only providing a single cumulative abatement cost estimate, the Commission and affected parties do not have the information to assess the abatement cost of each program component individually. While it is noted that the EIA does present the abatement cost (referred to by the Division as cost effectiveness) of some program elements individually, the abatement cost is not provided for all rule elements. This information would enable the Commission and affected parties to weigh the merits of rule components and evaluate the efficacy of the components relative to each other and to society as a whole. Therefore, Weld County has reproduced the Division's cumulative abatement cost calculations shown in Table 29 of the EIA included in the prehearing statement, and calculated the abatement cost for each component of the rules being proposed as shown in Table 1 below. The abatement cost values shown in Table 1 are calculated using the identical approach as the Division for its cost effectiveness calculations whereby the estimated Total Annual Cost is divided by the estimated Total CO₂e Reductions, but we have shown this for each rule component rather than just the cumulative abatement cost for the full proposed rule. This approach quickly enables the Commission and other parties to have the most accurate assessment of a program's benefits and costs to evaluate and prioritize each component of the proposed rule. From the abatement cost calculations shown in Table 1, it is evident that proposed midstream regulations are, for the most part, cost effective, while on the other hand, most aspects of the proposed upstream regulations are not cost effective, with the intensity program being a notable exception.

As shown in Table 1, the abatement cost of the intensity program is estimated to be \$19.65/mtCO₂e, which is well below the social cost of carbon. The social cost of carbon is generally estimated to be between \$76/mtCO₂ to \$83/mtCO₂ depending on the year the emissions

reductions occur between now and 2025.³ The costs of controlling emissions are often very site specific with some equipment and practices having low costs of marginal costs of abatement while others may have higher costs due to operator-specific variance in operations, design, existing controls, and emissions profiles. The intensity program is an efficient regulatory strategy that does not constrain operators to inefficient, but regulatorily mandated, controls. It acknowledges the diversity of marginal abatement costs and would allow operators to remediate low-cost sources first. As a result, the costs of the intensity rule are estimated to be far lower than other programs proposed for the upstream sector.

Weld County does not support the ECD testing program due to the limited emissions reductions, safety concerns and exorbitant costs equating to an abatement cost of \$258/mtCO₂e as shown in Table 1. Nor does Weld County support the upstream LDAR program due to the very small emissions reductions afforded by the program and high costs equating to an abatement cost of \$284/mtCO₂e. Likewise, Weld County does not support the well unloading rule proposal for the modest emissions reductions and exorbitant costs equating to an abatement cost of \$128/mtCO₂e. If the well unloading requirements are cost effective, they will be conducted as part of operators' plans to comply with intensity targets, command and control regulations for well unloading are not necessary.

In summary, Weld County is greatly concerned about the reasonableness of key components of the Proposed Rule, given the small emissions benefits and large costs of several of the proposed programs affecting the upstream sector. The marginal cost of control of the key components of the rule greatly exceeds the potential benefits to society from the anticipated GHG reductions. The benefits to society are shown by the Division in the PHS EIA in Table 26 and 27 for all rule revisions cumulatively. While the rule proposal presents cumulative benefits to society, if the benefits to society were to be analyzed for each component of the rule, it would show that ECD testing, upstream LDAR, and well unloading proposals have negative benefits to society (i.e., the present value of the costs greatly exceeds the value of the benefits and the net value is negative). Therefore, the ECD testing, upstream LDAR, and well unloading proposals should not be adopted by the Commission. The Commission's time would be better served through evaluation of other, more effective GHG emission reduction options.

Table 1 Cost Effectiveness for Each Rule Component

Rule Proposal	Section of Rule	Total CO₂e Reductions (mtCO₂e/Year)	Total Annual Cost (\$)	Cost Effectiveness/ Abatement Cost (\$/mtCO₂e)¹
Control Equipment Performance	Reg. 7, Section II.B	56,733.90	\$14,655,253.00	\$258.32

³ United States Gov't, Interagency Working Grp. on Social Cost of Greenhouse Gases, "Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide Interim Estimates under Executive Order 13990," (Feb. 2021), https://www.whitehouse.gov/wp-content/uploads/2021/02/TechnicalSupportDocument_SocialCostofCarbonMethaneNitrousOxide.pdf (see Table ES-1 for the social cost of carbon for 2020).

