SUPPLEMENTAL QUESTIONNAIRE

R.15-01-008, 2025 Annual Report

[Gill Ranch Storage LLC.]

Rulemaking (R.) 15-01-008 to Adopt Rules and Procedures Governing Commission Regulated Natural Gas Pipelines and Facilities to Reduce Natural Gas Leaks Consistent with Senate Bill 1371, Leno.

In partial fulfillment of Rulemaking (R.) 15-01-008 to Adopt Rules and Procedures Governing Commission Regulated Natural Gas Pipelines and Facilities to Reduce Natural Gas Leaks Consistent with Senate Bill 1371, Leno.

In Response to Data Request R15-01-008, 2025 Annual Report

Date: [6/13/25]

The following data have been prepared to comply with Senate Bill 1371 (Leno, 2014), Section 2, Article 3, Order Instituting Rulemaking (OIR) 15-01-008, and to provide responses to Data Request R. 15-01-008, 2025 Annual Report.

1. **Please provide the following for the period from January 1, 2024 to December 31, 2024:**

    a. **Describe any current projects or studies related to SB 1371.**
    We continue to conduct our quarterly LDAR (Leak Detection and Repair) inspections as part of our ongoing compliance efforts under SB 1371; however, there are no new projects or studies to report for this period.

    b. **Describe the activity changes between the previous year's reporting and the current year's reporting that affected the change in the total emissions. For example, changes in maintenance activities may have changed blowdown emissions from previous years and resulted in changes to total emissions.**
    This year, we began blowing down compressors when not in use to eliminate the potential for gas leakage. In addition, we continue to equalize compressor pressure with plant pressure when shutting down a unit. For example, we equalize to 620 psi. Since any unit pressure below 620 psi does not require a blowdown for startup, this practice allows us to restart compressors without the need for additional blowdowns, further reducing emissions. In 2024, there were 215 entries for blowdowns; however, only 72 were actual blowdowns due to our practice of equalizing compressors to below 620 psi.

    c. **Describe advances in abatement efforts, similar to the executive summary in the best practices reporting.**
    There were no new abatement initiatives during this reporting period beyond the operational improvements described in Question B, including proactive compressor blowdowns and pressure equalization to minimize emissions during shutdown and startup.

    d. **Describe improvements in reporting that are not discernable by reviewing the reporting data. For example, report the installation of a new data management or leak tracking system.**
    There were no new improvements in reporting systems or processes during this reporting period.

    e. **For smaller utilities, confirm if there were no leaks in distribution mains and services pipelines.**
    No leaks were found in distribution mains or service pipelines during our biannual leak surveys conducted on May 15, 2024, and November 1, 2024.

    f. **Identify any additional tables to be included in the Joint Report. Staff will place these tables in an appendix.**
    N/A

2. **Does the utility propose a 2015 baseline adjustment or emission factor change? If so, please describe. Can the utility adhere to the following timeline:**

    a. **Deadline for requests for baseline adjustments, methodology changes, including new emission factors: April 30, 2025.**

    b. **Agency Review Meetings: April 30 through July 31, 2025.**

    c. **Final Decision: August 29, 2025**.

Response:

Gill Ranch Storage does not propose a 2015 baseline adjustment or emission factor change at this time.

[Gill Ranch Storage LLC.], [June 13, 2025]

Rulemaking (R.) 15-01-008 to Adopt Rules and Procedures Governing Commission Regulated Natural Gas Pipelines and Facilities to Reduce Natural Gas Leaks Consistent with Senate Bill 1371, Leno.

In Response to Data Request, R15-01-008 - 2025 June Report

Appendix 1; Rev. 03/27/2025

Notes:
Emissions included in the Report are based on miles of transmission pipeline. Therefore provide the miles of transmission pipeline in your system her
The following data on transmission pipeline leaks is **for information purposes** and will not be used to report transmission pipeline leak emissions this year
Use a formula-derived value with the formula used in the Annual Emissions column. Do not use a copy and paste-as-valu
At the end of Annual Emissions Column, add a summation total in a cell for a column total, and then highlight orange.

Transmission Pipeline Leaks:

ID	Geographic Location	Pipe Material	Pipe Size (nominal)	Pipe Age (months)	Pressure (psi)	Leak Grade	Above Ground or Below Ground	Discovery Date (MM/DD/YY)	Repair Date (MM/DD/YY)	Scheduled Repair Date (MM/DD/YY)	Reason for Not Scheduling a Repair	Number of Days Leaking	Emission Factor (Mscf/Day)	Annual Emissions (Mscf)	Explanatory Notes / Comments
27 MILE TRANSMISSION PIPELINE	93637	NA	STEEL	30"	152	1415	NA	B	NA	NA	NA	NA	NA	NA	NO LEAKES WERE FOUND DURING THE BI-ANNUAL LEAK SURVEYS OF THE PIPELINE AND NO LEAKS WERE CAUSED BY 3RD PARTY DAMAGES. NO LEAKS WERE FOUND TO THE 223 COMPONENTS ON THE ABOVE GROUND FACILITIES LOCATED ON THE 27 MILE PIPELINE DURING THE QUARTERLY LEAK INSPECTIONS. 7-year ILI Inspection – Was completed in March 2024. No anomalous conditions identified by the ILI meet any of the PHMSA repair thresholds. PIPE SIZE: 30 " (762MM) OD * 0.506" (12.9 MM) WT MATERIAL GRADE: API 5L GRADE X-70M PSL 2
												Sum total		0	

