SUPPORTING STATEMENT
ENVIRONMENTAL PROTECTION AGENCY

Information Collection Request for the Greenhouse Gas Reporting Rule: Revisions and Confidentiality Determinations for Petroleum and Natural Gas Systems; Proposed rule (May 2023).

1. IDENTIFICATION OF THE INFORMATION COLLECTION

1(a) Title of the Information Collection

Greenhouse Gas Reporting Rule: Revisions and Confidentiality Determinations for Petroleum and Natural Gas Systems; Proposed rule; OMB control number 2060-NEW; ICR number 2774.01.

1(b) Short Characterization/Abstract

In response to the FY2008 Consolidated Appropriations Act (H.R. 2764; Public Law 110-161) and under authority of the Clean Air Act (CAA), the EPA finalized a greenhouse gas reporting rule in October of 2009 (henceforth referred to as the Greenhouse Gas Reporting Program or GHGRP) (74 FR 56260; October 30, 2009). The rule, which became effective on December 29, 2009, requires reporting of greenhouse gases (GHGs) from certain large facilities and suppliers.

The GHGRP requires that sources emitting GHGs, supplying certain products that contain GHGs, or injecting carbon dioxide (CO_2) underground in quantities above certain threshold levels of CO_2 equivalent (CO_2e) monitor and report GHG data and other relevant information. Subsequent rules have promulgated requirements for additional facilities, and suppliers; provided clarification and corrections to existing requirements; and finalized confidential business information (CBI) determinations, amended recordkeeping requirements, and implemented an alternative verification approach.

This supporting statement addresses information collection activities that would be imposed by the proposal "Greenhouse Gas Reporting Rule: Revisions and Confidentiality Determinations for Petroleum and Natural Gas Systems; Proposed rule" (hereafter referred to as the "proposed revisions").

The proposed revisions would amend the petroleum and natural gas systems source category of the Greenhouse Gas Reporting Rule to ensure that reporting is based on empirical data and accurately reflects total methane emissions and waste emissions from applicable facilities, and allows owners and operators of applicable facilities to submit empirical emissions data to demonstrate the extent to which a charge is owed. These proposed revisions include improving the existing calculation, recordkeeping, and reporting requirements. These proposed revisions also establish and amend confidentiality determinations for the reporting of certain data elements to be added or substantially revised in these proposed revisions.

Compared with the estimated respondent burden identified in the information collection for the GHGRP currently approved by Office of Management and Budget (OMB), this proposed information collection would result in an average annual incremental burden of 417,821 hours and $92,311,035 over the three years covered by this information collection, which includes an annual average of $41,413,037 in labor costs, $31,784,577 in operation and maintenance costs, and $19,113,421 in capital costs. The annual average incremental burden to the EPA for this period is anticipated at 2,080 hours and $126,730 ($2021) over the three years covered by this information collection.

2. NEED FOR AND USE OF THE COLLECTION

2(a) Need/Authority for the Collection

The EPA is proposing this information collection under its existing Clean Air Act (CAA) authority provided in CAA section 114. As stated in the October 30, 2009 preamble to part 98 (74 FR 56260), CAA section 114(a)(1) provides the EPA broad authority to require the information proposed to be gathered by part 98 because such data would inform and are relevant to the EPA's carrying out a wide variety of CAA provisions. Additionally, the FY2008 Consolidated Appropriations Act directed the EPA to "develop and publish a draft rule not later than 9 months after the date of enactment of this Act, and a final rule not later than 18 months after the date of enactment of this Act, to require mandatory reporting of greenhouse gas emissions above appropriate thresholds in all sectors of the economy of the United States."

The accompanying explanatory statement further directed the EPA to "use its existing authority under the Clean Air Act" to develop a GHG reporting rule. "The Agency is further directed to include in its rule reporting of emissions resulting from upstream production and downstream sources, to the extent that the Administrator deems it appropriate. The Administrator shall determine appropriate thresholds of emissions above which reporting is required, and how frequently reports shall be submitted to EPA.

Section 114 of the CAA provides the EPA authority to require the information mandated by the GHGRP because such data will inform and are relevant to future policy decisions. CAA section 114(a)(1) authorizes the Administrator to require emissions sources, persons subject to the CAA, or persons whom the Administrator believes may have necessary information to monitor and report emissions and provide such other information the Administrator requests for the purposes of carrying out any provision of the CAA. For these reasons, the Administrator may request that a person, on a one-time, periodic, or continuous basis establish and maintain records, make reports, install and operate monitoring equipment and, among other things, provide such information the Administrator may reasonably require.

These proposed revisions include improvements to existing calculation, recordkeeping, and reporting requirements. These proposed revisions also establish and amend confidentiality determinations for the reporting of certain data elements to be added or substantially revised in these proposed revisions. The proposed revisions would maintain the quality of the data collected under part 98 where continued collection of information assists in evaluation and support of EPA

programs and policies. In some cases, the proposed revisions would improve the EPA's ability to assess compliance (by revising or adding recordkeeping or reporting elements that allow the EPA to more thoroughly verify GHG data and understand trends in emissions) and advance the ability of the GHGRP to provide access to quality data on GHG emissions (by adding new source categories to address potential gaps in reporting of emissions data for specific sectors, adding or revising calculation methodologies to reflect an improved understanding of emissions sources and end uses, or adding key data elements to improve the usefulness of the data). In conjunction with this action, the EPA is proposing confidentiality determinations for the new and substantially revised data elements contained in these proposed revisions.

2(b) Practical Utility/Users of the Data

The GHGRP collects information from facilities that directly emit GHGs or inject CO_2 underground and from suppliers of certain products that contain GHGs. Reporting entities use uniform methods for calculating emissions, which enables data to be compared and analyzed. The comprehensive GHG data reported directly from large facilities and suppliers across the country are easily accessible to the public via the EPA's online data publication tool, also known as FLIGHT (Facility Level Information on Greenhouse gases Tool) at: *https://ghgdata.epa.gov/ghgp/main.do*. FLIGHT is designed for the general public and allows users to view and sort GHG data for every reporting year starting with 2010 from over 8,000 entities in a variety of ways including by location, industrial sector, and type of GHG emitted. To support the needs of data users, all non-confidential data collected through the GHGRP are made available for download through Envirofacts (*https://www.epa.gov/enviro/*), a cross-EPA data publication website.

Data collected through the GHGRP complement the Inventory of U.S. Greenhouse Gas Emissions and Sinks (Inventory) and are used to significantly improve our understanding of key emissions sources by allowing the EPA to better reflect changing technologies and emissions from a wide range of industrial facilities.

The GHGRP data have also been used to support CAA policy in numerous ways. For example, GHGRP data on Petroleum and Natural Gas Systems (subpart W) were analyzed to inform targeted improvements to the 2016 New Source Performance Standards (NSPS) for the oil and gas industry and to update emission factor and activity data used for that proposal and the 2016 NSPS, as updated in the US GHG Inventory (83 FR 52056; October 15, 2018).

In addition, GHGRP data have been used to support voluntary programs. For example, GHGRP data are used by the Landfill Methane Outreach Program (LMOP) to supplement the LMOP Landfill and Landfill Gas Energy Project Database which includes data collected from LMOP Partners about landfill gas energy projects or potential for project development.

Several states also use GHGRP data to inform their own policymaking. For example, the state of Hawaii is using GHGRP data to establish an emissions baseline for each facility subject to their GHG Reduction Plan and to assess whether facilities meet their targets in future years. GHGRP data are also being used to improve estimates of GHG emissions internationally. Specifically, GHGRP data have been used to inform several of the updates to emission

estimation methods included in the 2019 Refinement of the 2006 Intergovernmental Panel on Climate Change (IPCC) Guidelines for National GHG Inventories (the Refinement).

Lastly, the standardization of GHG data provides businesses with the necessary information to benchmark themselves against similar facilities, better understand their relative standing within their industry, and achieve and disseminate their environmental achievements. Businesses and other innovators can use the data to determine and track their GHG footprints, find cost- and fuel-saving efficiencies that reduce GHG emissions (*e.g.*, through energy audits or other forms of assistance), and foster technologies to protect public health and the environment. In addition, transparent, public data on emissions allow for accountability of polluters to the public who bear the cost of the pollution. This powerful data resource provides a critical tool for communities to identify nearby sources of GHGs and provide information to state and local governments.

The proposed revisions to part 98 include requirements for reporting of GHG data from additional emission sources (nitrogen removal units, produced water tanks, crankcase venting, and mud degassing), improvements to emissions estimation methodologies, and collection of data to support verification of GHG emissions and supply. Improvements to emissions estimation methodologies will improve the quality of the data collected under the program.

