BEFORE THE ENVIRONMENTAL PROTECTION AGENCY

Statement by MiQ

TECHNICAL COMMENTS RELATED TO PROPOSED SUBPART W REVISIONS, PART OF DOCKET Id. No. EPA-HQ-OAR-2023-0234

MiQ hereby submits technical comments in this matter pursuant to Docket Number EPA-HQ-OAR-2023-0234, and to the Environmental Protection Agency's proposed amendments to requirements that apply to the petroleum and natural gas systems source category, 40 CFR Part 98 Subpart W, of the Greenhouse Gas Reporting Rule.

I. Introduction

MiQ is a not-for-profit natural gas greenhouse gas emissions certification program for the oil and gas sector. The organization's mission is to facilitate the rapid reduction of methane emissions from the oil and gas sector through widespread, verified implementation of best practices that provide transparency to end users of fossil fuel supply chain emissions. Currently, MiQ has certified the methane emissions of 20% of US natural gas production across 18 different Facilities, most of which are highly similar to EPA's definition of Facility. MiQ also has published standards for each segment of the natural gas supply chain and a separate greenhouse gas intensity standard. Each operator must comply with the MiQ Standard for their segment(s) and undergo third party audit to verify their performance. Through its certification program, MiQ is also pioneering the development of the certified gas market, a market-based solution to reduce methane and greenhouse gas emissions and provide emissions transparency in the oil and gas supply chain. MiQ has also published methane emission performance standards for each segment of the natural gas supply chain as well as a greenhouse gas intensity standard.

MiQ thanks the Environmental Protection Agency for the opportunity to provide comment on updates EPA is proposing to Subpart W.

II. Executive Summary

After reviewing the revised regulatory language and other documentation in the docket, MiQ expresses its support for EPA's efforts to update Subpart W. EPA's efforts to substantially add calculation methodology options that reflect actual operating conditions for most material sources of emissions update requirements around calculating and reporting methane emissions to address gaps that have led many peer-reviewed studies over the past decade to conclude that the 40 CFR Part 98 is systemically underestimating methane emissions from the oil and gas sector. Overall, EPA strikes a practical balance in both providing updates to key assumptions and emission factors based on more up-to-date sources of empirical data and provides optionality to operators in many instances to use primary, site-specific data to calculate emissions.

MiQ presents comments, suggestions and requests for clarifications to EPA from the proposed language in this rule. MiQ agrees with EPA's general approach to structure emissions reporting methodological options as follows for individual sources.

1) Add methodologies for direct measurement where feasible
2) Provide requirements for the use of actual operating conditions in engineering calculation methods, or conservative defaults

3) Where emission factor methodologies are retained, revise emission factors where more recent data exists to better reflect the state of understanding around poorly measured or calculated methane emission sources.

MiQ's mission includes differentiating oil and gas operations based on best practices of methane management and quantification. Critics of the existing Subpart W regulation point to calculation methodologies significantly underestimating emissions from most regions and that emissions reported to Subpart W cannot be utilized to meaningfully analyze differences in operations. We believe that EPA's proposed rule significantly helps to address both of these criticisms. Providing options for operators to calculate emissions using their actual, reliable operational data such as flow metering data, air emissions testing data, and results of source or site-level measurement campaigns significantly helps give operators who simply want to comply that option, but also gives the option to operators to pursue other specific quantification methodologies. Additionally, EPA's efforts to correct methane emission sources that are suspected to lead to most observed discrepancies, including unlit or poorly operating flares and venting from over-pressurization caused by malfunctioning separator dump valves, clogged waste gas lines, or poorly designed facilities should result in operator-level emissions that agree more accurately with regional emission studies.

The onset of proposed OOOOb and OOOOc regulations that operators will eventually be required to utilize calculation methodologies utilizing data from inspections and process monitoring equipment that will eventually be required at scale. However, in the interim, accurate emission factors reflected by more recent studies and other assumptions in the proposed rule will provide incentives for operators to explore calculation methodologies that are based on actual operational and measurement data.

