Midstream's Greatest Resource

February 24, 2015

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U.S. Environmental Protection Agency
EPA Docket Center
Mailcode 28221T
Attention: Docket ID No. EPA–HQ–OAR–2014–0831
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Re: Comments on Greenhouse Gas Reporting Rule: 2015 Revisions and Confidentiality Determinations for Petroleum and Natural Gas Systems; Proposed Rule (Docket EPA-HQ-OAR-2014-0831)

Dear Docket Clerk:

The Gas Processors Association (GPA) appreciates this opportunity to submit comments on the proposed rulemaking "Greenhouse Gas Reporting Rule: 2015 Revisions and Confidentiality Determinations for Petroleum and Natural Gas Systems," 79 Fed. Reg. 73,148 (Dec. 9, 2014). The proposed rule notice summary indicates that the proposed rule is intended to address changes to the U.S. Environmental Protection Agency's (EPA or Agency) greenhouse gas (GHG) reporting rules, commonly referred to as the Subpart W regulations.

GPA has served the U.S. energy industry since 1921 as an incorporated non-profit trade association. GPA is composed of 112 corporate members that are engaged in the gathering and processing of natural gas into merchantable pipeline gas, commonly referred to in the industry as "midstream activities." Such processing includes the removal of impurities from the raw gas stream produced at the wellhead, as well as the extraction for sale of natural gas liquid products (NGLs) such as ethane, propane, butane, and natural gasoline. GPA members account for more than 90% of the NGLs produced in the United States from natural gas processing.

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The proposed rule revisions expand the requirements of 40 C.F.R. Part 98 Subpart W to "gathering and booster stations." As such, the proposed rule would have significant impact on the GPA membership because it owns and operates a significant majority of the thousands of "gathering and booster stations" that would be subject to the rule.

At the outset of these comments, GPA would like to point out that the organization structure of its comments generally mirrors the proposed rule and the Agency's request for specific comments; and therefore, the structure of our comments does not necessarily reflect the individual comments' importance to GPA (see Table of Contents below). GPA believes that all of its comments are necessary to assist EPA ensure the rule's integrity, and as such should be seriously considered by the Agency. However, GPA would like to especially draw EPA's attention to its comments on the definition of "facility" and the definition of the source category "[o]nshore petroleum and natural gas gathering and boosting." GPA considers its comments on these definitions to be the most important issues that EPA must resolve during this rulemaking. All other issued raised by GPA, while important and of serious concern, take second place to the need for EPA to resolve the definitions of "facility" and the source category.

GPA has also included an Appendix to its comments, which outlines the cost estimates GPA believes are associated with the proposed rule.

Table of Contents

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1. General support for INGAA, API, and TPA Comments

GPA generally supports comments submitted by the Interstate Natural Gas Association of America (INGAA), the American Petroleum Institute (API), and the Texas Pipeline Association (TPA). Although INGAA's comments are written specifically for the Transmission and Storage industry segments, many comments also apply to the gas processing industry segment. Additionally, while GPA generally supports API's comments, GPA does not agree with or support the basin reporting and thresholds approach in the proposed rule.

2. Definition of the Gathering and Boosting Source Category

2.1 GPA commends EPA for defining gathering and boosting as its own industry segment.

Gathering and boosting is a unique operation with a unique purpose. Historical treatment of this industry segment—either including it with production or processing—has led to confusion with understanding industry data. We encourage EPA to continue to distinguish gathering and boosting as its own industry segment in other programs, rules, inventories, etc.

2.2 GPA agrees with API that the word "petroleum" should be struck from "Onshore Petroleum and Natural Gas Gathering and Boosting."

The proposed source category definition includes "petroleum" in the definition of source category. GPA agrees with API that the word "petroleum" is not applicable and should not be included in this source type. The types of equipment that EPA lists in the proposed rule are synonymous with natural gas gathering and boosting systems and not liquid and petroleum gathering systems.

2.3 Remove the language "but is not limited to."

The proposed source category definition includes the phrase, "Gathering and boosting equipment includes, but is not limited to . . . ."[1] The listed equipment is the only equipment in the Onshore Petroleum and Natural Gas Production segment that could be subject to reporting requirements. Accordingly, the phrase "but is not limited to" introduces unnecessary imprecision and uncertainty.

[1] Greenhouse Gas Reporting Rule: 2015 Revisions and Confidentiality Determinations for Petroleum and Natural Gas Systems, 79 Fed. Reg. 73,148, 73,175 (Dec. 9, 2014) (Proposed Rule).

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3. Definition of a "Facility" under the Gathering and Boosting Industry Segment

3.1 GPA commends EPA for recognizing that, "gathering and boosting facilities are more dispersed than processing facilities and are geographically similar to Onshore Petroleum Production industry segment in size and number of sources";[2] however, GPA disagrees with EPA regarding basin level reporting requirements for the gathering and boosting industry segment.

GPA fully supports the facility definition and justification arguments set forth by TPA in Section I of their comment letter to EPA regarding the Proposed Rule. In recognition of Option 1-3 of EPA's Technical Support Document,[3] GPA sets forth the following alternative to the EPA's proposal.

3.2 The term "basin" is not common terminology that is used in the gathering and boosting industry segment.

Gathering and boosting sites are operationally different than production sites. Gathering and boosting sites have the ability to boost and move gas from multiple different basins within the same site whereas production typically maintains operations and moves gas within one basin. It is unclear why EPA is trying to place the gathering and boosting industry segment into a category that clearly does not fit the sources to be addressed.

3.3 In order to limit confusion throughout the industry, GPA requests that the definition of a facility be based on a single county or parish instead of a single basin.

County- or parish-level information is readily available and is used for permitting purposes. The 25,000 metric tons (mt) carbon dioxide equivalent (CO_2e) reporting threshold will apply to the aggregated GHG facility emissions on a county or parish basis. This approach would also be consistent with information that is already available within many companies' environmental management systems and will ease the burden associated with reporting. Additionally, this

[2] EPA Climate Change Division, Greenhouse Gas Reporting Rule: Technical Support for 2015 Revisions and Confidentiality Determinations for Petroleum and Natural Gas Systems; Proposed Rule at 14 (Nov. 13, 2014), *available at* http://www.regulations.gov/contentStreamer?objectId=09000064819660f0&disposition=attachment&contentType=pdf (Technical Support Document).
[3] *Id.* at 13-15.

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approach will provide EPA with the granularity that they desired under Option 1 of Facility definitions in the Technical Support Document.[4]

3.4 In addition, GPA requests that EPA define an equipment threshold, at or above which, GHG emissions will be determined and rolled up into the newly-defined facility (county or parish) total.

GPA proposes defining the lower facility limit as any site with equal to or greater than 650 manufacturer rated horsepower (HP) or HP equivalent. A survey of several GPA member companies indicates a threshold of 650 HP would reasonably represent 80-85% of member company facilities. This is consistent with EPA's desire in the original Subpart W Fact Sheet[5] to collect 85% of industry wide GHG emissions. In other words, emissions from only the equipment located within any individual gathering or booster station within a single county or parish that has at least 650 HP or HP equivalent will be compiled and applied towards the 25,000 mt CO_2e threshold. In doing this, EPA will significantly decrease the reporting burden placed on reporters and small businesses with small facilities. The following suggested language reflects comments 2.2, 2.3, and 3.

§ 98.230 Definition of the source category

(9) Onshore ~~***petroleum and***~~ *natural gas gathering and boosting. Onshore* ~~***petroleum and***~~ *natural gas gathering and boosting means gathering pipelines and other equipment used to collect* ~~***petroleum and/or***~~ *natural gas from onshore production gas or oil wells and used to compress, dehydrate, sweeten, or transport the gas to a natural gas processing facility, a natural gas transmission pipeline or to a natural gas distribution pipeline. Gathering and boosting equipment includes,* ~~***but is not limited to***~~ *gathering pipelines, separators, compressors, acid gas removal units, dehydrators, pneumatic devices/pumps, storage vessels, engines, boilers, heaters, and flares.*

Gathering and boosting equipment includes only equipment that is located at a gathering or boosting site, as provided in the definition of facility in Subpart A, with combined site manufacturer rated horsepower or horsepower equivalent of equal to or greater than 650. [1]

[4] *Id.* at 13.
[5] Proposed Rule – Mandatory Reporting of Greenhouse Gases from Petroleum and Natural Gas Systems – Subpart W; Fact Sheet: 2010 Proposed Rule – Subpart W, (Apr. 12, 2010) *available at* http://www.epa.gov/ghgreporting/documents/pdf/2010/Subpart-W_factsheet.pdf.

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§ 98.238 Definitions

Facility with respect to natural gas gathering and boosting for purposes of reporting under this subpart and for the corresponding subpart A requirements means ~~***all***~~ *gathering pipelines and other equipment located along those pipelines that are under common ownership or common control by a gathering and boosting system owner or operator and that are located in a single* ~~***hydrocarbon basin***~~ ***county or parish*** *as defined in this section.*

Where a person owns or operates more than one gathering and boosting system in a ~~***basin***~~ ***county or parish*** *(for example, separate gathering lines that are not connected), then all gathering and boosting equipment that the person owns or operates in the* ~~***basin***~~ ***county or parish*** *would be considered one facility. Any gathering and boosting equipment that is associated with a single gathering and boosting system, including leased, rented, or contracted activities, is considered to be under common control of the owner or operator of the gathering and boosting system that contains the pipeline.*

The facility does not include equipment and pipelines that are part of any other industry segment defined in this subpart ***nor equipment located at a gathering or boosting site (as provided in the definition of facility in Subpart A) with less than 650 manufacturer rated HP or manufacturer rated HP equivalent.***

4. The Extent of the Proposed Expansion of the GHG Reporting Program

4.1 EPA's assertion that complete information is needed extends beyond the purpose of the Greenhouse Gas Reporting Program (GHGRP) and the original intent of Subpart W.