3. NONDUPLICATION, CONSULTATIONS, AND OTHER COLLECTION CRITERIA

3(a) Nonduplication

To determine whether this request duplicates other information collections, the EPA evaluated existing GHG programs and the GHG data currently available including: Federal programs within the United States, such as the Inventory; State and regional GHG reporting programs, Reporting protocols developed by nongovernmental organizations; and Programs from industrial trade organizations.

Documentation of the EPA's review of GHG monitoring protocols used by federal and state voluntary and mandatory GHG programs as well as GHG reporting rules can be found in the docket at EPA-HQ-OAR-2008-0508-0056. For further discussion on the relationship of the GHGRP to other programs, please refer to the preambles of each of the GHGRP rulemakings, the June 6, 2008 memorandum entitled "Review of Existing Programs" (which can be found in the docket at EPA-HQ-OAR-2008-0508-0052), and the January 27, 2009 memorandum entitled "Review of Existing State Greenhouse Gas Reporting Rules" (which can be found in the docket at EPA-HQ-OAR-2008-0508-0054).

The proposed revisions include improvements to the calculation, monitoring, and reporting requirements that would incorporate new data or updated scientific knowledge; reflect new emissions sources for which data has not previously been collected; improve analysis and verification of collected data; and provide additional data to complement or inform other EPA programs. Based on this evaluation, this information collection request does not duplicate other information collections.

3(b) Public Notice Required Prior to Information Collection Request (ICR) Submissions to OMB

A public notice of this proposed collection is provided in the *Federal Register* notice of "Greenhouse Gas Reporting Rule: Revisions and Confidentiality Determinations for Petroleum and Natural Gas Systems; Proposed rule".

3(c) Consultations

The EPA engages in consultations with reporters on a regular basis. Since the GHGRP's inception, the EPA has conducted over 140 training webinars reaching over 17,000 people and has responded to approximately 40,000 questions received by our help desk. The EPA also communicates with GHGRP reporters directly after every data submission deadline during our annual verification period. The program maintains an open-door policy and has consulted on numerous occasions with trade associations as well as individual companies with issues or concerns. As a result of these consultations, the EPA has identified specific sections of the rule language that could be clarified or did not have the intended effect.

The EPA has previously promulgated amendments to the rule to resolve these issues and to correct technical and editorial errors that have been identified. Some of these amendments affected burden, but most amendments reduced burden or did not affect it. In addition to correcting and clarifying existing requirements, the EPA has amended the GHGRP in other ways based on public comments and stakeholder feedback, (*e.g.*, promulgated rulemakings that re-propose certain subparts, added requirements for new facilities and suppliers, and added reporting requirements that provide information about parent companies).

To monitor the usefulness of this data collection, the GHGRP staff are in regular communication with other EPA programs that use the data, such as voluntary and mandatory GHG reduction programs within the Office of Air and Radiation. The EPA also consults regularly with state, local, and tribal environmental control agencies, environmental groups, research entities, and other nongovernmental organizations.

In the current action, the EPA is primarily proposing amendments that would improve the quality of data collected through the GHGRP.

3(d) Effects of Less Frequent Collection

Annual reporting of the data is necessary to ensure that the Agency's objectives for the GHGRP are met. Annual reporting is critical for assessing year-to-year variations in emissions both at the facility and sector level. With less frequent reporting, the EPA would be unable to discern multi-year trends. As the Agency evaluates potential GHG emission reduction opportunities, it is critical to be able to analyze up-to-date, multi-year data for all sectors covered by the program. For example, the GHGRP collects critical information necessary to evaluate potential GHG reduction approaches, such as number of facilities in a sector, production or capacity of each facility, abatement technologies used across a sector, number of facilities using continuous emission monitoring systems, and chemical-specific GHG emission information. These data are essential for understanding the sources that would be impacted by potential

regulations, emissions monitoring approaches and abatement technologies currently employed within a sector, and the general emissions profile of the industry.

With annual data, stakeholders can monitor changes in facility emissions over time with respect to comparable facilities in the industry. Annual reporting also lines up with the reporting frequency of all existing State GHG reporting programs as well as other Agency and State programs that require reporting of environmental data. This reporting frequency remains the same in these proposed revisions to part 98.

The frequency with which facilities and suppliers subject to the GHGRP monitor, sample, or measure data varies from weekly to annually. We have maintained collection frequencies that are necessary to ensure adequate data quality and are designed to match the variability of activities conducted by the source category.

3(e) General Guidelines

This collection of information is consistent with all other OMB guidelines under 5 CFR 1320.5.

3(f) Confidentiality

Data collected under the GHGRP must be made available to the public unless the data qualify for CBI treatment under the CAA and EPA regulations. The EPA typically makes confidentiality determinations under the CAA on a case-by-case basis under 40 CFR 2.301. Due to the large numbers of entities reporting under the GHGRP and the large number of data reporting elements, the EPA concluded that case-by-case determinations would not result in a timely release of emissions data and other non-CBI data (75 FR 39094; July 7, 2010). Therefore, the EPA has published confidentiality determinations for most information reported under the GHGRP (76 FR 30782; May 26, 2011, 77 FR 48072; August 13, 2012, 77 FR 51477; August 24, 2012, 78 FR 68162; November 13, 2013, 78 FR 71904; November 29, 2013, 79 FR 3507; January 22, 2014, 79 FR 63750; October 24, 2014, 79 FR 70352; November 25, 2014, 79 FR 73750; December 11, 2014, 80 FR 64262; October 22, 2015, 81 FR 86490; November 30, 2016, and 81 FR 89188; December 9, 2016). These confidentiality determinations specify which data reporting elements in part 98: (1) are CBI, (2) are non-CBI, and (3) are emissions data (i.e., ineligible for CBI protection). All data determined by the EPA to be CBI are safeguarded in accordance with regulations in 40 CFR Chapter 1, Part 2, Subpart B.

In this action, the EPA is proposing confidentiality determinations for the new and substantially revised data elements contained in the proposed amendments; the EPA is also proposing confidentiality determinations for certain existing data elements for which a confidentiality determination has not previously been proposed or finalized. By proposing confidentiality determinations prior to data reporting, the EPA is providing potential reporters an opportunity to submit comments, particularly comments identifying data they consider sensitive and their rationales and supporting documentation. This opportunity to submit comments is the same opportunity that is afforded to submitters of information in case-by-case confidentiality determinations and provides an opportunity to rebut the agency's proposed determinations prior to finalization. The EPA will evaluate the comments on the proposed determinations, including

claims of confidentiality and information substantiating such claims, before finalizing the confidentiality determinations.

3(g) Sensitive Questions

The revisions to calculation, monitoring, reporting and recordkeeping requirements in these proposed revisions to part 98 do not include sensitive questions.

4. THE RESPONDENTS AND THE INFORMATION REQUESTED

The respondents in this information collection include owners and operators of facilities that must report their GHG emissions to the EPA to comply with the GHGRP requirements for petroleum and natural gas systems.

4(a) Respondents/North American Industrial Classification System (NAICS) Codes

The petroleum and natural gas sector is listed below by the corresponding subpart of the rule and their NAICS codes for reference. The NAICS codes are not exhaustive, but rather provide a list of facilities likely to be affected by the proposed revisions and confidentiality determinations.

Table 1. Examples of Affected Entities by Category

Subpart	NAICS Codes	
W. Petroleum and Natural Gas Systems	486210	Pipeline transportation of natural gas.
	221210	Natural gas distribution facilities.
	211120	Crude petroleum extraction.
	211130	Natural gas extraction.

4(b) Information Requested

(i) *Data Items*

This section characterizes the information being collected under the proposed rule, as well as the activities associated with developing, submitting, or filing that information.

The new information proposed to be collected under the proposed revisions include new data elements from new emissions sources and from the expansion of the number of industry segments reporting existing emissions sources.

Reporting and Recordkeeping Requirements

Respondents must report the data items specified according to the requirements of 40 CFR 98.236 and the recordkeeping requirements of 40 CFR 98.237, as provided in the currently approved ICR for the GHGRP (EPA ICR No. 2300.18). In this proposed rulemaking, the EPA is proposing to include additional emission sources (nitrogen removal units, produced water tanks,

other large emission sources, thief hatches on atmospheric tanks, dump valves on atmospheric tanks, crankcase venting, and mud degassing), improvements to emissions estimation methodologies, and collection of data to support verification of GHG emissions. The proposed revisions would include improvements to emissions estimation methodologies, which would improve the quality of the data collected under the program.

