STATE OF NEW MEXICO
ENVIRONMENTAL IMPROVEMENT BOARD

IN THE MATTER OF PROPOSED NEW REGULATION
20.2.50 NMAC – *Oil and Gas Sector – Ozone Precursor Pollutants* **No. EIB-21-27(R)**

NMOGA'S RESPONSE TO CLEAN AIR ADVOCATES, EDF, AND NMED'S JOINT MOTION TO STRIKE PARTS OF NMOGA'S PROPOSED SURREBUTTAL ON LDAR

The New Mexico Oil and Gas Association ("NMOGA") hereby responds to the Clean Air Advocates, Environmental Defense Fund, and New Mexico Environment Department's (collectively "Movants") Joint Motion to Strike ("Motion") certain parts of surrebuttal that NMOGA has filed and intends to present on proposed 20.2.50.116 NMAC leak detection and repair requirements ("LDAR") through its surrebuttal witness Mr. Smitherman. As shown below, NMOGA's surrebuttal testimony, including the parts subject to the Motion, properly responds to rebuttal testimony submitted by various parties. That rebuttal testimony, in turn, responded to NMOGA's technical and cost analysis of NMED's original LDAR proposal presented with NMOGA's direct testimony. In addition, NMED has changed its position on the appropriate frequency of LDAR in both rebuttal (See NMED Rebuttal Exhibit 1 and 2) and in its September 16, 2021 redline (See NMED Rebuttal Exhibit 23). Consequently, all of Mr. Smitherman's surrebuttal testimony is a proper response to the other parties' rebuttal testimony or post-rebuttal changes in position. Having opened the door to the surrebuttal testimony through their rebuttal testimony or post-rebuttal change in position, the other parties cannot properly object to relevant surrebuttal testimony and should not succeed in their tactical procedural attempts to inhibit NMOGA's ability to present its technical case, through both direct and surrebuttal testimony, for the Board's consideration.

In addition to being proper surrebuttal, many of the items contained in the slides are already in the evidentiary record because they have been admitted through NMOGA and NMED's exhibits. Indeed, NMOGA moved to admit all exhibits into the record, and this was done without objection. We are particularly puzzled about the movants' objections to these items.

We have provided a detailed table in section II.F of this response to assist the Hearing Officer with understanding the multiple bases for admission of every item that is the subject of this motion.

II. ARGUMENT

A. The Air Quality Control Act and the Board's Rules Favor Admitting the NMOGA Surrebuttal Testimony.

Both the Air Quality Control Act and the Board's procedural rules governing this hearing favor the admission of relevant evidence that will assist the Board in reaching a decision. The Act provides that "[a]t the hearing, the environmental improvement board . . . shall allow all interested persons reasonable opportunity to submit data, views or arguments orally or in writing . . . ." NMSA 1978, § 74-2-6(D). As the Board's rules make clear, the objective of a rulemaking hearing is "to encourage public participation" and "to encourage the effective presentation of the evidence and points of view of the parties." 20.1.1.6.B&C. The Board's rules require that "[t]he hearing officer shall conduct a fair and equitable proceeding, assure that the facts are fully elicited and avoid delay." 20.1.1.107.B NMAC. The Board and hearing officer are enjoined to construe the rules "liberally" to achieve the objectives. 20.1.1.108 NMAC.

Admission of the proposed NMOGA surrebuttal addressing the other parties' rebuttal testimony on the LDAR section is consistent with the Act and the rules because it will assure that the facts helpful to the Board's decision are fully elicited. It also will be fair because, as

explained below, the other parties have had notice of NMOGA's positions and technical support through NMOGA's direct testimony, including NMOGA's comments on its proposed rule changes, which in this case were adopted through the direct testimony of NMOGA's witness, John Smitherman. The other parties have responded, in their rebuttals, to these statements and now seek to preclude any effective NMOGA response to their rebuttals, frustrating the objectives of "public participation" and "effective presentation of the evidence and points of view of the parties."

B. NMOGA Responded to the Studies NMED Cited to Support the Original Proposed Rule on LDAR in its Direct Testimony

Movants argue that NMOGA should have presented its surrebuttal testimony as part of its rebuttal testimony. Movants would have the Hearing Officer overlook that NMOGA presented its technical case on this topic through the direct testimony of John Smitherman. NMOGA presented its technical testimony in direct to afford the Movants and other parties an opportunity to examine NMOGA's concerns so that the fullest and best record is available for the Board's consideration. Movants would now have the Hearing Officer use NMOGA's willingness to provide its comments on direct as a basis for denying it an opportunity to respond to their rebuttal. This is inconsistent with the entire purpose of this proceeding to develop a good record for the Board. Mr. Smitherman now desires to explain how his evidence, previously adduced, has addressed the concerns of the Movants, and he is entitled to do so.

Most of the surrebuttal testimony that the Movants seek to strike relates to NMOGA's analysis of studies on which NMED relied to support the cost-effectiveness of NMED's proposed LDAR requirements, 20.2.50.116. As indicated in the Motion, those studies were available to the parties prior to the filing of direct testimony. Consequently, NMOGA's direct case, particularly the direct testimony of Mr. Smitherman, addressed the studies on which

NMED relied for its original proposed rule language. That testimony appears on pages 23-24 of the Direct Testimony of John Smitherman, Appendix A1 to NMOGA's Statement of Intent to Present Technical Testimony, attached hereto as "Exhibit A" for convenience.

Importantly, on page 23, lines 20-21, Mr. Smitherman states that he reviewed the analysis on which NMED relied and specifically refers to the NMOGA technical analysis responding to the studies on which NMED relied in presenting proposed section 20.2.50.116, which is contained in NMOGA's original redline, NMOGA Appendix B, pages 30-34. The pages of the NMOGA redline regarding proposed section 20.2.50.116 are attached hereto as "Exhibit B" for convenience. Importantly, Mr. Smitherman's direct testimony on page 23, lines 23-25 and on page 24 discussed the analysis and implications of the technical analysis in the NMOGA redline at length. For these reasons, when it introduces Mr. Smitherman's direct testimony on this topic, NMOGA will request that the Hearing Officer admit into evidence the portion of the NMOGA redline, Appendix B, relating to proposed 20.2.50.116 of the rule, as shown on pages 28-36 of the redline, based on Mr. Smitherman's direct testimony adopting and explaining that part of the redline, including the comments containing the NMOGA technical analysis. Having submitted direct testimony through Mr. Smitherman and the pertinent part of the NMOGA redline responding to the studies on which NMED relied, NMOGA did not identify a need to submit extensive additional rebuttal testimony on this topic.

Although the parties appear to disclaim knowledge that Mr. Smitherman adopted this testimony, this is disingenuous. Mr. Smitherman clearly adopts this testimony, explaining that "you will find our analysis included in the comments in the NMOGA redline for your reference." NMOGA Appendix A1, pg. 23, lines 21-22. To further clarify that the Appendix B commentary was incorporated in Mr. Smitherman's testimony, Mr. Smitherman responds to several questions

along these lines: "What issues did ***you*** identify, if any, regarding ERG's assumptions about operations in New Mexico?" NMOGA Appendix Al, pg. 23, lines 24-25. All of Mr. Smitherman's responses to this line of questioning adopt and repeat what was captured in the analysis in NMOGA's Appendix B, and the framing of the questions makes clear that these are the observations and testimony of Mr. Smitherman. It's also telling that legal counsel for Clean Air Advocates refers specifically to NMOGA's LDAR testimony as the testimony of Mr. Smitherman in her questioning of Ms. Lee Ann Hill. CAA Rebuttal Exhibit 25, pg. 3, 17-19.

C. CAA, EDF and NMED All Rebutted NMOGA's Direct Testimony on this Topic in Their Rebuttal Testimonies, and the Proposed NMOGA Surrebuttal Testimony Responds to Their Rebuttal Testimonies.

Because NMOGA's direct technical testimony on this topic had already been filed and was available for the other parties to critique, NMED chose to file rebuttal testimony to Mr. Smitherman's direct testimony, including the technical analysis contained in the NMOGA, NMOGA Appendix B, at pages 30-34. That rebuttal testimony is in NMED Rebuttal Exhibit 1, pages 62-68, attached hereto as "Exhibit C." NMED's rebuttal testimony criticized the direct technical testimony by Mr. Smitherman, including the adopted explanation and data in the NMOGA redline. For example, on page 63 of NMED's rebuttal testimony, NMED complained that it "could not evaluate the validity or representativeness of the alternative model plants mentioned by NMOGA, because NMOGA does not document in its testimony or exhibits the actual model plants they created . . . ." The surrebuttal testimony, particularly pages 10-11, responds to that rebuttal testimony. As NMED has the "last word" on this topic, NMED will have an opportunity to address this in its surrebuttal. On page 63, beginning at line 8, NMED seeks to rebut NMOGA's argument that "costs in the 2016 CTG did not account for additional cost elements that were discussed in comments submitted to the EPA on the draft CTG by the

American Petroleum Institute." That point is addressed in NMOGA's proposed surrebuttal beginning at pages 20-26.

Movant EDF submitted considerable rebuttal testimony on this topic through witness Hillary Hull, EDF's Exhibit JJJ. In her rebuttal testimony, Ms. Hull identifies her review of Mr. Smitherman's direct testimony and the NMOGA redline, Appendix B. She also discusses the ERG-LDAR Reductions and Costs VOC spreadsheet, NMED Exhibit 69. On the second page of her testimony (page 303 of EDF's filing) she states: "NMOGA's estimate of the costs to comply with NMED's proposed instrument-based monitoring requirements contained in 20.2.50.116.C NMAC (leak detection and repair or "LDAR" requirements) are inflated." Her testimony then seeks to rebut NMOGA's proposal with respect to the estimated volumes of VOCs and other pollutants. She then testifies regarding NMED's estimate of the cost-effectiveness of NMED's LDAR proposal, and beginning on the sixth page of her testimony (pages 307-08 of EDF's exhibits) provides her technical critique of NMOGA's cost analysis, including her critique of some of the underlying technical basis for the NMOGA analysis. NMOGA is entitled to surrebut this testimony.