GPA understands that the onshore natural gas gathering and boosting (ONGGB) industry segment was included in the original Subpart W proposal. GPA also understands that there currently is a data gap in GHG reporting without this industry segment. However, in the preamble, EPA states "[t]hese proposed revisions, which address this petition, are consistent with the EPA's intent to 'collect complete and accurate facility-level GHG emissions from the petroleum and natural gas industry' (79 FR 74484, November 30, 2010) and to provide accurate and transparent data to inform future policy decisions."[6] GPA notes that EPA's intent in designing Subpart W was to collect emissions information from the largest sources contributing to approximately 80% of the emissions from each industry segment.[7] This rationale explains why EPA does not require all possible

[6] Proposed Rule at 73,151.
[7] Mandatory Reporting of Greenhouse Gases: Petroleum and Natural Gas Systems, 75 Fed. Reg. 18,608, 18,614 (Apr. 12, 2010).

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emitting equipment to report in each industry segment. However, in this proposal, EPA provides no evaluation of which emission sources contribute to 80% of emissions from the ONGGB industry segment, and instead EPA has chosen to include every possible emission source for which a data collection method is defined in Subpart W.

GPA has long struggled to understand EPA's goals for collecting the GHGRP data considering the extremely labor intensive data collection efforts (for example the thousands of direct measurements from compressors which were hardly discussed in the EPA Compressor White Paper).[8] GPA supports informed data collection, but with shifting goals and unclear intended uses for the data to be collected, GPA cannot endorse collection of data merely because the equipment type can be found within an industry segment. We do not support the notion that the GHGRP was intended to collect 100% of available emissions information for an entire industry segment, as supported by the April 12, 2010 proposed rule. In the following comments, we propose eliminating costly and unnecessary data collection efforts that GPA considers unreasonably burdensome.

5. Availability of Best Available Monitoring Methods (BAMM)

5.1 Automatic BAMM is needed for the entire first reporting year for ONGGB rather than the proposed three months.

Justification of a longer period of automatic BAMM is as follows:

5.2 Subpart W implementation originally allowed one year of BAMM.

Subpart W became effective in 2011, and automatic BAMM was allowed for all of reporting year 2011.[9] There is no reason data collection for the ONGGB industry segment should be treated differently. Entirely new industry segments are being added to reporting, which will require a significant implementation effort.

5.3 New requirements represent a substantial increase in the number of reporting facilities.

As discussed elsewhere in these comments, even according to EPA's underestimated impact analysis, this proposal represents at least an estimated threefold increase in the number of reporting compressor stations when based on

[8] EPA Office of Air Quality Planning and Standards, Oil and Natural Gas Sector Compressors (Apr. 2014), http://www.epa.gov/airquality/oilandgas/2014papers/20140415compressors.pdf.
[9] 40 C.F.R. §§ 98.234(f)(2), (3), (4), (5) (2014).

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the number of processing plants reporting.[10] As such, if one year was allowed to implement Subpart W reporting in other industry segments, at least one year must be allowed to implement Subpart W, in the ONGGB industry segment, particularly in light of the geographically dispersed nature of the sites and the significant reporting expansion.

5.4 Although all proposed emission estimation methods are currently in the rule, many reporters are not currently using these methods.

Many of GPA's members currently only report in the Onshore Natural Gas Processing industry segment, and some members might not report under Subpart W at all. Additionally, many ONGGB industry segment reporters do not report under the Onshore Production industry segment. Thus, implementing this rule is not just a matter of expanding current practices to additional facilities. Understanding the final rule requirements, preparing applicability analyses, developing and implementing recordkeeping tools, conducting training, collecting data and data quality assurance/quality control (QA/QC) activities will require significant time and resources.

5.5 Reporters will need focus on implementing these expansive new reporting requirements and will not have time to request BAMM on a case-by-case basis.

Many reporters will have hundreds of gathering and boosting stations that will be subject to the proposed expanded requirements. Preparing case-by-case BAMM requests will require extensive time and effort, which can be better spent in implementing data collection practices.

6. The Use of BAMM Beyond 2016 Must be Available with EPA Approval

6.1 BAMM will be needed in limited circumstances.

Past experience has proven BAMM critical in bridging the gap between final rules and compliance obligations and EPA has found that extensions were necessary in

[10] EPA Climate Change Division, Assessment of Impacts of the 2015 Proposed Revisions to Subpart W (Nov. 10, 2014), *available at* http://www.regulations.gov/contentStreamer?objectId=0900006481948b3c&disposition=attachment&contentType=pdf. EPA estimates three compressor stations upstream of each gas treatment facility.

> Each of the two gathering and boosting systems that comprise the model reporter is connected to three producing fields, so six fields total. There is a compression station associated with each connected field and each gathering and boosting system has a stand-alone gas treatment facility with a compressor station on the outlet side.

Id. at 5.

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limited circumstances. With this large expansion of the rule, EPA should recognize that BAMM may be required for certain unique scenarios. GPA does not expect for EPA to grant BAMM in scenarios when data can be reasonably collected. However, EPA should retain their ability to review BAMM requests and decide whether approval is granted. GPA also reminds EPA that the ability to grant BAMM requests for compressor monitoring was critical during the period of rule reconsideration for that equipment type. Should an analogous situation arise, EPA should retain their ability to grant BAMM requests.

6.2 BAMM is needed when facilities are acquired and divested.

When non-reporting assets are added to existing facilities, they must be incorporated into existing facility reporting. In another scenario, two small non-reporting assets may be combined and trigger the reporting threshold. In sections 98.235(e) and (f), EPA allows best engineering estimates "for the first 6 months of required data collection" in cases of newly reporting facilities or source acquisition from another facility that was not previously subject to Subpart W. However, this is not adequate for ONGGB divestiture and acquisition. For example, if an acquisition closes on December 1, the provisions of sections 98.235(e) and (f) only cover January through June (the first six months of required data collection). There is no available path in the rule for BAMM or missing data procedures for the July through November data. Therefore, BAMM must be available to be approved by EPA for cases such as these. For acquisition of facilities that were reported under Subpart W by the previous owner or operator, GPA notes that there is no distinction in the level of effort required to integrate newly acquired sources into an existing reporting program whether previously excluded from Subpart W or reported by a different entity.

7. Blowdown Vent Stacks

For the following reasons, EPA should eliminate the Blowdown Vent Stack equipment type for the ONGGB industry segment.

7.1 It is unclear if EPA is interested in only pipeline blowdowns or all equipment blowdowns.

EPA's Technical Support Document[11] focuses on gathering pipeline blowdowns, but the proposed rule covers all blowdowns within the proposed facility. By definition, all the blowdowns occurring within a basin, including individual equipment blowdowns, would require reporting in addition to pipeline

[11] *See* Technical Support Document at 19.

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blowdowns. GPA notes that the docket material is unclear on this point, but we advocate for elimination of the blowdown vent stack category entirely for ONGGB for the reasons stated below.

7.2 This requirement is unduly resource intensive, burdensome, and costly.

The 50 cubic feet physical volume threshold does not alleviate all work for blowdowns smaller than 50 cubic feet physical volume. In the preamble, EPA states that, "[t]he EPA expects that the exemption for volumes less than 50 cubic feet should alleviate any concerns with the burden of calculating emissions from small gathering pipelines." [12] Yet, every single blowdown event must still be evaluated to determine if it is over 50 cubic feet physical volume. A prudent operator would also keep records of this evaluation. So while some calculation and reporting time is saved with a 50 cubic feet threshold, the burdensome task of calculating physical blowdown volume by assessing block valve location and measuring all equipment and piping between block valves and documenting the results is not alleviated with a physical size threshold. Prudent operators would not "eyeball" equipment to assess physical volume and records of applicability evaluations would be maintained.

7.3 Gathering and boosting facilities are geographically dispersed and often unmanned. Pipelines are never manned.

As EPA recognizes in the Technical Support Document, ONGGB equipment is, like Onshore Production equipment, geographically dispersed and may be visited only intermittently. Many, if not the majority, of ONGGB compressor stations are not manned. Pipelines are never manned. As such, it is unclear why this equipment type was excluded for Onshore Production, but not for ONGGB. It is also unclear why EPA allows certain more "livable" approaches in the proposed rule for ONGGB due to the geographically dispersed and unmanned nature of this industry segment, but does not make any concessions on blowdowns. EPA's approach is unjustifiably inconsistent.

7.4 Blowdown vent stack reporting requires continuous data collection, which requires extensive training, personnel time, and recordkeeping.

Unlike other equipment types that involve an annual equipment survey, whenever a blowdown occurs, it must be evaluated and documented. This means that data must effectively be collected continuously. Blowdown tracking must involve field operators tracking every single blowdown. Training every operator in a

[12] Proposed Rule at 73,154.

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company to evaluate blowdown events, document the results, determine if they should be reported under Subpart W (including evaluating and documenting physical volume), maintain the proper records, and transfer the records to the GHGRP coordinator is overly burdensome.

7.5 The cost burden for reporting blowdown emissions is much higher than EPA estimates.

For blowdowns, EPA estimates that there will be eight blowdowns per year per facility (one per ONGGB compressor station within a basin) and it will take eight minutes to perform each calculation.[13] Setting aside EPA's inaccurate estimate of the number of ONGGB compressor stations per facility, EPA's estimate of just one blowdown event in an entire year at an ONGGB compressor station is unrealistic.