MiQ is concerned that the lack of specific guidance for some reporting requirements of actual operational data could lead to substantial data quality issues including variations of reporting of critical operational data. We provide EPA with the specific regulatory text, and in cases where we have experience, suggestions for how EPA can improve their requirements. MiQ also believes the proposed use of advanced methane monitoring and measurement technologies will lead to inconsistencies between operators. The proposed rule provides clear disincentives for the use of advanced monitoring and measurement technologies that have been found to consistently detect larger emission sources than traditional fugitive emission inspection methods more reliably. We provide EPA with examples of discrepancies that this regulation may unwittingly allow, and suggestions based off the MiQ Standard for how EPA can re-consider requiring or incentivizing the use of advanced monitoring and measurement technologies to ultimately help assure operator-level emission inventories. To ensure the data reported to EPA is consistent with the intent of these proposed requirements, MiQ additionally suggests the EPA implement third-party verification requirements.

Table 1: Summary of Comments

Sources or other	Topics	Proposed Rule Text References
Pneumatic devices	Direct flow measurement Intermittent bleed pneumatic device calculation methods	98.233(a)(1) 98.233(a)(3)(ii)
Equipment leaks	Direct measurement requirements Population emission factors for onshore production	98.233(q)(4)(ii) 98.233(r) Table W-1

	Use of alternative screening technologies Proposed 'k' factor Gathering pipeline emission factors	
Combustion	Updated methane emission factors Usage of sample data and manufacturer specifications	98.233(z)(3) 98.233(z)(4)
Flare stacks	Visual inspection procedures for pilot operation	98.233(k)(2)(ii)
Storage tanks	Gas-liquid separator dump valves	98.233(j)(5)(i)(B)
Other large release events & usage of topdown data	Recommendations for appropriate use of top-down data Reporting thresholds Disincentive risks	98.233(y) 98.233(y)(2)(iv)

III. Pneumatic Devices

Preamble III.E: "*We are proposing that, if a flow monitoring device is installed on the natural gas supply line dedicated to one or a combination of pneumatic devices, or the natural gas supply line dedicated to one or more pneumatic pumps, that are vented directly to the atmosphere, then the measured flow must be used to calculate the emissions from the pneumatic devices or pneumatic pumps, as applicable, downstream of that flow monitor. We are also proposing to require this calculation method when the flow is continuously measured in a supply line that serves both pneumatic devices and natural gas driven pneumatic pumps that are all vented directly to the atmosphere. The flow monitor would be required to meet the requirements specified in existing 40 CFR 98.234(b).*"

MiQ Comments: Some Operators within the MiQ certification program meter natural gas supply lines to pneumatic devices and other areas of gas consumption across their facility. The allowance of this type of flow monitoring will allow for fit-for-purpose, site-specific methods of quantifying GHG emissions from pneumatic devices. This methodology will reduce reliance on generic emission factors that do not account for the actual operation of an individual operator's fleet of pneumatic devices. Flow measurement that is segregated for pneumatic devices and pumps will be able to measure any periods of time of excess flow and properly include periods of time of higher-than-normal emissions. With pneumatic devices as the largest source of process emissions in the oil and gas industry, allowing for more representative calculation methodologies is critical and will likely be a heavily used option for many operators, considering the potential tax implications**.**

If EPA is requiring this calculation for continuous flow measurement, MiQ requests clarification if an additional requirement will be in place for operators currently with flow measurement installed to increase their operational and calibration practices meet 40 CFR 98.234(b) or 98.3(i). EPA should be aware that many operators voluntarily meter their gas, but likely do not sufficiently prioritize operation or calibration of these meters since there are currently no regulatory drivers to do so. While this will provide operators with a driver, there are other options that operators could default back to. **We request clarification around this proposed requirement, and generally support EPA mandating this to bring all field flow measurements up to a single standard.**

98.233(a)(3)(iii) and (iv) methods for calculating emissions from intermittent bleed pneumatic devices