Compressor Station LDAR	Reg. 7, Section II.E	2,897.64	\$109,041.70	\$37.63
Gas Plant LDAR	Reg. 7, Section II.I	5,255.00	\$383,578.00	\$72.99
Pigging/Blowdowns	Reg. 7, Section II.H	228,781.00	\$9,290,705.04	\$40.61
Pneumatics at Gas Plants	Reg. 7, Section III	--	\$0.00	N/A
Rod Packing at Gas Plants	Reg. 7, Section II.B.3	126,997.92	\$498,143.51	\$3.92
Upstream LDAR	Reg. 7, Section II.E	7,119.36	\$2,024,139.40	\$284.31
Upstream Intensity by 2025	Reg. 22, Section IV	4,351,005	\$85,497,247.07	\$19.65
Well Unloading	Reg. 7, Section II.G	103,128.16	13,284,196.01	\$128.81
Sampling	Reg. 7, Section V	--	\$1,233,607	N/A
Cumulative Summary ²				
Cost Effectiveness with Intensity Program Emission Reductions but without Intensity Costs		4,881,917.98	\$41,478,663.66	\$8.50
Cost Effectiveness with Intensity Program Emission Reductions and Costs		4,881,917.98	\$126,975,910.73	\$26.01
Cost Effectiveness without Intensity Program Emissions Reductions and without Intensity Costs		530,912.98	\$41,478,663.66	\$78.13

¹ Cost effectiveness values that exceed the social cost of carbon are shown in **bold** font. “N/A” indicates that values are not available.

² Small differences exist in the total calculations presented in this table relative to the Division’s EIA due to rounding.

B. Weld County Supports the Proposed Rule’s Upstream Intensity Program

Consistent with the majority of parties to the rulemaking, Weld County continues to support an intensity-based GHG emission reduction program. We also support several of the recommendations proposed by the City and County of Denver to improve the intensity-based regulations as detailed in the sections below. Furthermore, Weld County is concerned that without enactment of the intensity-based program, the Division would not have viable regulatory methods to achieve emissions reductions, and that such a process would be unduly burdensome to the agency as well as stakeholders. Lastly, Weld County continues to recommend minor changes to improve the verification plan.

1. Weld County and a Majority of the Parties Support the Proposed Rule Upstream Intensity Program

Weld County continues to support an intensity-based GHG emission reduction program and notes that a majority of the parties to the rule also expressed support for the program. An intensity-based program provides flexibility for companies to implement the most cost-effective way to achieve the necessary GHG reductions based on their individual operations and emissions profiles. Weld County sees continuation of purely “command and control” regulations as insufficient to reach statewide GHG emissions reductions goals and having marginal utility and diminishing returns. Colorado’s oil and gas industry is highly regulated and also has substantial inter-company variability in the sources that emit GHG emissions. This combination requires an innovative regulatory mechanism such as the intensity-based program. The fact that EDF has submitted an Alternate Proposal recommending replacement of pneumatic controllers just eight months after the Commission has adopted EDF’s previous Alternate Proposal on pneumatic controllers is just the type of wasteful regulatory burden that the intensity program is designed to prevent. It is unfortunate that parties that submitted Alternate Proposals do not support the intensity-based program as the intent of the program is to reduce so many varied alternatives for piecemeal controls. Moreover, due to the wide-ranging interests and buckshot issues brought before the Commissions, it is difficult to address all of the Alternate Proposals and rule revisions suggested by other parties in short written statements. An effective intensity program could streamline the rulemaking effort by the Commission and affected parties.

2. Weld County Supports Several of the Changes Proposed by the City and County of Denver

Weld County supports several of the changes to the upstream intensity rule proposed by the City and County of Denver (Denver). Weld County supports Denver’s suggestion that operators provide examples of potential emission reduction strategies that could be implemented in order to achieve the GHG intensity targets. Such examples could help inform the potential efficacy of an intensity program. To fully enable operators to address this request, and noting the 40-page limit established for the rebuttal statements, Weld County requests that industry members be provided time as part of the hearing process, outside of their time allotment, to provide detailed examples for the Commission and other parties.

Weld County also supports Denver’s recommendation to require assessment of the intensity program success, and to that end, require operators to submit annual reports rather than updates, and provide transparency in the methodology used to calculate their GHG intensity. Weld County supports Denver’s proposed revisions to Regulation 22 Part B§IV.E.3 (which would be Regulation 22 Part B §IV.E.4 in the proposed rule revisions submitted by the Division with its Prehearing Statement). It is our understanding that Denver has discussed its recommended revisions with the Division and come to consensus on a unified set of revisions to include in the Division’s proposed rule that will be forthcoming with its rebuttal. Weld County intends to support those changes pending final review.

