



Subpart W

(W)hat It Is, (W)ho it Impacts,
& (W)hy You Should Care

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with special thanks to

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Subpart W's function as an impartial annual reporting and data collection tool has taken a recent and dramatic shift towards compliance enforcement and punitive goals.*

*Potentially undercutting both its original purpose and legislative intent.



*A pneumatic controller at a Colorado oil field on February 24, 2021.
Credit Miguel Otárola/CPR News.*

Agenda

What, Who & Why?

- I. History – EPA/CAA, Estimates & the WEC
- II. Recent Developments – Federal
- III. Fundamental Issues – Case Study, State Updates, Operator Challenges
- IV. The Future and Takeaways



Offshore rig.
Source: Cressa LED Lighting.

Alphabet Soup

Before we dive in, welcome to Acronym Hell



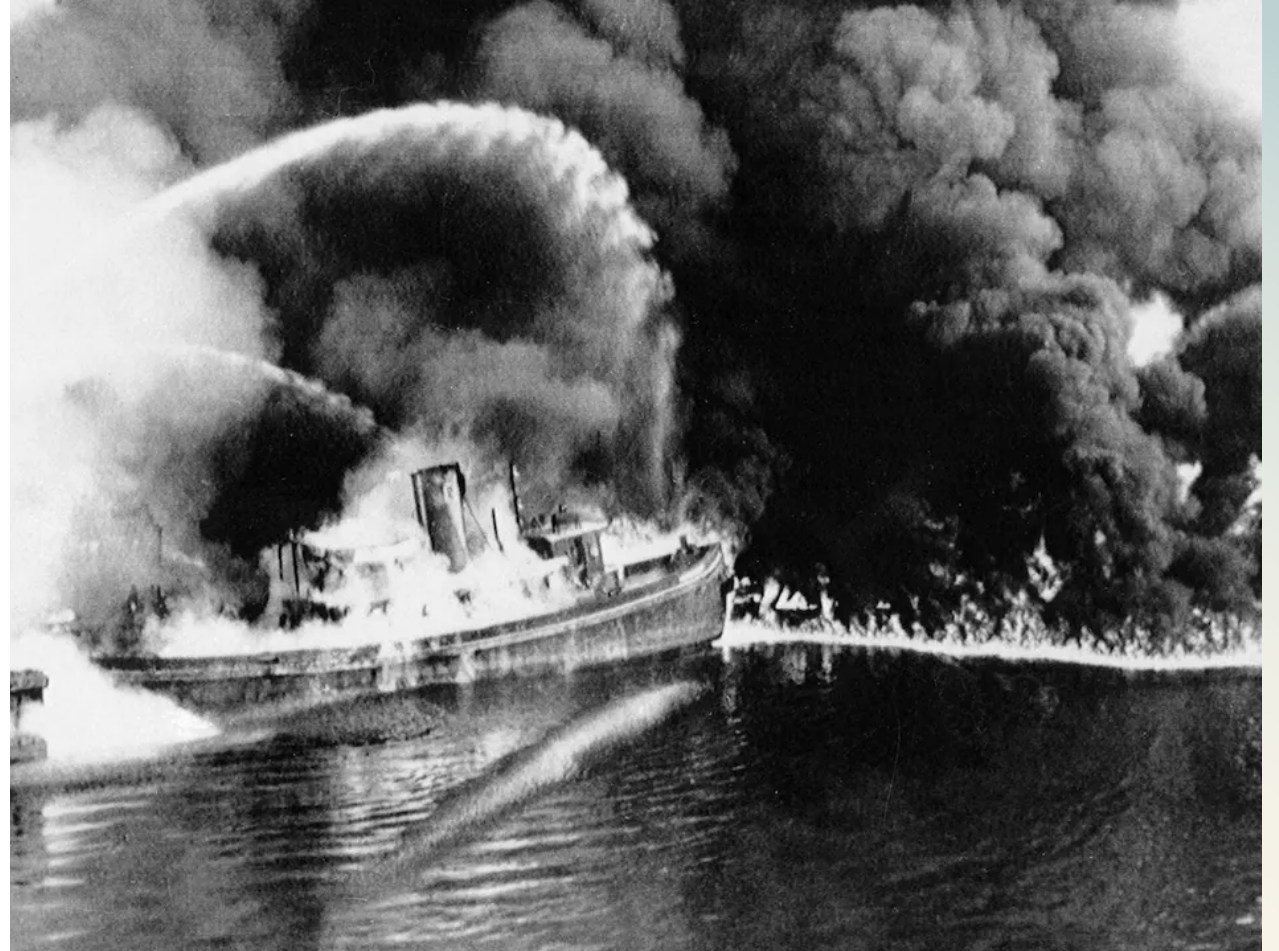
The federal government loves acronyms. Prepare yourself.

Glossary

- **EPA** – You know this one
- **CAA** – Clean Air Act, a robust 1963 federal law regulating all sources of air emissions
- **WEC** – “Waste Emissions Charge,” a proposed tax on methane originally introduced by the...
- **IRA** – Inflation Reduction Act of 2022, a law tackling everything from healthcare costs to IRS funding through 2031 to attempts at reducing...
- **GHG** – Greenhouse Gas Emissions, in this case methane, emitted by many aspects of domestic energy production
- **CRA** – Congressional Review Act enacted in 1996, a method of congressional oversight over agency rules and regulations (in this case, congressional oversight over EPA rulemaking)
- **MMTCO_{2e}** – Mostly for fun, but it is useful to know from the outset that all emissions under any reporting program are weighed in terms of carbon dioxide equivalents as the common denominator. This stands for “million metric tons of carbon dioxide equivalent,” (i.e., methane emissions, for all purposes in reporting, are measured in terms of carbon dioxide).
- **CH₄** – Methane, the primary component of natural gas