MiQ Comments: MiQ supports Calculation Method 3 for intermittent bleed pneumatic controllers because it more effectively applies current and future requirements of oil and gas operators and apply it to a calculation that should more accurately assess methane emissions. Modeling each pneumatic devices as operating in a bimodal fashion based on empirical leak inspection data (either malfunctioning or properly functioning), will increase accuracy of emissions reporting of pneumatic devices. A co-benefit of this option is that many operators will be required or incentivized to conduct more leak inspections of pneumatic devices in the time period **before** their facilities are subject to NSPS OOOOc guidelines that will by and large remove vented pneumatic devices from service. MiQ thinks this is a lower resource, fit for purpose way to support better emissions quantification while allowing operators to spend resources elsewhere. MiQ recommends the EPA reduce the time requirement in 98.233(a)(3)(ii)(B) and (C) to an annual requirement. This is based on MiQ's baseline requirement to perform one source-level equipment leak inspection annually across the Facility, including on pneumatic controllers. We believe this is not an onerous requirement, will not unreasonably increase the monitoring burden on operators of intermittent bleed pneumatic devices, and will lead to more representative and comparable data across operators. This recommendation effectively removes the necessity of Equation W-1D.

IV. Equipment Leaks

98.233(q)(4)(ii): ***"****You must accumulate a minimum of 50 leak measurements total for a given component type and leak detection method combination before you can develop and use a site-specific component-level leaker emission factor for use in calculating emissions according to paragraph (q)(2) of this section (Calculation Method 1: Leaker emission factor calculation methodology)."*

MiQ Comments: MiQ recommends that EPA revise this requirement to a tiered approach to allow operators subject to GHGRP with fewer amounts of equipment to inspect within a Facility the ability to apply representative leaker emission factors based on a smaller number of leaker emitters found. EPA can achieve this in several ways, based on data availability. EPA should consider using their existing uncertainty analysis and consider applying their findings using a more scalable factor rather than an absolute number of leaks. For example, EPA could utilize research synthesized in Rutherford et al. (2021)[1] that provide empirical data to estimate the fraction of emitting components and propose a scalable factor of leaks based on the total number of estimated components for an individual operator.

MiQ also requests clarification on if operators have already begun taking measurements that are consistent with 98.234(b) thru (d) methods, are they allowed to use this information to base their methodologies? We recommend that some allowance of historical information is given so that operators who are leaders in measurement are able to take advantage of voluntary measurement initiatives, prior to any regulatory driver, if the measurement methods are consistent with EPA's requirements.

[1] Rutherford, J.S., Sherwin, E.D., Ravikumar, A.P. *et al.* Closing the methane gap in US oil and natural gas production emissions inventories. *Nat Commun* **12**, 4715 (2021). https://doi.org/10.1038/s41467-021-25017-4

Population emission factors for onshore production facilities

MiQ Comments: MiQ applauds EPA on utilizing updated and synthesized data, including Rutherford et. al, to base population emission factors. Through preliminary analysis, it appears that these updated emission factors will lead to an increase in an operator's reported emissions simply due to the calculation methodology changes. This could lead to more operators beginning to perform leak inspections following 98.234(a) through (c) earlier than they are required to in NSPS OOOOc emission guidelines, which would lead to quicker emission reductions and operators reporting based on less generic methodologies.

Preamble III.Q-3 - Gathering pipeline emission factors: *We are seeking comment on the EPA's decision not to use the Yu et al. study data in developing proposed population emission factors, including rationale supporting the EPA's decision or rationale for why this study should be used in developing proposed population emission factors. Additionally, we are seeking comments on whether there are other published studies the EPA should evaluate for potential use in developing revised emission factors for gathering pipelines.*

MiQ Comments: We believe that EPA's decision to not use the study data in Yu et al. is erroneous and should be reconsidered. Current gathering pipeline emission factors are generally based on the 1996 GRI/EPA report assessment of distribution pipelines, which are arguably also not nationally representative and include zero data from actual gathering pipeline assets that are operated entirely differently than distribution pipelines. We agree that using Yu et al. alone to derive an updated national emissions factor will likely not result in nationally representative emission factors. All recent studies involving research around gathering pipeline emissions have been completed for specific regions or basins. Other studies that EPA should evaluate include Li et al. (2019)[2], focused on the Appalachian, San Juan and Piceance Basin and Zimmerle et al. (2017)[3] focused on gathering pipelines in the Fayetteville Shale.