3. Failure to Implement an Intensity Program Is a Missed Opportunity

Based on a review of the Division's revised EIA submitted with its Prehearing Statement at Table 19, it appears the GHG emissions reductions anticipated from all components of Regulation 22 and Regulation 7, except the intensity program, are approximately 12% of the emissions reductions that are anticipated from the intensity program alone. If the intensity program is taken out of the Division's cumulative cost calculations, the regulatory costs per metric ton of GHG emissions, reduced roughly, triples from \$26.01/mtCO₂e to \$78.26/mtCO₂e. For reference, the estimated social cost of carbon in year 2020 with a 2.5% discount rate (which is what is used in the Division's EIA) is \$76/mtCO₂.⁴ As the abatement cost of the rule increases, the net benefits to society (calculated as the benefits to society minus the costs to implement the rule) decrease. At the point that the abatement cost is equivalent to the social cost of carbon, the proposed rule has no net benefits to society. When the abatement cost exceeds the social cost of carbon, the proposed rule has negative net benefits. Since the abatement cost of the rule changes from \$26.01/mtCO₂e to \$78.26/mtCO₂e without the intensity program (as shown in Table 1), and the social cost of carbon for 2020 is \$76/mtCO₂, this means that without the intensity program the remainder of the rule is of questionable net benefit to society.

In contrast, based on information in the Division's EIA Table 29, the abatement cost of the intensity program can be calculated and is \$19.65/mtCO₂e. This is well below the social cost of carbon. Therefore, based on the Division's costs and emissions reduction estimates, the intensity program is one of the most effective elements of the Proposed Rule. The intensity program, therefore, has the highest potential for success, and a determination to not implement such a program because of a fear that it would fail is (1) a missed opportunity for regulatory innovation, and (2) a missed opportunity to develop a common goal and incentive structure to achieve greater potential GHG emissions reductions.

4. Weld County Continues to Recommend Changes to the Verification Plan

Weld County continues to recommend changes to the proposed verification plan in Regulation 22 Part B §IV.F. Weld County has provided the three recommendations included in the redline rule language submitted with its PHS for Regulation 22 Part B§IV.F in WeldCo_REB_EX-001 based on the most current proposed edits to Regulation 22 provided by the Division with its Prehearing Statement. Weld County recommends the verification plan should: (1) require reporting of annual production and any deviations from forecasts, (2) clearly define methods to evaluate how the total GHG emissions from the Oil and Gas sector compare to the GHG emissions reduction requirements included in the GHG Roadmap and specified in HB21-1266, and (3) include incentives for operators to reduce GHG emissions ahead of requirements. Weld County's proposed revisions to the rule for these two items are provided in WeldCo_REB_EX-001. Weld County understands that the Division intends to revise Regulation 22 Part B§IV.F to address requests (1) and (2) above and appreciates the Division's efforts.

⁴ See *supra* Footnote 3.

Weld County recommends that the verification plan, or other elements of Regulation 22 Part B Section IV, be revised to incentivize early GHG emissions reductions that result in a lower intensity than is required. Given that methane has a higher global warming potential and a shorter lifetime than carbon dioxide, emphasis in early reduction of methane would provide near-term climate benefits. Incentivizing early reductions provides an opportunity to potentially make more rapid progress towards Colorado's statewide GHG emissions reduction goals, and would also reward those operators that make gains ahead of requirements.

C. The Proposed Changes to the LDAR Requirements are Unnecessary and Inefficient

1. Weld County Continues to Have Concerns about the Necessity and Effectiveness of Enhanced LDAR Requirements

Weld County is generally supportive of increased leak detection and repair ("LDAR") and rod packing replacement requirements, as well requirements to reduce emissions from pigging, blowdown, and well maintenance activities to the extent these measures are cost-effective and technically feasible. However, the increased LDAR requirements affecting the upstream sector (Regulation 7, Section II.E) is anticipated to reduce GHG emissions by only 7,000 mtCO₂e/year⁵ and the estimated abatement cost of this program is \$284/mtCO₂e. The anticipated emissions reductions are less than the emissions from a single mid-sized boiler (i.e., smaller than 30 million British thermal units per hour) fired by natural gas. Therefore, Regulation 7, Section II.E is not a cost-effective program nor an effective use of resources. Based on this, Weld County does not support increased LDAR requirements for the upstream sector.

2. Weld County Does Not Support EDF's Alternate Proposal to Conduct Monthly LDAR

While Weld County does support use of emerging technologies to provide enhanced information for a wide variety of purposes, Weld County does not support adoption of regulatory requirements that are primarily feasible through the adoption of emerging technologies that have not proven to be effective, nor viable to implement, at a statewide scale. Therefore, Weld County does not support EDF's Alternate Proposal to modify the LDAR regulations for the upstream and midstream segments of the oil and gas sector for three reasons: lack of supporting information necessary to understand and substantiate the Alternate Proposal; significant logistical implications related to the implementation are not enumerated nor well considered in the Alternate Proposal; and the scope of the Commission's authority and legal responsibilities are not adequately considered in the Alternate Proposal.