Respondents must maintain records associated with the data items specified according to the requirements of 40 CFR 98.3 and the sector-specific recordkeeping requirements of each subpart. These records are discussed in the ICR Renewal for the Greenhouse Gas Reporting Program (EPA ICR No. 2300.18). In this proposed rule, the EPA is not proposing additional records.

(ii) Respondent Activities.

The proposed revisions would require gathering of new information, calculating new emissions, conducting monitoring of emission sources, and reporting new data elements associated with the required activities being proposed. All activities with associated costs are shown in the Appendix. For each related data element required in the proposed revisions to 40 CFR 98.236, all respondents would:

1. Submit the value via the web-based Electronic Greenhouse Gas Reporting Tool (e-GGRT) as part of the annual report currently required under part 98.

2. Maintain records of reported data for a minimum of three years.

All respondents would be required to calculate the new data elements using empirical data detailed in the proposed revisions to 40 CFR 98.233.

5. THE INFORMATION COLLECTED – AGENCY ACTIVITIES, COLLECTION METHODS, AND INFORMATION MANAGEMENT

5(a) Agency Activities

EPA activities include the monitoring and verification of emission reports, database and software maintenance, communication and outreach, and program evaluation. This ICR reflects an incremental agency burden for program operation activities, which include monitoring and verification of emission reports. Specifically, the additional burden for the review of new data elements reported was estimated.

5(b) Collection Methodology and Management

The EPA has established a central repository of data for all respondents, the web-based Electronic Greenhouse Gas Reporting Tool (e-GGRT). Respondents report data electronically, and the EPA stores the data in the database. Facilities and suppliers subject to the GHGRP register online through the e-GGRT system. The e-GGRT system has an XML reporting schema that allows facilities to upload GHG data directly in lieu of using the guided web forms provided through e-GGRT. The XML reporting schema contains all data elements needed to comply with

the GHGRP. The electronic reports submitted under the GHGRP are subject to the provisions of 40 CFR Part 3, specifying EPA systems to which electronic submissions must be made and the requirements for valid electronic signatures. Additionally, e-GGRT is designed to collect and store CBI.

The system follows Agency standards for design, security, data element and reporting format conformance, and accessibility. The EPA designed the database to minimize respondents' burden by integrating with existing data collection and data management systems, when feasible.

The EPA ensures data quality by conducting robust verification checks using both electronic software and manual review. The EPA contacts facilities when annual reports contain potential errors, and the statute requires that the facilities either resolve the error or explain that it is not an error in a timely manner. The EPA makes all data accessible to the public on a web-based, user-friendly publication tool called FLIGHT, as detailed in Section 2(b) of this document.

Under the proposed revisions, facilities would report all new data elements via e-GGRT.

5(c) Small Entity Flexibility

This information collection will not have a significant economic impact on a substantial number of small entities. The small entities subject to the requirements of this action are small businesses in the petroleum and natural gas industry. Small entities include small businesses, small organizations, and small governmental jurisdictions. The EPA has determined that some small entities are affected because their production processes emit GHGs that must be reported.

In the implementation of the GHGRP, the EPA previously determined thresholds that reduced the number of small businesses reporting. The proposed revisions would not revise the threshold for existing subpart W reporters, therefore, we do not expect a significant number of small entities will be newly impacted under the proposed rule revisions.

The proposed rule amendments predominantly apply to existing reporters and are amendments that would expand reporting to include new emission sources; add, remove, or refine emissions estimation methodologies to improve the accuracy of reported emission data; for the Onshore Natural Gas Production and Onshore Natural Gas Gathering and Boosting segments, revise reporting of emissions from a basin level to a site level; implement requirements to collect new or revised data; clarify or update provisions that have been unclear; or streamline or simplify requirements, for example, by increasing flexibility for reporters or removing redundant requirements.

5(d) Collection Schedule

For each reporting year, facilities collect data and calculate emissions at varying frequencies, as described in the GHGRP, and summarized in OMB Control No. 2060-0629, ICR No. 2300.18. All data elements under this information collection would be submitted no more frequently than an annual basis as part of the respondent's annual report required under part 98.

6. ESTIMATING THE BURDEN AND COST OF THE COLLECTION

This section presents the EPA's estimates of the burden and costs to respondents associated with the activities described in section 4(b) as well as the federal burden hours and costs associated with the activities described in section 5(a). The EPA estimates that, over the three years covered by this request, the average total respondent burden associated with this reporting will be 417,821 hours per year and the cost of all respondents of the information collection will increase an average of $92,311,035 per year, which includes $50,897,998 in non-labor costs per year.

Proposed revisions include the following:

- Expanding reporting to include new emission sources, to accurately reflect total methane in emission reports reported to the GHGRP.
- Adding emissions calculation methodologies to incorporate additional empirical data and improve the accuracy of reported emission data.
- Refining existing emissions calculation methodologies to reflect an improved understanding of emissions or to incorporate more recent research on GHG emissions to improve the accuracy of reported emission data.
- Removing calculation methodologies in cases where it was determined that more accurate calculation methodologies were available.
- Changing the basis for reporting emissions from Onshore Petroleum and Natural Gas Production and Onshore Petroleum industry segment to the well-pad instead of the site level.
- Changing the basis for reporting emissions from the Onshore Petroleum and Natural Gas Gathering and Boosting industry segment to the site instead of the basin level, sub-basin level, or county level.
- Adding data elements related to emissions from plugged wells.
- Adding or clarifying throughput related data elements for subpart W industry segments.
- Revising data elements or recordkeeping where the current requirements are redundant or alternative data would be more appropriate for verification of emission data.
- Clarifying requirements that reporters have previously found vague to ensure that accurate data are being collected, and editorial corrections or harmonizing changes that would improve the public's understanding of the rule.

The Appendix details by emission source and industry segment, the respondent activities required by the revised provisions and how much each activity is expected to cost, by labor, O&M, and capital.

Labor costs are tabulated for respondents to gather data, conduct sampling, conduct measurements, conduct monitoring, run simulation software, count equipment, conduct inspections, and calculate emissions.

Operation and maintenance costs are tabulated for respondents to hire contractors to conduct measurements on a regular basis, such as annual compressor measurements and periodic flow measurements costs. These costs also include the costs for costs for labs to analyze quarterly samples for dehydrators, acid gas removal units, and nitrogen removal units.

Capital costs are tabulated for respondents to purchase continuous parameter monitoring devices for each flare stack.

Finally, as a result of these proposed revisions, 93 new sources in three industry segments (3 in Onshore Natural Gas Transmission Compression, 47 in Onshore Petroleum and Natural Gas Production, and 43 in Onshore Natural Gas Processing) are expected to become subject to subpart W of Part 98. Labor and O&M costs are included to comply with the reporting and recordkeeping costs detailed in EPA ICR No. 2300.18.

Section 6(a) of this ICR provides estimates of burden (hours) for all respondent types. Section 6(b) contains estimates of respondent costs for the information collection. Section 6(c) summarizes federal burden and costs. Section 6(d) describes the respondent universe and the total burden and cost of this collection to respondents. Section 6(e) presents the bottom-line burden and cost. Section 6(f) provides reasons for any change in burden. The burden statement for this information collection is in section 6(g).

6(a) Estimating Respondent Burden

Respondent burden estimates are presented in Exhibit 6.1. The EPA estimates that the total annual burden to all affected entities will increase by 417,821 hours per year, on average, over the three years covered by this information collection.

Exhibit 6.1 of this document presents the aggregate and average annual respondent burden. For the details, see the Appendix.

Exhibit 6.1. Summary of Annual Respondent Burden and Cost of Proposed Revisions for the Greenhouse Gas Reporting Rule

Years 1-3	Number of Respondents	Total Labor Hours	Labor Costs	Non-Labor Costs (Annualized Capital/Startup and O&M)	Total Costs
	3,077	417,821	$41,413,037	$50,897,998	$92,311,035

6(b) Estimating Respondent Costs

Costs to respondents associated with this information collection include labor costs (*i.e.*, the cost of labor by facility staff to meet the rule's information collection requirements) and non-labor costs (*e.g.*, the cost of purchasing and installing monitoring equipment or contractor costs associated with providing the required information).

To calculate labor costs, the EPA used an approach consistent with the ICR associated with the GHGRP currently approved by OMB, updated to incorporate 2021 BLS labor rates. Sector-specific labor rates are used for the oil and gas industry (subpart W): $132.31 for senior managers, $123.46 for middle managers, $110.17 for engineers, and $77.99 for technicians. These labor rates were applied to the total burden estimates for each labor category to obtain the total costs for each subpart. Labor and non-labor costs (capital and O&M) are summarized in Exhibit 6.1. More details are in the Appendix.