A more reasonable estimate for one compressor station is 24 blowdowns per compressor, 12 blowdowns from filter/strainer opening, four other blowdowns for routine maintenance, and one pipeline blowdown within the fenceline. Assuming EPA's estimate that there is an average of three compressors per compressor station is accurate,[14] this results in 89 blowdowns per year. Note that while some of these blowdowns may be less than 50 cubic feet physical volume or meet another exemption provided in section 98.233(i), each blowdown must be evaluated to determine if this is the case, so some time is required for every blowdown. This results in (8 compressor stations x 89 blowdowns x 8 minutes x 200 reporters)/ 60 min/hr = 18,987 hours, compared to EPA's estimate of 213.3 hours. To calculate total increased costs, GPA used EPA's hourly engineer labor rate from the Supporting Statement of $78.29,[15] and determined that the estimated costs significantly increased from $16,702 to $1,486,466.

Additionally, EPA's impact and cost assessments completely fail to include time for training. Because blowdown reporting requires continuous monitoring, training operators or contractors on the requirements of the rule is essential. Due to staff turnover, training typically occurs at least once annually. Every operator/contractor will need to be trained. Often, operators/contractors will be responsible for multiple compressor stations, but there will be multiple operators/contractors in a crew, plus supervisors. For simplicity, we assume that

[13] Supporting Statement: Environmental Protection Agency—Greenhouse Gas Reporting Rule: 2015 Revisions and Confidentiality Determinations for Petroleum and Natural Gas Systems; Proposed Rule (40 CFR Part 98, subpart W), Appendix B at note j, Docket No. EPA-HQ-QAR02014-0831-0013 (Nov. 2014), http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OAR-2014-0831-0013 (Supporting Document).
[14] *Id.*, Appendix B at note k.
[15] *See id.* at 15.

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there is one operator for every four sites, who completes two hours of training the first year with an additional half hour for years following. We also assume there is one person leading the training. For EPA's model facility, this becomes an additional eight hours per year.

7.6 There is little justification for why this burdensome equipment type is included in the ONGGB industry segment.

Just because an activity occurs and a calculation methodology exists does not mean it is necessary or should be used. In the Technical Support Document, EPA seems to indicate that simply because a method exists to calculate blowdown emissions, the method should be required. EPA merely provides a description of how blowdown emissions would be calculated. EPA fails to provide a sufficient justification for *why* blowdowns in this segment should be reported.

7.7 Blowdown emissions contribute minimally to overall emissions.

GPA used the EPA's Facility Level Information on Greenhouse Gases Tool to evaluate emissions from over 125 facilities. In the current rule, blowdown vent stack emissions are reported in three industry segments: Onshore Natural Gas Processing, Onshore Natural Gas Transmission Compression, and LNG Import and Export Equipment. GPA only examined facilities that reported blowdown emissions, and at those facilities, the average contribution of blowdown emissions was just 1.8% of total facility CO_2e emissions. The median contribution was just 0.2% of total facility CO_2e emissions. GPA notes that this does not even include the facilities that reported zero blowdown emissions (which typically occur at Onshore Natural Gas Processing plants where all blowdown emissions are routed to flare). When facilities that reported zero blowdown emissions are included in the analysis, the contribution to total site GHG emissions are expected to drop even further.

GPA encourages EPA to use all the reported data to determine the contribution of blowdown emissions to total facility emissions. We expect that EPA will find that the contribution is extremely low, likely less than 1%. The level of effort required to obtain this very insignificant piece of information is not justifiable. GPA finds no reason to believe that the ONGGB industry segment would experience a significantly higher level of blowdowns than other industry segments. However, to be conservative, even if the ONGGB blowdown emissions are several times greater than the industry segments which currently report blowdowns, we expect the contribution of emissions from blowdowns to still be very low; therefore, this requirement is overly burdensome for the emissions data collected.

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8. Storage Tank Vented Emissions

8.1 EPA should eliminate the Storage Tank Vented Emissions equipment type for the Onshore Petroleum and Natural Gas Gathering and Boosting industry segment.

Alternatively, EPA should create a new, separate requirement that is inventory-based and does not require tank-specific annual data other than equipment counts. Justification for this request is as follows:

8.2 Tank emissions tracking and calculations is very burdensome and is not justified in the proposed rule or supporting materials.

The Technical Support and Assessment of Impacts do not discuss the storage tank requirement for the ONGGB industry segment. Other than one small line item in Appendix B of the Supporting Statement, there is no discussion on the implementation of this burdensome reporting requirement for the ONGGB industry segment. It is unreasonable for EPA to include this burdensome requirement without justifying the need for the data and adequately discussing the burden associated with this requirement.

8.3 Annual tank specific data would be required for every single tank in the ONGGB industry segment.

For the thousands of tanks in the ONGGB industry segment, reporters would need to assess tank throughput data (see comments below related to concerns about "separators" and separator throughput). While this data is usually available as a normal course of business, EPA should assume it takes at least 10 minutes per tank per year to locate the data, QA/QC it, evaluate it, and retain a record. Nearly all compressor stations in the ONGGB industry segment will have at least one condensate or produced water storage tank. EPA provides no justification of why this massive data collection effort is necessary or appropriate for this industry segment.

8.4 EPA underestimates that there are eight tanks per reporter.

GPA believes that the number of tanks per reporter is significantly under estimated and is at least an order of magnitude higher.

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8.5 Additional tank specific data would be required for an unknown portion of tanks in the ONGGB industry segment.

If Calculation Methods 1 or 2 are required, other operating data would need to be collected annually for each tank such as operating pressures and temperatures, which would require reporter time and a visit to each site. For some tanks, a liquid sample would be required to perform the calculation, so a site visit would be needed to take the sample, and time would be required to send the sample to the lab. Again, EPA provides no justification of why this massive data collection effort is necessary or appropriate for this industry segment.

8.6 EPA estimates of burden do not account for all tasks and underestimate the burden of each task.

For tanks, EPA estimates "1 minute per separator for technician to collect pressure data; and 30 minutes per separator for engineer to perform simulation run." First, EPA does not include time to assess tank throughput, which should be estimated at 10 minutes per tank. Second, to collect other operating data, EPA should estimate 20 minutes per tank. The task must be explained to the operator, planned into the operator's duties, a data collection form must be created or identified, the data must be collected, the data must be transferred to the GHG reporting coordinator, the GHG reporting coordinator must store the data in a centralized location, and the GHG reporting coordinator must note receipt of the data.

Third, if a condensate sample would need to be taken, EPA should estimate $1,000 for sample collection and analysis. Pulling samples of pressurized liquid must be planned to ensure that the task is completed in a safe and correct manner (without depressurizing the liquid). Additionally, the sample containers must be prepared and obtained, the task planned and coordinated with other site activities, which may involve a safe work permit, the sample taken, the sample transported or shipped to the lab, analysis completed, laboratory report prepared, results provided to the company, data entered in a centralized database, and emissions determined for subsequent reporting. For unstabilized condensate liquids entering a tank, the sample must be taken at the separator, which may not contain liquid when the operator arrives to pull the sample. This could add even more time to this task.

Fourth, EPA's assessment of 30 minutes to perform the emissions determination may be optimistic. We note that if running the simulation is done in house, the

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average cost of time and labor is $200; however, if the run is outsourced, the typical fee is at least $400 per run. Thus, total time for tanks using Calculation Method 1 or 2 is more accurately estimated at two hours per tank at $1000 per sample plus an additional $400 if the process simulation is outsourced.

8.7 Combining the requirements for storage tanks in the ONGGB industry segment and the Onshore Production industry segment results in confusing terminology and unclear requirements.

If EPA does not remove this equipment category entirely for ONGGB, GPA suggests that EPA create a new equipment category for storage tank emissions from the ONGGB industry segment that contains relevant terminology and avoids confusion with onshore production industry segment requirements. The proposed requirement is an expansion of an existing requirement that has language specific for the Onshore Production industry segment. Tacking on ONGGB requirements to this language creates confusion about the applicable requirements. ONGGB sites do not operate the same way that production sites operate.

Examples of unclear language:

8.7.1 The terms "separator(s)," "gas-liquid separator(s)," "wellhead separator(s)," and "wellhead gas-liquid separator(s)," appear throughout sections 98.233(j) and 98.236(j). Do all of these terms refer to the same type of equipment? GPA notes that the high pressure separators and low pressure separators typically found at production sites are not necessarily the same types of separators that are used at ONGGB compressor stations. ONGGB compressor stations typically do not have "wellhead separators" because they do not typically have wellheads onsite. Many ONGGB compressor stations have a separator vessel at the inlet of the facility to separate liquids that condensed in the gas pipeline. The gas proceeds through the compressor train, which typically also includes compressor interstage knockout drums, which are separators. In the rule language, in each instance where EPA uses the terms "separator(s)," "gas-liquid separator(s)," "wellhead separator(s)," and "wellhead gas-liquid separator(s)," is EPA referring the inlet separator and/or compressor interstage knockout vessels at ONGGB compressor stations?

8.7.2 The terms "oil," "sales oil," and "stabilized oil" are used throughout sections 98.233(j) and 98.236(j). ONGGB facilities do not process oil but may handle and process condensate. In the proposed rule language, in

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each instance where EPA uses the term "oil," what material is EPA referring to? Does this include condensate? This terminology should be clarified and made applicable to the ONGGB industry segment.

8.7.3 Proposed section 98.233(j) says, "[f]or hydrocarbon liquids flowing directly to atmospheric storage tanks without passing through a wellhead separator . . . ."[16] This language is tailored for the onshore production industry segment. How should this language be applied to the ONGGB industry segment? ONGGB facility owner/operators will not know whether the condensate that condensed in the gathering pipeline was from gas that passed through a wellhead separator. It would be impossible for an ONGGB facility owner/operator to acquire this information since gas is gathered from multiple production sites, each of which could have a different facility configuration.

8.7.4 Calculation Method 1 in section 98.233(j)(1) says, ". . . using operating conditions in the last wellhead gas-liquid separator before liquid transfer to storage tanks."[17] ONGGB facilities do not have wellhead gas-liquid separators. The operating conditions at the multitude of upstream wellhead gas-liquids separators would have no bearing at all on the conditions of the liquids entering ONGGB storage tanks.