Movant CAA also presented rebuttal testimony in response to NMOGA's direct testimony through witness Lee Ann L. Hill, CAA Exhibit 25. Ms. Hill's rebuttal testimony on this topic in CAA Exhibit 25 beginning on page 3, line 17 to page 4, line 10 and page 18, line 18 to page 19, line 2. NMOGA is entitled to surrebut this testimony.

D. <u>By Joining the Proximity LDAR Proposal in its Rebuttal, Oxy Has Represented that the Proximity LDAR Proposal Is Feasible for Industry, a Point that EDF's Witnesses Have Explicitly Urged in their Rebuttal Testimony and To which NMOGA is Entitled to Respond.</u>

In its Rebuttal Testimony, Oxy has for the first time aligned itself with the environmental group's LDAR proximity proposal. In doing so, Oxy has represented that this proposal is economically feasible for at least some of the oil and gas industry in New Mexico. NMOGA is entitled to rebut that representation. More importantly, regardless of what Oxy has represented about the feasibility of this approach for industry, witnesses for the Movants have deliberately perpetuated this implication and invited the Board to consider what it means for other members of industry, referring repeatedly to the proposal as the "Oxy agreement." *See, e.g.,* CAA Rebuttal Exhibit 23, pg. 2. In one particularly overt example, Dr. McCabe, witness for Clean Air Advocates, has asserted that Oxy's joining of the LDAR proximity proposal means industry is able and ready to meet the proposal's demands. In his rebuttal testimony, he states:

> <u>It is significant that a major oil and gas operator in New Mexico has agreed to these stronger provisions. Clearly, Oxy views them as technically and economically feasible. We hope the EIB will take note of this key development.</u>

CAA Rebuttal Exhibit 23, pg. 2-3 (emphases added). In inviting the EIB to "take note of this key development," he is clearly inviting the board to conclude that if one industry member can do it, all industry members can do it. This point is not lost on the proponents of this motion who, in their opening statements, referred to the "Oxy agreement" as a significant development supporting the viability of their proposal from industry's perspective. NMOGA has not had an opportunity to respond to any of these assertions or implications as they were said for the first time on rebuttal. As such, the proponents of this motion have clearly opened the door to surrebuttal on this issue.

E. <u>NMOGA, Not Movants, Would Be Prejudiced If Its Surrebuttal Testimony is Excluded.</u>

Movants complain that they would be prejudiced if the NMOGA proposed surrebuttal testimony is admitted due to the lack of opportunity to respond. As exemplified by their rebuttal testimony, Movants had sufficient opportunity to challenge NMOGA's technical analysis as presented in NMOGA's direct testimony and did so. As to the proposed Surrebuttal Testimony, although not required to do so, NMOGA provided the surrebuttal testimony in question to counsel for the other parties on September 23, allowing the parties several days for review and the ability to address any points needed in their own surrebuttal testimony. The proposed surrebuttal testimony includes more specific information from the publicly available information cited NMOGA's redline, in response to the rebuttal testimony, and the technical witnesses for the other parties already had access to that information and, as shown by some of the rebuttal testimony, are already familiar with it. Moreover, simply because the rebuttal testimony is 56 pages does not result in any prejudice to the other parties, as much of the information repeats information provided in NMOGA's direct testimony and redline, or adjusts the direct testimony in response to other parties' rebuttal testimony.

NMOGA, on the other hand, would be prejudiced if the proposed surrebuttal testimony is stricken. The surrebuttal testimony properly responds to rebuttal testimony submitted by the other parties, and prohibiting NMOGA from presenting the surrebuttal would deny NMOGA its only opportunity to respond to the rebuttal testimony. Indeed, in effect, Movants tactics are to attempt to prevent NMOGA from presenting this technical evidence through both direct and surrebuttal testimony, which would deny NMOGA and its members any opportunity to present this part of its case. That could create reversible error in the event there is an appeal.

F. <u>Itemized Bases for Denial</u>

For the Hearing Officer's convenience, we have provided the bases for denying this motion with respect to every slide and exhibit in the following table.

Subject of Objection	**Basis for Denial**
Slides 10-11 "NMOGA Model Plant – Well Sites"	These tables were referenced and incorporated into Mr. Smitherman's Direct Testimony. Appendix A1, pg. 23-24. Consequently, they are part and parcel of Mr. Smitherman's testimony, and there is no basis for excluding them. As outlined in Mr. Smitherman's testimony, the tables appear in NMOGA, Appendix B. The data underlying these tables were also provided in NMOGA Exhibit 27, and parties have waived their rights to object to any of NMOGA's exhibits, which have already been admitted into the evidentiary record. The parties clearly had opportunity to review and rebut this data and took the opportunity to do so in their rebuttal testimony. For example, in NMED Rebuttal Exhibit 1, Ms. Bisbey-Kuehn and Mr. Palmer allege they "cannot evaluate the validity or representativeness of the alternative model plants mentioned by NMOGA, because NMOGA does not document in its testimony or exhibits the actual model plants they created and on which they estimated new emission reductions and cost effectiveness numbers." NMED Rebuttal Exhibit 1, pg. 62-63. In response, NMOGA is demonstrating that its admitted exhibits did in fact set out this data (Exhibit 27) and that NMOGA's emissions reductions based on that model plant are more appropriate. *See also, e.g.,* EDF Rebuttal Exhibit JJJ, Rebuttal Testimony of Hillary Hull (testifying that NMOGA's proposal will decrease emissions reductions and that its costs are inflated, among other things); CAA Rebuttal Exhibit 25, 3-21, Rebuttal Testimony of Lee Ann Hill (responding specifically to John Smitherman and testifying that NMOGA's analysis fails to account for the emissions reductions that will be achieved); EDF Rebuttal Exhibit XX, Rebuttal Testimony of David Lyon (testifying that he disagrees with NMOGA's assertion that NMED has overestimated emissions reductions that can be achieved from LDAR). While the table itself was in direct testimony, NMOGA is responding to the rebuttal argument of NMED and providing the original table of dispute for reference. In addition, NMOGA is providing the data in surrebuttal to economize the Board's time and present it at the same time that NMOGA presents surrebuttal in response to the other party's rebuttal. This is consistent with how many parties have delivered their

	testimony in this hearing, and the line between direct, rebuttal and surrebuttal has been continually blurred for reasons far less compelling than this. NMOGA has also sought to respect the Hearing Officer's preference that the EIB not be required to refer to the commented version of NMOGA Exhibit B. The Hearing Officer's order was crafted to ensure that portions of Exhibit B and 47 remained in the record to the extent the parties relied on them. That is precisely the situation here.
Slides 12-13 "ERG/CTG Model Plant – Gas Well Sites"	This data is presented in NMOGA Exhibit 3, pg. 162-163. All of NMOGA's exhibits have already been admitted into the record, including Exhibit 3, and there is no basis for objecting to it at this point. This data is also reflected in NMED Exhibit 34, which has also been admitted. Furthermore, this is the source data that NMED relied on in developing its cost-per-ton analysis for ERG. On rebuttal, NMED has asserted that its data is superior. *See* NMED Rebuttal Exhibit 1, pg. 62-63. It is unclear how these slides could possibly be objectionable given that it forms the basis for NMED's analysis, and NMED has argued extensively on rebuttal that its data is better.
Slide 14 "Emission reductions from LDAR"	This is already in the record as NMED Exhibit 069, Tab "Emissions Reduction Factors", lines 3-5, 15-17. NMOGA is entitled to respond to the representations of NMED and its reliance on this information. NMED has clearly brought the emissions reductions achievable from particular frequencies within controversy on surrebuttal. As outlined above, NMED changed the frequency of LDAR in its 9/7 redline (Rebuttal Exhibit 2) and in its 9/16 redline (Rebuttal Exhibit 23). Consequently, the relative effectiveness of different frequencies is subject to debate, and NMOGA has not had an opportunity yet to respond to NMED's repudiation of the frequencies proposed in the 9/7 redline by NMED.
Slide 16 "Emissions reductions over-estimated at Well Sites"	This is a distillation of slide 15. The table on slide 15 was referenced and incorporated into Mr. Smitherman's Direct Testimony. Appendix A1, pg. 23-24. Consequently, the table is part and parcel of Mr. Smitherman's testimony, and there is no basis for excluding it. As outlined in Mr. Smitherman's testimony, the table appears in NMOGA, Appendix B and Exhibit 47.