EPA & CAA

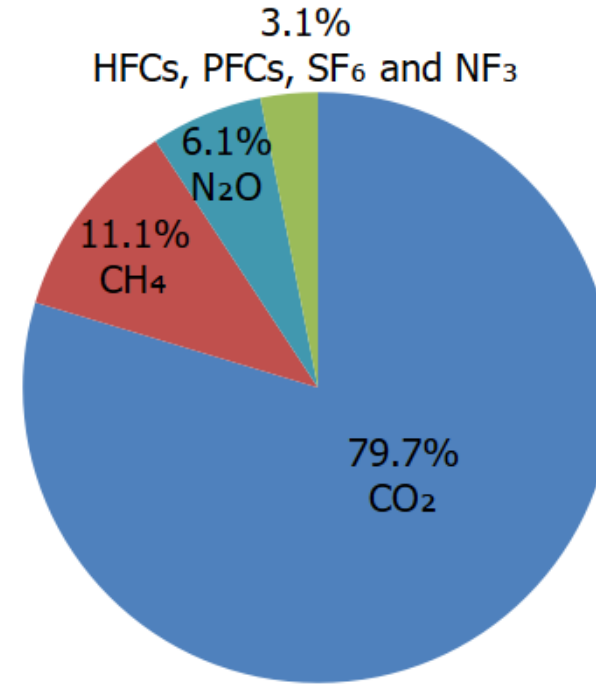
- The Environmental Protection Agency was founded on December 2, 1970, under the Nixon administration in the wake of numerous national environmental conversations that arose in the 1960s.
- The Clean Air Act was enacted in 1963, primarily in a research capacity towards monitoring and controlling air pollution. It was expanded significantly in 1970, granting federal government a larger share in air pollution control, with the newly created EPA positioned to implement the requirements of the CAA.
- Additional leaps in CAA power and authority took place in 1977, and again in 1990, granting the CAA significant authority in the realm of enforcement.



Cuyahoga River on fire.
Credit: Time Magazine, July 1969.

Inventory of US Greenhouse Gas Emissions & Sinks

- The EPA began its annual report (called the “Inventory”) in the early 1990s to fulfill US international treaty obligations, namely the UNFCCC (United Nations Framework Convention on Climate Change) in existence since 1992.
- General purpose is to establish baselines, track reduction progress, and inform on potential policies.
 - For example, one notable trend from the most recent survey is that 2022 GHG emissions are down 17% from 2005 levels.



Data from the EPA 2024 Inventory Report (covering 1990 through 2022)

CO₂ – Carbon Dioxide

CH₄ – Methane

N₂O – Nitrous Oxide

Hydrofluorocarbons, Perfluorocarbons, Sulfur Hexafluoride, Nitrogen Trifluoride

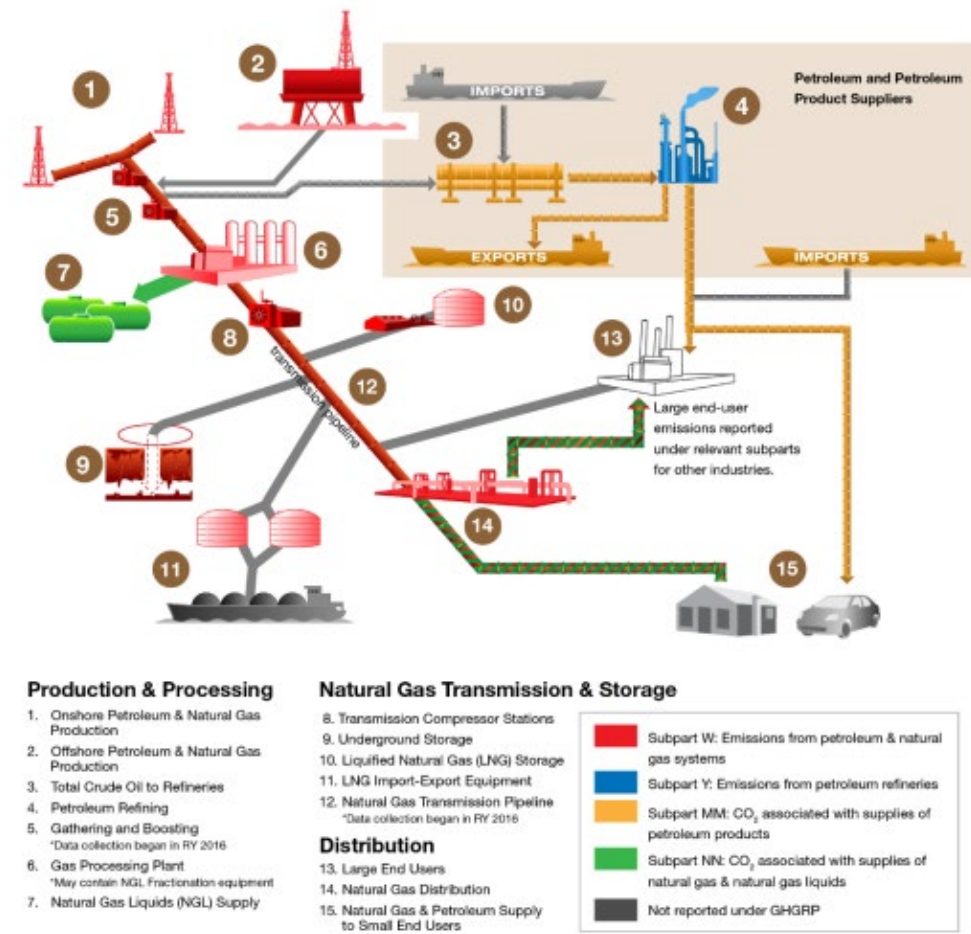
Subpart W

A Reporting Estimate Within the Reporting Estimate (within the reporting estimate)

- Congress, withing the Consolidated Appropriations Act of 2008, directed the EPA to create the Greenhouse Gas Reporting Program (GHGRP).
- The GHGRP collects data from large emissions sources in a variety of industrial sectors, informing the larger Inventory and supplying data used in the Inventory.
- 40 C.F.R. (Code of Federal Regulations) Part 98 was the implementation of that Congressional directive.
- Subpart W of 40 C.F.R. Part 98 is the portion of this reporting program applying specifically to petroleum and natural gas facilities.
 - In effect, an estimate (Subpart W reporting), within the estimate (the Greenhouse Gas Reporting Program), within the estimate (The Inventory).