The EPA estimates that the total annual labor costs to all affected non-federal entities would average $41.4 million over the three years covered by this information collection. Exhibit 6.1 presents the aggregate burden by year for all subpart W industry segments.

Exhibit 6.2 presents the annual average burden and cost for each industry segment over the first three years of the information collection. For a more detailed summary of the annual costs by industry segment, see Appendix 1.

Exhibit 6.2. Annual Average Burden Over the First Three Years of the Information Collection, by Industry Segment

Industry Segment	Annual Number of Respondents	Total Hours	Annual Average Burden Per Respondent	Labor Costs	O&M and Capital Costs	Total Costs
Onshore Natural Gas Processing	515	52,560	102	$8,768,994	$3,936,094	$12,705,088
Onshore Natural Gas Transmission Compression	1,008	27,579	27	$2,755,614	$6,028,399	$8,784,013
Underground Natural Gas Storage	68	1,744	26	$167,324	$417,348	$584,673
LNG Import and Export Equipment	11	41	4	$4,605	$18,649	$23,254
Onshore Petroleum and Natural Gas Production	777	277,639	357	$27,957,105	$36,301,841	$64,258,946
Natural Gas Distribution	164	1,453	9	$163,069	$161,370	$324,439
LNG Storage	7	133	19	$14,714	$20,953	$35,667
Onshore Petroleum and Natural Gas Gathering and Boosting	361	16,886	47	$1,490,222	$4,013,157	$5,503,379
Natural Gas Transmission Pipeline	53	881	17	$87,596	$187	$87,783
Offshore Petroleum and Natural Gas Production	141	34	0	$3,793	$0	$3,793
TOTAL	3,077	417,821	123	$41,413,037	$50,897,998	$92,311,035

6(c) Estimating Agency Burden and Cost

This section describes the burden and cost to the federal government associated with this information collection, and the details are provided in Appendix A. Federal activities under this information collection include EPA oversight of the reporting program and required reporting by federally owned GHG generating facilities.

EPA activities associated with the GHGRP include oversight and implementation of the reporting program, e.g., monitoring and verification of emission reports, database and software maintenance, communication and outreach, and program evaluation. For the rule, the incremental burden to the EPA is associated with the additional time to review the new and

substantially revised data elements that would be reported (see section 4(b)(i)). There are no non-labor costs associated with the proposed changes.

To develop EPA labor costs, the EPA estimated the average hourly labor rate for salary and overhead and benefits for Agency staff to be $60.93. To derive this figure, the EPA multiplied the hourly compensation at GS-13, Step 1 on the 2021 GS pay scale ($38.08) by the standard government benefits multiplication factor of 1.6 to account for overhead and benefits.[1]

The total burden and costs to the federal government from the new and substantially revised data elements are anticipated to average 2,080 hours and $126,730 ($2021) per year over the three years covered by this information collection, which represents one additional full-time employee. Exhibit 6.3 presents the annual Agency burden and cost.

Exhibit 6.3 Annual Agency Burden and Cost Per Year

Total Annual Burden Hours	Labor Costs ($2021)
2,080	$126,730

6(d) Estimating the Respondent Universe and Total Burden and Costs

The estimated number of respondents that will perform the required activities under this information collection is presented in the Appendix. The number of respondents is not expected to vary in each year.

6(e) Bottom Line Burden Hours and Costs

The bottom-line burden hours and costs are shown in Exhibit 6.4.

Exhibit 6.4 Total Burden and Costs Per Year

	Annual Average
Respondent Costs	
Number of Respondents	3,077
Total Respondent Labor Hours	417,821
Total Respondent Labor Costs	$41,413,037
Non-labor (Capital and O&M) Costs	$50,897,998
Total Respondent Costs	$92,311,035
Agency Costs	
Total Agency Burden Hours	2,080
Total Agency Labor Costs	$126,730
Total Burden Hours (Respondents + Agency)	419,901
Bottom Line Costs (Respondents + Agency)	$92,437,765

[1] https://www.opm.gov/policy-data-oversight/pay-leave/salaries-wages/salary-tables/pdf/2021/GS_h.pdf

6(f) Reasons for Change in Burden

This section presents the change in burden based on the proposed revisions and explains the reasons for the change in burden.

The reasons for the change in burden are mainly due to the addition of new emissions sources, new reporting elements, and new calculation methodologies. The EPA's proposed revisions to Part 98 result in an increase in costs.

This proposed rule will result in an overall average annual burden of 417,821 hours and $92,311,035 over the three years covered by this information collection.

6(g) Burden Statement

The respondent reporting burden for this collection of information is estimated to be an annual average of 417,821 hours and $92,311,035 over the three years covered by this information collection, which includes an annual average of $41,413,037 in labor costs, $31,784,577 in operation and maintenance costs, and $19,113,421 in capital costs. The annual average incremental burden to the EPA for this period is anticipated at 2,080 hours and $126,730 ($2021) over the three years covered by this information collection.

Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information.

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for the EPA's regulations are listed in 40 CFR Part 9.

To comment on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including the use of automated collection techniques, the EPA has established a public docket for this ICR under Docket ID Number EPA-HQ-OAR-2023-0234, which is available for online viewing at *http://www.regulations.gov*, or in person viewing at the Air and Radiation docket in the EPA Docket Center (EPA/DC), EPA West Building, Room 3334, 1301 Constitution Avenue, NW, Washington, D.C. The telephone number for the Reading Center is (202) 566-1744. An electronic version of the public docket is available at *http://www.regulations.gov*. This site can be used to submit or view public comments, access the index listing of the contents of the public

docket, and to access those documents in the public docket that are available electronically. When in the system, select “search,” then key in the Docket ID Number identified above.

Part B of the Supporting Statement

This section is not applicable because statistical methods are not used in data collection associated with the proposed amendments.

SUPPORTING STATEMENT:
ENVIRONMENTAL PROTECTION AGENCY
OMB control number 2060-0629; ICR number 2300.XX
Appendix

Table 1. Subpart W Labor Costs by Emission Source and Industry Segment

Year 1-3	(A) Hours per Occurrence	(B) Occurrences / Respondent/ Year	(C) Hours/ Respondent/ Year (A x B)	(D) Respondents/ Year	Engineer Hours/ Year (C x D)	Tech Hours /Year	Middle Manager Hours/ Year	Senior Manager Hours/ Year	(H) Cost/ Year
1. APPLICATIONS (Not Applicable)									
2. SURVEY AND STUDIES (Not Applicable)									
3. ACQUISITION, INSTALLATION, AND UTILIZATION OF TECHNOLOGY AND SYSTEMS									
4. REPORT REQUIREMENTS									
A1. Read Rule, Instructions, Guidance Documents for Subpart W									
Incremental labor costs for new sources are at the end of this table.									
A2. Read Rule, Instructions, Guidance Documents for Subpart A									
Incremental labor costs for new sources are at the end of this table.									
B. Required Activities									
Acid Gas Removal Units 1									
Gather CEMS data for e-GGRT reporting (M1)									
LNG Storage reporters 4,5,6,7	1.00	2.0	2.00	1	2.0		0.2	0.1	$258
LNG Import and Export Equipment reporters 4,5,6,7,8	1.00	2.0	2.00	1	2.0		0.2	0.1	$258
Conduct quarterly gas sampling (M2)									
LNG Storage reporters 5,6,7,9	0.67	2.2	1.47	1	1.5		0.1	0.1	$189
LNG Import and Export Equipment reporters 5,6,7,8,9	0.67	2.2	1.47	1	1.5		0.1	0.1	$189
Perform engineering calculation (M3)									
LNG Storage reporters 5,7,10,11	0.17	3.0	0.50	2	1.0		0.1	0.1	$129