	These emissions reductions were a direct result of the changes to the model plant. In NMED Rebuttal Exhibit 1, Ms. Bisbey-Kuehn and Mr. Palmer allege they "cannot evaluate the validity or representativeness of the alternative model plants mentioned by NMOGA, because NMOGA does not document in its testimony or exhibits the actual model plants they created and on which they estimated new emission reductions and cost effectiveness numbers." NMED Rebuttal Exhibit 1, pg. 62-63. In surrebuttal, NMOGA is demonstrating that its testimony does in fact demonstrate the emissions reductions are overestimated at well sites. NMOGA is also surrebutting other parties who have challenged NMOGA's analysis. *See, e.g.,* EDF Rebuttal Exhibit JJJ, Rebuttal Testimony of Hillary Hull (testifying that NMOGA's proposal will decrease emissions reductions and that its costs are inflated, among other things); CAA Rebuttal Exhibit 25, 3-21, Rebuttal Testimony of Lee Ann Hill (responding specifically to John Smitherman and testifying that NMOGA's analysis fails to account for the emissions reductions that will be achieved); EDF Rebuttal Exhibit XX, Rebuttal Testimony of David Lyon (testifying that he disagrees with NMOGA's assertion that NMED has overestimated emissions reductions that can be achieved from LDAR). While the table itself was in direct testimony, NMOGA is responding to the rebuttal argument of NMED and providing the original table of dispute for reference. In addition, NMOGA is providing the data in surrebuttal to economize the Board's time and present it at the same time that NMOGA presents surrebuttal in response to the other party's rebuttal. This is consistent with how many parties have delivered their testimony in this hearing, and the line between direct, rebuttal and surrebuttal has been continually blurred for reasons far less compelling than this. This is also consistent with the Hearing Officer's preference that the EIB not be required to refer to the commented version of NMOGA Exhibit B. The Hearing Officer's order was crafted to ensure that portions of Exhibit B and 47 remained in the record to the extent the parties relied on them in their testimony. That is precisely the situation here, as Mr. Smitherman has explicitly and extensively referred to this analysis and provided additional commentary in Appendix A1 of his direct testimony. NMOGA is providing the data in surrebuttal to economize the board's time and present it at the same time that NMOGA presents surrebuttal in response to the other party's rebuttal.

Slide 18 "Emissions reductions overestimated at Well Sites"	This is a distillation of slide 17. The table on slide 17 was referenced and incorporated into Mr. Smitherman's Direct Testimony. Appendix A1, pg. 23-24. Consequently, it is part and parcel of Mr. Smitherman's testimony, and there is no basis for excluding it. As outlined in Mr. Smitherman's testimony, the table appears in NMOGA, Appendix B and NMOGA Exhibit 47. While the table itself was in direct testimony, NMOGA is responding to the rebuttal argument of NMED and providing the original table of dispute for reference. For example, in NMED Rebuttal Exhibit 1, Ms. Bisbey-Kuehn and Mr. Palmer allege they "cannot evaluate the validity or representativeness of the alternative model plants mentioned by NMOGA, because NMOGA does not document in its testimony or exhibits the actual model plants they created and on which they estimated new emission reductions and cost effectiveness numbers." NMED Rebuttal Exhibit 1, pg. 62-63. In response, NMOGA is demonstrating that its exhibits do in fact set out this data (Exhibit 27) and that NMOGA's emissions reductions based on that model plant are more appropriate. NMOGA is also surrebutting other parties who have challenged NMOGA's analysis. *See, e.g.,* EDF Rebuttal Exhibit JJJ, Rebuttal Testimony of Hillary Hull (testifying that NMOGA's proposal will decrease emissions reductions and that its costs are inflated, among other things); CAA Rebuttal Exhibit 25, 3-21, Rebuttal Testimony of Lee Ann Hill (responding specifically to John Smitherman and testifying that NMOGA's analysis fails to account for the emissions reductions that will be achieved); EDF Rebuttal Exhibit XX, Rebuttal Testimony of David Lyon (testifying that he disagrees with NMOGA's assertion that NMED has overestimated emissions reductions that can be achieved from LDAR). NMOGA is also providing the data in surrebuttal to economize the Board's time and present it at the same time that NMOGA presents surrebuttal in response to the other party's rebuttal. This is consistent with how many parties have delivered their testimony in this hearing, and the line between direct, rebuttal and surrebuttal has been continually blurred for reasons far less compelling than this. This is also consistent with the Hearing Officer's preference that the EIB not be required to refer to the commented version of NMOGA Exhibit B.

	The Hearing Officer's order was crafted to ensure that portions of Exhibit B and 47 remained in the record to the extent the parties relied on them in their testimony. That is precisely the situation here, as Mr. Smitherman has explicitly and extensively referred to this analysis and provided additional commentary in Appendix A1 of his direct testimony. NMOGA is providing the data in surrebuttal to economize the board's time and present it at the same time that NMOGA presents surrebuttal in response to the other party's rebuttal.
Slide 29 "Gather and Boosting Facility Model Plant"	This data is in NMOGA Exhibit 28 and NMOGA Exhibit 7 and has already been admitted into evidence. The parties have waived their rights to object to this information.
Slide 30 "Table 9-9"	This data is presented in NMOGA Exhibit 3, pg. 168, and has already been admitted into the record as evidence. The parties have waived their rights to object to this information.
Slide 31 "Emissions reductions over-estimated at G&B"	This data is referenced and incorporated into Mr. Smitherman's Direct Testimony. Appendix A1, pg. 23-24. Consequently, it is part and parcel of Mr. Smitherman's testimony, and there is no basis for excluding it. As outlined in Mr. Smitherman's testimony, the table appears in NMOGA, Appendix B and NMOGA Exhibit 47. The Hearing Officer's order was crafted to ensure that portions of Exhibit B and 47 remained in the record to the extent the parties relied on them in their testimony. That is precisely the situation here, as Mr. Smitherman has explicitly and extensively referred to this analysis and provided additional commentary in Appendix A1 of his direct testimony. NMOGA is providing the data in surrebuttal to economize the board's time and present it at the same time that NMOGA presents surrebuttal in response to the other party's rebuttal.
Slide 32 "Emissions reductions over-estimated at G&B"	This is a distillation of slide 31. The table on slide 31 was referenced and incorporated into Mr. Smitherman's Direct Testimony. Appendix A1, pg. 23-24. Consequently, it is part and parcel of Mr. Smitherman's testimony, and there is no basis for excluding it. As outlined in Mr. Smitherman's testimony, the table appears in NMOGA, Appendix B and NMOGA Exhibit 47. This table is integral to surrebutting NMED's rebuttal of the table when it was presented in Mr. Smitherman's direct testimony. In NMED Rebuttal Exhibit 1, NMED argues that

	NMOGA did not "provide any details regarding how the results of the second paper were used to adjust the VOC reduction estimates from this in the 2016 CTG to those in NMOGA's testimony, or how they were used to adjust the cost per ton of VOC reduced." NMOGA is now surrebutting that statement by explaining its approach. While the table itself was in direct testimony, NMOGA is responding in surrebuttal to the rebuttal argument of NMED and providing the original table of dispute for reference. In addition, NMOGA is providing the data in surrebuttal to economize the Board's time and present it at the same time that NMOGA presents surrebuttal in response to the other party's rebuttal. This is consistent with how many parties have delivered their testimony in this hearing, and the line between direct, rebuttal and surrebuttal has been continually blurred for reasons far less compelling than this. This is also consistent with the Hearing Officer's preference that the EIB not be required to refer to the commented version of NMOGA Exhibit B. The Hearing Officer's order was crafted to ensure that portions of Exhibit B and 47 remained in the record to the extent the parties relied on them in their testimony. That is precisely the situation here, as Mr. Smitherman has explicitly and extensively referred to this analysis and provided additional commentary in Appendix A1 of his direct testimony. NMOGA is providing the data in surrebuttal to economize the board's time and present it at the same time that NMOGA presents surrebuttal in response to the other party's rebuttal.
Slide 38 "Emissions reduction over-estimated at G&B"	This data is referenced and incorporated into Mr. Smitherman's Direct Testimony. Appendix A1, pg. 23-24. Consequently, it is part and parcel of Mr. Smitherman's testimony, and there is no basis for excluding it. As outlined in Mr. Smitherman's testimony, the table appears in NMOGA, Appendix B and NMOGA Exhibit 47. This is also integral to surrebutting NMED's rebuttal on this issue, as outlined in response to Slide 36 above. The Hearing Officer's order was crafted to ensure that portions of Exhibit B and 47 remained in the record to the extent the parties relied on them in their testimony. That is precisely the situation here, as Mr. Smitherman has explicitly and extensively referred to this analysis and provided additional

	commentary in Appendix A1 of his direct testimony. NMOGA is providing the data in surrebuttal to economize the board's time and present it at the same time that NMOGA presents surrebuttal in response to the other party's rebuttal.
Slide 39 "Emissions reduction over-estimated a G&B"	This is a distillation of slide 38. The table on slide 38 was referenced and incorporated into Mr. Smitherman's Direct Testimony. Appendix A1, pg. 23-24. Consequently, it is part and parcel of Mr. Smitherman's testimony, and there is no basis for excluding it. As outlined in Mr. Smitherman's testimony, the table appears in NMOGA, Appendix B and NMOGA Exhibit 47. This is also integral to surrebutting NMED's rebuttal on this issue, as outlined in response to Slide 36 above. The Hearing Officer's order was crafted to ensure that portions of Exhibit B and 47 remained in the record to the extent the parties relied on them in their testimony. That is precisely the situation here, as Mr. Smitherman has explicitly and extensively referred to this analysis and provided additional commentary in Appendix A1 of his direct testimony. NMOGA is providing the data in surrebuttal to economize the board's time and present it at the same time that NMOGA presents surrebuttal in response to the other party's rebuttal.
Slides 40-50. LDAR Incremental Analysis Rebutting NMED's Shifting Position on LDAR Frequencies and Thresholds	All of the underlying data to support this analysis is already in the record in NMED Exhibit 069, NMOGA Appendix B, and NMOGA Exhibit A1. This is being provided to respond to NMED's continual shift in LDAR frequencies and thresholds. Between September 7 and September 16 (***after the rebuttal deadline***), NMED increased the relative frequency of LDAR inspections and significantly lowered the PTE thresholds for each frequency. NMOGA is surely entitled to surrebuttal against the department's unexplained changes in position. NMOGA anticipates that NMED will provide new testimony to support this shift in position or, at the very least, seek to repudiate its September 6th redline. It would be fundamentally inequitable to allow NMED to change its position beyond the rebuttal deadline and not allow the parties to respond to that change. These slides evaluate the cost-per-ton of the LDAR proposals on an incremental basis to surrebut NMED's original rebuttal testimony that thresholds more stringent than NMOGA