[Gill Ranch Storage LLC.], [June 13, 2025]

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In Response to Data Request, R15-01-008 - 2025 June Report

Appendix 1; Rev. 03/27/2025

Notes:

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At the end of Annual Emissions Column, add a summation total in a cell for a column total, and then highlight orange

Transmission Pipeline Damage (3rd party dig-ins, natural disasters, etc.):

ID	Geographic Location	Damage Type	Pipe Material	Pipe Size (nominal)	Pipe Age (months)	Pressure (psi)	Leak Grade	Above Ground or Below Ground	Discovery Date (MM/DD/YY)	Repair Date (MM/DD/YY)	Number of Days Leaking	Emission Factor (Mscf/Day)	Annual Emissions (Mscf)	Explanatory Notes / Comments
27 MILE TRANSMISSION PIPELINE														

Sum total 0

[Gill Ranch Storage LLC.], [June 13, 2025]

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Appendix 1; Rev. 03/27/2025

Notes:

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At the end of Annual Emissions Column, add a summation total in a cell for a column total, and then highlight orange.

The emissions reported under the column Methane Abatement (Mscf) are for information purposes only, and should be seperated from the emissions reported under the column for Annual Emissions (Mscf).

Transmission Pipeline Blowdowns:

ID	Geographic Location	Number of Blowdown Events	Reason	Emission Reduction Strategy	Annual Emissions (Mscf)	Explanatory Notes / Comments	Methane Abatement (Mscf)
		Total			**0**		

[Gill Ranch Storage LLC.], [June 13, 2025]

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Appendix 1; Rev. 03/27/2025

Notes:
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At the end of Annual Emissions Column, add a summation total in a cell for a column total, and then highlight orange
The emissions captured on this tab represent the emissions associated with the operational design and function of the component. Any intential release of natural gas for safety or maintenance purposes should be included in the Blowdowns worksheet.

Transmission Pipeline Component Vented Emissions:

Total Number of Devices	Device Type	Bleed Rate	Manufacturer	Emission Factor (Mscf/day)	Annual Emission (Mscf)	Explanatory Notes / Comments

Sum total 0

[Gill Ranch Storage LLC.], [June 13, 2025]

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Use a formula-derived value with the formula used in the Annual Emissions column. Do not use a copy and paste-as-value.

At the end of Annual Emissions Column, add a summation total in a cell for a column total, and then highlight orange

The emissions captured on this tab represent the emissions associated unintentional leaks that if repaired would not leaking. If the component is releasing gas or "bleeding" as a result of its design or function then it is not to be captured in this tab.

Transmission Pipeline Component Fugitive Leaks:

ID	Geographic Location	Device Type	Bleed Rate	Manufacturer	Discovery Date (MM/DD/YY)	Repair Date (MM/DD/YY)	Number of Days Leaking	Emission Factor (Mscf/day)	Annual Emission (Mscf)	Explanatory Notes / Comments

Sum total 0

[Gill Ranch Storage LLC.], [June 13, 2025]

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Appendix 1; Rev. 03/27/2025

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At the end of Annual Emissions Column, add a summation total in a cell for a column total, and then highlight orange.

Transmission Pipeline Odorizers:

ID	Geographic Location	Number of Units	Emission Factor (Mscf/yr)	Annual Emission (Mscf)	Explanatory Notes / Comments
			Sum total	0	Provided as an example.

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Header column "Comment" boxes displayed below for reference.	
Column Heading	Description and Definition of Required Contents (IF not self-explanatory)
Pipeline Leaks	
ID	
Geographic Location	GIS, zip code, or equivalent
Pipe Material	PB = cathodically protected steel, bare PC = cathodically protected steel, coated UB = unprotected steel, bare UC = unprotected steel, coated
Pipe Size (nominal)	
Pipe Age (months)	
Pressure (psi)	MOP = maximum operating pressure over the past year
Leak Grade	1 = grade 1 2 = grade 2 2+ = grade 2+ 3 = grade 3 AH = Above Ground Hazardous synonoumous with Grade 1. AN = Above Ground Non-Hazardous AM = Above Ground Non-Hazardous Minor (akin to grade 3 below ground leak). N = non-graded or ungraded
Above Ground or Below Ground	A = above ground B = below ground
Discovery Date (MM/DD/YY)	
Repair Date (MM/DD/YY)	Date that the pipeline repair stopped the leak. Any associated blowdowns resulting from the repair should be included in the blowdowns tab.
Scheduled Repair Date (MM/DD/YY)	If leak is open, specify the scheduled date of repair, or type "M," signifying that the leak is being monitored with no scheduled date of repair. Then, provide the reason for not scheduling a repair in Column for that purpose.
Reason for Not Scheduling a Repair	If not scheduled for repair (e.g. with a "M" for monitoring the leak in Scheduled Repair Date), then provide the reason for not scheduling a repair.
Number of Days Leaking	If the leak was discovered by survey in the year of interest, then assume leaking from January 1st of subject year thru repair date or December 31st of subject year, which ever is earlier. (E.G. Days Leaking = Repair - Jan 1st + 1 day.) (For days leaking for leaks carried over use January 1st as start date for emissions calculations.) For O&M discovered leaks, assume that the leak begins with the discovery date thru repair date or December 31st of subject year, whichever is earlier.
Emission Factor (Mscf/Day)	
Annual Emissions (Mscf)	