Year 1-3	(A) Hours per Occurrence	(B) Occurrences / Respondent/ Year	(C) Hours/ Respondent/ Year (A x B)	(D) Respondents/ Year	Engineer Hours/ Year (C x D)	Tech Hours /Year	Middle Manager Hours/ Year	Senior Manager Hours/ Year	(H) Cost/ Year
LNG Import and Export Equipment reporters 5,7,8,12	0.17	3.0	0.50	3	1.5		0.2	0.1	$194
Perform simulation run using AspenTech HYSYS®, or API 4679 AMINECalc (M4)									
LNG Storage reporters 6,7,13	0.42	2.1	0.88	1	0.9		0.1	0.0	$113
LNG Import and Export Equipment reporters 6,7,8,13	0.42	2.1	0.88	1	0.9		0.1	0.0	$113
Nitrogen Removal Units 1									
Gather CEMS data for e-GGRT reporting (M1)									
Onshore Natural Gas Processing reporters 4,7,14,15	1.00	2.0	2.00	1	2.0		0.2	0.1	$258
Onshore Petroleum and Natural Gas Production reporters 4,7,14,15	1.00	0.0	0.00	0	-		-	-	$0
Onshore Petroleum and Natural Gas Gathering and Boosting reporters 4,7,14,15	1.00	1.0	1.00	1	1.0		0.1	0.1	$129
LNG Storage reporters 4,7,14,15	1.00	2.0	2.00	1	2.0		0.2	0.1	$258
LNG Import and Export Equipment reporters 4,7,14,15	1.00	2.0	2.00	1	2.0		0.2	0.1	$258
Conduct quarterly gas sampling (M2)									
Onshore Natural Gas Processing reporters 7,9,13,15	0.67	1.3	0.87	56	48.5		4.9	2.4	$6,264
Onshore Petroleum and Natural Gas Production reporters 7,9,13,15	0.67	1.0	0.67	1	0.7		0.1	0.0	$86

Year 1-3	(A) Hours per Occurrence	(B) Occurrences / Respondent/ Year	(C) Hours/ Respondent/ Year (A x B)	(D) Respondents/ Year	Engineer Hours/ Year (C x D)	Tech Hours /Year	Middle Manager Hours/ Year	Senior Manager Hours/ Year	(H) Cost/ Year
Onshore Petroleum and Natural Gas Gathering and Boosting reporters 7,9,13,15	0.67	2.2	1.47	10	14.7		1.5	0.7	$1,893
LNG Storage reporters 7,9,13,15	0.67	2.2	1.47	1	1.5		0.1	0.1	$189
LNG Import and Export Equipment reporters 7,9,13,15	0.67	2.2	1.47	1	1.5		0.1	0.1	$189
Perform engineering calculation (M3)									
Onshore Natural Gas Processing reporters 7,10,14,15	0.17	1.5	0.25	125	31.3		3.1	1.6	$4,033
Onshore Petroleum and Natural Gas Production reporters 7,10,14,15	0.17	1.8	0.30	6	1.8		0.2	0.1	$232
Onshore Petroleum and Natural Gas Gathering and Boosting reporters 7,10,14,15	0.17	3.0	0.50	27	13.5		1.4	0.7	$1,742
LNG Storage reporters 7,10,14,15	0.17	3.0	0.50	2	1.0		0.1	0.1	$129
LNG Import and Export Equipment reporters 7,10,14,15	0.17	3.0	0.50	3	1.5		0.2	0.1	$194
Perform simulation run using AspenTech HYSYS®, or API 4679 AMINECalc (M4)									
Onshore Natural Gas Processing reporters 7,13,14,15	0.42	1.6	0.67	76	50.7		5.1	2.5	$6,539
Onshore Petroleum and Natural Gas Production reporters 7,13,14,15	0.42	2.0	0.83	5	4.2		0.4	0.2	$538

Year 1-3	(A) Hours per Occurrence	(B) Occurrences / Respondent/ Year	(C) Hours/ Respondent/ Year (A x B)	(D) Respondents/ Year	Engineer Hours/ Year (C x D)	Tech Hours /Year	Middle Manager Hours/ Year	Senior Manager Hours/ Year	(H) Cost/ Year
Onshore Petroleum and Natural Gas Gathering and Boosting reporters 7,13,14,15	0.42	2.1	0.88	24	21.0		2.1	1.1	$2,710
LNG Storage reporters 7,13,14,15	0.42	2.1	0.88	1.0	0.9		0.1	0.0	$113
LNG Import and Export Equipment reporters 7,13,14,15	0.42	2.1	0.88	1	0.9		0.1	0.0	$113
Equipment Leaks 1									
Conduct Leak Detection Surveys and Perform Emission Calculations									
Natural Gas Transmission Pipeline reporters 7,16,25	4.00	3.0	12.00	22	258.0		25.8	12.9	$33,298
Determine emissions using population counts									$0
Natural Gas Transmission Pipeline reporters 17,18,25	4.50	3.0	13.50	22		290.3			$22,636
Blowdown Vent Stacks 1									
Calculate emissions									
Onshore Natural Gas Processing reporters 7,19,20,22,23	1.00	4.0	4.00	337	1,346.4		134.6	67.3	$173,768
Onshore Petroleum and Natural Gas Production reporters 7,19,21,22	1.00	6.0	6.00	478	2868		286.8	143.4	$370,148
Underground Natural Gas Storage reporters 7,19,20,22	1.00	4.0	4.00	49	196		19.6	9.8	$25,296
LNG Storage reporters 7,19,20,22	1.00	4.0	4.00	5	20.0		2	1	$2,581

Year 1-3	(A) Hours per Occurrence	(B) Occurrences / Respondent/ Year	(C) Hours/ Respondent/ Year (A x B)	(D) Respondents/ Year	Engineer Hours/ Year (C x D)	Tech Hours /Year	Middle Manager Hours/ Year	Senior Manager Hours/ Year	(H) Cost/ Year
Natural Gas Distribution reporters 7,19,21,22,23	1.00	4.0	4.00	163	652.0		65.2	32.6	$84,148
Onshore Petroleum and Natural Gas Gathering and Boosting reporters	1.00	6.0	6.00	301	1,808.4		180.8	90.4	$233,394
Other large release events 1									
Collect the necessary data and calculate emissions									
Onshore Natural Gas Processing reporters 7,24,26,28	20.00	1.0	20.00	4.5	90.0		9.0	4.5	$11,616
Onshore Natural Gas Transmission Compression reporters 7,24,26,28	20.00	1.0	20.00	5.3	106.0		10.6	5.3	$13,680
Underground Natural Gas Storage reporters 7,24,26,28	20.00	1.0	20.00	0.5	10.0		1.0	0.5	$1,291
LNG Import and Export Equipment reporters 7,24,26,28	20.00	1.0	20.00	0.1	2.0		0.2	0.1	$258
Onshore Petroleum and Natural Gas Production reporters 7,24,27,29	20.00	2.0	40.00	14.9	596.0		59.6	29.8	$76,920
Natural Gas Distribution reporters 7,24,27,29	20.00	2.0	40.00	5.1	204.0		20.4	10.2	$26,328
LNG Storage reporters 7,24,26,28	20.00	1.0	20.00	0.1	2.0		0.2	0.1	$258
Onshore Petroleum and Natural Gas Gathering and Boosting reporters 7,24,27,29	20.00	2.0	40.00	9.6	384.0		38.4	19.2	$49,560

Year 1-3	(A) Hours per Occurrence	(B) Occurrences / Respondent/ Year	(C) Hours/ Respondent/ Year (A x B)	(D) Respondents/ Year	Engineer Hours/ Year (C x D)	Tech Hours /Year	Middle Manager Hours/ Year	Senior Manager Hours/ Year	(H) Cost/ Year
Natural Gas Transmission Pipeline reporters 7,24,27,29	20.00	2.0	40.00	1.0	40.0		4.0	2.0	$5,162
Offshore Petroleum and Natural Gas Production reporters 7,24,26,28	20.00	1.0	20.00	1.4	28.0		2.8	1.4	3,614
Combustion Emissions									
Determine fuel consumption through company records and calculate emissions (to incorporate combustion slip)									
Onshore Petroleum and Natural Gas Production reporters 1,7,19,31,72	0.50	1	0.50	478	239.0		23.9	12.0	$30,846
Onshore Petroleum and Natural Gas Gathering and Boosting reporters 1,7,19,31,72	0.50	1	0.50	354	177.0		17.7	8.9	$22,844
Natural Gas Distribution reporters 1,7,19,31,72	0.50	1	0.50	163	81.5		8.2	4.1	$10,518
Crankcase venting 1									
Gather information and calculate emissions									
Onshore Petroleum and Natural Gas Production reporters 7,19,73	2.00	1	2.00	478	956.0		95.6	47.8	$123,383
Onshore Petroleum and Natural Gas Gathering and Boosting reporters 7,19,73	2.00	1	2.00	354	708.0		70.8	35.4	$91,375
Natural Gas Distribution reporters 7,19,73	2.00	1	2.00	163	326.0		32.6	16.3	$42,074
Onshore Natural Gas Processing reporters 7,19,73	2.00	1	2.00	454	908.0		90.8	45.4	$117,188