Subpart W: Who Reports?

- Onshore Petroleum and Natural Gas Production;
- Offshore Petroleum and Natural Gas Production;
- Onshore Natural Gas Processing;
- Onshore Natural Gas Transmission Compression;
- Underground Natural Gas Storage;
- Liquefied Natural Gas Storage;
- Liquefied Natural Gas Import and Export Equipment;
- Onshore Petroleum and Natural Gas Gathering and Boosting; and
- Onshore Natural Gas Transmission Pipelines



"GHGRP and the Oil and Gas Industry," reproduced in Congressional Report R48906.
Credit: EPA

Subpart W: Who Reports? Redux

- Facilities that emit 25,000 metric tons of CO₂ equivalent (MTCO₂e) or more per year
 - Note that the methane (CH₄) must first be converted to its carbon dioxide (CO₂) equivalent, a metric that was 25x (or, for every thousand tons of methane, a 25,000 metric ton of carbon dioxide equivalent) for many years
 - Part of recent Subpart W changes have been to adjust this metric to a 28x (or, for every thousand tons of methane, a 28,000 metric ton of carbon dioxide equivalent), reducing emissions requirements triggering Subpart W reporting
 - This 12% increase in threshold trigger has implications for small developers on the cusp of reporting requirements, and went into effect for the 2025 Reporting Year (due 3/31/2026)



A pump jack at sunset.
Credit: Eric Kounce.

The Inflation Reduction Act of 2022

- Enacted August 16, 2022, the IRA was a budget reconciliation bill generally aimed at healthcare, corporate taxes, and climate incentives.
- Of note, the IRA amended the Clean Air Act (CAA) by adding Section 136, granting new authority and power through creation of the Methane Emissions Reduction Program (**MERP**).
- Section 136 also imposed (in relevant part)...
 - 136 Stat. 2074: “**Waste Emissions Charge**” – “The Administrator shall impose and collect a charge on methane emissions...from an owner or operator of an applicable facility that reports more than 25,000 metric tons of carbon dioxide equivalent of greenhouse gases emitted per year pursuant to Subpart W...”
- **This would be the first time the federal government has directly imposed a charge, or tax, on greenhouse gas emissions.**
- EPA proposed to implement the WEC on **January 26, 2024**, and issued final rulemaking and determinations on WEC scope on **November 18, 2024**.

Who Would be Subject to the WEC?

- According to the Regulatory Impact Analysis accompanying the 2024 final rulemaking:
 - About **half of facilities** initially subject to the WEC
 - After accounting for statutory thresholds allowing for some methane emission based on amount of oil or gas sent to market, about **25% remain subject to WEC**
 - After accounting for “netting,” or common ownership applying the “negative” emissions from one common facility to another reporting facility, about **20% remain subject to the WEC**
- Not statistically insignificant; and, as in all things, consider the source of the data and the fluidity around both its implementation and rulemaking

Data from EPA 2024 Regulatory Impact Analysis—Derived from GHGRP Year 2022

	A	B	C	D
Facility Type	Number of Facilities Reporting Subpart W Emissions	Number of Facilities with Emissions Subject to the WEC	Number of Facilities with WEC Emissions After Applying Thresholds	Number of Facilities with Emissions Subject to WEC After "Netting"
Onshore petroleum and natural gas production	459	393	226	202
Onshore petroleum and natural gas gathering and boosting	350	310	201	125
Onshore natural gas transmission compression	659	22	~5	~0
Onshore natural gas transmission pipeline	44	20	4	4
Natural gas processing	444	180	~53	~16
Offshore petroleum and natural gas production	116	23	17	16
Underground natural gas storage	51	1	1	1
Liquefied natural gas import and export equipment	11	7	0	0
Liquefied natural gas storage	5	0	0	0
Total Number of Facilities^a	2,112	954	~507	~364

Based on Regulatory Impact Analysis provided by the EPA in 2024.
Source: Congressional Research Service.

What Would be Subject to the WEC?

- The same data, in terms of emissions instead of facilities
 - About **one-third of reported emissions would be subject to the WEC**