Appendix 1; Rev. 03/27/2025

Header column "Comment" boxes displayed below for reference.	
Column Heading	Description and Definition of Required Contents (IF not self-explanatory)
Explanatory Notes / Comments	
All Damages	
ID	
Geographic Location	GIS, zip code, or equivalent
Damage Type	E = excavation damage N = natural force damage O = other outside force damage
Pipe Material	PB = cathodically protected steel, bare PC = cathodically protected steel, coated UB = unprotected steel, bare UC = unptotected steel, coated
Pipe Size (nominal)	
Pipe Age (months)	
Pressure (psi)	MOP = maximum operating pressure over the past year
Leak Grade	1 = grade 1 2 = grade 2 2+ = grade 2+ 3 = grade 3 N = non-graded or ungraded
Above Ground or Below Ground	AH = above ground, hazardous AN = above ground, non-hazardous B = below ground
Discovery Date (MM/DD/YY)	
Repair Date (MM/DD/YY)	
Number of Days Leaking	If date and time stamp are reliable and used consistently by respondent, then emissions may be calculated based on actual time leaking. E.G. Repair time - damage event time = duration of event. If respondent has average or historical leak duration based on the nature and circumstances of damages, then these may be applied to like damage events. The emissions factors should be adequately supported and explained in the filing. If actual time stamps and historical averages are not available, then whole days should be used in the engineering calculation. The leak begins with the damage event date thru repair date or December 31st of subject year, whichever is later. E.G. Days Leaking = Repair date - date of damage + 1 day.

Header column "Comment" boxes displayed below for reference.	
Column Heading	Description and Definition of Required Contents (IF not self-explanatory)
Emission Factor (Mscf/Day)	
Annual Emissions (Mscf)	
Explanatory Notes / Comments	Provide method of calculation and example of formula. Explain how any EF's used were derived.
Tab: Blowdowns	
ID	
Geographic Location	GIS, zip code, or equivalent
Number of Blowdown Events	
Reason	Maintenance (M) Repair or Replacement (R) Integrity Management (IM) Pressure Reduction or Deactivation (PR) Other (O) In the case of Other(O), please provide a description of the reason.
Emission Reduction Strategy	Drafting (D) Cross Compression (XC) Gas Capture (GC) Flaring or Thermal Oxidation (FTO) Project Bundling (PB) Multiple Methods (M) None (N) Other (O) In the case of Multiple Methods (M), please list each method. In the case of Other (O), please provide a description of the strategy.
Annual Emissions (Mscf)	
Explanatory Notes / Comments	
Methane Abatement (Mscf)	

Header column "Comment" boxes displayed below for reference.	
Column Heading	Description and Definition of Required Contents (IF not self-explanatory)
Tab: Component Vented Emissions	
Total Number of Devices	
Device Type	P = pneumatic device H = Hydraulic valve operator T = turbine valve operator PR = pressure relief valve O = other devices
Bleed Rate	L = low bleed I = intermittent bleed H = high bleed NA = not applicable
Manufacturer	
Emission Factor (Mscf/day)	
Annual Emissions (Mscf)	Because the emissions are a factor of design or function, these emissions counted for the entire year. E.G. 365 days times the actual volume emitting if known, or the approved Emissions Factor.
Explanatory Notes / Comments	Note whether the emissions are based on actual volumetric measures.

Header column "Comment" boxes displayed below for reference.	
Column Heading	Description and Definition of Required Contents (IF not self-explanatory)
Component Fugitive Leaks	
ID	
Geographic Location	GIS, zip code, or equivalent
Device Type	P = pneumatic device H = Hydraulic valve operator T = turbine valve operator PR = pressure relief valve O = other devices
Bleed Rate	L = low bleed I = intermittent bleed H = high bleed NA = not applicable
Manufacturer	
Discovery Date (MM/DD/YY)	List the actual discovery date. If the leak was discovered in the year of interest, then we will assume the component was leaking from the beginning of the year for emissions reporting purposes, or prior survey date if surveyed previously within the year of interest.
Repair Date (MM/DD/YY)	Date that the component repair stopped the leak. Any associated blowdowns as a result of the repair should be included in the blowdowns tab.
Number of Days Leaking	Assume Leaking from January 1 of subject year or prior survey date, whichever is later, thru the repair date (if repaired in year of interest) or December 31 of subject year, whichever is earlier. For O&M discovered leaks, assume that the leak begins with the discovery date thru repair date or December 31st of subject year, whichever is earlier.
Emission Factor (Mscf/day)	
Annual Emissions (Mscf)	
Explanatory Notes / Comments	
Odorizers	
ID	
Geographic Location	GIS, zip code, or equivalent
Number of Units	
Emission Factor (Mscf/yr)	
Annual Emission (Mscf)	All of the emissions from the odorizing process and equipment.
Explanatory Notes / Comments	