Year 1-3	(A) Hours per Occurrence	(B) Occurrences / Respondent/ Year	(C) Hours/ Respondent/ Year (A x B)	(D) Respondents/ Year	Engineer Hours/ Year (C x D)	Tech Hours /Year	Middle Manager Hours/ Year	Senior Manager Hours/ Year	(H) Cost/ Year
Onshore Natural Gas Transmission Compression reporters 7,19,73	2.00	1	2.00	624	1,248.0		124.8	62.4	$161,068
Underground Natural Gas Storage reporters 7,19,73	2.00	1	2.00	49	98.0		9.8	4.9	$12,648
LNG Import and Export Equipment reporters 7,19,73	2.00	1	2.00	11	22.0		2.2	1.1	$2,839
LNG Storage reporters 7,19,73	2.00	1	2.00	5	10.0		1.0	0.5	$1,291
Dehydrators									
Gather data for simulation run (large dehydrators) (M1)									
Onshore Natural Gas Processing reporters 17,30,31	1.00	1.8	1.80	262		471.6			$36,779
Onshore Petroleum and Natural Gas Production reporters 17,30,31	1.00	19.8	19.80	42		2,811.6			$219,273
Onshore Natural Gas Transmission Compression reporters 5,17,30	1.00	19.8	19.80	227		4,494.6			$350,527
Underground Natural Gas Storage 5,17,30	1.00	19.8	19.80	25		485.1			$37,832
Onshore Petroleum and Natural Gas Gathering and Boosting reporters 5,17,30	1.00	11.8	11.76	287		3,375.0			$263,211
Equipment counts and population emission factors (small dehydrators) (M2)									
Onshore Natural Gas Transmission Compression reporters 1,5,10,17,30	0.17	27.0	4.50	227		1,021.5			$79,665

Year 1-3	(A) Hours per Occurrence	(B) Occurrences / Respondent/ Year	(C) Hours/ Respondent/ Year (A x B)	(D) Respondents/ Year	Engineer Hours/ Year (C x D)	Tech Hours /Year	Middle Manager Hours/ Year	Senior Manager Hours/ Year	(H) Cost/ Year
Underground Natural Gas Storage 1,5,10,17,30	0.17	27.0	4.50	25		110.3			$8,598
Condensate storage tanks (formerly transmission storage tanks) 1									
Underground Storage									
Screen for leaks using optical gas imaging instrument 7,32,34,35,36	0.17	1.5	0.24	39	9.7		1.0	0.5	$1,247
Screen for leaks using acoustic leak detection device 7,32,34,35,36	0.17	1.5	0.24	0	-		-	-	$0
Screen and quantify leaks using calibrated bag 7,33,34,35,36	0.25	1.5	0.37	0	-		-	-	$0
Screen and quantify leaks using flow meter 7,33,34,35,36	0.17	1.5	0.24	0	0.0		0.0	0.0	$2
Screen and quantify leaks using high volume sampler 7,33,34,35,36	0.25	1.5	0.37	1	0.3		0.0	0.0	$41
Quantify leaks using high volume sampler after screening with optical gas imaging instrument or flow meter 7,33,34,35,36	0.25	1.5	0.37	8	2.9		0.3	0.1	$376
Quantify leaks using acoustic leak detection after screening with optical gas imaging instrument or flow meter 7,33,34,35,36	0.25	1.5	0.37	5	1.7		0.2	0.1	$219
Quantify leaks using calibrated bags after screening with optical gas imaging instrument or flow meter 7,33,34,35,36	0.25	1.5	0.37	0	0.1		0.0	0.0	$15

Year 1-3	(A) Hours per Occurrence	(B) Occurrences / Respondent/ Year	(C) Hours/ Respondent/ Year (A x B)	(D) Respondents/ Year	Engineer Hours/ Year (C x D)	Tech Hours /Year	Middle Manager Hours/ Year	Senior Manager Hours/ Year	(H) Cost/ Year
Quantify leaks using flowmeter after screening with optical gas imaging instrument or flow meter 7,33,34,35,36	0.25	1.5	0.37	3	1.0		0.1	0.0	$126
Calculate emissions 7,33,34,35,36,37	0.17	1.5	0.24	11	2.8		0.3	0.1	$362
Hydrocarbon liquid Storage Tanks (formerly atmospheric storage tanks) 1									
Determine emissions by calculating flashing emissions with software program, such as AspenTech HYSYS® or API 4697 E&P Tank (M1)									
Onshore Natural Gas Processing reporters 5,7,30	0.50	439.8	219.90	151	33,278.2		3,327.8	1,663.9	$4,294,925
Determine emissions by sampling and analyzing separator oil composition (M2)									
Onshore Natural Gas Processing reporters 5,7,30	0.02	571.6	9.53	151	1,441.7		144.2	78.6	$186,071
Determine emissions using equipment counts and population emission factors (M3)									
Onshore Natural Gas Processing reporters 5,7,30	0.01	430.7	3.59	151		543.2			$42,360
Dump valves 1									
Yearly inspections of dump valves (per separator)									
Onshore Petroleum and Natural Gas Production reporters 5,17,38	0.17	23.5	3.92	164		643.0			$50,147
Onshore Petroleum and Natural Gas Gathering and Boosting reporters 5,17,38	0.17	1.6	0.27	22		6.0			$468
Onshore Natural Gas Processing reporters 5,17,38	0.17	23.5	3.92	160		627.2			$48,917
Thief hatches 1									
Yearly inspections of thief hatches (per tank)									

Year 1-3	(A) Hours per Occurrence	(B) Occurrences / Respondent/ Year	(C) Hours/ Respondent/ Year (A x B)	(D) Respondents/ Year	Engineer Hours/ Year (C x D)	Tech Hours /Year	Middle Manager Hours/ Year	Senior Manager Hours/ Year	(H) Cost/ Year
Onshore Petroleum and Natural Gas Production reporters 17,38,39	0.17	427.0	71.17	738		52,519.8			$4,095,946
Onshore Petroleum and Natural Gas Gathering and Boosting reporters 17,38,39	0.17	114.8	19.14	421		8,057.0			$628,354
Onshore Natural Gas Processing reporters 17,38,39	0.17	427.0	71.17	454		32,308.9			$2,519,728
Produced water tanks 1									
Determine emissions using equipment counts and population emission factors (M3)									
Onshore Petroleum and Natural Gas Production reporters 17,30,31,40	0.01	430.7	3.59	367		1,317.2			$102,728
Onshore Petroleum and Natural Gas Gathering and Boosting reporters 17,30,31,40	0.01	45.3	0.38	214		80.8			$6,303
Onshore Natural Gas Processing reporters 17,30,31,40	0.01	430.7	3.59	151		543.2			$42,360
Well Venting for Liquids Unloading 1									
Measure flow rate (M1)									
Onshore Petroleum and Natural Gas Production reporters 7,30,31,41	0.08	536.0	44.67	159	7,116.9		711.7	355.8	$918,514
Calculate emissions (M1)									
Onshore Petroleum and Natural Gas Production reporters 7,30,31,41	0.17	536.0	89.33	159	14,233.8		1,423.4	711.7	$1,837,029

Year 1-3	(A) Hours per Occurrence	(B) Occurrences / Respondent/ Year	(C) Hours/ Respondent/ Year (A x B)	(D) Respondents/ Year	Engineer Hours/ Year (C x D)	Tech Hours /Year	Middle Manager Hours/ Year	Senior Manager Hours/ Year	(H) Cost/ Year
Determine well counts, number of events, well depth, calculate pressure, calculate flow (M2 and M3)									
Onshore Petroleum and Natural Gas Production reporters 7,30,31,42,43	0.17	168.9	28.15	319	8,970.5		897.0	448.5	$1,157,739
Mud degassing 1									
Use mudlogging data to calculate emissions (M1)									
Onshore Petroleum and Natural Gas Production reporters 7,31,68,69,70	1.0	65.6	65.6	170	11,119.2		1,111.9	556.0	$1,435,058
Use emission factor to calculate emissions (M2)									
Onshore Petroleum and Natural Gas Production reporters 7,31,70,71	0.17	65.6	10.93	170	1,853.2		185.3	92.7	$239,176
Plugged wells 1									
Gather quantities related to plugged wells (quantities of natural gas, crude oil, and condensate produced that is sent to sale)									
Onshore Petroleum and Natural Gas Production reporters 75,76	0.50	3.3	1.64	478	783.9		78.4	39.2	$101,174
C. Create Information (Included in 4B)									
D. Gather Existing Information (Included in 4E)									
E. Write Report									
Changing to reporting at the well-pad level or site ID									
Onshore Petroleum and Natural Gas Production reporters 44,45	12.00	1.0	12.00	478	5,736.0	478.0	956.0		$786,837