8.7.5 Section 98.233(j)(1)(vii)(B) refers to "produced crude oil or condensate."[18] Does this also refer to condensate that is generated by liquids condensing in gathering pipelines? Industry would not typically consider this to be "produced condensate."

8.7.6 Section 98.233(j)(1)(vii)(B) currently says ". . . select the latest available analysis that is representative of produced crude oil or condensate from the sub-basin category."[19] As explained in previous comment number 3, the terms "basin" and "sub-basin" bear no relevance to the ONGGB industry segment. The composition of condensate processed at an ONGGB compressor station may have little relationship to the basin or sub-basin the compressor station happens to be in. Thus, mandating use of an analysis from the same sub-basin will not necessarily result in selection of the most appropriate representative analysis.

[16] Proposed Rule at 73,178.
[17] *Id*. at 73,178-79.
[18] *Id*. at 73,179.
[19] 40 C.F.R. § 98.233(j)(1)(vii)(B).

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8.8 Examples of ONGGB operating scenarios that are not contemplated by the current language:

8.8.1 In Scenario A, a compressor station has atmospheric fixed roof storage tanks that receive condensate that has condensed in the gathering line upstream of the facility and/or condensate that has condensed in the compression process. For these tanks, condensate typically passes through an inlet separator before entering the tanks. In Scenario B, a compressor station has atmospheric fixed roof storage tanks that receive condensate that is trucked in from other locations around the gathering system(s). How are these Scenario B storage tanks treated under these calculation and reporting requirements, since there is not a separator located directly upstream of the tanks?

8.8.2 In Scenario C, the liquid from the inlet separator (and possibly compressor interstage separators) is routed through a condensate stabilizer. The stabilized liquids are routed to the storage vessel. How are these Scenario C storage tanks treated under these calculation and reporting requirements, since there is not a separator located directly upstream of the tanks, and the separator operating temperature pressure have no bearing on the tank emissions?

8.8.3 In Scenario D, there are multiple inlet separators that eventually route to the same storage tank. How are these Scenario D storage tanks treated under these calculation and reporting requirements, since the rule language seems to only contemplate one single separator located directly upstream of the tank?

8.8.4 In Scenario E, a pig is run into a compressor station, and the liquid is routed to a "slug catcher" (a holding spot for the liquid that is typically not atmospheric). Liquid from the slug catcher is then routed to the atmospheric storage tanks, possibly through a stabilizer or other process to depressurize the liquid. How is this scenario handled under the calculation and reporting requirements?

8.9 The application of the Onshore Production industry segment throughput threshold is not justified for the ONGGB industry segment.

The proposed rule language, requirements, and thresholds for calculations are based on well production separators, which is not relevant for ONGGB operators.

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8.9.1 The 10 barrel per day threshold bears no relevance to ONGGB.

The EPA's analysis of an emission factor threshold for the November 30, 2010 final rule is specific to the onshore production industry segment and bears no relevance on the ONGGB industry segment.[20] This threshold was developed such that 20% of emissions from storage tanks in the onshore production industry segment were captured with simple emission factor methods. Therefore, analysis that EPA performed does not apply at all to the ONGGB industry segment. To justify an appropriate threshold for simplified emission factor estimation techniques, EPA must perform an analysis to determine appropriate thresholds for storage tanks in the ONGGB industry segment. EPA has provided no justification or support for the proposed rule language.

8.9.2 ONGGB operators do not typically track separator throughput.

ONGGB operators do not track separator throughput as a normal course of business. ONGGB operators track tank throughput, which is typically measured by measuring the volume of batches of liquid that are removed from the tank (not a continuous measurement). Additionally, as noted previously, not all tanks receive liquids from separators, and there may be multiple separators feeding into a single tank.

8.10 <u>If EPA retains this equipment category, the emission calculation methods must be revised to be appropriate for the ONGGB industry segment.</u>

8.10.1 A simple emission factor should be used for all tanks in the ONGGB industry sector.

According to Appendix B of the Supporting Statement, it appears that EPA estimates there are eight tanks per reporter. With EPA's estimated 200 reporters, this yields a total of 1,600 tanks. GPA estimates that there are several thousand tanks in the ONGGB industry sector, if not tens of thousands. Just one GPA member company has over 1,000 atmospheric pressure fixed roof storage tanks. Evaluating every single tank to determine if it meets a threshold to perform more complex emissions estimates is a huge burden in and of itself. GPA requests that EPA

[20] EPA Office of Air and Radiation, Equipment Threshold for Onshore Production Storage Tanks (Nov. 30, 2010), http://www.regulations.gov/contentStreamer?objectId=0900006480b7d7f0&disposition=attachment&contentType=pdf.

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provide a simple emission factor method for all tanks, similar to Calculation Method 3 at section 98.233(j)(3).

8.10.2 If EPA proceeds with requiring more complex emission estimates for some storage tanks, ONGGB reporters should be allowed to use of any combination of site specific, representative, or best engineering estimates for all equation inputs.

Calculation Methods 1 and 2 are very prescriptive in how data must be acquired. GPA fails to understand this level of prescriptiveness, when for dehydrators (which require similar complex analysis and simulations to determine emissions), EPA allows the use of "engineering estimate based on best available data" for all calculation parameters.[21] GPA also notes that some ONGGB owners and operators calculate condensate tank emissions based on a process simulation where *gas* composition and rates are known, and condensate production (through pressure increases) is simulated. This type of analysis is performed because pressurized condensate samples can be difficult to collect (or impossible to collect for grassroots facilities). GPA notes that condensate that is formed in the gathering pipelines and through compression is not like oil that is being produced from a producing reservoir/formation. The composition, API gravity and Reid vapor pressure of the condensate will depend on the variety of wells that the gas is collected from and the operating conditions of the gathering lines and the compressor station. It is not clear if or how this emission estimation technique is accounted for in Calculation Methods 1 or 2.

8.10.3 Calculation Method 3 at section 98.233(j)(3) is not adequate for the ONGGB industry segment.

Due to the limited comment time, GPA was not able to evaluate the source of the emissions factors used in Calculation Method 3. If the factors were developed based on onshore production data (which does not apply to the ONGGB industry segment), GPA requests that EPA determine appropriate emission factors for storage tanks in the ONGGB industry segment. Regardless of the origin of the emission factors, the language in the calculation method is not applicable to the ONGGB industry segment. Specifically, the terms "EF_i" and "count" are tailored to separators or wells. The ONGGB industry segment does not have wells, and as

[21] 40 C.F.R. § 98.233(e)(1).

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discussed in detail above, separator count and separator operation may have little to do with storage tanks in the ONGGB industry segment.

8.10.4 GPA notes that not all ONGGB owners and operators use E&P Tanks.

Many operators use EPA's TANKS 4.09.d, which is based on AP-42, to estimate tank working and breathing losses. Note that this software requires Reid vapor pressure to be known. Most operators use ProMAX or HYSYS to estimate flash emissions, which also requires the liquid or gas composition to be known. Thus, the proposed requirement necessitates time consuming and expensive sampling.

8.10.5 EPA should eliminate reporting of tanks that are routed to flare or vapor recovery.

As proposed, EPA requires that additional complex calculations must be performed on tanks whose emissions are routed to flare or vapor recovery. For tanks that are routed to flare, the flare calculations must be applied to the tank emissions, and then these resulting emissions must be backed out of the flare equipment emissions. For tanks that are routed to vapor recovery, operators must still collect operating data and liquid samples, conduct analyses, perform emissions determinations and retain all records only to "adjust the emissions downward." This exercise is a waste of resources for tanks that are controlled by vapor recovery. Even if some of the emissions (~ 2%, for a 98% controlled tank) are not captured by vapor recovery, the negligible amount of carbon dioxide (CO_2) and methane emissions cannot justify the burden. Operators are essentially "punished" for controlling their tanks.

Why would EPA mandate more difficult and resource-wasting reporting requirements for owners and operators who are reducing their CO_2e emissions? Similar to the requirements for blowdown vent stacks and the requirements for centrifugal and reciprocating compressors, emissions that are routed to flare should be simply calculated under the flare equipment type, and emissions that are routed to vapor recovery should not be calculated (the blowdown vent stack category only applies to emissions that are actually vented). This is a dramatically more simple approach with the same results—GHG emissions to atmosphere are accounted for.

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9. Stuck Dump Valve Tracking and Reporting Should be Removed.

9.1 As discussed throughout comment 8, not all ONGGB tanks receive liquids directly from separators, and no ONGGB tanks receive liquids directly from wellhead separators.

Thus, the requirement to "calculate emissions from occurrences of gas-liquid separator liquid dump valves not closing during the calendar year" would simply not be possible or relevant for many ONGGB tanks.

9.2 EPA provides no estimate of time or cost associated with this task.

In Appendix B of the Supporting Statement, EPA estimates 0.52 hours per tank, which is based on "assuming 1 minute per separator for technician to collect pressure data; and 30 minutes per separator for engineer to perform simulation run."[22] This dump valve task certainly takes time, and this time must be accounted for in EPA's cost analysis. Like blowdowns, this piece of information requires continuous data collection, so every operator, and possibly third party pumpers/technicians, will need to be trained on this task. Every operator in a company will need to know how to inspect for dump valve issues (which many already do), but most importantly, they will need to be trained to document any issues, maintain the proper records, and transfer the records to the GHGRP coordinator. It is difficult to assess an appropriate amount of time to assign because this is a continuous data collection effort; GPA recommends that EPA estimate one hour per tank annually. Additionally, if the tank emissions are routed to a flare, then the emissions calculated in Equation W-16 would need to be applied to the flare calculations, and then this volume would need to be subtracted out of the total site flare emissions. This is a complex set of calculations and EPA should estimate an additional 30 minutes per tank that is routed to flare.