	proposed are appropriate and to surrebut NMED's 9/16 draft, which significantly increased the stringency of these thresholds and frequencies. The underlying cost data for this information is already in the record in NMED's Exhibit 069, and the underlying emissions reductions are incorporated in the testimony of Mr. Smitherman at Appendix A1, pg. 23-24, as incorporated from NMOGA Exhibit B.
Slides 52-56 Response to LDAR Proximity Proposal	This data is presented to rebut the LDAR proximity proposal. Specifically, NMOGA is entitled to rebut the statements uttered for the first time on rebuttal that the EIB should conclude from Oxy's joining of the proximity LDAR concept that the measures are feasible for industry. This is clearly within the scope of surrebuttal.
Excel spreadsheets entitled "LDAR Gathering Boosting Station Incremental Analysis" and "LDAR Well Sites Incremental Analysis"	The spreadsheets provide the underlying calculations for the LDAR incremental analysis provided on slides 40-56 and should be admitted for all the reasons stated above. They should also be admitted for the convenience of the board and parties who are attempting to understand or challenge this information.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that on September 28, 2021, a true and correct copy of the foregoing ***Motion to Strike*** was served via electronic mail to the following:

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/s/ Eric L. Hiser
Eric L. Hiser

Exhibit A

especially on rare to fail parts. Further, it should be obvious that supply chains can be disrupted by things outside the operator's control. Look no further than what a global pandemic did in 2020 and 2021. Operators must have the time needed to acquire replacement parts without penalty as long as they mark the item that has been identified as needing repair and repair it in a timely fashion once parts are available.

Q. DID NMOGA PROPOSE SOME CHANGES TO THE PROPOSAL TO ADDRESS THIS PROBLEM?

A. NMOGA has offered new language that allows an operator to tag the component in need of repair that cannot be repaired within 30 days of discovery as "Repair Delayed". The operator has an obligation to complete the repair within 15 days of receiving the component or part. This is a necessary flexibility that recognizes the urgency of needed repair with the realities of the market.

Q. DID YOU REVIEW ERG'S COST-PER-TON ANALYSIS COMMISSIONED BY NMED TO SUPPORT THE LEAK REPAIR THRESHOLDS AND FREQUENCIES IN 20.2.50.116.C(3)?

A. I did. You will find our analysis included in the comments in the NMOGA redline for your reference.

Q. WHAT ISSUES DID YOU IDENTIFY, IF ANY, REGARDING ERG'S ASSUMPTIONS ABOUT OPERATIONS IN NEW MEXICO?

A. In virtually all cases, the ERG cost-per-ton analysis that NMED used consistently and significantly understated the actual cost because it used data that was not representative of New Mexico producing sites in either the northwest or the southeast producing regions of the state. ERG analysis was based on a flawed assumption that OGI and EPA Method 21 equipment were used in equal measure in survey data. This led to inaccurate base level data which skewed their results. Further, the Model Plant used by EPA was not representative of either Permian Basin (southeast New Mexico) oil production sites or natural gas well sites typical of the San Juan Basin (northwest New Mexico).

Q. WHAT ISSUES DID YOU IDENTIFY, IF ANY, IN ERG'S COST-PER-TON ANALYSIS TO SUPPORT NMED'S PROPOSAL FOR WELL PRODUCTION FACILITIES?

A. These flaws in the ERG analysis led to inaccurate results when calculating the cost per ton of emissions reduction from LDAR. At well production facilities, as our comments in the redline make clear, when more appropriate data is used, the actual cost per ton is higher, and in many instances significantly higher, than what NMED relied upon. For example, for the cost per ton at oil well production facilities with GOR less than 300, the actual cost is almost triple the ERG estimate.

Q. WHAT ISSUES DID YOU IDENTIFY, IF ANY, IN ERG'S COST-PER-TON ANALYSIS FOR GATHERING AND BOOSTING SITES?

A. NMED analysis was based on old and outdated data in the form of another "Model Plant". Basing our estimate on more recent peer-reviewed studies yields a more reliable and appropriate estimate for the cost per ton of emissions reduction due to LDAR. Our comments in the redline illustrate those estimated costs on various frequencies of inspection. As you can see, the costs based on more accurate data are quite high and much higher than warranted.

Q. WHAT ISSUES DID YOU IDENTIFY, IF ANY, IN ERG'S COST-PER-TON ANALYSIS FOR TRANSMISSION COMPRESSOR STATIONS?

A. The ERG analysis did not even use data from actual transmission compressor stations. They used data from Gathering and Boosting Stations which handle unprocessed natural gas. This is a significant error in their assumption that led to incorrect results. Natural gas being handled at transmission compressor stations has already been processed to remove almost all heavier components (the VOCs) and therefore has virtually no potential to emit VOCs. By basing their analysis on unprocessed natural gas, their analysis cannot be expected to represent actual emissions or emissions reductions due to LDAR.

Q. WHAT ISSUES DID YOU IDENTIFY, IF ANY, IN ERG'S COST-PER-TON ANALYSIS FOR GAS PLANTS?

A. The ERG analysis errs in its basis for calculating the cost per ton of emission reduction for gas processing plants. They also incorrectly assumed that the costs for certain federally required LDAR programs can be ignored. These flaws, and perhaps others, left the NMED with incomplete analysis on which to base the proposed rule. NMOGA's recommendations for LDAR at gas processing plant recognize more directly the complexity caused by various federally required programs, and therefore a more robust analysis is utilized to base recommendations for change.

Q. BASED ON THE ISSUES YOU HAVE IDENTIFIED, WHAT LEAK RATE THRESHOLDS AND FREQUENCIES DO YOU RECOMMEND?

A. NMOGA has recommended both leak rate thresholds and inspection frequencies for all major facilities as outlined in the redline including well production facilities, gathering and boosting stations, and transmission compressor stations. These parameters result in significant VOC reductions and a much more reasonable cost per ton than that offered by NEMD based on the flawed ERG analysis.

PROPOSED 20.2.50.117 NATURAL GAS WELL LIQUID UNLOADING

Q. DO ALL LIQUID UNLOADING OPERATIONS VENT GAS TO THE ATMOSPHERE?

A. Gas well liquid unloading is a complex process that is customized to wells according to their particular characteristics. It is in the best interest of the operator of a gas well that is in need of unloading liquids to not lose any gas to the atmosphere. The operator's livelihood is selling gas, not emitting it. Sometimes a well can be manually unloaded by shutting it in to build pressure and then opening it to the facilities and sales. Other times, substances like foamers can be introduced into the well in order to assist the well's ability to lift the liquids to the surface facilities while staying online and maximizing sales. Only when these types of techniques are not effective, liquid unloading to a lower backpressure by venting to the atmosphere may be the best alternative to restoring production.

Q. SHOULD THESE REGULATIONS BE LIMITED TO JUST THOSE ACTIVITIES THAT VENT TO THE ATMOSPHERE?

A. NMOGA has suggested modifications to this rule to recognize that only those manual liquid unloading events that result in venting of gas to the atmosphere are covered by this section of the rule. Since only manual liquid unloading involving venting to the atmosphere would result in emissions, it is just common sense that there is no benefit to emissions reduction to apply them to activities that do not cause emissions.

Q. DID NMOGA PROPOSE CHANGES TO ACCOMPLISH THIS?

A. Yes, see the first sentence in the applicability paragraph of this section.

Q. WHAT ARE AUTOMATED CONTROL SYSTEMS AND HOW DO THEY REDUCE VOC EMISSIONS?

A. Just as NMED has stated in their suggested best practices in paragraph 117.B.2.c, closing the vent valve as soon as practical after an unloading event will help minimize venting volumes. Depending on an individual well's producing characteristics, an automatic controller can detect certain parameters signaling that an unloading event has reached an end point and respond by actuating a valve to send gas back to the facilities and sales. This could mean detecting the arrival of a plunger, or a change in other operating parameters such as flowline pressure. Technology in this space has advanced over time so we might expect new ideas to be developed that would fit under this language.

Q. SHOULD THESE BE INCLUDED AS AN ADDITIONAL MANAGEMENT PROCEDURE?

A. Yes, Allowing liquid unloading to the atmosphere to occur as long as automated control system is installed and operating as one of the methodology options will encourage the deployment of these "smart" systems now and as they may be developed in the future. Even those systems that exist today can be deployed to make gas well liquid unloading

Exhibit B

Comment on 20.2.50.115(E)(1)(b): Redline required as an operator should have the option of not operating a unit (e.g. Tank) with a VRCU rather than having redundant control or backup control. For example, an operator could shut-in a well(s) to service a VRCU on the tanks receiving hydrocarbon fluid from that well (s) rather than have redundant control systems.

Comment on 20.2.50.115(E)(3): Redline required as record keeping is addressed under LDAR section. Redline required as an operator should have the option of not operating a unit (e.g. Tank) with a VRCU rather than having redundant control or backup control. For example, an operator could shut-in a well(s) to service a VRCU on the tanks receiving hydrocarbon fluid from that well (s) rather than have redundant control systems.

F. Recordkeeping requirements: The owner or operator of a control device or closed vent system shall maintain a record of the following:

(1) the certification of the closed vent system where applicable and ~~as~~ required by this Part; and

(2) the information required in Paragraph (7) of Subsection B of 20.2.50.115 NMAC.