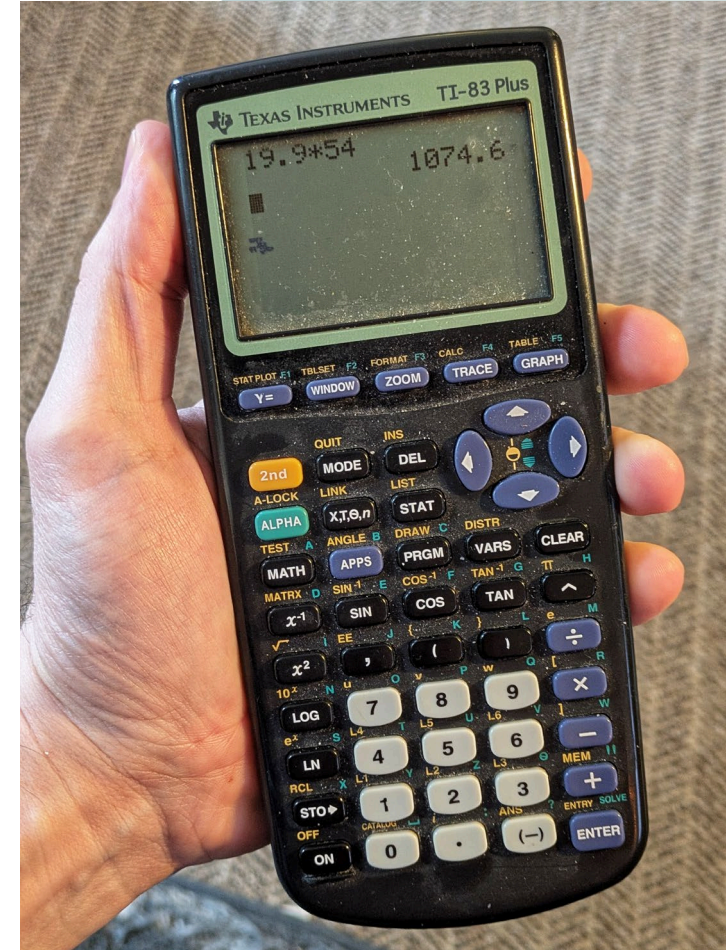
Estimated Annual Emissions in Million Metric Tons of Carbon-Dioxide-Equivalent (MMTCO₂e)

	A	B	C	D
Facility Type	Methane Emissions Reported Under Subpart W	WEC Emissions from Facilities Subject to Subpart W	WEC Emissions After Applying Thresholds	WEC Emissions After "Netting"
Onshore petroleum and natural gas production	30.8	23.8	17.1	14.8
Onshore petroleum and natural gas gathering and boosting	15.1	11.8	7.8	3.9
Onshore natural gas transmission compression	4.5	0.5	0.2	0.1
Onshore natural gas transmission pipeline	2.4	0.8	0.4	0.4
Natural gas processing	2.7	1.2	0.8	0.3
Offshore petroleum and natural gas production	1.5	0.8	0.6	0.6
Underground natural gas storage	0.3	0.003	—	—
Liquefied natural gas import and export equipment	0.1	—	—	—
Liquefied natural gas storage	—	—	—	—
Total Emissions	58.8	39.2	26.9	19.9

Based on Regulatory Impact Analysis provided by the EPA in 2024.
Source: Congressional Research Service.

How Much is the WEC?

- As it was scheduled to begin in 2024, the original charge was **\$900 per metric ton** of methane
 - To increased to **\$1,200** in 2025
 - And an additional increase to **\$1,500** in 2026
- Equating to about **\$54 per ton** of MTCO₂e, factoring in the 1-to-28 ratio of methane to carbon dioxide equivalence
- Applied to the 19.9 million metric tons of MTCO₂e from the last slide, we arrive at an **estimated \$1.1 billion in charges and industry exposure for the 2026 Fiscal Year**, as predicted by 2024 Regulatory Impact Analysis data supplied by the EPA



A photo of me and my 30-year-old TI-83 Plus doing the math.
Don't judge how dirty it is; it's an ancient treasure.

Congressional Review Act (CRA)

- The CRA provides a legislative process allowing Congress to overturn federal agency action, though it does **not** change the law on the books.
- In effect, the CRA can force a new agency interpretation, or implementation, of existing law.
- The 119th Congress passed a joint resolution in the House and the Senate in February of 2025, signed March 14, 2025, disapproving of EPA's 2024 WEC Rule and delaying implementation of the WEC.
- 5 U.S. Code § 801 (the CRA) – (b)(2) “**A rule that does not take effect...**[via Congressional disapproval by joint resolution] **may not be reissued in substantially the same form...**” [unless specifically authorized by law enacted after the date of the joint resolution].
- **The statutory requirements of Section 136 discussed earlier, the implementation of the WEC itself, remains.**

One Big Beautiful Bill Act

- An omnibus reconciliation bill signed into law on July 4, 2025, concerning everything from auto loans and semiconductor manufacturing to SNAP benefits.
- **Extended the effective date of the WEC from 2024 to 2034.**
- This extension also allows for time for the EPA to figure out how the WEC fits into other regulatory and statutory programs.
 - **CAA Section 111** – conditional exceptions to WEC.
 - **The Greenhouse Gas Reporting Program** – current proposed suspension of reporting requirements until 1/1/2034 (and proposed removal of all reporting programs **except** for petroleum and natural gas systems, as required by the 2022 IRA).

If Delayed, Why Do We Care?

1. Uncertainty

- In less than half a decade, we've gone from the first instance of financially punitive federal action against greenhouse gas emitters to consistent can-kicking (without repeal).

2. Altered scope

- A potential methane tax has changed the perception of Subpart W from regulatory reporting obligation to something significantly more consequential, with potential financial, reputational, or even investor-related implications.

3. Practical challenges if implemented

- Friction between Subpart W as a standardized, broad-strokes reporting system shoehorned into a taxation and enforcement role.



Source: OGCI

Subpart W Data Collection

The Problem of Linking Punitive Enforcement to a System Built on Estimates

- To understand the practical struggles, we need a basic understanding on some current methods of data collection:
- **Emissions factors** – the standardization of the components within the industry itself, and the assigning of an emissions value to quantify estimated emissions (i.e., a valve will have an emissions factor, a pneumatic controller will have an emissions factor, etc.)
 - When the goal is data feeding into a broad-stroke estimate fulfilling international treaties and informing of national progress in reducing GHG, standardization is “fine”
 - When we introduce a potential **yearly \$1 billion punitive factor** into this standardization process, it invites critique

The Pneumatic Controller: A Case Analysis

- Pneumatic controllers are device that operate valves to control pressure, liquid levels, and several other functions. They can be designed to bleed continuously, or intermittently, and due to their prevalence in many aspects of the industry, are a frequent topic of discussion.
- For some sites, they have been said to account for **50% of methane emissions** alone.
- How emissions data has been collected on pneumatic controllers has varied dramatically.