Year 1-3	(A) Hours per Occurrence	(B) Occurrences / Respondent/ Year	(C) Hours/ Respondent/ Year (A x B)	(D) Respondents/ Year	Engineer Hours/ Year (C x D)	Tech Hours /Year	Middle Manager Hours/ Year	Senior Manager Hours/ Year	(H) Cost/ Year
Onshore Petroleum and Natural Gas Gathering and Boosting reporters 46,47	3.00	1.0	3.00	354	1,062.0	354.0	354.0		$188,238
5. RECORDKEEPING REQUIREMENTS									
A. Read Instructions (Included in 4A)									
B. Plan Activities (Included in 4B)									
C. Implement Activities (Included in 4B)									
D. Recordkeeping									
E. Time to Transmit or Disclose Information (included in 4E)									
F. Time to Train Personnel (included in 4A)									
G. Time for Audits (Not Applicable)									
Incremental labor costs due to new sources 67									
Onshore Natural Gas Processing reporters				53					$1,278,188
Onshore Natural Gas Transmission Compression reporters				364					$2,150,673
Underground Natural Gas Storage reporters				16					$79,270
LNG Import and Export Equipment reporters				0					$0
Onshore Petroleum and Natural Gas Production reporters				309					$16,411,333
Natural Gas Distribution reporters				0					$0
LNG Storage reporters				2					$9,205
Onshore Petroleum and Natural Gas Gathering and Boosting reporters				0					$0
Natural Gas Transmission Pipeline reporters				4					$26,499

Year 1-3	(A) Hours per Occurrence	(B) Occurrences / Respondent/ Year	(C) Hours/ Respondent/ Year (A x B)	(D) Respondents/ Year	Engineer Hours/ Year (C x D)	Tech Hours /Year	Middle Manager Hours/ Year	Senior Manager Hours/ Year	(H) Cost/ Year
Offshore Petroleum and Natural Gas Production reporters				7					$179
TOTAL ANNUAL LABOR BURDEN AND COST									$41,413,037
								417,821	

Table 2. Subpart W Operation and Maintenance Costs and Capital Costs by Emission Source and Industry Segment.

Year 1-3	Occurrences/ Respondent/Year	Respondents / Year	Cost/ Year
ANNUAL COSTS (O&M)			
Acid gas removal units			
Quarterly gas samples and analyses (M2)			
LNG Storage reporters 31,48	8.8	1	$3,520
LNG Import and Export Equipment reporters 31,48	8.8	1	$5,867
Acid gas removal units			
Flow rate measurement for simulation software (M4)			
Onshore Natural Gas Processing reporters 5,49,50	1.0	76.0	$114,000
Onshore Petroleum and Natural Gas Production reporters 5,49,50	1.0	5.0	$7,500
Onshore Petroleum and Natural Gas Gathering and Boosting reporters 5,49,50	1.0	24.0	$36,000
LNG Storage reporters 5,49,50	1.0	1.0	$1,500
LNG Import and Export Equipment reporters 49,50	1.0	1.0	$1,500
Nitrogen removal units			
Quarterly gas samples and analyses (M2)			
Onshore Natural Gas Processing reporters 14,48	5.2	56.0	$116,480
Onshore Petroleum and Natural Gas Production reporters 14,48	4.0	1.0	$1,600
Onshore Petroleum and Natural Gas Gathering and Boosting reporters 14,48	8.8	10.0	$35,200
LNG Storage reporters 14,48	8.8	1.0	$4,224
LNG Import and Export Equipment reporters 14,48	8.8	1.0	$5,867
Nitrogen removal units			
Flow rate measurement for simulation software (M4)			
Onshore Natural Gas Processing reporters 14,49,50	1.0	76.0	$114,000
Onshore Petroleum and Natural Gas Production reporters 14,49,50	1.0	5.0	$7,500
Onshore Petroleum and Natural Gas Gathering and Boosting reporters 14,49,50	1.0	24.0	$36,000
LNG Storage reporters 14,49,50	1.0	1.0	$1,500
LNG Import and Export Equipment reporters 14,49,50	1.0	1.0	$1,500
Glycol dehydrators			
Flow rate measurement for simulation software (M1)			

Year 1-3	Occurrences/ Respondent/Year	Respondents / Year	Cost/ Year
Onshore Natural Gas Processing reporters 14,49,50	1.0	262	$393,000
Onshore Petroleum and Natural Gas Production reporters 14,49,50	1.0	142	$213,000
Onshore Petroleum and Natural Gas Gathering and Boosting reporters 14,49,50,74	1.0	227	$340,500
LNG Storage reporters 14,49,50,74	1.0	25	$36,750
LNG Import and Export Equipment reporters 14,49,50	1.0	287.0	$430,500
Centrifugal and Reciprocating Compressors--contractor to perform compressor leak measurements 2			
Onshore Petroleum and Natural Gas Production reporters 51,52	2.0	478	$570,933
Onshore Petroleum and Natural Gas Gathering and Boosting reporters 51,52	2.0	354	$422,825
Hydrocarbon liquid Storage Tanks			
Simulation software yearly cost			
Onshore Natural Gas Processing reporters 49,53	1.0	165	$32,991
Pneumatic Devices-measure volumetric flow rate regularly 2			
Onshore Natural Gas Processing reporters 54,55,56	250	454	$1,362,000
Natural Gas Distribution reporters 56,57,58	33	163	$161,370
Onshore Natural Gas Transmission Compression reporters 31,56,58	33	624	$624,480
Underground Natural Gas Storage reporters 31,56,59	73	49	$71,600
Onshore Petroleum and Natural Gas Production reporters 31,55,56	1,765	478	$10,122,492
Onshore Petroleum and Natural Gas Gathering and Boosting reporters 31,55,56	407	354	$1,727,016
Pneumatic Pumps-measure volumetric flow rate regularly 2			
Onshore Petroleum and Natural Gas Production reporters 31,60,61	134	478	$383,934
Onshore Petroleum and Natural Gas Gathering and Boosting reporters 31,61,62	41	354	$216,780
Incremental recordkeeping and O&M costs due to new sources 67			
Onshore Natural Gas Processing reporters		53	$1,663,008
Onshore Natural Gas Transmission Compression reporters		364	$4,868,646
Underground Natural Gas Storage reporters		16	$276,608
LNG Import and Export Equipment reporters		0	$0
Onshore Petroleum and Natural Gas Production reporters		309	$7,364,715

Year 1-3	Occurrences/ Respondent/Year	Respondents / Year	Cost/ Year
Natural Gas Distribution reporters		0	$0
LNG Storage reporters		2	$10,913
Onshore Petroleum and Natural Gas Gathering and Boosting reporters		0	$0
Natural Gas Transmission Pipeline reporters		4	$187
Offshore Petroleum and Natural Gas Production reporters		7	$0
ANNUALIZED CAPITAL COSTS			
Flare stacks - continuous parameter monitoring 3			
Onshore Natural Gas Processing reporters 31,63,64,65	2	454	$128,355
Onshore Natural Gas Transmission Compression reporters 31,63,64,65	1	624	$123,014
Underground Natural Gas Storage reporters 31,63,64,65	4	49	$24,418
LNG Import and Export Equipment reporters 31,63,64,65	3	11	$3,915
Onshore Petroleum and Natural Gas Production reporters 31,63,64,65	157	478	$10,708,030
Onshore Petroleum and Natural Gas Gathering and Boosting reporters 31,63,64,65	22	354	$1,108,836
Incremental capital costs due to new sources 67			
Onshore Natural Gas Processing reporters		53	$14,984
Onshore Natural Gas Transmission Compression reporters		364	$71,758
Underground Natural Gas Storage reporters		16	$7,973
LNG Import and Export Equipment reporters		0	$0
Onshore Petroleum and Natural Gas Production reporters		309	$6,922,137
Natural Gas Distribution reporters		0	$0
LNG Storage reporters		2	$0
Onshore Petroleum and Natural Gas Gathering and Boosting reporters		0	$0
Natural Gas Transmission Pipeline reporters		4	$0
Offshore Petroleum and Natural Gas Production reporters		7	$0

Table 3. Total Subpart W Burden Hours and Costs Per Year

						Total Hours
Years 1 - 3						417,821
TOTAL ANNUALIZED CAPITAL COST						$19,113,421
TOTAL ANNUAL LABOR COST						$41,413,037
TOTAL ANNUAL O&M COSTS						$31,784,577
TOTAL ANNUAL COSTS (Labor, O&M, and annualized capital)						$92,311,035