First, the information necessary to assess the proposed benefits is not provided in the Alternate Proposal. Weld County requests that before any action is taken with regard to the Alternate Proposal, EDF provide more documentation on the modeling analysis used to estimate the LDAR emissions reductions effectiveness. Specifically, Weld County believes that EDF

⁵ APCD_PHS_EIA at 44.

should have included the model inputs, outputs and technical documentation of the Fugitive Emissions Abatement Simulation Tool (“FEAST”) model as part of the Alternate Proposal for parties to review and comment on the validity and importance of inputs, as well as confirm the appropriate use and interpretation of the model outputs. This information is critical to effectively comment on EDF’s Alternate Proposal because the premise for the Alternate Proposal is that there are significant sources of GHG emissions that go undetected by the current regulatory requirements. Information to substantiate this premise is necessary. What limited information that is available indicates that data from the Permian Basin is used to estimate equipment leaks in some cases.⁶ Weld County is concerned about the use of Permian Basin data to model and estimate DJ Basin emissions as there is the potential that this information is not representative. The AIRS satellite data show that methane concentrations in DJ Basin have decreased substantially since 2013, so the Permian Basin data may not be indicative of operations in Colorado.⁷ Instead, Weld County recommends that EDF wait to conduct this analysis until data for the DJ Basin is available from the studies conducted by the Division this summer and fall. Additionally, EDF suggests the Alternate Proposal as a cost-effective method to reduce emissions. The cost effectiveness calculation depends on the anticipated emissions reductions amounts and thus verification of those anticipated emissions reductions is critical to evaluating EDF’s Alternate Proposal.

Second, significant logistical implications related to the implementation are neither enumerated nor well considered in the Alternate Proposal. Weld County understands that EDF’s Alternate Proposal would not specifically require advanced screening and that operators could always use current approved instrument monitoring methods (“AIMM”) to comply with the rule; however, EDF estimates the use of advanced screening is potentially three to ten times more cost effective than AIMM.⁸ Therefore, the logistical considerations associated with implementing advanced screening must be considered which EDF has not done. For example, how many well sites could be monitored per aerial flight? This is a potentially significant consideration in light of EDF’s estimate that 197,585 additional inspections would be required by the Alternate Proposal.⁹ Based on studies conducted this summer in the DJ Basin, the highest number of facilities detected in a single day was 20 facilities.¹⁰ Also, it is estimated that up to 100 square miles can be evaluated per day using aerial monitoring. If aerial surveys were used for all advanced screening, it is estimated that between 450 and 800 flights per month would be conducted. This is based on either aerial screening of 20 facilities per day, which would equate to 823 flights per month,¹¹ or flying 100 square miles per day, which would equate to 455 flights per month.¹² This would be an enormous increase in air traffic volume which translates to many other logistical considerations, such as sufficient airport and ancillary infrastructure, commercial

⁶ EDF_PHS_EX-019 at 7 n.23.

⁷ WeldCo_PHS_EX-002.

⁸ EDF_Alt_Initial_EIA comparison of Tables 11–13.

⁹ EDF_Alt_Initial_EIA Table 1.

¹⁰ See Carbonmapperdata.org and query plumes detected on July 19, 2021.

¹¹ This is derived by estimating how many facility inspections would occur per month and then dividing this by 20 facilities per flight.

¹² This is derived by overlaying a 100 square mile grid over the State of Colorado and mapping the location of active oil and gas wells and determining how many of the 100 square mile grid cells contain active wells.

capacity, safety, effects on price in response to high demand and corresponding adequacy of the EIA, etc. Furthermore, EDF did not evaluate the ability for advanced screening methods to provide data within an adequate timeframe. Weld County notes that the aerial monitoring results from the July 2021 measurements in Colorado were made public in November 2021, a delay of over three months between when the measurements were taken and the results were available. Advanced screening methods that take longer than two weeks to supply data to the operators would make that method infeasible to implement for compliance with EDF's Alternate Proposal. Finally, aircrafts are significant sources of emissions. EDF did not consider the indirect emissions increases that would occur as a result of required inspections. Emission reduction calculations in the Initial EIA for EDF's Alternate Proposal should have considered the potential increases associated with the inspections themselves to confirm that indirect emissions associated with implementing the proposal do not negate the desired benefits completely, particularly given the significant number of inspections that would be required. In sum, Weld County is concerned that due to these serious logistical considerations, advanced screening options would not be feasible and there would be no other method to comply with EDF's Alternate Proposal other than AIMM.

Third, EDF did not adequately consider the scope of the Commission's authority and legal responsibilities as part of the Alternate Proposal. Specifically, the scope of the Commission's authority to adopt rules that could result in increased air traffic is unclear, especially without fully considering the impacts to air quality and other resources. What are the Commission's legal requirements related to any Federal Aviation Administration requirements? EDF did not evaluate these implications as part of its Alternate Proposal.

For these stated reasons, Weld County does not support EDF's Alternate Proposal to modify the LDAR regulations for the upstream and midstream segments of the oil and gas sector. However, Weld County does support the continued use of emerging technologies and looks forward to seeing the results from the Colorado 2021 monitoring campaign to better assess how these technologies can be deployed most effectively for other purposes.