9.3 EPA's own analysis shows that these emissions estimations are "weak."

This very burdensome continuous data collection effort and reporting requirement hinges on emission estimates that EPA summarizes by saying, "[p]redicting and evaluating non-flashing effects on emissions (such as dump valves or vortexing) has not yet been thoroughly studied or quantified. The methods above have

[22] *See* Supporting Statement, Appendix B at note r.

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significant weaknesses as . . . [t]he sample data set is limited. . . . [and] [o]nly weak correlations were observed for the available data."[23]

9.4 The data used to develop the correction factor CF_n in Equation W-16 was collected solely from onshore production sites, not ONGGB sites.

EPA used data from a Texas Commission on Environmental Quality (TCEQ) study to develop this correction factor.[24] The TCEQ study "gathered process, operational, and measurement data from tank batteries servicing gas or oil wells across the state."[25] Tank batteries that service gas or oil wells are not in the ONGGB industry segment (see also comment 2.2). Therefore, this dataset is irrelevant to ONGGB. If EPA retains this reporting requirement, they must use appropriate data to develop a representative emission estimate. Otherwise, this burdensome data collection effort will result in useless and uniformed emissions information.

10. Acid Gas Removal Vents and the Distinction Between Onshore Natural Gas Processing and Onshore Petroleum and Natural Gas Gathering and Boosting Industry Segments.

CO_2 and sulfur dioxide (SO_2) removal cannot define both a gas processing plant and a gathering and boosting facility.

The definition of a gas processing plant is well established in the context of the Clean Air Act (CAA) and it does not incorporate stand-alone gathering and boosting systems. Gathering and boosting systems can share some similar equipment as gas processing; however, gas processing specifically involves the extraction of natural gas liquids from field gas and/or fractionation of mixed natural gas liquids to natural gas products. EPA confused this in the original 2010 Subpart W rulemaking by including "sulfur and carbon dioxide removal" as criteria for "separation" and therefore criteria for a facility to be considered a gas processing plant. This is not consistent with the definitions of gas processing plants currently codified in 40 C.F.R. Part 60 Subpart KKK, 40 C.F.R. Part 60

[23] EPA Climate Change Division, Greenhouse Gas Emissions Reporting from the Petroleum and Natural Gas Industry, Background Technical Support Document at 134 (Apr. 12, 2010), *available at* http://www.regulations.gov/contentStreamer?objectId=0900006480aae5ed&disposition=attachment&contentType=pdf.
[24] *Id.* at 132.
[25] TCEQ, Air Quality Research and Contract Reports: Emissions Inventory, https://www.tceq.texas.gov/airquality/airmod/project/pj_report_ei.html (last visited Feb. 23, 2015).

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Subpart OOOO, and 40 C.F.R. Part 63 Subpart HH, which limits gas processing plants to those sites engaged in liquid extraction and/or NGL fractionation only.

Under the current definition in Subpart W, acid gas removal (AGR) units are stand-alone gas processing plants and already subject to the reporting requirements in the onshore natural gas processing industry segment. In order to improve consistency between CAA rules and to avoid confusing scenarios where a facility with sulfur and carbon dioxide removal could be applicable to both industry segments and result in duplicative reporting, GPA proposes modifying the "*Onshore natural gas processing*" definition to exclude sulfur and carbon dioxide removal. This would alleviate confusion and potential duplicative reporting and result in only those non-fractionating, non-liquids extraction facilities reporting under the gathering and boosting industry segment.

- 98.230(a)(3) *Onshore natural gas processing. Natural gas processing means the separation of natural gas liquids (NGLs)* ~~***or non-methane gases***~~ *from produced natural gas, or the separation of NGLs into one or more component mixtures. Separation includes* ~~***one or more of the following:***~~ *forced extraction of natural gas liquids*~~***, sulfur and carbon dioxide removal,***~~ ***or*** *fractionation of NGLs*~~***, or the capture of CO2 separated from natural gas streams***~~.

If EPA agrees to modify the onshore natural gas processing definition in section 98.230(a)(3) to exclude sulfur and carbon dioxide removal, GPA is supportive of retaining the annual average throughput of 25 million standard cubic feet (MMscf) per day or greater applicability threshold value for AGRs in the ONGGB industry segment.

If EPA rejects modifying the onshore natural gas processing definition in section 98.230(a)(3) to exclude sulfur and carbon dioxide removal, GPA recommends removing AGRs from the ONGGB industry segment since they are already monitored and reported under the Onshore Natural Gas Processing industry segment. In addition to the definition of onshore natural gas processing in section 98.230(a)(3), AGRs are specifically defined in section 98.238 as a process unit that separates hydrogen sulfide and/or carbon dioxide from sour natural gas using liquid or solid absorbents or membrane separators. Therefore, the inclusion of AGRs in the definition of ONGGB industry segment is redundant and should be removed to avoid confusion and eliminate duplicative reporting.

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Irrespective of EPA's response to the above comments, GPA recommends incorporating provisions into the final rule that addresses the potential for some non-fractionating processing plants with an annual throughput of around 25 MMscf per day to be required to report as part of different industry segments from year to year. First, GPA is supportive of utilizing the 25 MMscf per day or greater applicability threshold value for non-fractionating processing plants in both industry segments. This would allow for consistency between the industry segments, ease the reporting burden, and still capture necessary GHG data. Second, GPA recommends that non-fractionating processing plants always remain subject to only one industry segment for reporting purposes. It is not reasonable or logical to require a facility to change applicable industry segments from year to year based solely on the annual natural gas throughput of the facility. A facility should be defined as and required to report in one or the other, not both segments. This potential industry segment overlap would be eliminated by simply revising the definition of "*Onshore natural gas processing*" in section 98.230(a)(3) as proposed by GPA previously. For example, all stand-alone AGRs would report under the ONGGB industry segment and AGRs located at a facility that extracts or fractionates NGLs would report under the onshore natural gas processing industry segment.

11. Emission Factors

11.1 EPA should allow the use of manufacturer data, test data, measurement and/or monitoring data as an optional alternative to the prescribed emissions factors contained in Subpart W and Subpart C for ONGGB.

GPA supports the use of emissions factors prescribed in Subpart W and Subpart C for the ONGGB. As indicated above, a significant majority of companies in the ONGGB segment have not been subject to an emissions inventory obligation and therefore may not have component counts (e.g., pneumatic devices, pneumatic pumps, fugitive components) nor have major "equipment" counts (e.g., separators, tanks, etc.). In addition, the ONGGB has not been subject to extensive monitoring of methane emissions from sources such as reciprocal compressor engines (seals and rod packing) or centrifugal compressor seals (e.g., wet and dry). Therefore, the use of the prescribed emissions factors does ease the reporting burden for the ONGGB and should remain in the finalized rule.

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11.2 GPA recommends that the rule allow the ONGGB industry segment to report their emissions based on data/information that provides the best representation of emissions from their specific sources.

Such data/information may include, but not be limited to: manufacturer data (e.g., pneumatic controller gas volume, flare performance specifications, etc.), emissions test data (e.g., engine stack test data), and measuring/monitoring data (e.g., storage tank measurements, compressor rod packing and seal emissions, equipment leaks). Companies should not be required to test, measure, or monitor every source in lieu of using the prescribed emissions factors, but should be allowed to use this data as representative of their emissions.

This is a very common approach in state level "criteria pollutant" emissions inventories in which an emissions reporting hierarchy is applied. The reporting hierarchy includes: (1) source-specific emissions testing, measurements, monitoring; (2) representative emissions based on testing, measurement, and/or monitoring of in-kind sources; (3) manufacturer specifications; (4) emissions estimation tools (e.g. EP Tanks, Glycalc); (5) established emissions factors (e.g. AP-42); and (6) engineering estimates.

We believe that by allowing the use of this data, as an optional alternative to the prescribed emissions factors, the agency over time will acquire sufficient data to revise the existing prescribed emissions factors (many of which are based on studies that are almost two decades old). The use of better or more accurate emissions data will also allow companies (and the EPA) to more accurately reflect whether reported emissions are increasing or decreasing (since by using factors, a decrease or increase is merely reflective of the accuracy or change in "unit" counts).

12. Combustion Calculation Methods

12.1 EPA should provide reporters with the option of using either calculation method (1) or (2) under section 98.233(z).

12.2 EPA is setting a new precedent by deviating from previously accepted compliance methods within the same source category.

Since 2011, EPA has required owners and operators of boosting stations with emissions exceeding 25,000 mt CO_2e to calculate and report combustion emissions using methods listed in Subpart C of this part. Many owners and operators who would be required to report under the new ONGGB industry

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segment have already been reporting combustion emissions, for sites in the same industry segment, under Subpart C of this part. Requiring these same reporters to now use a *different* calculation methodology sets an unfair precedent, and imposes additional reporting burdens by deviating from previously accepted compliance methods. GPA suggests that the existing combustion calculation methodology used in Subpart C is sufficiently accurate for future use at all booster stations. Differences in the heating values between fuel types used for combustion sources within the gathering and boosting industry segment is expected to result in minor differences in GHG emissions. GPA does recognize that EPA models this reporting methodology after one that is already in use in the Onshore Petroleum Natural Gas Production industry segment, however, one size does not fit all. What works for the Onshore Petroleum Natural Gas Production will not work necessarily work in the ONGGB category. Onshore Petroleum Natural Gas Production and ONGGB are differentiated as source categories because of their vastly different functions and equipment.

12.3 EPA does not provide a detailed cost or time analysis to justify the use of a new calculation methodology.

Appendix B of EPA's supporting documentation details cost and time burden for years 1 through 3 of reporting. However, EPA fails to provide a detailed cost estimate for the additional combustion reporting using new methodologies for the source category.

12.4 The cost and time burden of a new calculation methodology does not justify the negligible difference in emissions provided by the different methodologies.