Table 4. Subpart W Assumptions Used in Table 1 and Table 2 of the Appendix

1 New emission source for the listed industry segment(s).
2 New measurement requirements for the listed industry segment(s).
3 New equipment purchase requirements for the listed industry segment(s).
4 Assumed 1 hour per year to gather CEMS data.
5 Number of occurrences per respondent based on maximum average number reported by segment and by calculation method for RY2019 for other industry segments for this emission source.
6 Assumed 1 reporter would use this method.
7 For each hour of an Engineer's time, assumed 0.1 hours of a Middle Manager's time and 0.05 hours of a Senior Manager's time for oversight and review.
8 Only LNG exporters use AGRU.
9 Assumed activity takes 10 minutes (based on similar activity in December 2010 EIA for GHGRP) and multiplied by 4 for quarterly activities. (See https://www.epa.gov/ghgreporting/regulatory-impact-analysis-mandatory-reporting-greenhouse-gas-emissions-final-rule)
10 Assumed activity takes 10 minutes (based on similar activity in December 2010 EIA for GHGRP). (See https://www.epa.gov/ghgreporting/regulatory-impact-analysis-mandatory-reporting-greenhouse-gas-emissions-final-rule)
11 Assumed 2 reporters would use this method.
12 Assumed 3 reporters would use this method.
13 Assumed same amount of time per AGRU as for dehydrators in December 2010 EIA for GHGRP [10 minutes to compile data + 15 minutes to run simulation, per AGRU]. (See https://www.epa.gov/ghgreporting/regulatory-impact-analysis-mandatory-reporting-greenhouse-gas-emissions-final-rule)
14 Assumed same average number of NRUs per reporter as AGRUs in RY2019 for each industry segment and calculation method.
15 Assumed same number of reporters have NRUs as AGRUs in RY2019 for each calculation method.
16 Assumed 4 hours per year per respondent to schedule contractor, review contractor results, etc.
17 Activity conducted by a technician.
18 Assumed 4.5 hours in first year. Assumed 10% of 4.5 hours in subsequent years. After the first year, the level of effort (LOE) will only involve accounting for changes from the previous year.

19 Assumed activity occurs once per year per reporter.
20 Assumed 4 hours per reporter per year to perform calculations for blowdown vent stacks.
21 Assumed 4 hours per reporter per year to perform calculations for blowdown vent stacks.
22 Assumed that each facility would calculate emissions using 98.233(u) and 98.233(v) and assign to the equipment type that represents the largest portion of the emissions by equipment or event type.
23Assumed that 40% of reporters with desiccant dehydrators will be required to report blowdown vent stacks now that emissions from desiccant dehydrators are no longer being reported to subpart W and are no longer exempt from 98.233(i).
24 Assumed 20 hours to gather the necessary data to estimate emissions from other large release events and minimal time to calculate the emissions.
25 Assumed half of reporters would conduct leak surveys and the other half would use population leak factors.
26 Assumed one large release event per year.
27 Assumed two large release events per year.
28 Assumed 1% of reporters have a large release event to report each year.
29 Assumed 3% of reporters have large release events to report each year.
30 LOE from December 2010 EIA (See https://www.epa.gov/ghgreporting/regulatory-impact-analysis-mandatory-reporting-greenhouse-gas-emissions-final-rule).
31 Number of occurrences per respondent based on average number reported by segment for RY2019.
32 Assumed 10 minutes per tank.
33 Assumed 15 minutes per tank.
34 Used average number of transmission tanks per reporter for underground storage segment (1.5 tanks per facility).
35 Based on RY2019 data from transmission compression facilities, 515 unique facilities tested for leaks from transmission tanks. Of those 515 facilities, 503 used optical gas imaging to screen for leaks, 1 used flow meters to screen for leaks, and 11 used high volume sampling for screening and quantifying leaks. No facilities used calibrated bags or acoustic leak detection to screen and quantify leaks.
36 Used same ratios from transmission tanks for underground storage condensate storage tanks.
37 This is the sum of reporters using high volume samplers to quantify leaks and reporters using flowmeters to quantify leaks.
38 Assumed inspections take 10 minutes per separator or 10 minute per tank.
39 Number of occurrences based on total number of tanks reported in RY2019.
40 Assumed the same number of produced water tanks per reporter as hydrocarbon storage tanks reported in RY2019 by industry segment.
41 Assumed 1/3 of reporters would use M1.
42 Assumed 2/3 of reporters would use M2 or M3.
43 Assumed 10 minutes per well.
44 Assumed 15 hours per reporter per year to report by well-pad instead of by sub-basin (12 hours of an Engineer's time, 2 hours of a Middle Manager's time and 1 hour of a Technician's time).

45 Assumed an average of 3.44 wells per well-pad from NSPS OOOOb TSD.
46 Assumed 5 hours per reporter per year to report by G&B site instead of by county (3 hours of an Engineer's time, 1 hour of a Middle Manager's time and 1 hour of a Technician's time).
47 Assumed an average of 45 sites per Gathering and Boosting facility (15 centralized production, 15 compressor stations, and 15 other).
48 Assumed testing costs of $400 per AGRU/NRU.
49 Assumed flow measurement activity occurs once per year per AGRU/NRU facility.
50 Based on OGI crew costs, assumed it would cost $300 to show up (travel, + set up) + $150/hr for measurements. Assuming 8 hour day for testing for $1,500.
51 Assumed an average of 6 compressors per reporter (based on average number of reciprocating compressors per reporter from RY2019). NOD measurements are only required once every 3 years, so 2 compressors per year over the 3 year period of the ICR.
52 Assumed costs only apply to NOD measurements. Only requiring volumetric measurements for Onshore Production and Gathering and Boosting if the compressors are subject to NSPS OOOOb. The NSPS only requires measurements when compressors are in operating or standby pressurized modes.
53 Assumed one time license costs of E&P Tanks of $600 over the three-year period or $200 per year.
54 Assumed 250 pneumatic devices per facility.
55 Based on average number of pneumatic devices per facility, assumed would test 1/5 of devices every year.
56 Assuming the testing crew would cost $300 to show up (travel, + set up) + $150/hr for measurements. Vent measurements are 15 minute long, so max 4 device measurements/hour, and 25-28 total devices could be measured in an 8 hour day and would cost about $1,500. Second day costs would be similar, since multi-day monitoring would incur hotel and additional per diem costs. Based on 25 devices at the site, an average cost of about $60 per device for the vent measurements
57 Assumed 33 pneumatic devices per facility, same as Transmission Compression facilities.
58 Based on average number of pneumatic devices per facility, assumed would test 1/2 of devices every year.
59 Based on average number of pneumatic devices per facility, assumed would test 1/3 of devices every year.
60 Based on average number of pneumatic pumps per facility, assumed would test 1/5 of pumps every year.
61 Based on OGI crew costs, I estimate it would cost $300 to show up (travel, + set up) + $150/hr for measurements. Vent measurements are 5 minutes long, so max 12 device measurements/hour, and something like 50 total pumps could be measured in an 8 hour day and would cost about $1,500. Second day costs would be similar, since multi-day monitoring would incur hotel and additional per diem costs. Based on 50 pumps at the site, an average cost of about $30 per device for the vent measurements.
62 Based on average number of pneumatic pumps per facility, assumed would test 1/2 of pumps every year.
63 Assumed one continuous parameter monitoring device per flare stack.
64 Estimated that 80% of oil and gas industry already monitors flow rate, so the need for continuous parameter monitoring is reduced.
65 Assumed that continuous parameter monitoring device would cost $5,000 per flare. Assuming 10 year life and 7% interest, annualized cost is $712 per flare.
66 Assumed an additional 0.5 hours per year per reporter to incorporate combustion slip into existing calculations.

67 There are a total of 755 new sources expected to be required to comply with subpart W as a result of this rulemaking and the change in global warming potentials in the supplemental proposal.
68 Assumed 1 hour per well to gather mudlogging data and calculate emissions.
69 Assumed mudlogging is already being used so no costs for measurement equipment. If mudlogging is not already being used, would use method 2 instead of purchasing measurement equipment.
70 Assumed half of affected reporters would use Method 1 for mud degassing emissions and half would use Method 2.
71 Assumed 10 minutes per well to calculate emissions from mud degassing using the emission factor.
72 Assumed an additional 0.5 hours per year to incorporate combustion slip into existing calculations.
73 Assumed 2 hours per year to gather information (determine concentration of CH4 in gas stream entering the engine, determine total number of crank case vents on reciprocating internal combustion engines, and total operating hours per year for reciprocating internal combustion engines) and calculate emissions.
74 Assumed half of reporters would use simulation software for dehydrators and half would use population emission factors.
75 Assumed 0.5 hours per well per site to gather plugged well data annually.
76 Assumed 5% of wells would be plugged per year.