[Gill Ranch Storage LLC.], [June 13, 2025]

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Appendix 7; Rev. 03/27/2025

Notes:

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Use the Population based emission factor if facility is not surveyed. Use Leaker based emission factor if facility is surveyed, and report only the found leaking components.

Underground Storage Facility Leaks and Emissions:

ID	Geographic Location	Source	Number of Sources	Discovery Date (MM/DD/YY)	Repair Date (MM/DD/YY)	Number of Days Leaking	Emission Factor (Mscf/day/dev)	Annual Emissions (Mscf)	Explanatory Notes / Comments
	93637	NA	NA	NA	NA	NA	NA	NA	NO LEAKS

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Notes:

Enter either the initials of the facility to be included in the "ID" column or the name be provided along with the zip code in the "Geographic Location."

Use a formula-derived value with the formula used in the Annual Emissions column. Do not use a copy and paste-as-value.

At the end of Annual Emissions Column, add a summation total in a cell for a column total, and then highlight orange.

The emissions captured on this tab represent the emissions associated with the operational design and function of the compressor. Any intentional release of natural gas for safety or maintenance purposes should be included on the Blowdowns worksheet.

Previous Reporting Changes:

1) New Column for Measurement Frequency - See box comments.

2) Added new column for Emission Factor: Measurement Date - Pressurized Operations.

3) Added a fourth compressor operating mode "Offline". In addition, a measurement of emissions (EF) should be taken during Offline mode, to ensure that no emissions are eminating from the system.

4) Alternate emissions measurement method, where applicable and measured by the operator:

5) Alternate emissions measurement method, where applicable and measured by the operator:
- Blowdown and Isolation valves

6) Measure centrifugal compressor emissions additional columns added for these emissions:
- Dry seals
- Wet seals
- Wet seal oil degassing vents in Pressurized Idle mode

CPUC Staff strongly encourage more frequent measurement of the following compressor vented emissions. Compliance minimum is once annually, though Staff suggest the minimum frequency should be quarterly and measured at roughly the same time each quarter (e.g. on or around the component survey given mode of operation). More frequent measurements, e.g. monthly would be better due to the temporal changes in conditions that effect emissions. The more frequent measurements also provide an opportunity to detect worn rod packing or seals, which exacerbate emissions, and with timely awareness of suboptimal operations gas operators have an opportunity for accelerating maintenance to correct worn parts. The following steps for reporting more frequent measurements in 2019 are outlined in the adjacent cell, and should be provided if available.

The Columns P thru T were added to the template and should be used for the indicated measured compressor emissions, which include Centrifugal compressors in accordance with OGR and your operating practice.

For the 2024 data reporting of compressor vented emissions:
Where more than one measurement was taken during the year (e.g. after a maintenance cycle*, monthly, or quarterly), use the measured EF multiplied by the activity hours that occurred during the corresponding period. For example, if the compressor measurement was taken quarterly, then the measured EF should be multiplied by the activity hours that occurred in the respective quarter, and the same for more frequent measurments (e.g. monthly, weekly etc.). For each compressor devote one row per measurement period (see example provided). In the case of a single annual measurement EF, then that EF would apply to the activity hours for each respective mode for the entire year (which is consistent with prior year reporting practice).

*** If a measurement is taken after a maintenance cycle and no other measurements were taken during the remainder of the year, then use this measured EF for the activity hours occurring after the measurement date thru 12/31/xx. The activity hours prior to the maintenance of the compressor from the beginning of the year should use the previously measured EF, even if the EF was measured in the prior year.**

Use these EF columns as well as the columns for the Compressor Measurements noted in Columns Q thru T when they are applicable. If the data is not captured by the operator, then add a note explaining why the applicable measurement data was not recorded or available in the Explanatory Notes / Comments column.

Transmission Compressor Vented Emissions:

ID	Geographic Location	Compressor Type	Prime Mover	Number of Cylinders	Number of Seals	Seal Type	Measurement Frequency	Emission Factor: Measurement Date - Pressurized Operations	Operating Mode: Pressurized Operating (hours)	Operating Mode: Pressurized Idle (hours)	Operating Mode: Depressurized Idle (hours)	Operating Mode: Offline (Hours)	Emission Factor: Pressurized Operating(scf/hr)	Emission Factor: Pressurized Idle (scf/hr)	Emission Factor: Depressurized Idle (scf/hr)	Emission Factor: Pressurized Operating - Rod Packing (scf/hr)	Emission Factor: Pressurized Operating - Blowdown Valve (scf/hr)	Emission Factor: Pressurized Idle - Rod Packing (scf/hr)	Emission Factor: Pressurized Idle - Blowdown Valve (scf/hr)	Annual Emissions (Mscf)	Explanatory Notes / Comments
									Hypothetical values used to provide an example.												
Unit C-210	93637	R	E	6	6	W	A	1/1/2025	1095	0	0	7689	376.2	0	0					387.22	
Unit C-220	93637	R	E	6	6	W	A	1/1/2025	1062	0	0	7722	80.4	0	0					80.26	
Unit C-230	93637	R	E	6	6	W	A	1/1/2025	579	0	0	8205	423.6	0	0					230.55	
Unit C-240	93637	R	E	6	6	W	A	1/1/2025	51	0	0	8733	81	0	0					3.88	
Unit C-250	93637	R	E	6	6	W	A	1/1/2025	859	0	0	7925	80.4	0	0					64.92	

766.84 Provided as an example.

[Gill Ranch Storage LLC.], [June 13, 2025]

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Underground Storage Blowdowns:

ID	Geographic Location	Source	Compressor Type	Number of Blowdown Events	Annual Emissions (Mscf)	Explanatory Notes / Comments
C-210	93637	C	R	62	642.446	START UP AND MAINTENANCE BLOWDOWNS
C-220	93637	C	R	66	298.679	START UP AND MAINTENANCE BLOWDOWNS
C-230	93637	C	R	35	307.548	START UP AND MAINTENANCE BLOWDOWNS
C-240	93637	C	R	8	114.895	START UP AND MAINTENANCE BLOWDOWNS
C-250	93637	C	R	44	265.524	START UP AND MAINTENANCE BLOWDOWNS
WELL 204	93637	W	N/A	3	270.081	MAINTENANCE BLOWDOWN
WELL 205	93637	W	N/A	4	245.735	MAINTENANCE BLOWDOWN
WELL 206	93637	W	N/A	3	2.674	MAINTENANCE BLOWDOWN
WELL 101	93637	W	N/A	3	349.127	MAINTENANCE BLOWDOWN
WELL 102	93637	W	N/A	5	505.833	MAINTENANCE BLOWDOWN
WELL 104	93637	W	N/A	9	264.989	MAINTENANCE BLOWDOWN
PIT-3000	93637	O	N/A	51	944.512	MAINTENANCE BLOWDOWN
SC-113	93637	O	N/A	1	108.578	MAINTENANCE BLOWDOWN
SC-123	93637	O	N/A	1	108.743	MAINTENANCE BLOWDOWN
SC-133	93637	O	N/A	1	108.679	MAINTENANCE BLOWDOWN
F-302	93637	O	N/A	2	99.322	MAINTENANCE BLOWDOWN
PR-305	93637	O	N/A	4	316.788	MAINTENANCE BLOWDOWN
PR-901	93637	O	N/A	2	192.878	MAINTENANCE BLOWDOWN
PR-703	93637	O	N/A	1	37.887	MAINTENANCE BLOWDOWN
East 1	93637	O	N/A	2	30.882	MAINTENANCE BLOWDOWN
East 2	93637	O	N/A	1	23.575	MAINTENANCE BLOWDOWN
West 2	93638	O	N/A	1	18.186	MAINTENANCE BLOWDOWN
				309	5257.561	

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The emissions captured on this tab represent the emissions associated with the operational design and function of the component. Any intentional release of natural gas for safety or maintenance purposes should be included on the Blowdowns worksheet.

Underground Storage Component Vented Emissions (See note above):

Quantity	Geographic Location	Device Type	Bleed Rate	Manufacturer	Pressure (psi)	Survey Date (MM/DD/YY)	Number of Days Emitting	Emission Factor, Engineering or Manufacturer's based Estimate of Emissions (Mscf/day)	Annual Emissions (Mscf)	Explanatory Notes / Comments
PCV-8110	93637 P	L	FISHER	110		0	0.216	0	0 emmissions since 2020, Controller is operating using Nitrogen.
PCV-8410	93637 P	L	FISHER	110		0	0.216	0	0 emmissions since 2020, Controller is operating using Nitrogen.
PCV-7710	93637 P	L	FISHER	110		0	0.216	0	0 emmissions since 2020, Controller is operating using Nitrogen.
PCV-7810	93637 P	L	FISHER	110		0	0.216	0	0 emmissions since 2020, Controller is operating using Nitrogen.
PCV-7510	93637 P	L	FISHER	110		0	0.216	0	0 emmissions since 2020, Controller is operating using Nitrogen.
PCV-7610	93637 P	L	FISHER	110		0	0.216	0	0 emmissions since 2020, Controller is operating using Nitrogen.
PCV-7110	93637 P	L	FISHER	110		0	0.216	0	0 emmissions since 2020, Controller is operating using Nitrogen.
PCV-7210	93637 P	L	FISHER	110		0	0.216	0	0 emmissions since 2020, Controller is operating using Nitrogen.
PCV-7310	93637 P	L	FISHER	110		0	0.216	0	0 emmissions since 2020, Controller is operating using Nitrogen.
PCV-7410	93637 P	L	FISHER	110		0	0.216	0	0 emmissions since 2020, Controller is operating using Nitrogen.
								0	

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Notes:

The number of days leaking may be more than 365 days due to including the estimation function of the leak occurring at half the number of days between the prior survey date and the discovery date.