We do not believe that national emission factors based on pipeline type are the most accurate way to estimate methane emissions from gathering pipelines at an individual operator level. Although a number like this can be used as a baseline, for operators to be able to more accurately quantify emissions, measurement data from these assets must be used to both develop an estimate and assure that estimate is reasonable. Therefore, we propose that for operators of gathering pipeline sites they should be required to perform at least 1 annual leak detection survey on all of their gathering pipeline assets, and quantify emissions from detected sources using either the rate algorithm provided by the leak detection technology or engineering calculations using methodologies similar to orifice calculations.

Use of Information in Alternative Periodic Screenings

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[2] Pekney, Natalie J, Li, Zhongju, Mundia-Howe, Mumbi, and Reeder, Matthew D. 2019. "Gathering Pipeline Methane Emissions in Appalachian/San Juan/Piceance Basin Using Unmanned Aerial Vehicle and Mobile Sampling". United States. https://www.osti.gov/servlets/purl/1604876.

[3] Zimmerle et al. "Gathering pipeline methane emissions in Fayetteville shale pipelines and scoping guidelines for future pipeline measurement campaigns." 2017. Elementa: Science of the Anthropocene. 1 January 2017. doi: https://doi.org/10.1525/elementa.258

MiQ Comments: We observe discrepancies and potential loopholes or disincentives that could be exacerbated through the proposed calculations for equipment leaks in relation to the proposed OOOOb and OOOOc rules. Operators who choose to comply with OOOOb and OOOOc using alternative periodic screenings are at a disadvantage if they only complete one OGI per year since they must assume that a leak lasts for an entire year. However, on the flip side, operators using periodic screenings will have more permissible data requiring greater scrutiny and likely larger total emissions reported via the "other large release events" category. For both reasons above, these proposed calculation methodologies may ultimately disincentivize operators to use screening technologies for quantification. Please refer to the comments below responding to EPA's questions around further use of top-down data and how to couple top-down data with bottom-up inventory.

Equation W-30*: introduction of 'k' factor to adjust for undetected leaks*

MiQ Comments: We applaud EPA's proposal to include adjustment factors based on the type of survey that are based on empirical data surrounding the effectiveness of survey detection. We believe this methodology will ultimately more accurately account for equipment leak emissions across the industry reported through leak inspection results and incentivize operators to develop and maintain strong, integrated LDAR programs to keep reportable emissions events as low as possible. We do not believe that the most accurate method of individual operator differentiation is for all operators to use the same adjustment factor regardless of their equipment leak inspection practices. Research on handheld OGI methods has shown that undetected leaks are partly due to poorly trained OGI operators. Updates to Appendix K attempt to resolve this issue across the industry as well as others. MiQ suggests EPA consider developing a construct to allow operators to remove the usage of the *'k'* factor over time if exceptional performance above and beyond the industry standard is showcased that provides additional assurance.

V. Combustion

Updated methane emission factors for internal combustion equipment in Table W-7

MiQ comments: We applaud EPA's proposal to, at minimum, require operators to report methane emissions from internal combustion equipment consuming pipeline quality gas using emission factors that are based on actual data taken from specific types of internal combustion engines. This update is critical to more accurate operator-level reporting of methane emissions for operators with significant usage of internal combustion engines. We also applaud EPA's decision to limit the usage of these emission factors to the consumption of pipeline quality gas. This will ensure that these emission factors are used only in situations where they are representative of real operations.

98.233(z)(4)(i) & (ii): *(4) For each natural gas-fired reciprocating internal combustion engine or gas turbine calculating emissions according to paragraph (z)(1)(ii) or (z)(2)(ii) of this section, you must determine a CH4 emission factor (kg CH4/MMBtu) using one of the methods provided in paragraphs (z)(4)(i) through (iii) of this section. If you are required to or elect to use the method in paragraph (z)(4)(i) of this section, you must use the results of the performance test to determine the CH4 emission factor.*

(i) Conduct a performance test following the applicable procedures in § 98.234(i).