G. Reporting requirements: The owner or operator shall comply with the reporting requirements in 20.2.50.112 NMAC.

[20.2.50.115 NM–C - N, XX/XX/2021]

20.2.50.116 EQUIPMENT LEAKS AND FUGITIVE EMISSIONS:

A. Applicability: ~~Wellhead sites~~Well production facilities, tank batteries, gathering and boosting sites, gas processing plants, transmission compressor stations, and associated piping and components are subject to the requirements of 20.2.50.116 NMAC. Equipment leak and fugitive emissions -monitoring required by New Source Performance Standards, including but not limited to Subpart OOOO and Subpart OOOOa, 40 C.F.R. Part 60, as may be revised, may be used to satisfy the requirements of this 20.2.50.116 NMAC. A component is subject to the requirements if it is a gas vapor or light liquid component that contacts process fluid that is at least 10% VOC by weight. Components in water and/or air service are exempt from the requirements of 20.2.50.116 NMAC. Well production facilities and gathering and boosting sites producing or handling exclusively coal bed methane are not subject to the requirements of 20.2.50.116

Comment on 20.2.50.116.A. Redlined required to exempt facilities already performing robust equipment leak monitoring under New Source Performance Standards. The ten-percent VOC threshold is added to exempt from the rule components that do not contain liquids capable of emitting meaningful amounts of VOC. Similarly, NMOGA has added the exemption for water and/or air service components because these do not leak VOCs. Coal bed methane wells or gathering and boosting sites handling coal bed methane should also be excluded because they do not have the potential to emit VOC's due to equipment leaks since the gas they produce or handle has no VOC to emit and there are no hydrocarbon liquids produced or handled

B. Emission standards: The owner or operator of oil and gas production and processing equipment located at wellhead sites, tank batteries, gathering and boosting sites, gas processing plants, or transmission compressor stations shall demonstrate compliance with this Part by performing the monitoring, recordkeeping, and reporting requirements specified in 20.2.50.116 NMAC.

C. ~~Default~~ Monitoring, inspection or testing requirements: Owners and operators shall comply with the following monitoring requirements: ~~and the monitoring requirements in 20.2.50.112 NMAC:~~

(1) The owner or operator of a ~~wellhead site~~well production facility or tank battery ~~facility~~ with an annual ~~average daily production of greater than 10 barrels of oil per day or an~~ average daily production or average daily throughput of greater than 60,000 standard cubic feet per day of natural gas shall, at least weekly, conduct audio, visual, and olfactory (AVO) inspections of thief hatches, closed vent systems, pumps, compressors, pressure relief devices, open-ended valves or lines, valves, flanges, connectors, piping, and associated equipment to identify defects and leaking components as follows:

(a) conduct an external visual inspection for defects which may include~~:~~ cracks, holes, or gaps in piping or covers; loose connections; liquid leaks; broken or missing caps; broken, cracked or otherwise damaged seals or gaskets; broken or missing hatches; or broken or open access covers or other closure or bypass devices;

(b) conduct an audio inspection for pressure leaks and liquid leaks;

(c) conduct an olfactory inspection for unusual or strong odors;

(d) any positive detection during the AVO inspection shall be ~~be considered a leak; and~~

~~**(e)** a leak discovered by an AVO inspection shall be tagged with a visible tag~~ repaired in accordance with Subsection E if not repaired at the time of discovery. ~~and reported to management or their designee within three calendar days.~~

(2) The owner or operator of a ~~wellhead site~~well production facility or tank battery ~~facility~~ with an annual ~~average daily production of equal to or less than 10 barrels of oil per day or an~~ average daily production or average daily throughput of equal to or less than 60,000 standard cubic feet per day of natural gas shall, at least monthly, conduct an audio,

visual, and olfactory (AVO) inspection of thief hatches, closed vent systems, pumps, compressors, pressure relief devices, open-ended valves or lines, valves, flanges, connectors, piping, and associated equipment to identify a defect and leaking component as specified in Subparagraphs (a) through (e) of Paragraph (1) of Subsection (C) of 20.2.50.116 NMAC.

(3) The owner or operator of the following facilities shall conduct an inspection using U.S.EPA method 21 or optical gas imaging (OGI) of thief hatches, closed vent systems, pumps, compressors, pressure relief devices, open-ended valves or lines, valves, flanges, connectors, piping, and associated equipment to identify leaking components at a frequency determined according to the following schedules:

(a) for ~~wellhead sites~~well production facilities or tank battery facilities:

(i) annually at facilities with a PTE less than 10~~two~~ tpy VOC;

(ii) semi-annually at facilities with a PTE equal to or greater than ~~two~~ 10 tpy and less than ~~five~~ 25 tpy VOC; and

(iii) quarterly at facilities with a PTE equal to or greater than ~~five~~ 25 tpy

(b) for gathering and boosting sites, gas processing plants, and transmission compressor stations

(i) ~~quarterly~~ semi-annually at facilities with a PTE less than 25 tpy VOC; and

(ii) ~~monthly~~ quarterly at facilities with a PTE equal to or greater than 25 tpy VOC

(4) Inspections using U.S. EPA method 21 shall meet the following requirements:

(a) the instrument shall be calibrated before each day of its use by the procedures specified in U.S. EPA method 21 and by the instrument manufacturer;

~~(b) the instrument shall be calibrated with zero air (less than 10 ppm of hydrocarbon in air), and a mixture of methane or n-hexane and air at a concentration near, but nor more than, 10,000 ppm methane or n-hexane; and~~

(e~~b~~) a leak is detected if the instrument records a measurement of 500 ppm or greater of hydrocarbon and the measurement is not associated with normal equipment operation, such as pneumatic device actuation and crank case ventilation.

(5) Inspections using OGI shall meet the following requirements:

(a) the instrument shall comply with the specifications, daily instrument checks, and leak survey requirements set forth in Subparagraphs (1) through (3) of Paragraph (i) of 40 CFR 60.18;

(b) a leak is detected if the emission images recorded by the OGI instrument are not associated with normal equipment operation, such as pneumatic device actuation or crank case ventilation.

(6) Leaks discovered pursuant to the leak detection methods of Paragraphs (3), (4) and (5) of Subsection C of 20.2.50.116 NMAC are not subject to enforcement by the department unless the owner or operator fails to perform the required repairs in accordance with Subsection E of 20.2.50.116 NMAC or keep required records in accordance with Subsection F of 20.2.50.116 NMAC.

(6~~7~~) Components that are difficult, unsafe, or inaccessible to monitor, as determined by the following conditions, are not required to be inspected until it becomes feasible to do so:

(a) difficult to monitor components are those that require elevating the monitoring personnel more than two meters above a supported surface. ~~or that cannot be reached via a wheeled scissor-lift or hydraulic type scaffold that allows access to components up to seven and six tenths meters (25 feet) above the ground;~~

(b) unsafe to monitor components are those that cannot be monitored without exposing monitoring personnel to an immediate danger as a consequence of completing the monitoring; and

(c) inaccessible to monitor components are those that are buried, insulated, or obstructed by equipment or piping that prevents access to the components by monitoring personnel.

Comment on 20.2.50.116(C): Redline required as the "and" here creates significant confusion where 112 is a default monthly inspection. It also conflicts with 112's statement that default is monthly unless otherwise stated in the specific rule section. Ultimately, the reference is unnecessary when this leak program is a monitoring program.

Comment on 20.2.50.116(C)(1). (2): Redline required to align with OCD Waste Rule. As that rule and this one are focused on gas waste and gas related emissions, respectively, it is appropriate to apply flexibilities like this one based upon gas rate through the site.

Comment on 20.2.50.116(C)(1)(a): Redline required to limit to external AVO, and not requiring equipment to be opened up for internal inspection. AVO inspections can provide opportunities for operators to identify components at a facility that are not operating properly. The proposed language may be interpreted to require operators to open seals and gaskets to visually inspect for damage. This is not a common practice during an AVO inspection and may lead to unnecessary waste not typically associated with an AVO inspection. Incorporating this practice into an AVO inspection would also pose a safety issue when opening up the equipment to visually inspect for damage. Operators have specific practices, procedures, and guidelines for

how and when to open equipment such as seals and gaskets to check for damage.

Comment on 20.2.50.116(C)(3)(a). The thresholds and inspection frequencies set in 20.2.50.116 C(3)(a) for requiring equipment leak surveys are unnecessarily stringent, result in less reductions than estimated, and impose unreasonable costs.