Use a formula-derived value with the formula used in the Annual Emissions column. Do not use a copy and paste-as-value.

At the end of Annual Emissions Column, add a summation total in a cell for a column total, and then highlight orange

The emissions captured on this tab represent the emissions associated unintentional leaks that if repaired would not leaking. If the component is releasing gas or "bleeding" as a result of its design or function then it is not to be captured in this tab.

Please include emissions from leaks found with concentrations below 10,000ppm, and include in the total emissions column. Please use the associated emission factors provided in Appendix 9, Emission Factors.

Underground Storage: Compressor and Component Fugitive Leaks (see note above): 12/31/2024 1/1/2024

ID	Geographic Location	Device Type	Bleed Rate	Manufacturer	Pressure (psi)	Discovery Date (MM/DD/YY)	Repair Date (MM/DD/YY)	Prior Survey Date (MM/DD/YY)	Number of Days Leaking	Emission Factor or Engineering Estimate (Mscf/day)	Emissions (Mscf)	Explanatory Notes / Comments
8201B	93637 V		N/A	N/A	2750	03/05/24	03/07/24	12/14/23	84.00	0.1342	11.2728	GS-700 BY HEATHE CONSULTANTS USED FOR SURVEYING
											11.2728	

[Gill Ranch Storage LLC.], [June 13, 2025]

Rulemaking (R.) 15-01-008 to Adopt Rules and Procedures Governing Commission Regulated Natural Gas Pipelines and Facilities to Reduce Natural Gas Leaks Consistent with Senate Bill 1371, Leno.

In Response to Data Request, R15-01-008 2025 June Report

Appendix 7; Rev. 03/27/2025

Pursuant to SB 1371, Leno - Natural gas: leakage abatement, the California Public Utilities Commission (CPUC) requests that the following information be transmitted to the CPUC and the California Air Resources Board (CARB):
Note - Definitions in Data Request, R15-01-008 2025 June Report

The following question in the above mentioned data request is answered using the spreadsheets in this Appendix (#7):
(6) Calculable or estimated emissions and non-graded gas leaks, as defined in Data Request R15-01-008 2025 June Report.

Notes:

Use a formula-derived value with the formula used in the Annual Emissions column. Do not use a copy and paste-as-value.

At the end of Annual Emissions Column, add a summation total in a cell for a column total, and then highlight orange

Underground Storage Dehydrator Vented Emissions:

ID	Geographic Location	Type of Dehydrator (Glycol or Desiccant)	Vapor Recovery Unit or Thermal Oxidizer (Y/N)	Annual Volume of Gas Withdrawn (Mscf)	Emission Factor (Y/N)	Engineering Estimate (Y/N)	Annual Emissions (Mscf)	Explanatory Notes / Comments
DEHY 1/DEHY 2	93637	GLYCOL	Y	81,631	N	N	NA	

Header column "Comment" boxes displayed below for reference.	
Column Heading	**Description and Definition of Required Contents (IF not self-explanatory)**
Storage Leaks & Emissions	
ID	
Geographic Location	GIS, zip code, or equivalent
Source	W/C = wellhead connector W/V = wellhead valve W/PRV = wellhead pressure relief valve W/OEL = wellhead open-ended line W/F = wellhead flange W/O = wellhead other C = casing P = pipeline O = other
Number of Sources	
Discovery Date	Report Discovery Date if calculating wellhead component emissions using Leaker EFs
Repair Date	Report Discovery Date if calculating wellhead component emissions using Leaker EFs
Number of Days Leaking	Calculate Number of Days Leaking using the formula: Repair Date minus Discovery Date + 1 day
Emission Factor (Mscf/yr)	
Annual Emissions (Mscf)	
Explanatory Notes / Comments	
Compressor Vented Emissions	
ID	
Geographic Location	GIS, zip code, or equivalent
Compressor Type	C = centrifugal R = reciprocating
Prime Mover	E = electric motor C = internal combustion engine
Number of Cylinders in Compressor	
Number of Seals	
Seal Type	W = wet D = dry O = other
Measurment Frequency	A - Annual Q - Quarterly M - Monthly W - Weekly D - Daily
Emission Factor: Measurement Date - Pressurized Operations	
Operating Mode: Pressurized Operating (hours)	
Operating Mode: Pressurized Idle (hours)	
Operating Mode: Depressurized Idle (hours)	
Operating Mode: Offline (Hours)	
Emission Factor: Pressurized Operating (scf/hr)	Use these EF columns as well as the columns for the Compressor Measurements noted in Columns R thru AB when they are applicable. If the data is not captured by the operator, then add a note explaining why the applicable measurement data was not recorded or available in the Explanatory Notes / Comments column.
Emission Factor: Pressurized Idle (scf/hr)	
Emission Factor: Depressurized Idle (scf/hr)	
Emission Factor: Pressurized Operating - Rod Packing (scf/hr)	These are new columns for reporting year 2020 of 2019 data. These only apply to operators who during their operations and surveys of compressor stations measure their Compressor Vented Emissions for these components of the compressor. Not all gas operators measure vented emissions and estabish flow rates for vented emissions while at the various modes of operation. The current regulations require an annual
Emission Factor: Pressurized Operating - Blowdown Valve (scf/hr)	
Emission Factor: Pressurized Idle - Rod Packing (scf/hr)	
Emission Factor: Pressurized Idle - Blowdown Valve (scf/hr)	
Annual Emissions (Mscf)	
Explanatory Notes / Comments	
Blowdowns	
ID	
Geographic Location	GIS, zip code, or equivalent
Source	W = wellhead rework C = compressor P= pipeline O = other
CompressorType	C = centrifugal R = reciprocating
Number of Blowdown Events	
Annual Emissions(Mscf)	
Explanatory Notes / Comments	