(ii) Original equipment manufacturer information, which may include manufacturer specification sheets, emissions certification data, or other manufacturer data providing expected emission rates from the reciprocating internal combustion engine or gas turbine

MiQ Comments: We applaud EPA's proposal to allow operators to use more specific methods of estimating methane emissions from their operations. The difference in methane emissions estimation method from combustion equipment will significantly increase reported emissions from operators especially in the gathering & boosting, and transmission & storage segments, potentially up to an order of magnitude. For an emission source of this materiality, we believe it's critical to allow the use of site-specific methods where available. These allowances will ensure that operators have a pathway to estimate emissions from their own test data or their own manufacturer, helping to further differentiate performance on an operator level.

VI. Other Large Release Events

Preamble II.B: *"… different types of top-down data have a wide range of detection limits and spatial resolution, which makes it difficult to reliably convert point estimates to an annual emissions estimate as required by the GHGRP. Therefore, this proposal does not propose using top-down approaches for sources other than besides other large release events due to the limitations described earlier in this section. However, we invite comment on whether there are top-down approaches that could be used to estimate annual emissions for any source categories under subpart W or for facility-level emissions, what level of accuracy should be required for such use, and whether the development of standards (either by the EPA or third-party organizations) could help inform this determination. We also invite comment on how frequently measurements would need to be conducted to be considered reliable or representative of annual emissions for reporting purposes...In addition to the proposed use of top-down data to help identify and quantify super-emitter and other large emissions events, we invite comment on whether there are other appropriate uses of top-down data for the purposes of reporting under subpart W of the GHGRP, including what types of emission sources and emission events, what specific top-down methods may be appropriate, especially in terms of spatial scale and minimum detection limits."*

MiQ Comments: The MiQ Standard requires operators to utilize data from Facility Scale surveys to reconcile their calculated emissions. Facility Scale surveys must be conducted using a technology that has conducted single blind testing demonstrating a minimum detection limit (MDL) of at least 25 kg/hr at a probability of detection (PoD) of 90%. Operators may use other means of emissions monitoring through the usage of equivalency modeling using models such as the Fugitive Emissions Abatement Simulation Tool (FEAST) or LDAR-Sim. The data gathered from Facility Scale surveys, or any third-party data must be evaluated by the operator to determine whether a detected emission is already included in an operator's baseline emissions calculations. Examples of emissions that may already be included are periods of normal tank flashing emissions or properly performed and reported pipeline blowdowns. Operators are required to evaluate the impact of all their additional emissions to their overall MiQ grade.

Reconciliation of the results of Facility Scale inspections are used as assurance of an operator's MiQ grade band. For example, an operator must have an intensity of 0.05% or less to claim a MiQ A-grade. Along with the detection and quantification data gathered from monitoring and measurement surveys, other available data such as operating conditions, parametric monitoring

or other inspection data can be used to help provide context to detected emission events, which also leads to more accurate quantification of emissions. As EPA has observed, many Facility Scale inspection results have indicated emissions from highly episodic events. More frequent surveys such as quarterly or monthly inspections give operators more data ultimately to help understand both the magnitude and periodicity of individual emission events. Most MiQ-certified operators reconcile the results of their advanced monitoring and measurement inspections in an event-based format, assessing the additionality of emissions to the operator's current inventory, the average emission rate and event duration, similar to EPA's guidance under "Other Large Release Events," but without the reporting thresholds that EPA has set. Other results have indicated systemic underreporting or lack of reporting from methane emissions from certain sources. In these situations, some operators have decided to use survey results to indicate a gap in their bottom-up inventory and utilize engineering calculations to account for emissions on an annual basis.

Since the vast majority of MiQ Operators in the MiQ program use Facility Scale inspection methods, our program does not provide a disincentive for operators to use certain technologies. All Operators are on a level playing field regarding the **requirement** to use Facility Scale inspections and the technology requirements for the methods utilized. However, proposed OOOOb and OOOOc rules will not ***require*** operators to conduct inspections other than traditional equipment leak inspection methods. As many others are surely also commenting, this may create disincentives for operators to use top-down inspection methods for fear of discovering emissions that they otherwise may not be required to inspect for and report.