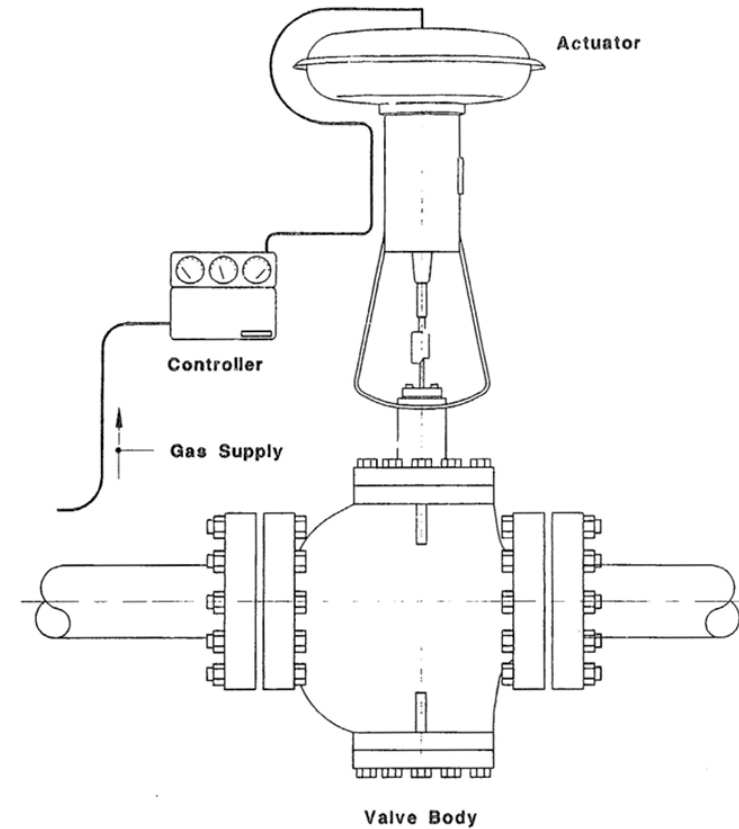


Figure 3-1. Example of a Pneumatic Controller Used for Level, Flow Rate, Temperature, or Pressure Control

The EPA 1996 Study

- A multi-volume research project to quantify methane emissions from the U.S. natural gas industry
- Of relevance to use is “Volume 12: Pneumatic Devices”
 - Data used to arrive at emissions factors was compiled from a number of sources, with emphasis on a Canadian Petroleum Association Report and EPA conducted field tests

TABLE 4-2. RESULTS FROM THE CANADIAN PETROLEUM ASSOCIATION PNEUMATIC EMISSION RATE STUDY

Instrument Type	Facility Type	Equipment Type	Quantity Measured	Minimum Flow, scfd	Maximum Flow, scfd	Average Natural Gas Emission, scfd
Snap-Acting Controller	Oil Battery	Group Treater	1	0.0	690	33
		Test Treater	2	172	172	179
		Group Treater	1			14
		Group Treater	2	0.0	>951	226
		Group Treater	2	0.0	>933	59
		Group Treater	2	0.0	>959	140
		Group Treater	2	0.0	573	81
		Group Treater	1	0.0	>1,911	695
		Group Treater	1			12
		Test Treater	2			210
		Test Separator	2	0.0	430	233
		Group Separator	1	0.0	1397	677
Average Emission for Snap-Acting Controllers						213 ± 57%
Throttling Controller	Oil Battery	Dehydrator	3	0	10	2
		Line Heater	1	55	55	60
		Line Heater	1	11	11	11
		Line Heater	1	31	31	34
		Group Treater	6	7	7	8
		Test Separator	1	529	529	529
		Test Separator	3	9	240	11
Average Emission for Throttling Controllers						94 ± 152%

The 1996 EPA Study

1. Domestic field tests

- From the 1996 Report, initial emissions factors were derived and remained a basis for nearly two decades

TABLE 4-4. MEASURED EMISSION RATES FOR CONTINUOUS BLEED DEVICES

	Production Onshore	Production Offshore	Total Production	Transmission
Number of Measurements	9	9	18	23
Minimum, scfd/device	380	108	108	152
Maximum, scfd/device	2,334	962	2,334	4,215
Average, scfd/device	1,189 ± 39%	556 ± 33%	872 ± 30%	1,363 ± 29%

Continuous Bleed

TABLE 4-5. SUMMARY OF PRODUCTION SITE DATA

Site	Total Count of Devices	Power Media	Number of Snap-Acting Devices	Number of Throttling Devices ^a	Number of Continuous Bleed Devices ^b
1	136	Gas	114	22	22
2	18	Gas	75	95	29
3	405	Gas	405	0	0
4	68	Gas	48	20	20
5	21	Gas	26	83	21
6	13	Gas	94	534	534
7	3	Gas	999	0	0
8	3	Gas	667	0	0
9	6	Gas	3	3	3
10	14	Gas	0	14	0
11	76	Gas	0	76	76
12	600	Gas	0	600	600
13	107	Air	71	36	25
14	69	Gas	42	27	20
15	13	Gas	8	5	0
16	1	Gas	1	0	0
17	3	Gas	3	0	0
18	4	Air	3	1	0
19	46	Air	6	40	40
20	5	Gas	4	1	0
21	11	Gas	5	42	42
22	31	Gas	0	31	31
TOTALS	4,204		2,574	1,630	1,463
FRACTION BY DEVICE TYPE			Non Continuous Bleed 0.65 ± 43%		Continuous Bleed 0.35 ± 43%

^a Throttling devices can be either continuous or intermittent bleed.

^b Continuous bleed devices are a sub-category of throttling devices.