Component Vented Emissions	
ID	
Geographic Location	GIS, zip code, or equivalent
Device Type	C = connector OE = open-ended line M = meter P = pneumatic device PR = pressure relief valve V = valve O = other devices
Bleed Rate	L = low bleed I = intermittent bleed H = high bleed NA = not applicable
Manufacturer	
Pressure (psi)	MOP = maximum operating pressure over the past year
Survey Date (MM/DD/YY)	
Number of Days Emitting	Because the emissions are a factor of design or function, these emissions counted for the entire year.
Emission Factor, Engineering or Manufacturer's based Estimate of Emissions (Mscf/day)	Explain in the comment column the basis for your emission estimate.
Annual Emissions (Mscf)	
Explanatory Notes / Comments	
Compressor and Component Fugitive Leaks	
ID	
Geographic Location	GIS, zip code, or equivalent
Device Type	C = connector OE = open-ended line M = meter P = pneumatic device PR = pressure relief valve V = valve O = other devices
Bleed Rate	L = low bleed I = intermittent bleed H = high bleed NA = not applicable
Manufacturer	
Pressure (psi)	MOP = maximum operating pressure over the past year
Discovery Date (MM/DD/YY)	List the actual discovery date. If the leak was discovered in the year of interest, then we will assume the component was leaking from the beginning of the year for emissions reporting purposes.
Repair Date (MM/DD/YY)	Date that the component repair stopped the leak. Any associated blowdowns as a result of the repair should be included in the blowdowns tab.
Prior Survey Date (MM/DD/YY)	Before the discovery date of the leak, there was a "Prior Survey Date" when the compressor station was tested and no leak was found. There should be records as to when the compressor station was last surveyed. If the survey spanned two or more days, enter the final date. Note, a facility level survey date is sufficient to establish the prior survey date.
Number of Days Leaking	The algorithm that is used for determining the number of days leaking should conform to the following guidance: For the number days leaking prior to the date of discovery (survey date in the year of interest), calculate the number of days between the Discovery Date and the Prior Survey Date then divided by 2. [Dividing by 2 approximates the average time leaking between the leak discovery and the prior survey date. See below guidance when a leak is discovered in a prior period and repaired in the year of interest.] (Discovery Date – Prior Survey Date)/2 Calculate the number of days leaking after discovery (survey) date, by subtracting the discovery date from the repair date, unless the leak has not been repaired, where the number of days should be calculated by subtracting the discovery date from December 31 of the year of interest.* (Repair Date – Discovery Date), unless repair date greater than 12/31/XX then use 12/31/XX) --- Days Leaking = (Repair Date - Discovery Date) + (Discovery Date - Prior Survey Date)/2 +1 * [This requires tracking the leak across different years, because the leak could be minor and conceivably span more than year before getting repaired. Therefore, in the cases where a leak is carried over to a subsequent year, an annual calculation should be made to reflect that the number of days leaking in the prior year have already been reported in the annual emissions inventory. In subsequent years the carried over leaks should reflect a beginning date of January 1 of the year of interest.]
Emission Factor or Engineering Estimate (Mscf/day)	
Emissions (Mscf)	
Explanatory Notes / Comments	
Dehydrator Vented Emissions	
ID	
Geographic Location	GIS, zip code, or equivalent
Type of Dehydrator (Glycol or Desiccant)	
Vapor Recovery Unit OR Thermal Oxidizer (Y/N)	In order to claim 0 emissions, a Vapor Recovery Unit OR thermal oxidizer must be used 100% of the time during oeration
Annual Volume of Gas Withdrawn (Mscf)	
Emission Factor (Y/N)	If the glycol dehydrator has a Vapor Recovery Unit (VRU) or a thermal oxidizer, the emission factor is 0. If using a desiccant dehydrator, the emission factor is 2.23E-03 mt CH4/MMscf
Engineering Estimate (Y/N)	If using an engineering estimate, please include an attachment of methodology or software used as a separate document. Record the annual emissions
Annual Emissions (Mscf)	For dehydrators using an emission factor, annual emissions are calculated by multiplying annual volume of gas withdrawn and the emission factor For dehydrators using an engineering estimate, record the annual emissions
Explanatory Notes / Comments	