MiQ believes that the proposed updates to improve emission source calculation methodologies and require more complete reporting of all potential emission sources will lead to more accurate methane emission inventories. However, to provide additional assurance MiQ encourages EPA to adopt a mechanism to require all operators to utilize some type of advanced monitoring and measurement method annually. Results from these inspections could either be used by operators to quantitatively reconcile the emissions they are reporting to EPA or simply be required to be reported to EPA in annual GHGRP reporting. EPA should consider the following technological requirements, which are present in the MiQ Standard.

- Independent, single-blind testing of each monitoring or measurement method using controlled releases or field tests is required
- Testing must produce a probability of detection curve at certain wind conditions, or a probability of detection curve must be able to be deciphered
- Probability of detection and frequency should be considered when developing performance requirements.
    - For example, EPA could present a matrix that could, among other options, require periodic screening methods with a MDL of 10 kg/hr or less at 90% PoD be used at least once per year, screening methods with a MDL of 25 kg/hr or less at 90% PoD be used at least twice per year, and screening methods with a MDL of 100 kg/hr or less be used at least bi-monthly
- The spatial coverage of the method across an operator's Facility must be transparent. For reference, MiQ requires 100% of an operator's Facility to be monitored via Facility Scale inspection methods. Spatial coverage requirements may also be refined based on the performance characteristics of the method.
- Continuous monitoring systems (CMS) must also be given a path to comply with this requirement, and should have, at minimum, the following requirements
    - Identical independent, single-blind testing requirements as other methods

- Probability of detection curves
- In lieu of a high spatial coverage requirement, a floor (i.e. 25%) should be set for deployment percentage coupled with requirements that deployment must occur on a representative swath of an operator's Facility

Preamble II.B: *We invite comment on how best to combine top-down data with bottom-up methods in a way that avoids double counting of emissions. For example, top-down data may be used to refine emission estimates for particular sources or for the facility. We also seek comment on the best methods to estimate duration of events measured using top-down measurements and extrapolation to annual emissions. We also invite comment on the associated modeling necessary to incorporate top-down data and the associated uncertainties for calculating facility level emissions.*

MiQ Comments: MiQ requires operators to assess the "additionality" of emissions discovered via usage of advanced technology compared to the operator's existing baseline inventory. The attached resource sheet provides current guidance given by MiQ to operators and MiQ auditors to organize data collected and justifications of the data based on further investigation. For example, if an operator discovers through top-down inspections mulitiple uncontrolled produced water tanks that are venting, the operator may either 1) assess additionality through causal analysis and quantify the emissions impact of each individual event, or 2) analyze the root causes of the detections to determine if a common root cause exists, and use the results of that analysis to either refine an existing emission source calculation methodology or add a new emission source to the operator's inventory. EPA's current reporting threshold of 100 kg/hr or 250 MT CO_2e for "other large release events" is a large enough threshold to remove most scenarios where a determination of double-counting is difficult to make. We recommend EPA review the GTI Veritas protocol for a discussion on how technology specifications, including MDL and PoD, can impact the risk of double-counting emissions detected top-down data. We recommend that EPA further clarify the follow-up requirements of an operator and allow operators to use relevant process parameters, parametric monitoring and equipment monitoring results to present justifications around the usage of top-down data in emissions inventories.

98.233(y) opening paragraph: *You are not required to measure every release from your facility, but if you have credible information that demonstrates the release meets or exceeds one of the thresholds or credible information that the release may reasonably be anticipated to meet or exceed (or to have met or exceeded) one of the thresholds in paragraph (y)(1) of this section, then you must calculate the event emissions and, if the thresholds are confirmed to be exceeded, report the emissions as an other large release event.*

MiQ Comments: MiQ requests clarification for how EPA plans to interpret "confirmed" and "reasonably anticipated to meet or exceed." Does EPA plan to publish additional guidance for how operators must account for quantification uncertainties in measurement technologies? For example, if an operator is using a "snapshot" measurement technology with a MDL of 20 kg/hr at a 90% PoD and single measurement quantification error of +/- 50%, and detects two emission events at 95 kg CH4/hr ± 50% and 105 kg CH4/hr ± 50% that both fall below the 250 MT CO2e threshold, what will the expectations be for including these events as *other large release events*? Will a heavier burden of proof be placed on the event that calculates an average emission rate of 105 kg/hr even though the error bands overlap?