Intermittent Bleed

Additional Studies or Data Sets Concerning Pneumatic Controllers

- **The 2013 “Allen” Study** – sponsored by the Environmental Defense Fund; analyzed 300 pneumatic controllers in 15-minute measurement windows
 - One key takeaway was that **19% of controllers are responsible for 95% of emissions**
 - Note that at least one EPA analysis of the study said it could be used to justify estimates from **20.5 bcf/y** (billion cubic feet per year) of national methane emission, up to **40.9 bcf/y**
- **The “Rutherford” Study** – conducted a methodological review of dataset analysis, synthesizing data from a number of other studies to arrive at higher emissions factors, in conjunction with the 2013 “Allen” Study
 - Note that the **EPA conducted none of its own research or data** and relies heavily on the Rutherford study in update alternative emissions factors
 - The lack of EPA validation or verification is problematic considering the weight potentially given for developing alternative emissions factors

The Pneumatic Controller: Takeaway

- The inconsistencies and unknowns surrounding pneumatic controller emissions illustrates the larger issues around applying standardized cookie-cutter methods meant for generating broad data sets to **individual fee liability**.



Pneumatic controller.
Source: Fisher CI.

Subpart W as a Fee Basis – Larger Issues

- The maintenance and responsible operator question
 - Ignoring inherent issues with the studies themselves, they do highlight that significant emissions arise from malfunctioning or poorly performing equipment.
 - Two facilities with similar equipment can have vastly different actual emissions, but standardized methodologies for a punitive fee will disproportionately harm the responsible party, undercutting the point.



Source: Oilfield Marketplace.

Subpart W as a Fee Basis – Larger Issues

- Reconciling data sets
 - Standardized EPA methodologies do not reconcile with operational realities of accumulating data – we've come a long way since 1996
 - As methane detection technologies are more widely deployed, inconsistencies are emerging between observed emissions and EPA calculation methodologies designed for broad estimates



Optical gas imaging camera.
Source: BOE Report.

Subpart W as a Fee Basis – Larger Issues

- Reconciling reporting requirements
 - As previously indicated, part of the justification in delayed application of WEC is forcing the EPA to consider how it fits into other reporting mandates
 - In a similar way, Subpart W reporting, OOOOoc (Emissions Guidelines for Existing Crude Oil and Natural Gas Facilities), MERP requirements, state-level methane regulations, and emerging super-emitter frameworks, all intersect with potentially conflicting requirements and methodologies

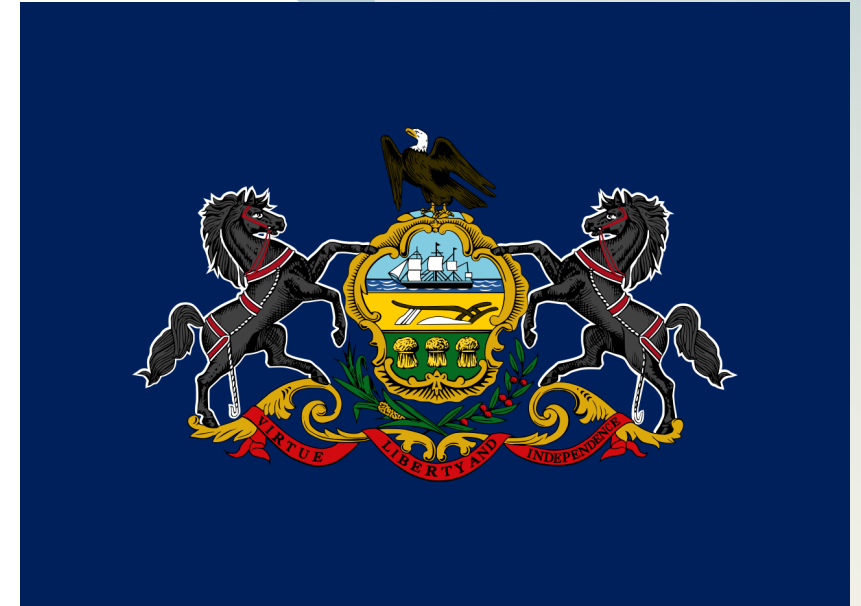


Regulatory Intersections

- The WEC enforcement protocols are linked with EPA CAA Section 111 rulemaking, with WEC applying to oil and gas production, and CAA Section 111 rulemaking having wider coverage of stationary sources of emissions.
 - Think power plants, steel plants, industrial boilers....but also a lot of the same oil and gas industry facilities that fall under Subpart W reporting requirements, and consequently the WEC, creating overlap
- The WEC is to have some exceptions built into Section 111 rulemaking, but Section 111 has been in flux for the last decade.
 - First finalized during the Obama Administration, and altered by the first Trump Administration, the Biden Administration, and the second Trump Administration
 - This provides some of the justification for delayed WEC implementation, as CAA Section 111 needs to be finalized to implement the accompanying conditional exceptions to the WEC
- The most recent version of CAA Section 111 rulemaking extended the deadline for states to submit their plans for methane emission regulation in accordance with CAA Section 111 directives to January 22, 2027
 - State plans are an early, necessary procedural part of actual implementation