GPA recognizes that EPA is trying to account for the differences in fuel gas used in combustion equipment. However, GPA does not agree with EPA that this distinction is warranted. Depending on fuel type, there could be anywhere from a 0-15% difference in emissions between the calculation methodologies. In the overall inventory this is negligible and does not justify the additional substantial burden that would be imposed. Additional fuel sample analyses would be required and current environmental management systems would have to be reprogrammed. In addition, there would be a significant new cost for training associated with a new calculation. Staff would need to be trained on how to gather and collect the data, as well as, separate staff trained to manage, calculate, and report the data. While there would be costs associated with expanded reporting regardless of method, use of a prior method would allow staff to use methods that have been in place since the birth of the GHG Reporting Rule.

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13. Equipment Leaks by Population Count

13.1 The major equipment categories are unclear and possibly not applicable to the ONGGB industry segment.

GPA appreciates that EPA is proposing a population count method for estimating equipment leak emissions for the ONGGB industry segment. However, EPA has simply tacked on the ONGGB industry segment to the existing requirements for the onshore production industry segment. Due to limited time to provide comments, GPA was not able to evaluate the emission factors in Table W-1A and whether they are appropriate for ONGGB. GPA was also not able to investigate the source of data for Table W-1B and whether those counts are appropriate for ONGGB. However, GPA is concerned about the types of "major equipment" in Table W-1B.

13.2 ONGGB facilities will not have wellheads, so this equipment type is not applicable.

13.3 GPA is unclear what EPA means by "separators."

Does this refer to all vessels at a gathering and boosting compressor station that separate liquid by phases? As noted in previous comments, the high pressure separators and low pressure separators typically found at production sites are not necessarily the same types of separators that are used at ONGGB compressor stations. ONGGB compressor stations typically do not have "wellhead separators" because they do not typically have wellheads onsite. Many ONGGB compressor stations have a separator vessel at the inlet of the facility to separate liquids that condensed in the gas pipeline. The gas proceeds through the compressor train, which typically also includes compressor interstage knockout drums, which are separators. It is unclear if these interstage knockout separators should be included in the "separator" count, because "compressors" are another, separate major equipment type.

13.4 GPA does not understand how to count "meters/piping."

Section 98.233(r)(2)(i)(A) says, "[f]or meters/piping, use one meters/piping per well-pad." There are no wellpads at ONGGB facilities, so would this count always be zero?

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13.5 GPA does not understand what "in-line heaters" are at ONGGB facilities.

Sometimes at facility inlet and/or outlet meters, there may be small heating systems to ensure a temperate environment for the meter, but GPA does not think these are in-line heaters. The component counts here are very high, so GPA needs to understand how EPA thinks this major equipment type applies to ONGGB facilities.

14. Assumptions and Cost Estimates

14.1 GPA does not understand how EPA's estimate of 200 ONGGB respondents was derived.

In the Assessment of Impacts, EPA states that "[a]ccording to the Office of Pipeline Safety (OPS), there are 400 natural gas gathering pipeline operators under regulation by OPS. OPS estimated that 50% of these operators are potentially subject to the new regulation (depending upon proximity to population centers), resulting in approximately 200 reporters." Further, in the Supporting Statement, Appendix B, footnote "e," EPA states; "[a]ssuming that 50% of the 400 natural gas gathering pipeline reporters are large diameter, high pressure lines potentially subject to regulation." GPA fails to understand how "proximity to population centers," pipeline diameter, or pipeline pressure relate to rule applicability. If an ONGGB facility is aggregated across a county or a basin, it is more likely that combustion emissions will exceed reporting thresholds long before pipeline blowdown emissions come close. In addition, EPA estimates that the number of reporters under the Onshore Natural Gas Processing industry segment will total 291 reporters. GPA wishes to point out that by the nature of the industry, any company with a processing plant will most likely also have an associated gathering system subject to reporting, therefore the number of reporters in the ONGGB industry segment will total 291, at minimum, but potentially more.

14.2 EPA's assumption on the average reporter is inaccurate and unsubstantiated.

In Appendix B of EPA's technical support documents, EPA estimates large facilities have four centrifugal compressors and small facilities have two reciprocating compressors. GPA asserts that this assumption is inaccurate. Specifically, in the ONGGB sector there are only a handful of centrifugal compressors. The nature of centrifugal compressors does not yield themselves to the ONGGB industry segment. Centrifugal compressors have much less operational flexibility and do not yield themselves to changing loads, which makes them unsuitable for the ONGGB industry segment. GPA asserts that three

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to five reciprocating compressors is a more accurate estimate, with some facilities having one or two and some larger facilities at least 12 or more reciprocating compressors.

14.3 EPA estimates that sites within the ONGGB industry segment have "two flare stacks per compression station and one per gas treatment facility."

While GPA acknowledges that the presence of flares at compression stations is becoming more common, it is inaccurate to assume that each compression station has two flares. In Table 1 of GPA's comments, we assume that approximately 20% of compression sites have a flare, with some having none, and some having more than one.

14.4 EPA estimates that at each gathering and boosting station has "one isolation valve/blowdown stack."

GPA states that this statement inaccurate. Due to safety considerations at each site the average compressor station has a blowdown valve at each station inlet and discharge. It should be noted that many sites may have more than one inlet per site. In addition each major piece of equipment on site, such as a compressor will have an individual unit blowdown. Depending on the size of the site this totals at least three or more blowdown stacks.

14.5 GPA wishes to reconcile the gap between EPA's assumptions and the information contained in the *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2012.*

In the inventory document EPA states that across the North East, Midcontinent, West Coast, Gulf Coast, and Rocky Mountain regions, combined, there are 35,930 small compressors and 136 large compressors. This totals 36,066 compressors. If GPA uses EPA's assumption of three compressors on average per site, this will total 12,022 sites. Using EPA's assumption of eight compression sites per basin, GPA calculates that there are 1,502 basins that will be reported. Again, if GPA uses EPA's assumption of one basin per reporter then GPA calculates that there will 1,502 reporters.

14.6 EPA's cost and time estimates are extremely low.

EPA stated in the preamble that, "[t]he proposed amendments to subpart W are not expected to significantly increase burden." We respectfully disagree and believe the proposed rule is very expansive and burdensome as written. As demonstrated below, EPA's estimates of burdens and costs are extremely low and the compliance burden is much more than EPA has estimated. EPA estimates that

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there are three gathering and boosting compressor stations per processing plant (plus one compressor station downstream of gas treatment). This estimate is low, but even still, this means that for each gas processing plant, there is a threefold increase in the number of facilities that need to be tracked *plus* all the pipeline associated with those facilities. Under the proposed rule, one GPA member estimates going from reporting 60 gas plants to reporting 900 compressor stations plus the entire pipeline system associated with those compressors stations.

Without looking at any other numbers, this information alone is enough to realize this rule, as proposed, will be a very significant increase in burden; therefore, we ask EPA to implement the many suggested revisions to significantly reduce the compliance burden.

14.6.1 Respondent activities.

In the Support Statement, section 4(b) EPA lists the activities that a respondent performs:

> *The primary tasks that reporting program respondents perform include:*
>
> *1. Implementing and updating, as necessary, appropriate monitoring plans for each affected source and each affected unit at a source, as applicable;*
>
> *2. Conducting operation and maintenance activities associated with the monitoring, including quality assurance activities;*
>
> *3. Ensuring data quality, preparing annual reports of emissions data, and submitting these reports to the EPA;*
>
> *4. Potentially responding to questions or error messages from the EPA; and*
>
> *5. Maintaining records for a minimum of three years.*[26]

However, in Appendix B of the Supporting Statement, only some of those activities were included, and the time estimates for those activities are much less than reality. It does not appear that EPA accounted for the time to implement and update monitoring plans, collect samples and conduct

[26] Supporting Statement at 10-11.

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required analyses as needed, conduct quality assurance activities, ensure data quality, and respond to questions or error message from EPA.

14.6.2 EPA's estimate of total respondent time is significantly underestimated and unreasonable.

Section 6(a) states that the total annual burden to all affected entities is 63.4 hours per year. We urge EPA to reevaluate this determination. It is not reasonable to assume that it would that it will take a reporter just eight business days to: review the rule; understand the rule; develop training materials; train all affected personnel; develop a budget; hire and schedule contractors where needed; evaluate facility applicability; update the monitoring plans; develop recordkeeping systems; collect all the data; collect and analyze gas samples; perform all the calculations; run all software simulations; QA/QC all the raw data and calculated results; determine if there was any missing data; format all the data into the correct reporting form (which can include XML programming); and review the final reports with the certifying official.

Even for the smallest entity that would only submit one report (as EPA incorrectly assumes all reporters to be), this is an unreasonable estimate. If a one-hour training session was held with 8 people, it would use up $1/8^{th}$ of the total estimated time. Due to staff turnover, nearly none of these requirements is a "one-time only" requirement. Reading and understanding the rule and training personnel are ongoing tasks. According to Appendix D of the Supporting Statement, EPA estimates the total time burden for ONGGB to be 9,297 hours for 200 reporters, which is just 46.5 hours per reporter—or just six business days. EPA should revisit and revise these inaccurate time estimates. We believe that several orders of magnitude increase in time is warranted, if not more. Many Subpart W reporters and GPA members have full time staff whose job, sometimes year-round, is managing the GHGRP. These positions do not generate revenue for the company and they only exist because it is not possible to meet the regulatory requirements otherwise. GPA assures EPA that these positions would not exist if it truly only took one full time employee a week and a half to comply with this rule.

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15. Other Reporting Requirements

15.1 GPA asserts that the proposed reporting element in section 98.236(aa)(10)(ii), "[t]he quantity of produced gas consumed in the calendar year, in thousand standard cubic feet," should be treated as Confidential Business Information (CBI).