1. ***The ERG evaluation is flawed.*** The evaluation of VOC control quantities and costs, performed for NMED by ERG and presented in the ERG excel workbook titled "LDAR-Reductions-and-Costs-VOC-5-27-2021_erg-06-08-2021.xlsx" overstates the reductions that would be achieved by the rule and understates the costs of such reductions.
   a. ***Types of Survey Instrument and Reduction Percentages***. ERG assumes that companies would use an equal blend of Optical Gas Imaging (OGI) and Method 21 (handheld analyzer) instruments (500 ppm detection threshold) when doing surveys and averaged the reduction percentages for these two methods.
      i. Based on 2019 GHGRP reported survey types this is an incorrect assumption. Of 2,022 reported surveys, 1,714 (85%) were reported as using an OGI imaging instrument.
      ii. For this reason, NMOGA did not include Method 21 methodologies in any of their analyses.
   b. ***Model Plants – Well Production Facilities.*** The ERG analysis relied on a "model plant" that is not representative of New Mexico and does not represent the best data available.
      i. The ERG evaluation uses reductions and costs from the US EPA's: Control Techniques Guidelines for the Oil and Natural Gas Industry. EPA-453/B-16-001. October 2016 [hereafter, "2016 CTG"]; U.S. Environmental Protection Agency, Office of Air and Radiation, Office of Air Quality Planning and Standards, Sector Policies and Programs Division Research Triangle Park, North Carolina Table 9-11 of the 2016 CTG. Specifically, ERG used reductions and costs from tables 9-11, 9-12, and 9-13 from the 2016 CTG's to estimate reductions and costs for annual, semi-annual, and quarterly inspection frequencies at well production facilities (well sites)
      ii. These tables are based on "Model Plants" that EPA used to estimate potential emissions and reductions in the 2016 CTG's
      iii. The "Model Plants" in the 2016 CTG's were established by EPA for Natural Gas Well sites, Oil Well Sites with a GOR <300 scf/bbl, and Oil Well Sites with a GOR >= 300 scf/bbl. The counts of major equipment and components (valves, connectors, etc) for these model plants were based on information from an EPA/GRI study from 1996 (gas well sites) and 40 CFR Part 98, subpart W, Tables W-1B and W-1C (component counts for oil well sites). These EPA "Model Plants" represent a generic representation of well sites and are not specific to well sites in the San Juan and Permian Basins.
      iv. Based on equipment counts reported into the US EPA's Greenhouse Gas Reporting Program (40 CFR Part 98, subpart W) well production facilities in the San Juan and Permian Basins have, on average, less pieces of major equipment, less components, and less potential equipment leak emissions than the 2016 CTG Model Plants. The GHGRP based well site Model Plants are reflective of San Juan and Permian Basin sites and should be used preferentially to the generic CTG models.
   c. ***Inaccurate Reductions – Well Production Facilities.*** The failure to rely on the correct model led to unrepresentative conclusions.
      i. Less potential for equipment leaks translates to less reductions from a leak detection and repair program. Comparing the ERG CTG based reduction estimates and the GHGRP based reduction estimates shows the effect of these differences.

Estimated Reductions Comparison - Tons Per Year VOC – OGI Surveys						
	ERG (CTG Basis)			NMOGA (GHGRP Basis)		
	Gas Well Site	Oil Well Site <300 GOR	Oil Well Site <300 GOR	Gas Well Site	Oil Well Site <300 GOR	Oil Well Site <300 GOR
Annual	0.61	0.13	0.3	0.509	0.096	0.122
Semiannual	0.917	0.199	0.451	0.764	0.143	0.183
Quarterly	1.222	0.265	0.602	1.018	0.191	0.244

      ii. Coupling these lower reductions with the costs in ERG's analysis workbook yields the following comparison of costs per ton of VOC reduction at the different survey frequencies in the proposed rule.

Costs of VOC Reductions - $ per ton of VOC reduced – OGI Surveys						
	ERG (CTG Basis)			NMOGA (GHGRP Basis)		
	Gas Well Site	Oil Well Site <300 GOR	Oil Well Site <300 GOR	Gas Well Site	Oil Well Site <300 GOR	Oil Well Site <300 GOR
Annual	$2,243	$10,343	$4,552	$2,686	$14,267	$11,226
Semiannual	$2,592	$11,954	$5,260	$3,124	$16,605	$12,975
Quarterly	$3,588	$16,553	$7,285	$4,299	$22,960	$17,973

iii. As this cost comparison table illustrates, by considering actual characteristics of well sites in the San Juan and Permian Basins rather than generic models based on old and non-specific data, the cost per ton of VOC reduction at well sites is meaningfully higher than projected by ERG.

d. ***Inaccurate Costs – Well production facilities.***

i. The costs used in the ERG analysis of 20.2.50.116 requirements for well sites are from the 2016 CTG's.

ii. In their December 2015 comments on the draft 2016 CTGs, the American Petroleum Institute (API) noted the estimated costs of leak surveys was significantly understated by EPA. The following excerpt from the API comments provide an overview of the costs underestimated by EPA.

EPA Did Not Consider Key Costs To Industry In Assessing The Cost Effectiveness Of Leak Detection Requirements Proposed.
In its cost analysis for the proposed control strategy for fugitives emissions, EPA did not adequately capture all of the costs associated with implementation of such a program. Specifically, in the cost-effectiveness evaluation, EPA underestimated the costs associated with:

- *Conducting leak surveys*
- *Completing repairs, and*
- *Maintaining the required recordkeeping, including the costs of developing and maintaining the corporate and site-specific monitoring plans.*

Further, EPA did not include several aspects beyond the cost of the actual survey work in its cost analysis, including:

- *Training of personnel*
- *Travel time and costs*
- *Equipment maintenance (e.g. monitoring device calibration)*

... Utilizing the more representative costs along with EPA's current estimates of emission reductions expected from the rule, the cost effectiveness of the proposed semi-annual OGI monitoring increases from EPA's estimate of $2,230 per well site to over $6,400 per site.

iii. Using the API cost of $6,400 per site with adjustment to a 2019 cost yields an estimated cost per ton of VOC reduction of $8,751 for the GHGRP based gas well site Model Plant and $7,253 for the 2016 CTG's gas well Model Plant.

iv. These additional costs support raising the monitoring thresholds to improve the feasibility of the rule.

2. ***Percent of components leaking, survey frequency and percent VOC reduction***

a. In their December 17, 2018 comments to EPA regarding reconsideration of Subpart OOOOa (Docket ID No. EPA-HQ-OAR-2017-0483; EPA's "Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources Reconsideration; Proposed Rule"; 83 Fed. Reg. 52056 (October 15, 2018)), the American Petroleum Institute (API) presented data from analysis of Subpart OOOOa leak surveys conducted by their member companies. API's analysis includes:

i. Two years of Subpart OOOOa Leak Survey Data for Sites Monitored at a Semi-Annual Frequency

ii. Over 6,000 total surveys across 3,482 sites

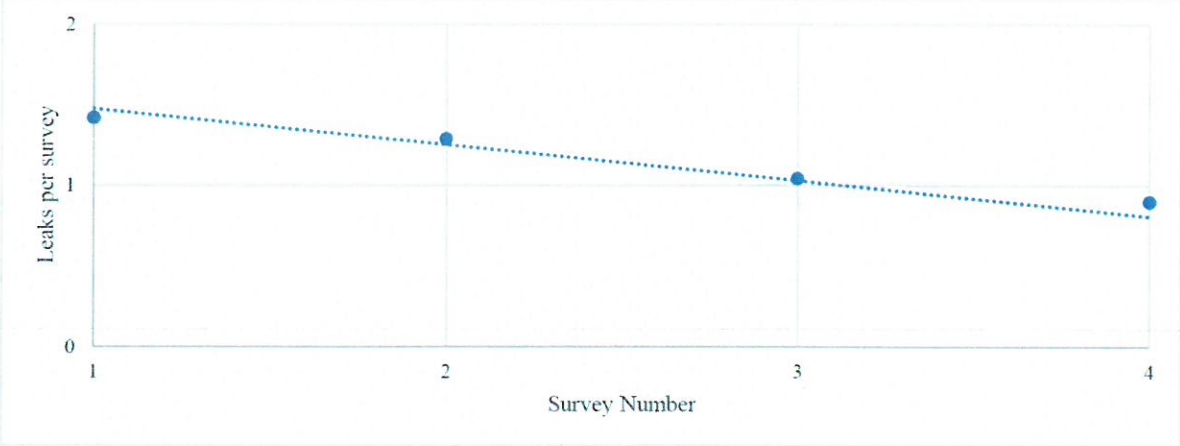
iii. Represents data from 13 different operators

b. API's analysis showed the following:

i. There are large number of sites that have no leaks (58% of initial well site surveys).

ii. The average number of leaking components per site is less than 2 components found leaking during the initial Subpart OOOOa survey and falls quickly to less than 1 leaking component found on average in subsequent surveys. These values are both below the 4 fugitive components that EPA assumed would require repair in each survey and even further below the number of leaks assumed in the EPA Leak Protocol Table 2-4 emission factors that were used to estimate emissions (See Figure 1 in Comment 1.1.3). In fact, nearly 92% of all surveys conducted across the 2-year period identified 4 or less leaking components per site.

Figure 1. Average Count of Leaks Found per Leak Survey Monitored per § 60.5397a



c. Additionally, a research study funded by the API and conducted by GHD found an overall component leak percentage of 0.42% at 67 varied upstream oil and gas sites. This peer reviewed paper "Equipment leak detection and quantification at 67 oil and gas sites in the Western United States" was published in 2019. (Pacsi, Adam & Ferrara, Tom & Schwan, Kailin & Tupper, Paul & Lev-On, Miriam & Smith, Reid & Ritter, Karin. (2019). Equipment leak detection and quantification at 67 oil and gas sites in the Western United States. Elem Sci Anth. 7. 29. 10.1525/elementa.368.)

d. This recent data further illustrates that the estimated VOC reductions in the 2016 CTG's used to evaluate 20.2.50.116 NMAC are overstated, the costs per ton of VOC reduction are higher, and the incremental reductions from increasing the frequency of leak surveys is lower than used in NMED's contractor's analysis.

e. This further supports NMOGA's recommendation that less frequent leak surveys at higher emissions threshold are appropriate for wells and tank batteries.

Comment on 20.2.50.116(C)(3)(b). The emissions thresholds and associated leak monitoring frequencies at 20.2.50.116(C)(3)(b) are overly stringent and not supported by NMED's analysis. These thresholds and frequencies should be adjusted as indicated above to better reflect the potential reductions and costs of leak monitoring.