MiQ is supportive of solutions that do not pass undue burden on individual operators to justify the data they are reporting and are supportive of solutions which provide clarity on the intent of any reporting requirements placed on operators. As an example, MiQ requires operators to

evaluate **all** results of emission event inspections with the goal of verifying what MiQ grade band the operator falls under. EPA could consider taking a similar approach and tie both the reporting threshold and the level of confirmation necessary on an operator's risk of surpassing the threshold stated in the waste emissions charge.

98.233(y)(2)(iv): *For the purposes of paragraph (y)(2)(ii) of this section, ''monitoring or measurement survey'' includes any monitoring or measurement method in§ 98.234(a) through (d) as well as advanced screening methods such as monitoring systems mounted on vehicles, drones, helicopters, airplanes, or satellites capable of identifying emissions at the thresholds specified in paragraph (y)(1).*

MiQ Comments: MiQ supports EPA's proposed methodology to allow operators to determine the start time of certain emission events based on the results of monitoring and measurement surveys. To drive consistency, MiQ requests that EPA consider publishing guidance or interpretation material describing what general types of emission events can be time-bounded by types of monitoring and measurement surveys.

MiQ also requests that EPA clarify and provide guidance on how audio, visual and olfactory (AVO inspections) can be used by operators to assist in determining the start time of emission events, and what the requirements of AVO surveys need to be to use them as permissible data. MiQ believes that certain emission events should be able to be discovered by thorough AVO inspections and currently are not systematically employed in this way by the oil and gas industry because there are no regulatory drivers to improve systematic tracking of AVO survey results.

VII. Flare Stacks

98.233(k)(2)(ii): *At least once per month visually inspect for the presence of a pilot flame or combustion flame. If a flame is not detected, assume the pilot has been unlit since the previous inspection and that it remains unlit until a subsequent inspection detects a flame. Use the sum of the measured flows, as determined from measurements obtained under paragraph (n)(1) of this section, during all time periods when the pilot was determined to be unlit, to calculate the fraction of the total annual volume that is routed to the flare when it is unlit.*

MiQ Comments: For EPA to expect accurate and consistent reporting amongst operators, EPA will need to set expectations on how they expect a visual inspection is conducted for monitoring the presence of a pilot flame. For example, existing pilot flames may not be visible to operations from the ground dependent on environmental conditions and the relative height of the flare stack. In these cases, operators reporting to (n)(2)(ii) may be placed in a difficult position to verify the presence of a pilot flame with no other information available. Most unlit flares on remote oil and gas sites are detected *and* accurately reported by operators through the use of advanced monitoring and measurement data, especially aerial and satellite methods, or through the use of process monitoring via thermocouples or other flare monitoring technologies pursuant to 98.233(k)(2)(i). The inclusion of a visual inspection option for sites currently without additional flare monitoring technologies installed will help improve flare operations. However, we request that EPA explore and further specify what, if any, other indicators exist for ensuring the pilot flame for both flare stacks and enclosed combustion devices are operating properly, to ensure more consistent reporting between operators and to maximize the effect of this proposed requirement. A relevant method for visually inspecting flares, or additional requirements to increase the consistency and quality of these inspections across all operators, will directly lead to more accurate reporting.

VIII. Storage Tanks

98.233(j)(5)(i)(B): *If stuck gas-liquid separator liquid dump valve is identified, the dump valve must be counted as being open since the beginning of the calendar year, or from the previous visual inspection that did not identify the dump valve as being stuck in the open position in the same calendar year. If the dump valve is fixed following visual inspection, the time period for which the dump valve was stuck open will end upon being repaired. If a stuck dump valve is identified and not repaired, the time period for which the dump valve was stuck open must be counted as having occurred through the rest of the calendar year.*