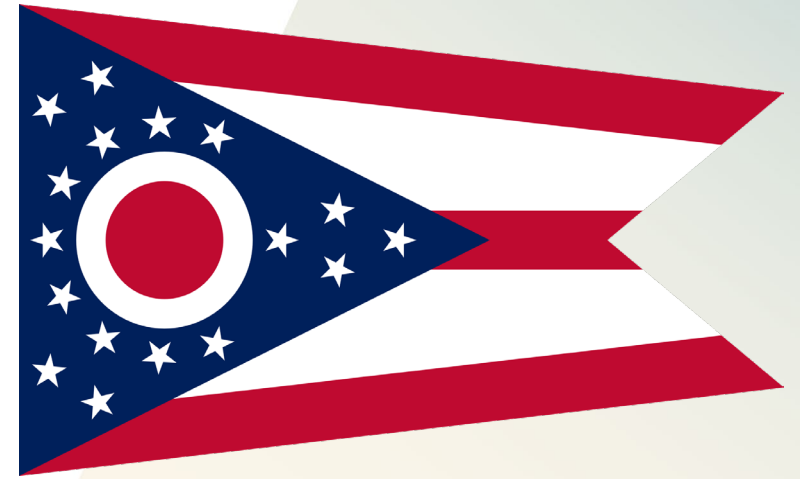
Recent Developments – Pennsylvania

- On July 24th, 2026, the Pennsylvania Department of Environmental Protection (DEP) Regulatory Update noted ongoing efforts to develop regulatory amendments for methane emissions from oil and gas wells and production facilities
- This coincided with the Shapiro Administration announcing these efforts on the same date, noting stakeholder outreach and public comment period to come



Recent Developments – Ohio

- In early 2026 the Ohio EPA published notice of Early Stakeholder Outreach for input on rules intended to satisfy its CAA Section 111 rulemaking obligations regarding methane emissions, with the commenting period ending April 10, 2026
 - *Awaiting draft rule language availability to public*
- Ohio House Concurrent Resolution 47 introduced June 18, 2026, currently in committee, urging US EPA to reconsider methane rule application to marginal wells and small operators



The Small Operator Burden – Facilities

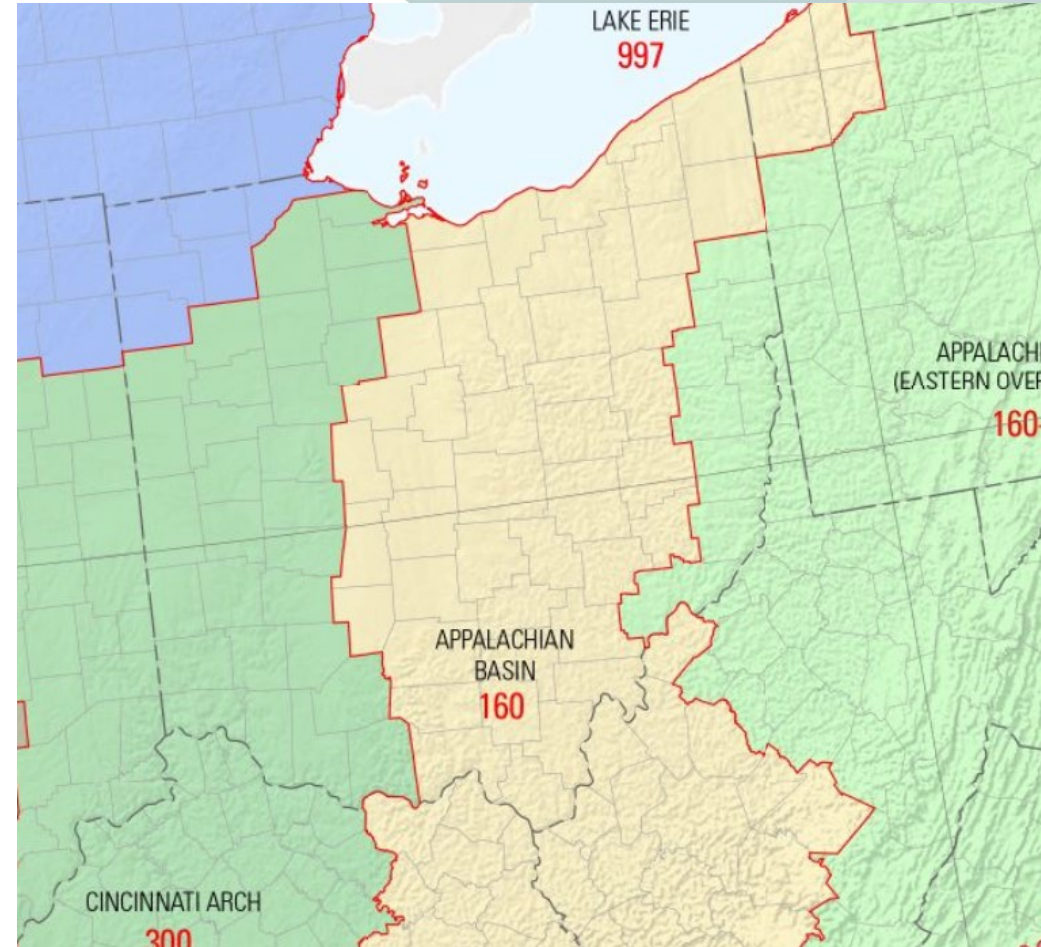
- Consider the definition of a “**facility**” in Subpart W Reporting:
 - Provisions of the Clear Air Act generally define a facility in ordinarily understood terms, such as a “stationary source,” meaning any “building, structure, **facility**, or installation which emits or may emit any air pollutant.”
 - 40 CFR 98, Subpart W, instead defines a facility as all equipment on a single well-pad, and operations under common ownership or common control location in a **single hydrocarbon basin**, and specifically provides that “where a person or entity owns or operates more than one well in a basin, then all onshore petroleum and natural gas equipment associated with all wells that the person or entity owns or operates in the basin will be considered one facility.”



Source: Denver Business Journal.

The Small Operator Burden – Facilities

- With WEC and MERP statutorily linking Subpart W reporting with CAA enforcement powers, language becomes critical in understanding the implications
 - Based on the current definition, hundreds or thousands of non-contiguous low-producing wells spanning different states can be aggregated as a single reporting facility, forcing small producers and limited operators into fee exposure



Source: American Association of Petroleum Geologists.