D. The Proposed ECD Testing Requirement Provides Limited Emissions Reductions While Imposing Significant Costs and Unjustifiable Safety Risks

Weld County continues to have concerns about the necessity and effectiveness of an ECD testing program, particularly given that it is negative cost effective. If the Commission adopts the ECD testing, Weld County urges the Commission to revise the Proposed Rule to strike language that arbitrarily and inconsistently creates requirements for operators in northern Weld County. While Weld County generally does not support the Center for Biological Diversity's ("CBD") Alternate Proposal, we support limited portions of CBD's Alternate Proposal related to visual inspections.

1. Weld County Continues to Have Concerns about the Necessity and Effectiveness of an ECD Testing Program

Although Weld County generally supports additional emission reductions, the Division's ECD testing program will result in limited emission reductions, if any, and comes with significant

cost, safety, and feasibility implications. Testing of ECD's, which is typically conducted when these devices are operating at optimal conditions, is not likely to identify or resolve any issues associated with its operation. Even by the Division's own estimates, the ECD testing requirements are expected to result in reductions corresponding to less than 0.1% of the 2005 oil and gas baseline GHG emissions. These low emissions benefits associated with the ECD testing proposal equate to an abatement cost of \$258/mtCO₂e, as shown in Table 1. This is significantly higher than the social cost of carbon (generally estimated to be between \$76/mtCO₂ to \$83/mtCO₂, depending on the year the emissions reductions occur between now and 2025) and indicates that there would be negative net benefit from conducting these tests.¹³

2. If the Commission adopts the ECD testing, Weld County Requests the Commission Strike the Language Singling Out Northern Weld County

If the Commission adopts the ECD testing or the pigging and blowdown rules, Weld County urges the Commission to revise the Proposed Rule to strike language that arbitrarily singles out requirements for northern Weld County. The Division's revisions arbitrarily link northern Weld County with requirements for the 8-hour ozone control area for ECD testing and midstream pigging and blowdown revisions. Nowhere in Regulation 7's SBAP, or its Prehearing Statement, does the Division explain this decision. In its Prehearing Statement, the Division states that "enclosed combustion devices in Northern Weld County [should be treated] in accordance with the requirements for the state's ozone nonattainment area, which currently does not cover the entirety of Weld County. The Division is not, however, proposing to expand the boundaries of the state's nonattainment area through this regulatory proposal. That would be premature, as EPA has not yet taken final action to determine whether it believes Colorado must do so."¹⁴ Nevertheless, by linking northern Weld County with the requirements for the nonattainment area, the Division appears to anticipate that northern Weld County will be included within the boundary. This decision is arbitrary, as Weld County has demonstrated in testimony before the Commission¹⁵ and in a detailed letter to the EPA¹⁶ that northern Weld County does not contribute to ozone concentrations at violating monitors any more than any other area outside of the nonattainment boundary.

As currently drafted, the Proposed Rule does not consistently include northern Weld County in requirements for the 8-hour Ozone Control Area throughout Regulation 7 Part D. For example, any portion of Regulation 7 that is not part of this rulemaking (e.g., Regulation 7 Part D Section I.D Storage Tanks controls and Regulation 7 Part E) is only applicable to the 8-hour Ozone Control area and not the "8-hour Ozone Control Area and northern Weld County" currently specified in the Proposed Rule. This inconsistency creates significant challenges for operators to

¹³ See *supra* Footnote 3 (see Table ES-1 for the social cost of carbon for 2020).

¹⁴ APCD_PHS at page 14.

¹⁵ Weld County Rebuttal December 2020 Rulemaking Hearing for 2008 Ozone SIP, and Regulation 3 and 7, available at https://drive.google.com/drive/folders/19J2MGBZE_k3rxgjMLZrnL92qk7EgrUU8.

¹⁶ Weld County's Comment to the EPA, available at <https://www.regulations.gov/document/EPA-HQ-OAR-2017-0548-0459/comment>.

track requirements associated with Regulation 7 Part D—not only for facilities inside and outside the 8-hour Ozone Control Area (defined in Regulation 7 Part A Section II.A.1), but also for operators who need to track which requirements apply in northern Weld County and for which aspects of Regulation 7. Furthermore, this regulatory confusion is completely unnecessary. If the nonattainment area boundary changes, the Commission would need to update the definition of the 8-hour Ozone Control Area (defined in Regulation 7 Part A Section II.A.1) for the entire Regulation 7, not just certain portions of the rule. Thus, modifying the definition of the 8-Hour Ozone Control Area would be more appropriate, and it would also prevent the need to remove “northern Weld County” from the ECD testing program and pigging and blowdown sections later. These requirements would automatically be revised to include northern Weld County through revision of the definition of the 8-Hour Ozone Control Area. Moreover, in the event the nonattainment area boundary does not change, the rule would either need to be revised to remove the term “northern Weld County” or the ECD program and pigging and blowdowns would have geographical applicability that differs from any other portion of Regulation 7 Part D. Accordingly, Weld County urges the Commission to strike the language that arbitrarily singles out northern Weld County and imposes geographically complex requirements that are inconsistent with other portions of Regulation 7.