EPA is proposing that this new data element not be designated CBI because it "is not likely to affect the competitive position of the company" and "the information will be aggregated."[27] This information should be designated as CBI for the following reasons. First and most importantly, revealing this information could result in competitive harm. Information on fuel consumed at gathering and boosting stations is not typically publically available and this information directly indicates the fuel efficiency of a station. While a station's contract may be established for long periods of time, contracts at other stations owned by the same company may be renegotiated at any given time. These contracts are not publically available and are negotiated privately. If information is available through the Greenhouse Gas Reporting Rule that negatively reflects on an ONGGB company's fuel efficiency, this could lead to a competitive disadvantage in negotiating any open contracts within or outside of that basin.

Additionally, EPA is also requesting the data element section 98.236(aa)(10)(i) "[t]he quantity of produced gas throughput in the calendar year, in thousand standard cubic feet." If both the throughput and the fuel use are publically available, then fuel efficiency (throughput divided by fuel use) is publically available. This could lead to competitive disadvantage, especially if not all ONGGB owners and operators are reporting because they are below the reporting threshold. Indeed, even if this fuel efficiency was available for every single ONGGB owner and operator nationwide, this would result in competitive information that would not be publically available otherwise, and this could alter how contracts are negotiated. GPA does not think that EPA intends to alter this contract negotiation process, but making this data publically available could do just that. Finally, EPA states that because this information is aggregated, it should not be CBI. However, EPA does not account for a scenario where an operator may only have one (or a small number) of stations within the reporting facility. As previously stated, even aggregated information could lead to competitive disadvantage.

[27] *See* Proposed Rule at 73,169.

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15.2 GPA does not understand what the terms "produced gas," "produced condensate," and "produced oil" mean in section 98.236(aa)(10).

These are terms that are relevant to the Onshore Production industry segment, but they are not relevant to the ONGGB industry segment.

15.2.1 In section 98.236(aa)(10)(i), EPA requests "[t]he quantity of produced gas throughput in the calendar year."

How is this "produced gas" distinct from "natural gas" which is the term used in section 98.236(aa)(3)(i) for natural gas processing? The gas that is gathered and boosted in the ONGGB industry segment is effectively the same type of gas that enters a gas plant.

15.2.2 In section 98.236(aa)(10)(ii), EPA requests "[t]he quantity of produced gas consumed in the calendar year."

Again, what does EPA mean by "produced gas" in this instance. It is common for gathering and boosting stations to use residue gas from the downstream gas processing plant for fuel. In these scenarios, is this type of clean fuel gas considered to be "produced gas?"

15.2.3 In section 98.236(aa)(10)(iii), EPA requests "[t]he quantity of produced condensate throughput in the calendar year."

As noted in an earlier comment, GPA does not typically consider the condensate that formed in the gathering pipeline to be "produced condensate." Would the condensate that condensed in the gathering pipeline not be reported under this data element? Also, what does EPA mean by "throughput" since condensate is formed within a gathering system? GPA assumes that EPA must mean the total condensate that exits the gathering system, but we request clarification.

15.2.4 In section 98.236(aa)(10)(iv), EPA requests, "[t]he quantity of produced oil throughput in the calendar year."

GPA is unclear what an ONGGB facility owner or operator would report here. Oil is not produced in the ONGGB industry segment. This data element should be deleted.

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15.3 The data element in section 98.236(aa)(10)(ii), "quantity of produced gas consumed," is redundant of Subpart C and must be deleted.

GPA does not understand what information EPA is attempting to collect here. GPA assumes that by "consumed," EPA means "combusted." We do not understand how this data element differs from Subpart C. Subpart C contains extensive reporting requirements that are tailored for various fuel accounting systems. This data element is redundant of Subpart C, and including it here will cause confusion and additional work to try to boil down and combine the complex Subpart C reported data into this one single line item. This data element also undermines the specifically crafted exemptions that Subpart C allows, such as fuel used by pilot lights.[28]

15.4 EPA must remove the reporting element in section 98.236(10)(aa)(v), "[t]he quantity of gas flared, vented and/or unaccounted for in the calendar year, in thousand standard cubic feet."

15.4.1 This data element undermines over five years of Subpart W rule development, public comment, reconsiderations, and petitioner negotiations.

The purpose of the extensive and prescriptive data collection, quality assurance, calculation, and reporting requirements of Subpart W is to consistently account for gas vented and flared in Petroleum and Natural Gas Systems. This single data element effectively requests all the same information, but without any guidance or standard methods. This also undermines the equipment specific provisions to ease reporting burden, such as the exclusion of blowdowns less than 50 cubic feet physical volume.[29] These blowdowns would have to be reported under this data element. Thus, this data element undermines over five years of rule development, public comment, reconsiderations, and petitioner negotiations.

15.4.2 Prior to the proposed rule, "unaccounted for" gas has been specifically exempted from reporting in Subpart W.

[28] 40 C.F.R. § 98.30(d); *see also id.* § 98.30(b).
[29] *Id.* § 98.233(i)(2).

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For natural gas distribution, section 98.236(aa)(9)(iv) says, "[t]he quantity of natural gas delivered to end users, in thousand standard cubic feet. This value does not include stolen gas, or gas that is otherwise unaccounted for," and section 98.236(aa)(9)(v) says, "[t]he quantity of natural gas transferred to third parties such as other LDCs or pipelines, in thousand standard cubic feet. This value does not include stolen gas, or gas that is otherwise unaccounted for." Why is EPA requesting the ONGGB industry segment to report "unaccounted for" gas when EPA has specifically exempted the natural gas distribution industry segment from reporting "unaccounted for" gas?

15.4.3 Gas that is "unaccounted for" should not be lumped together with gas that is flared and vented.

EPA does not define what "unaccounted for" gas means. GPA assumes this means the difference between the quantities of gas measured at the inlets to the ONGGB facility and the quantities of gas measured at the outlets of the ONGGB facility (which includes measured vents, measured flares, measured condensate production, measured fuel use, measured process gas use, and measured process gas). "Unaccounted for" means just that—the gas was not accounted for. This could be due to lack of measurement points or meter calibration discrepancies. "Unaccounted for" does not necessarily mean that gas was lost to atmosphere. Yet by having this data element that says, "quantity of gas flared, vented and/or unaccounted for," EPA seems to imply that this gas was emitted to atmosphere. As such, this reporting element would yield very misleading information for the EPA and the public (as EPA proposed that this data element is not CBI).

15.4.4 Performing a facility-wide mass balance is very challenging and reporters will not perform these balances consistently.

First, EPA is requesting that a mass balance be reported on each ONGGB facility, which EPA has defined as all ONGGB equipment within a basin. As noted in a previous comment, gathering systems may span across multiple basins. Thus, under the proposed rule, an ONGGB facility may not align with how the gathering system is situated. Owners and operators will typically perform mass balances across a gathering system, and their measurement systems are set up for these determinations. However, if the gathering system spans multiple basins, the measurement systems will not

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be configured to perform such a mass balance. It may not even be possible to perform such a mass balance or it will require significant work to establish a secondary mass balance just for the GHG Reporting Rule.

Also, as noted above, to perform a mass balance on a system, one must evaluate measured vents, measured flares, measured condensate production (from gas turning into condensate) (where condensate must be converted to a gas equivalent), measured fuel use, measured gas from production sites or upstream ONGGB compressor stations, measured non-fuel use of process gas or fuel gas (such as for stripping gas or pneumatic systems) and measured process gas exiting the system. This is a very complex analysis, and not all operators will perform it the same way. For example, some condensate that is produced in ONGGB (from gas condensing into condensate) is "credited" to the producer, and different operators may account for this credited condensate differently; some will view it as "lost" gas. Also, this data element may unfairly disadvantage owners and operators who do not have extensive measurement networks. This reporting element will make it look like those companies "lose" more gas than others, but it is not necessarily "lost"; it is simply unaccounted for.

15.5 GPA asserts that the proposing reporting element in section 98.236(aa)(10)(i), "[t]he quantity of produced gas throughput in the calendar year in thousand standard cubic feet," should be treated as CBI.

EPA has stated, "[w]*e have decided to maintain the annual quantity of natural gas received at gas plants and the annual quantity of processed (residue) gas leaving gas plants as confidential*."[30] The EPA should allow businesses to determine the confidentiality of the gas received because ONGGB companies have contract agreements with producers that could allow for competitive harm. In fact, as noted in Table 3, under the Proposed Confidentiality Determinations and Rationale the statement, "*[o]nce these agreements are established, information on the actual throughput of the gathering and boosting system* ***is not likely*** *to affect the competitive position of the company operating the gathering and boosting system . . .*"[31] The GPA questions the phrase "is not likely." The main scope of the GHG inventory is to provide information concerning the

[30] Greenhouse Gas Reporting Rule: 2014 Revisions and Confidentiality Determinations for Petroleum and Natural Gas Systems, 79 Fed. Reg. 70,352, 70,375 (Nov. 25, 2014) (emphasis added).
[31] Proposed Rule at 73,170 (emphasis added).

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greenhouse gases on an annual basis at a facility or facilities and should not involve publicizing the input values.

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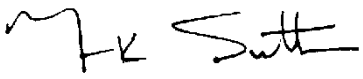
Thank you for the opportunity to comment on the proposed GHG Reporting Rule revisions and confidentiality determinations for Petroleum and Natural Gas Systems. GPA is willing to further engage on this issue with EPA. Please contact me at (918) 493-3872 or msutton@GPAglobal.org if GPA can be of assistance.