1. Gathering and Boosting Sites.

a. For gathering and boosting sites, ERG used reductions and costs from table 9-14 from the 2016 CTG to estimate reductions and costs for annual, semi-annual, and quarterly inspection frequencies at gathering and boosting sites. For the monthly inspection frequency case, ERM used the Colorado cost per inspection for the annual cost. ERM then used the "CTG cost effectiveness value for quarterly OGI checks for G&B x a factor of 1.5 because the cost/ton increases as the frequency increases".

b. These tables are based on "Model Plants" that EPA used to estimate potential emissions and reductions in the 2016 CTG's

c. Similar to well production facilities, the "Model Plant" in the 2016 CTG, established by EPA for Gathering and Boosting sites major equipment and components (valves, connectors, etc), is based on old and limited information from an EPA/GRI study from 1996.

d. Based on a major recent study commissioned by the US Department of Energy and led by Colorado State University (Zimmerle, Daniel, Bennett, Kristine, Vaughn, Timothy, Luck, Ben, Lauderdale, Terri, Keen, Kindal, Harrison, Matthew, Marchese, Anthony, Williams, Laurie, & Allen, David. Characterization of Methane Emissions from Gathering Compressor Stations: Final Report. United States. https://doi.org/10.2172/1506681) gathering and boosting sites have, on average, less pieces of major

equipment, less components, and less potential equipment leak emissions than the 2016 CTG Model Plant.

e. Less potential for equipment leaks translates to less reductions from a leak detection and repair program. Comparing the ERG CTG based reduction estimates and the CSU/DOE study-based reduction estimates shows the effect of these differences.

VOC Tons per Year Reduced per Gathering and Boosting Site			
OGI Inspection Frequency	**ERG Estimated**	**NMOGA Estimated**	
		San Juan	**Permian**
Annual	3.91	0.746	1.853
Semiannual	5.86	1.119	2.779
Quarterly	7.81	1.492	3.705
Monthly[a]	Not Shown	1.678	4.168
For the monthly OGI survey frequency, NMOGA used 90% reduction which is the Method 21 monthly reduction percentage stated by ERG minus the 2% differential for quarterly OGI surveys vs. quarterly Method 21 surveys.			

f. Using these more current and correct reduction estimates, NMOGA calculates the following costs per ton of VOC reductions for gathering and boosting sites in the San Juan basin and gathering and boosting sites in the Permian basin.

Cost per Ton of VOC Reduction - Gathering and Boosting Site		
OGI Inspection Frequency	**NMOGA Estimated**	
	San Juan	**Permian**
Annual	$10,837	$4,362
Semiannual	$12,572	$5,061
Quarterly	$17,452	$7,025
Monthly[a]	$46,539	$18,734
[a]The annual cost for monthly OGI surveys at G&B sites is the annual cost for quarterly surveys in ERG's workbook multiplied by 3 (12 surveys/4 surveys)		

g. The reductions are less and the costs higher in the San Juan basin than the Permian basin due to the differences in gas composition between the basins. The San Juan basin field gas is about 15% by weight VOC while the Permian basin field gas is about 31.8% by weight VOC.

h. As this analysis illustrates, the cost of leak surveys at gathering and boosting stations are significantly higher than estimated by ERG and not justified as currently proposed.

i. For these reasons, NMOGA recommends the frequencies and thresholds be adjusted to better reflect the potential reductions and costs.

2. ***Transmission Compressor Stations***

a. In the analysis conducted for NMED, ERG did not include any information or basis for VOC emissions or VOC emission reductions from transmission compressor stations. ERG does state, in their analysis workbook, that they "Used Colorado cost per inspection for the annual cost and the CTG cost effectiveness value for quarterly OGI checks for G&B." for stations with a VOC PTE <25 tpy, and they "Used Colorado cost per inspection for the annual cost. Used the CTG cost effectiveness value for quarterly OGI checks for G&B x a factor of 1.5 because the cost/ton increases as the frequency increases." for stations with a VOC PTE >= 25 tpy.

b. Since there are no estimates of VOC emissions or emission reductions, there is no basis for NMOGA or the EIB to evaluate the efficacy of the 20.2.50.116 NMAC requirements for transmission compressor stations.
c. Given the fact that natural gas handled by transmission compressor stations has been processed and most propane and heavier hydrocarbons (VOC's) removed it is almost certain that potential equipment leak VOC emissions are very low and any reductions from LDAR surveys would be correspondingly very low.
d. The VOC content of typical pipeline natural gas in the US is around 0.8% by weight VOC, contrasted with 15% by weight for produced gas in the San Juan basin and 31.8% by weight for produced gas in the Permian basin.
e. EPA did not include transmission compressor stations in the 2016 CTG because, given the lack of VOCs in the gas handled, there is little to no potential for VOC reductions to be made at them.
f. Based on the EPA 2019 Greenhouse Gas Inventory and the typical composition of pipeline natural gas in the US, the equipment leak emissions of VOC are around 0.12 tpy per transmission compressor station. Reductions from LDAR leak surveys and repair are a fraction of this dependent on the survey frequency.
g. Due to the lack of information to evaluate the appropriateness of the proposed 20.2.50.116 NMAC for transmission compressor stations, the certainty that VOC emissions would be less than 0.1 tpy/station regardless of the inspection frequency, and the extremely high cost of the miniscule potential VOC reductions, NMOGA recommends that leak surveys for transmission compressor stations be reduced as outlined above.

3. ***Gas Processing Plants***
   a. In their analysis, conducted for NMED, ERG does not document or analyze incremental VOC reductions from implementing 20.2.50.116 NMAC at gas processing plants.
   b. ERG inappropriately uses the cost per ton of VOC reduction from the 2016 CTG to analyze the average cost per ton of reduction from gas processing plants. However, the basis for the 2016 CTG LDAR reductions and costs are entirely different than and not reflective of the requirements for LDAR at gas processing plants in 20.2.50.116.
      i. The 2016 CTG's evaluated the incremental reductions and costs of an existing gas plant moving from a Subpart KKK or Subpart VV LDAR program to a Subpart VVa program. The incremental requirements in the 2016 CTG's would be monthly checks for valves and pumps, and periodic checks for connectors based on the percent that are found leaking. If >0.5% of connectors are found leaking, then all need to be checked annually; longer intervals are allowed at lower percentages of leaking connectors.
      ii. In contrast, the requirements in 20.2.50.116 are for quarterly or monthly LDAR surveys of the entire gas processing facility rather than just incremental checks of valves and pumps.
      iii. ERG does acknowledge that most, if not all, gas processing plants in New Mexico are already implementing an LDAR program under Subpart KKK or Subpart VV. ERG also documents some plants subject to the Subpart OOOOa NSPS requirements for LDAR surveys which mirror those in the 2016 CTG's.
      iv. For gas processing plants that are already implementing a Subpart VVa program under NSPS OOOOa, ERG incorrectly assigns zero cost in their analysis. However, there are no exclusions of such plants in 20.2.50.116 NMAC as proposed. NMOGA has recommended a change in the proposed rule that acknowledges compliance with LDAR requirements in Subpart OOOOa, and other NSPS's constitutes compliance with 20.2.50.116 NMAC.
   c. Without documentation of the incremental VOC reductions from implementing the proposed rule requirements at gas processing plants and correct documentation of the cost per ton of VOC reduction, there is no ability for NMOGA or the EIB to evaluate whether the requirements are appropriate or not.
   d. For these reasons, NMOGA has recommended changes which would limit the frequency of LDAR surveys at gas processing plants.

Comment on 20.2.50.116(C)(4)(a): Redline required as calibration procedures vary by type and manufacturer of instrument. This calibration requirement should cite the manufacturer's procedures.

Comment on 20.2.50.116(C)(7)(a): Redline required to align with federal rule. NMOGA finds language around scissor-lifts confusing and potentially asks operators to conduct unsafe work at unsafe heights. This practice is not routine and is done only when necessary, with significant safeguards. These safeguards, such as spotters and shutting in equipment, are generally not factored into cost-benefit and likely results in very little additional emissions reduction. Inspectors are regularly able to find leaks on top of storage tanks from the ground, without risking work at heights. To address these concerns we recommend removing language.

Exhibit C

to go through a verification process in order for it be considered a violation. The owner or operator may choose to voluntarily verify the violation, but that verification is not necessary to correct the violation, which would result in delayed repairs and increased emissions, and should not be the action that triggers correction of the violation or notification to the Department.

Subsection E – Repair Requirements

NMOGA proposes clarifying language regarding the need to tag components that are repaired at the time a leak is discovered in Paragraph 1, and revisions to the repair deadlines in Paragraph 2 and 4. NMED agrees with these proposals.

NMOGA proposes to add a requirement in new Paragraph 5 that if a leak cannot be repaired due to personnel or parts delay, the repair can be delayed and must be repaired within 15 days of resolution of the shortage. NMED agrees in part with this proposal and has revised the paragraph to allow for delayed repairs due to parts shortages, but not personnel shortages. Owners and operators should not be authorized to delay repairs due to personnel shortages, which may be caused by different factors, including a company's chronic understaffing of compliance experts needed to comply with this Part.

Cost Analysis

NMOGA provided extensive comments in its redline at NMOGA Appendix B, pp. 30-34, regarding NMED's cost effectiveness analyses that were used to support the proposed emission thresholds and inspection frequencies in Section 20.2.50.116. As discussed in the direct testimony at NMED Exhibit 32, the analyses were based largely on the U.S. EPA's Control Techniques Guidelines for the Oil and Natural Gas Industry. *See* NMED Exhibit 24 ("2016 CTG"). NMOGA argues that the model plants included in the 2016 CTG were out of date and were not representative of the well sites in the San Juan and Permian Basins. NMOGA claims

that model plants based on information in the GHGRP for the Permian and San Juan Basins better reflect well production facilities in New Mexico and should be used instead of the model plants in the 2016 CTG, and these would lead to lower emission reductions compared to those in the 2016 CTG. NMED cannot evaluate the validity or representativeness of the alternative model plants mentioned by NMOGA, because NMOGA does not document in its testimony or exhibits the actual model plants they created and on which they estimated new emission reductions and cost effectiveness numbers.