3. If the Commission adopts the ECD testing, Weld County Supports the Joint Industry Working Group’s (“JIWG”) Recommendation to Implement a Delayed Testing Schedule

If the Commission adopts the ECD testing, Weld County supports JIWG’s recommendation that the Commission implement a delayed testing schedule. A delayed testing schedule would provide a more feasible window of time to conduct the tests and enable the necessary testing protocols to be developed. Given the small emissions reductions estimated by the Division for the ECD testing program and the enormous costs and safety concerns, providing more time to get it right is highly recommended.

4. Weld County Does Not Support CBD’s Alternate Proposal to Include Flow Testing as Part of ECD Testing, But Does Support CBD’s Alternate Proposal for Visual Inspections

CBD submitted an Alternate Proposal to “enhance the proposal by the APCD to make changes to Regulation 7 to add testing, monitoring, and reporting.” Weld County would note that CBD does not propose true alternatives to testing, but rather just more stringent requirements for testing and reporting, including increased frequency and the requirement to submit reports rather than retain records. Specifically, CBD proposes the following revisions to the scope of testing requirements:

- Removal of allowance for alternative test methods [I.E.3.a];
- Removal of testing exception for manufacturer-certified ECDs approved by USEPA under NSPS OOOOa [I.E.3.a.(ii), I.J.1.h];
- Require existing ECD’s to be tested within 3 years of promulgation [II.B.2.h.(ii)];

- Require ECD's located in a DIC, ozone non-attainment area, or northern Weld County to be tested every 3 years, and 5 years for all others [II.B.2.h.(iii)];
- Expanding testing requirements to ECD's for vapor recovery unit ("VRU") downtime and units not subject to Regulation 7 [II.B.2.h]; and
- Expanding the analytes for testing to including hazardous air pollutants [II.B.2.h].

The expansion of scope to include manufacturer-certified units offers no emissions benefit as the manufacturer's certification will achieve the same result as operator testing while the inclusion of intermittent units for VRUs will achieve minimal emissions reductions. Further, including hazardous air pollutants as an analyte significantly increases the complexity and cost of testing. Testing for total hydrocarbons as either methane or propane is a simple reference test method, while speciated analysis requires gas chromatography and mass spectrometry (GC-MS). The availability of GC-MS is limited, and the costs are substantial while the benefits of such speciation are nil. Weld County does not support the ECD testing program as it will result in limited emissions reductions, if any, and comes with significant cost, safety, and feasibility implications. CBD's Alternate Proposal would exacerbate Weld County's concerns. As such, Weld County recommends the Commission not adopt CBD's Alternate Proposal to expand the scope of testing.

CBD proposes that flow to an ECD should not deviate by more than 10% of the manufacturer's specification on an hourly basis [II.B.2.g.(iii)], and that economic feasibility of flow monitors be disregarded. This demonstrates a fundamental lack of understanding of ECD function and flow monitoring devices. ECD's are designed to not exceed a maximum tip velocity and to accommodate lower flows. These parameters are clearly delineated in 40 CFR §60.18(f) with which manufacturers and operators must already demonstrate compliance. Moreover, the monitoring and telemetry required for hourly monitoring is astronomically expensive and potentially unavailable. The most common flowmeter is an orifice meter that infers total flow by measuring differential pressure across an orifice in the flow line. While these meters are accurate for daily measurements, they are not capable of providing accurate hourly or sub-hourly flows required to comply with CBD's proposed rule language. Alternative flow measurement devices capable of hourly monitoring, such as ultrasonic velocity monitors, are extremely expensive (upwards of \$10,000 per device) and can hardly be justified by the minimal emissions reductions anticipated.

Similarly, monitoring of hourly or sub-hourly measurements requires installation of telemetry and communications which may not be available at every site and are expensive to install. CBD does consider these costs in its EIA for its Alternate Proposal. For these reasons, Weld County does not support adoption of the provisions for hourly flow limitations.

CBD has also proposed additional specificity on visual inspections to ensure proper ECD function [II.B.2.f.(ii)], including monitoring regulators, backpressure valves, liquid vessels, and visible emissions. These provisions provide a better indication of continuous compliance as these are good indicators of a safely and properly functioning ECD, and Weld County does support these specific provisions of the CBD's Alternate Proposal.