Respectfully Submitted,



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APPENDIX

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Table 1. Booster Stations

COST ESTIMATE - Year 1 through 3

EPA's GHG Mandatory Reporting Rule (Proposed Subpart W)

Citation	DESCRIPTION		QTY. Yr 1	QTY. Yr. 2 - future years	UNIT PRICE	National Count*	Total Yr. 1	Total Yr. 2 - future	Total 3 Reporting Years
98.233(a)	Pneumatic Pumps and Devices								
	Inventory and maintain pneumatic device inventory	hr	1.25	1.25	$ 100	12,022	$ 1,502,750	$ 1,502,750	$ 4,508,250
	Inventory and maintain pneumatic pumps inventory	hr	0.5	0.5	$ 100	12,022	$ 601,100	$ 601,100	$ 1,803,300
	Classify device into appropriate category	hr	1.25	1.25	$ 100	12,022	$ 1,502,750	$ 1,502,750	$ 4,508,250
98.233(d)	Acid Gas Removal Vent Stack								
	Sample collection and logging	hr	6	6	$ 100	1,202	$ 721,320	$ 721,320	$ 2,163,960
	Quarterly gas samples and analyses of outlet gas		4	4	$ 400	1,202	$ 1,923,520	$ 1,923,520	$ 5,770,560
98.233(e)	Dehydrators								
	Assume most dehys are modeled	hr	0.5	0.5	$ 100	1202	$ 60,110	$ 60,110	$ 180,330
	Gather dehy data	hr	1	1	$ 100	12,022	$ 1,202,200	$ 1,202,200	$ 3,606,600
	Feed gas sampling analysis		1	1	$ 1,000	1202	$ 1,202,200	$ 1,202,200	$ 3,606,600
	Feed gas water content		1	1	$ 25	12,022	$ 300,550	$ 300,550	$ 901,650
	Dry gas water content		1	1	$ 25	12,022	$ 300,550	$ 300,550	$ 901,650
98.233(i)	Blowdown Vent Stacks								
	Write procedure and conduct training	hr	2	0.5	$ 100	3,006	$ 601,100	$ 150,275	$ 901,650
	Determine volume between isolation valves	hr	8	1	$ 100	12,022	$ 9,617,600	$ 1,202,200	$ 12,022,000
	Retain logs of blowdown events	hr	8	8	$ 100	12,022	$ 9,617,600	$ 9,617,600	$ 28,852,800
98.233(j)	Storage Tanks								
	Tank modeling	hr	0.5	0.5	$ 300	9,017	$ 1,352,475	$ 1,352,475	$ 4,057,425
	Sampling separator composition and analysis		1	1	$ 1,000	12,022	$ 12,022,000	$ 12,022,000	$ 36,066,000
	Write procedure and conduct training	hr	2	0.5	$ 100	3,006	$ 601,100	$ 150,275	$ 901,650
	Retain logs of events	hr	8	8	$ 100	12,022	$ 9,617,600	$ 9,617,600	$ 28,852,800
98.233(n)	Flare Stack								
	Estimate flare volumes, determine representative composition and efficiency	hr	12	12	$ 100	2,404	$ 2,885,280	$ 2,885,280	$ 8,655,840

Table 1. Booster Stations

COST ESTIMATE - Year 1 through 3

EPA's GHG Mandatory Reporting Rule (Proposed Subpart W)

Citation	DESCRIPTION		QTY. Yr 1	QTY. Yr. 2 - future years	UNIT PRICE	National Count*	Total Yr. 1	Total Yr. 2 - future	Total 3 Reporting Years
98.233(p)	Reciprocating Compressors								
	Inventory Management	hr	1	0.5	$ 100	12,022	$ 1,202,200	$ 601,100	$ 2,404,400
98.233(r)	Fugitive Emissions								
	Maintain major equipment	hr	4	0.5	$ 100	12,022	$ 4,808,800	$ 601,100	$ 6,011,000
98.233(r)	Gathering Pipeline Fugitive								
	Determine gathering line length	hr	4	1	$ 100	1,503	$ 601,100	$ 150,275	$ 901,650
	Determine appropriate basin assignment	hr	4	0.5	$ 100	1,503	$ 601,100	$ 75,138	$ 751,375
98.233(z)	Combustion								
	Determine fuel consumption through company records (Tier 1 or 2)	hr	1	1	$ 100	12,022	$ 1,202,200	$ 1,202,200	$ 3,606,600
	Data Management								
	Data management system configuration	hr	5	1	$ 100	12,022	$ 6,011,000	$ 1,202,200	$ 8,415,400
	ONGGB facility threshold determination	hr	1	0.25	$ 100	12,022	$ 1,202,200	$ 300,550	$ 1,803,300
	Pneumatic Pumps and Devices	hr	1	1	$ 100	12,022	$ 1,202,200	$ 1,202,200	$ 3,606,600
	Acid gas removal vent stack	hr	1	1	$ 100	12,022	$ 1,202,200	$ 1,202,200	$ 3,606,600
	Dehydrators	hr	1	1	$ 100	12,022	$ 1,202,200	$ 1,202,200	$ 3,606,600
	Blowdown vent stacks	hr	1	1	$ 100	12,022	$ 1,202,200	$ 1,202,200	$ 3,606,600
	Storage tanks	hr	1	1	$ 100	12,022	$ 1,202,200	$ 1,202,200	$ 3,606,600
	Flare stacks	hr	1	1	$ 100	2,404	$ 240,440	$ 240,440	$ 721,320
	Reciprocating compressor	hr	0.25	0.25	$ 100	12,022	$ 300,550	$ 300,550	$ 901,650
	Fugitive emissions	hr	1	0.25	$ 100	12,022	$ 1,202,200	$ 300,550	$ 1,803,300
	Gathering Pipeline Fugitive	hr	1	0.25	$ 100	12,022	$ 1,202,200	$ 300,550	$ 1,803,300
	Combustion	hr	4	1	$ 100	12,022	$ 4,808,800	$ 1,202,200	$ 7,213,200
	Reporting and Compliance Management								
	Training	hr	2	1	$ 120	3,006	$ 721,320	$ 360,660	$ 1,442,640
	Monitoring Plan Development/Revisions	hr	3	0.5	$ 120	12,022	$ 4,327,920	$ 721,320	$ 5,770,560
98.234	Data QA/QC	hr	1	1	$ 120	12,022	$ 1,442,640	$ 1,442,640	$ 4,327,920
98.235	Missing data requirements	hr	0.5	0.5	$ 100	12,022	$ 601,100	$ 601,100	$ 1,803,300

Table 1. Booster Stations

COST ESTIMATE - Year 1 through 3

EPA's GHG Mandatory Reporting Rule (Proposed Subpart W)

Citation		DESCRIPTION		QTY. Yr 1	QTY. Yr. 2 - future years	UNIT PRICE	National Count*	Total Yr. 1	Total Yr. 2 - future	Total 3 Reporting Years
98.236		Reporting	hr	2	2	$ 120	12,022	$ 2,885,280	$ 2,885,280	$ 8,655,840
98.237		Records retention	hr	0.5	0.5	$ 100	12,022	$ 601,100	$ 601,100	$ 1,803,300
							Total cost Yr 1:	**95,604,955**	Total cost Yr 1-3:	**$226,400,000**

* 36,066 Compressors Nationally: Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2012

12,022 Gathering and Boosting Sites Nationally

	EPA Cost	GPA Cost
Per Gathering and Boosting Site for Year 1:	N/A	$ 7,953
Per Gathering and Boosting Site for Year 1-3:	N/A	$ 18,832
Per Reporter for Years 1-3 [1, 2]:	**$ 9,499**	**$ 150,657**

Difference between GPA cost and EPA cost: **1586%**

[1] Greenhouse Gas Emissions Reporting from the Petroleum and Natural Gas Industry, Background Technical Support Document, Supporting Statement Environmental Protection Agency. Page 18

[2] GPA cost is derived by using EPA's assumption of 8 compression sites per basin

EPA's GHG Mandatory Reporting Rule (Proposed Subpart W)
Gas Processing Plant and Booster Station Cost Assumptions

Table 1. Booster Stations

General

Number of Booster Stations based on EPA count of gathering compressors in the Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2012

3 compressors per station

Spreadsheet estimates Year 1 through 3 costs

Pneumatic Pumps and Devices

Assume that the inventory of pneumatic devices is spread over 3 years as is allowed in the rule

Inventory labor includes travel to and from the booster site

Assumes that more than one site will be visited per trip

Assume that the pneumatic pump inventory will be done while on site for pneumatic device inventory

Acid Gas Vents

10% of booster stations have acid gas treatment

Outlet gas requires sampling

Assume inlet gas is currently being sampled

Sampling includes travel to and from booster station

Dehydrators

Assume 1 dehy per booster station

Assume 10% of dehys not currently being modeled for other compliance requirements

Feed gas extended analysis, feed gas water content and dry gas water content require sampling

Sampling labor includes travel to and from the booster station

Blowdown Vent Stacks

Includes training to ensure consistent determination of equipment volumes and tracking of blowdowns

Assume one operator for every four sites

Storage Tanks

Costs for tank modeling are based on 1 tank per booster station and a half hour to model each tank

Assume that 75% of tanks will require modeling

Assume half modeled by third party at $400 each

Sampling costs are based on 1 separators per booster station

Costs for a pressurized hydrocarbon sample, run lab extended analysis and lab report can vary

A value of $1,000 is applied for the separator analyses

Includes training to ensure consistent determination of equipment volumes and tracking of blowdowns

Assume one operator for every four sites

Flares

20% of booster stations have flare

Labor includes time to determine flare gas rate, representative gas sample, and flare efficiency

Centrifugal Compressor

No centrifugal compressors used for gathering

Reciprocating Compressor

Inventory management cost has been applied to this category

Assume 3 compressors per booster station

Fugitive Emissions

Inventory management cost has been applied to this category

Gathering Pipeline Fugitive Emissions

Cost assumes that the reporting burden is spread amongst the basin

EPA's assumption of 8 booster stations per basin was used

Gathering pipelines have to be "assigned" to a basin for reporting

Combustion

Assume all booster stations in ONGGB industry segment will require combustion calculations

Assume one meter per booster station

Assume use of new calculation methodology for this industry segment

Data Management

Assume data management system exists, requires modifications for Subpart W reporting

Reporting and Compliance Management

Costs based on individual booster station costs