NMOGA also argues that the costs in the 2016 CTG did not account for additional cost elements that were discussed in comments submitted to the EPA on the draft CTG by the American Petroleum Institute ("API"). NMOGA argues that NMED should use the revised costs reflected in the API comments on the draft CTG. EPA, in its "Responses to Public Comments on the Draft Control Techniques Guidelines for the Oil and Natural Gas Industry, October 2016,"[1] fully responded to the API comments mentioned in the NMOGA testimony and adjusted the cost estimates in the 2016 CTG as appropriate. *See* NMED Exhibit 34, pp. 191-196. It is beyond the scope of this rulemaking to reassess the EPA's response to these particular API comments on the 2016 CTG in the absence of any additional information from API or NMOGA relative to those original comments and EPA's response.

NMOGA also argues that data submitted to EPA by the API in their December 17, 2018 comments on the EPA's October 15, 2018 proposed reconsideration of the Oil and Gas Sector NSPS, based on two years of NSPS Subpart OOOOa leak surveys, supported less frequent surveys at higher emission thresholds for well sites and tank batteries. NMED disagrees that these data should be used to justify less frequent surveys and higher emissions thresholds. NSPS

[1] EPA Docket Number EPA-HQ-OAR-2015-0216.

Subpart OOOOa applies to facilities for which construction, modification, or reconstruction commenced after September 18, 2015. Therefore, facilities subject to NSPS Subpart OOOOa were still no more than three years old at the time those NSPS Subpart OOOOa surveys were completed. Those results cannot be considered representative of the existing facilities that will be covered by the requirements of Proposed Part 50, some of which are several decades old. For example, according the NMED Equipment Data the average age of a storage tank in New Mexico is over 10 years old. It is important to note that standards for "new" sources, as defined in NSPS regulations and proposed Part 50, are intended to apply to sources constructed or reconstructed after a certain date into the foreseeable feature, even after those sources would no longer be considered new in the general sense of that term.

NMOGA also cites to a recently published peer reviewed research study of upstream leak frequencies to support less frequent surveys at higher emission thresholds. *See* NMOGA Appendix B at p. 32, citing to "Pacsi, Adam & Ferrara, Tom & Schwan, Kailin & Tupper, Paul & Lev-On, Miriam & Smith, Reid & Ritter, Karin. (2019). Equipment leak detection and quantification at 67 oil and gas sites in the Western United States. *Elem Sci Anth.* 7. 29. 10.1525/elementa.368." However, NMOGA does not provide a detailed comparison of the results of that study to the frequency or emission rates that were the basis of the 2016 CTG estimates of cost effectiveness.

NMOGA also cited a recent paper commissioned by the U.S. Department of Energy and led by Colorado State University and noted that gathering and boosting sites have, on average, less pieces of major equipment, less components, and less potential equipment leak emissions than the 2016 CTG model plant. Based on this assertion, NMOGA concludes that "less potential for equipment leaks translates to less reductions from a leak detection and repair program." *See*

NMOGA Appendix B at p. 32. However, NMOGA fails to note the findings of the study that "the study indicates that study emission factors ***either agree with, or are larger than***, current greenhouse gas reporting program (GHGRP) emission factors for the western U.S." (Emphasis added). NMOGA does not provide any details regarding how the results of the second paper were used to adjust the VOC reduction estimates from those in the 2016 CTG to those in NMOGA's testimony, or how they were used to adjust the cost per ton of VOC reduced. For example, NMOGA relies on the fact that the recent studies have found fewer components and lower leak frequencies in their surveys, and then uses that information in reducing the estimated VOC emission reductions. However, there is no discussion of how the same information would affect the costs of an LDAR program (e.g., fewer components and fewer leaks to repair should also lead to lower costs). The NMOGA analysis also does not take into account the estimated leak rates (in standard cubic feet per hour), including the presence of large emitters relative to those that were the basis of the 2016 CTG estimates. *See* NMOGA Exhibit 7 at page 47.

NMED has reviewed the two cited papers and agrees that they present useful data on leak frequencies and emission rates. However, other commenters have also submitted peer reviewed studies showing that fugitive emissions from oil and gas production may be higher than previously estimated. *See, e.g.*, Environmental Defense Fund ("EDF") Exhibits C, D, E, F, H, I, and J. NMED has concluded that it is beyond the scope of this rulemaking for the Board to conduct a comprehensive literature review of all the recent relevant research on fugitive emissions and establish new cost effectiveness values for LDAR programs specific to the different basins in New Mexico. NMOGA's testimony and comments do not present sufficient data or explanation for NMED to determine whether the cost effectiveness values presented in

NMOGA Appendix B are based on an analysis that accounts for all of the variables that would actually determine the cost effectiveness of a specific LDAR program.

NMOGA argues that the incremental VOC reductions and the cost effectiveness of the proposed LDAR requirements for gas processing plants were not properly calculated, citing the fact that the 2016 CTG cost per ton of VOC was used even though the proposed requirements in Section 20.2.50.116 go beyond the requirements of the 2016 CTG and NSPS Subparts OOOO and OOOOa. NMOGA proposes changes that would allow compliance with NSPS Subpart OOOO or OOOOa, as revised, to satisfy the requirements of Section 20.2.50.116, and that would decrease the frequency of monitoring at those gas processing plants not subject to NSPS Subpart OOOO or OOOOa from quarterly to semiannually for plants with a PTE of VOC less than 25 tpy VOC, and from monthly to quarterly for those with a PTE equal to or greater than 25 tpy VOC.

NMED is not willing to propose that the Board allow compliance with the LDAR requirements in NSPS subparts OOOO or OOOOa ***as revised*** to constitute compliance with Section 20.2.50.116 because one of the central purposes of proposed Part 50 is to provide state-level regulations that are not subject to the changes that occur at the federal level. Adopting NMOGA's proposal will give New Mexico no certainty over the future regulatory requirements limiting VOC emissions from equipment leaks at oil and gas facilities in the State. It is worth noting, for example, that NSPS subpart OOOOa was promulgated in 2016 under the Obama administration, then both NSPS Subparts OOOO and OOOOa were substantially amended in 2020 during the Trump administration, and the 2020 amendments were then disapproved in June 2021 under the Congressional Review Act following the 2020 election.

In addition, the NSPS, although it requires monthly checks of pumps and valves at gas processing plants, allows for extended periods of time between checks of connectors, depending on the percent of connectors that are found leaking at any one facility.

NMED acknowledges that it is difficult to accurately estimate the cost effectiveness of an LDAR program without data that are specific to a particular type of facility. The LDAR provisions for gas processing plants in the 2016 CTG and NSPS Subparts OOOO and OOOOa recommend implementing, or require complying with the requirements of, the LDAR program in 40 CFR part 60, subpart VVa (NSPS for Synthetic Organic Chemicals Manufacturing Industry for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006). These are the same requirements promulgated in the Compliance Assurance Monitoring Rule (40 C.F.R. Part 65, Subpart F, Equipment Leaks) and are not specific to natural gas processing plants.

Given the uncertainties in estimating the cost effectiveness of an LDAR program for oil and gas operations in New Mexico, NMED is proposing changes to the LDAR inspection frequencies and emission thresholds to align with Colorado Reg. 7, and accepting NMOGA's proposal regarding gas processing plants and gathering and boosting stations. Specifically, components at well production facilities and tank batteries would be subject to Method 21 instrument monitoring or OGI monitoring one time if the facility has a PTE less than 2 tpy VOC; annually if the facility has a PTE equal to or greater than 2 tpy VOC and less than 6 tpy of VOC; semiannually if the PTE is equal to or greater than 6 tpy, but less than 12 tpy; and quarterly if the PTE is equal to or greater than 12 tpy. Under NMOGA's recommended changes, all components at gathering and boosting sites and gas processing plants would be subject to Method 21 instrument monitoring or OGI monitoring semiannually if the facility has a PTE equal to or less

than 25 tpy of VOC, and quarterly if the PTE is equal to or greater than 25 tpy. While NMED does not believe the revisions will significantly impact the cost estimates for the LDAR provisions, NMED is updating the emission reductions and cost estimate spreadsheet to reflect the revised frequencies and will submit the updated spreadsheet prior to the hearing to allow time for the other parties to review. NMED is also proposing revisions in Subsection C, Paragraph 3(d) to require annual Method 21 instrument monitoring or OGI monitoring at any facility producing or processing exclusively coal bed methane and at transmission compressor stations.

While NMED is proposing to revise the monitoring frequencies, NMED will consider further testimony provided by any of the parties that would support a recommendation that the Board adopt different frequencies and/or cost effectiveness estimates.

Section 20.2.50.117 – Natural Gas Well Liquid Unloading

NMOGA and IPANM proposed a number of revisions to Section 20.2.50.117. The Department agrees with many of these proposals and has made technical and clarifying revisions to Section 20.2.50.117 in response. Edits not agreed to by the Department are discussed in detail below.

Subsection A – Applicability

NMOGA and IPANM propose to add the term "Manual" to the applicability provisions and throughout the rule where the term "liquid unloading" is cited. NMED does not agree with this proposal as it would restrict the type of unloading events covered under this Section. NMED intended to regulate both manual and automated liquid unloading events that result in venting of natural gas.

NMOGA and IPANM propose to delete down hole maintenance events as they are covered under Section 20.2.50.124. NMED agrees with this proposal.