E. Weld County Does Not Support EDF's Alternate Proposal Related to Non-Emitting Pneumatics

EDF proposes an additional six years of implementation of non-emitting pneumatic controllers for well production facilities, specifically including requirements for non-emitting pneumatic controllers for the previously exempted low-producing wells defined as producing less than 15 barrels of oil equivalent ("BOE") per year. Additionally, this alternate proposal also adds an additional four years of implementation of non-emitting pneumatic controllers for natural gas compressor stations. EDF's alternate proposal also includes requirements for less than 15 BOE facilities to install non-emitting pneumatic controllers starting in 2024 and ending in 2029 which would effectively remove that exemption from the regulation. [II.C.4.c.(iv)].

Weld County has three primary concerns about EDF's Alternate Proposal. First, the Commission just adopted new rules for pneumatic controllers in February 2021. Second, the Alternate Proposal is too complex to implement and administer when operators would likely retrofit pneumatic controllers independently under the intensity-based rule. Third, Weld County is concerned about the effect of this proposal on small operators.

In February 2021, the Commission adopted new rules for pneumatic controllers based on EDF's Alternate Proposal. The new rule was based on technical and economic feasibility and these aspects have not changed since February. Another Alternate Proposal on the same emissions sources in less than a year has adverse impacts on the Commission and other parties and is inefficient. Weld County is optimistic that with the adoption of an intensity-based program for the upstream sector, the practice of including Alternate Proposals for sources with recent, new controls that have not even been enacted for a full year will become unnecessary. The fact that EDF does not support the upstream intensity proposal and yet continues to advocate for piecemeal regulation on sub-year frequency is counter-productive, and the Commission and other parties are bearing the burden with repeated rulemaking hearings.

Secondly, the proposed implementation of the rule is overly complex with year-specific percentage retrofit requirements varying by "historic non-emitting facility percent production." It would be more efficient and effective to enable operators to choose to implement pneumatic controller retrofits as part of an intensity-based rule compliance option. This would reduce the administrative burden for the Division to oversee compliance with this complex rule and will provide flexibility for the operators to determine the most cost-effective method to reduce GHG emissions without additional, unnecessary regulations.

Thirdly, EDF's alternate proposal shows minimal emissions reductions for facilities classified as less than 15 BOE and would effectively hinder small oil and gas operators in Colorado by increasing the capital needed to meet EDF's alternate proposal to install non-emitting pneumatic controllers. EDF's analysis shows that extending the requirement to install non-emitting pneumatics to low-producing wells (defined as less than 15 BOE) would only reduce methane emissions by 2,177 tons per year (tpy), which is only 2% more than the rule as proposed.¹⁷ EDF also notes that the incremental cost of abatement for this proposed change ranges

¹⁷ See Table 2, EDF_ALT_EX-001.

from \$985/ton to \$1,109/ton.¹⁸ Moreover, EDF fails to consider the impact to the economic viability of lower-producing wells. EDF's analysis projects, and likely underestimates, the annualized cost per pad (assuming 2 wells per pad) to \$3,347m, which is equivalent to a decrease in 0.4% to 0.9% of net operating margin.¹⁹ While this may seem insignificant, lower-producing wells often operate on margins less than 1% and this rule would render them economically unviable. In effect, this proposal disadvantages small operators who operate a greater portion of the lower-producing wells. Further, small operators located in rural and low-income communities commonly have a disproportionate effect on the local economies, further disenfranchising those communities.

For these stated reasons, Weld County does not support EDF's Alternate Proposal to retrofit facilities with non-emitting pneumatics.

F. Proposed Rule Changes Related to the SIP Should Not Be Implemented

The Commission should not adopt the Division's late changes to the Proposed Rule in response to the EPA's comments on the State Implementation Plan ("SIP"). As noted in its Prehearing Statement, Weld County is concerned about the Division's last-minute revisions to the Proposed Rule, which were released just one week before the prehearing statements were due. Altering the Proposed Rule at this late hour raises significant due process concerns. Moreover, these revisions were made in response to the EPA's belated comments requesting that Colorado include in its SIP additional monitoring requirements for storage vessel and wet seal centrifugal compressor combustion devices "for consistency with" the EPA's Control Techniques Guidelines for the Oil and Natural Gas Industry. But as noted in Weld County's Prehearing Statement, these revisions are wholly unnecessary. Colorado's requirements are at minimum consistent with—if not more stringent than—the recommendations in EPA's CTG.