MiQ Comments: Through experience with audits of MiQ facilities, it is fairly common practice amongst operators of high-pressure gas-liquid separators that wells will be shut-in or alarms requiring immediate response due to the separator reaching low liquid level, which will happen if a dump valve is stuck open. In some other cases, operators will also monitor the density of the fluid going to the tank and alarms on low density will trigger follow up to inspect for a malfunctioning dump valve. These best practices have been commonly verified amongst the vast majority of MiQ-certified operators on high-pressure gas-liquid separators. We cannot confirm if process parameters are also monitored on low-pressure gas-liquid separators. We suggest that EPA consider including the monitoring of process parameters as a method to both 1) identify a dump valve malfunction, and 2) estimate the amount of time the dump valve was stuck open resulting in emissions. We suggest that, if this is implemented, that EPA include reporting requirements of operators to list separators in which process parameters are used as the primary method to identify and estimate the duration of dump valve malfunctions.

IX. Third-Party Verification

MiQ encourages EPA to consider a construct for requiring third-party verification of oil and gas operators subject to Subpart W reporting. This addition will improve confidence in the underlying data reported by operators to calculate their emissions and assist EPA in ensuring that the usage of empirical data by operators is accurate and appropriately demonstrates the extent to which a charge is owed. The substantial revisions by Subpart W may create much more variation in how emissions are reported by operators within the same segment. While this is a welcome consequence, the addition of more methods increases the chance that operators may incompletely report emissions or misinterpret certain aspects of the revised protocols. EPA can drive consistency in reporting by requiring third-party verification of operators' reported emissions, also increasing trust in the implementation and enforcement of the waste emissions charge. We believe that synergies could be realized with the additional proposed requirements of public companies by the Securities and Exchanges Commission to report third-party verified corporate-level greenhouse gases[4], and requirements by various international organizations to require third party-verification of greenhouse gases from member companies[5,6]. In addition to these corporate-wide protocols which require or propose requirements for third-party verifications of emissions information, MiQ has led in developing auditing requirements for more granular Facility-level greenhouse gas audits, which generally covers the same Facility

[4] Securities and Exchange Commission, 17 CFR 210, 229, 232, 239, and 249, [Release Nos. 33-11042; 34-94478; File No. S7-10-22], RIN 3235-AM87, *The Enhancement and Standardization of Climate-Related Disclosures for Investors*, Proposed Rule

[5]IFRS Foundation, International Sustainability Standards Board, IFRS Sustainability Disclosure Standard, *Climate-related Disclosures*, June 2023

[6] World Business Council for Sustainable Development, World Resources Institute, *A Corporate Accounting and Reporting Standard*, March 2004

boundaries as operators reporting to Subpart W. We suggest that EPA consider MiQ's public requirements for auditors and requirements set forth by the State of Colorado in their recently adopted GHG Intensity Verification rule for guidance on accreditation processes, necessary details of verification, and frequency and timelines of Facility-level audits[7,8].

X. Conclusion

MiQ supports the proposed changes by EPA to 40 CFR Part 98, Subpart W. Consistent with MiQ's mission, these proposed changes give operators the opportunity to quantitatively display their differentiated emissions performance moreso than current emissions reporting requirements, using empirical data. These revisions should have the effect of more meaningfully differentiating performance between exceptional, responsible operators and lagging operators. The full effects of this rule, however, can only be realized if EPA further strengthens reporting requirements, more directly incentivizes or requires the usage of advanced monitoring and measurement technologies, and strengthens verification requirements.

MiQ thanks EPA in advance for reviewing these comments. Any questions may be directed to Michael Rabbani, Director of Standards and Certifications (michael.rabbani@miq.org), and Ben Webster, Director of Policy (ben.webster@miq.org).

[7] MiQ Standard for Methane Emissions Performance, *Introduction for Auditors v2.0*, 2023. https://miq.org/document/miq-introduction-for-auditors/\\

[8] Department of Public Health and Environment, Air Quality Control Commission, Regulation Number 7, Control of Emissions from Oil and Gas Emissions Operations, 5 CCR 1001-9. https://drive.google.com/drive/u/0/folders/1sD6Vzvjq2Z4xK1-_AuaUfnzJRBFcGrLD