The Small Operator Burden – Lack of Screening

- Proper compliance with Subpart W requirements, including determining if you are near thresholds, is a time-consuming and expensive process.
- Large producers employ in-house professional engineers, outside consultant reviews, and formal professional assurances from independent third parties to verify data collected.
- Marginal wells face disproportionate burdens in the realm of monitoring, recordkeeping, reporting, and fugitive emissions survey requirements relative to their production and emissions.
- The EPA has sufficient data to provide **a less burdensome screening process** allowing small producers to determine when they are approaching Subpart W reporting requirement and potential future exposure to the WEC.



The Unknowns of the Future

- The rapid changes of the regulatory landscape have given the industry whiplash
 - Faster than the EPA can provide consistent implementation guidance for
 - And faster than a practical operational path forward has surfaced
- How will the EPA react and evaluate discrepancies and changes in reported emissions?
 - Risk of WEC incentivizes a keener eye to data collection methods and alternative EPA calculation methods
 - But will variances measured against previously reported data risk audit?
 - The shift from reporting exercise to compliance program is making defensible documentation and audit readiness a new operational reality



Source: The Federalist Society.

Key Takeaways

- Subpart W was created for broad *national data gathering*, not as a **compliance enforcement tool**.
- Even with delayed implementation, the introduction of a methane charge has shifted reporting from an *annual reporting exercise* to a **business and risk management issue** that everyone in the industry should keep apprised of.



"Oil Field Cardington, Ohio 1964," Oil on canvas by Emerson Burkhardt.

Questions? Comments? Feel free to reach out!



James Parsons

Senior Attorney, Oliva Gibbs

James Parsons has over a decade of experience in the oil and gas industry, providing clients with assistance in such matters as due diligence, mineral property transactions, regulatory compliance, title examination, and litigation. These efforts have included both leading projects and aiding with work in the states of Texas, Ohio, North Dakota, Oklahoma, West Virginia, and Pennsylvania.



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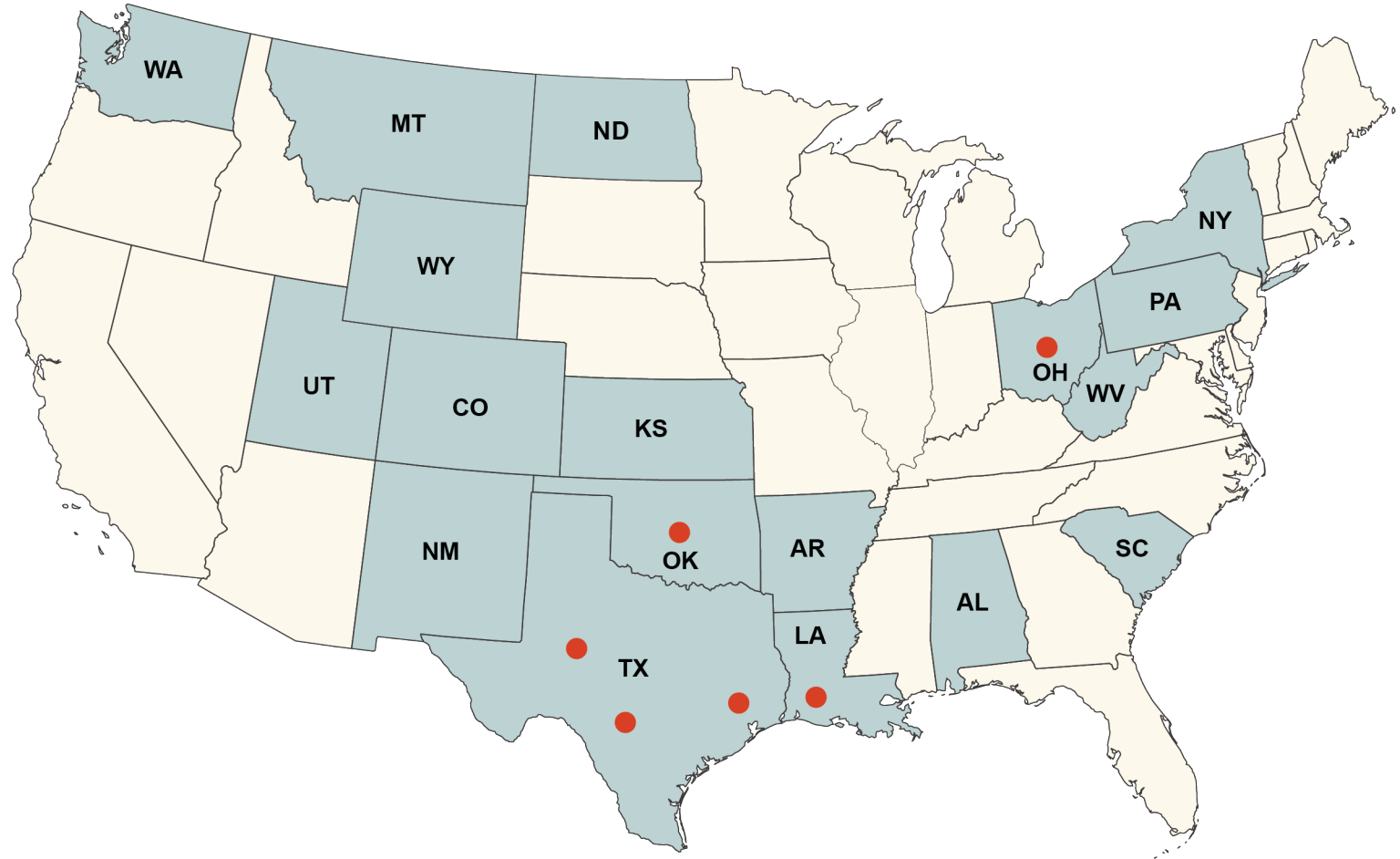
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