Similarly, Weld County opposes CBD's Alternate Proposal to include the flare-enhanced performance requirements in the State Implementation Plan ("SIP"). As set forth in JIWG's Appeal of the Prehearing Order, the Commission may only consider alternate proposals "if the subject matter of the alternative proposal is consistent with and fits within the scope of the notice." 5 C.C.R. 1001-1 § V.E.4.b; *see also* Notice of Rulemaking at 3. Here, the Notice of Rulemaking Hearing permits Alternate Proposals on SIP provisions, but limits these revisions to "Regulation Number 7, specific to flare performance, as necessary to address Ozone Nonattainment Area requirements related to previously submitted SIP revisions." Notice of Rulemaking Hearing Regarding Proposed Revisions to Regulation Number 7 and Regulation Number 22, 5 CCR 1001-9 and 5 CCR 1001-26 (Sept 20, 2021). Yet CBD's Alternate Proposal extends far beyond revisions related to "flare performance" and "previously submitted SIP revisions."

As set forth in Weld County's response to JIWG's Appeal, CBD's Alternate Proposal seeks to add requirements for "enclosed combustion devices" to the SIP. The term "enclosed

¹⁸ See Table 14, EDF_ALT_Initial EIA.

¹⁹ This assumes a price of \$40 to \$70 per BOE.

combustors” broadly applies to flares, as well as other enclosed combustion equipment utilized by the oil and gas industry such as thermal oxidizers. Accordingly, this proposal falls outside the scope of the notice.

This proposal is also out of scope because it does not relate to a previously submitted SIP revision. This language responds to the Division’s September 17, 2021 proposal that any SIP revisions should be “directed only at addressing the EPA’s consideration of our RACT (Reasonably Available Control Technology) SIP.” CBD does not claim that its Alternate Proposal constitutes RACT and does not use that term anywhere in its prehearing statement, SBAP, or EIA. Further, its proposed requirements for flow meters and performance testing do not relate to any previously submitted SIP revision, RACT or non-RACT. If the Commission were to interpret the Notice of Rulemaking so broadly as to find that CBD’s Alternate Proposal applies to a previously submitted SIP revision, such an interpretation would remove all meaning from the words “previously submitted SIP revisions.” Lastly, the CBD EIA fails to analyze the costs or benefits of the proposal, claiming only that the proposal “would likely increase air pollution reductions.” And if the Commission reach the merits of CBD’s Alternate Proposal, it should be rejected.

Finally, there is little to be gained from incorporating new air regulatory requirements in the SIP. Indeed, it is a well-established practice in Colorado that new air regulatory requirements should be adopted as “state-only” rules first, and only incorporated into the SIP after they have been shown to be cost effective and achievable in practice. Moreover, there is no air quality rationale for incorporating the flare performance provisions in the SIP, as these provisions will be legally and practically enforceable as part of Regulation 7.

Accordingly, the Commission should not adopt the Division’s or CBD’s proposals to include rule revisions in the SIP.

G. Weld County Supports the Local Community Organizations and Conservation Groups’ Alternate Proposal to Require Annual Information Reporting

Weld County generally supports the Local Community Organizations and Conservation Groups’ Alternate Proposal to modify Regulation 7, Part D, §V.D to require the Division to provide annual reports to the Commission summarizing oil and gas data collected throughout the year, as well as provide an assessment of the information for multiple existing regulatory programs.

LIST OF ISSUES

Weld County requests the Commission resolve the following issues:

1. The addition of new elements to the proposed intensity program's reporting verification plan to include incentive structure, among other considerations;
2. Not adopt rule components that exceed the social cost of carbon and thus provide negative net social benefits, which include ECD testing, enhanced LDAR, and well unloading proposals;
3. Strike language that arbitrarily singles out requirements for northern Weld County; and
4. Evaluate the Commission's scope of authority to adopt rules with the potential to significantly increase air traffic and evaluate any Federal Aviation Administration requirements that could be applicable prior to taking action on EDF's Alternate Proposal related to modified LDAR requirements for the upstream and midstream segments.

LIST OF EXHIBITS

Weld County has provided a table of contents for its exhibits as an attachment to this Rebuttal.

LIST OF WITNESSES

In addition to the witnesses named in the Prehearing Statement, Weld County includes the following witnesses to testify on the comments articulated in this rebuttal statement:

- Courtney Taylor, Senior Managing Consultant, Ramboll²⁰

Weld County is not submitting any written testimony with this rebuttal but reserves the right to submit written rebuttal testimony in response to other parties' rebuttals.

CONCLUSION

Weld County appreciates the opportunity to participate in this rulemaking and thanks the Commissioners in advance for their attention to this Rebuttal Statement.

²⁰ Courtney Taylor's resume is attached as WeldCo_REB_EX-002.

Respectfully submitted this 23rd day of November, 2021.

BOARD OF COUNTY COMMISSIONERS
OF WELD COUNTY, COLORADO

s/Bruce T. Barker

Bruce T. Barker, Weld County Attorney

CERTIFICATE OF SERVICE

I hereby certify that on this 23rd day of November 2021, a true and correct copy of the foregoing Rebuttal Statement was sent via electronic mail to the following:

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