[Gill Ranch Storage LLC.], [June 13, 2025]
Rulemaking (R.) 15-01-008 to Adopt Rules and Procedures Governing Commission Regulated Natural Gas Pipelines and Facilities to Reduce Natural Gas Leaks Consistent with Senate Bill 1371, Leno.
In Response to Data Request, R15-01-008, 2025 June Report
Appendix 8; Rev. 03/27/2025

Notes:
Please round all natural gas emissions to nearest Mscf.
As a reminder, please use the latest version of each of the worksheets

Summary Tables:

System Categories	Emission Source Categories	Fugitive or Vented	For Informational and Reference Purposes Only: Original 2015 Baseline Emissions (Mscf)	Approved 2015 Baseline Emissions [Mscf]	Proposed Adjusted 2015 Baseline Emissions (Mscf)	2023 Total Annual Volume of Leaks & Emissions (Mscf)	2023 Total Annual Count of Leak & Emission Items	2024 Total Annual Volume of Leaks & Emissions (Mscf)	2024 Total Annual Count of Leak & Emission Items	Emission Change for Year Over Year Comparison from 2023 to 2024 (Mscf)	Percentage Change for Year Over Year Comparison from 2023 to 2024	Count Change for Year Over Year Comparison from 2023 to 2024	Percentage Change for Year Over Year Comparison from 2023 to 2024	Emission Change for Year Over Year Comparison from 2015 to 2024 (Mscf)	Percentage Change for Year Over Year Comparison from 2015 to 2024	Explanation for Significant Percentage Change for Year Over Year Comparison from 2023 to 2024
Transmission Pipelines	Pipeline Leaks	Fugitive								-	#DIV/0!	-	#DIV/0!	0	#DIV/0!	
	All Damages	Fugitive								-	#DIV/0!	-	#DIV/0!	0	#DIV/0!	
	Blowdowns	Vented								-	#DIV/0!	-	#DIV/0!	0	#DIV/0!	
	Component Vented Emissions	Vented								-	#DIV/0!	-	#DIV/0!	0	#DIV/0!	
	Component Fugitive Leaks	Fugitive								-	#DIV/0!	-	#DIV/0!	0	#DIV/0!	
	Odorizers	Vented								-	#DIV/0!	-	#DIV/0!	0	#DIV/0!	
Transmission M&R Stations	Station Leaks & Emissions	Fugitive								-	#DIV/0!	-	#DIV/0!	0	#DIV/0!	
	Blowdowns	Vented								-	#DIV/0!	-	#DIV/0!	0	#DIV/0!	
Transmission Compressor Stations	Compressor Emissions	Vented								-	#DIV/0!	-	#DIV/0!	0	#DIV/0!	
	Compressor Leaks	Fugitive								-	#DIV/0!	-	#DIV/0!	-	#DIV/0!	
	Blowdowns	Vented								-	#DIV/0!	-	#DIV/0!	-	#DIV/0!	
	Component Vented Emissions	Vented								-	#DIV/0!	-	#DIV/0!	-	#DIV/0!	
	Component Fugitive Leaks	Fugitive								-	#DIV/0!	-	#DIV/0!	-	#DIV/0!	
	Storage Tank Leaks & Emissions	Vented								-	#DIV/0!	-	#DIV/0!	-	#DIV/0!	
Distribution Main & Service Pipelines	Pipeline Leaks	Fugitive								-	#DIV/0!	-	#DIV/0!	-	#DIV/0!	
	All Damages	Fugitive								-	#DIV/0!	-	#DIV/0!	-	#DIV/0!	
	Blowdowns	Vented								-	#DIV/0!	-	#DIV/0!	-	#DIV/0!	
	Component Vented Emissions	Vented								-	#DIV/0!	-	#DIV/0!	-	#DIV/0!	
	Component Fugitive Leaks	Fugitive								-	#DIV/0!	-	#DIV/0!	-	#DIV/0!	
Distribution M&R Stations	Station Leaks & Emissions	Fugitive								-	#DIV/0!	-	#DIV/0!	-	#DIV/0!	
	All Damages	Fugitive								-	#DIV/0!	-	#DIV/0!	-	#DIV/0!	
	Blowdowns	Vented								-	#DIV/0!	-	#DIV/0!	-	#DIV/0!	
Customer Meters	Meter Leaks	Fugitive								-	#DIV/0!	-	#DIV/0!	-	#DIV/0!	
	All Damages	Fugitive								-	#DIV/0!	-	#DIV/0!	-	#DIV/0!	
	Vented Emissions	Vented								-	#DIV/0!	-	#DIV/0!	-	#DIV/0!	
Underground Storage	Storage Leaks & Emissions	Fugitive	0			0	0	0	0	-	#DIV/0!	-	#DIV/0!	-	#DIV/0!	
	Compressor Vented Emissions	Vented	5822.48			822.46	5	766.84	5	(56)	(6.8%)	-	0.0%	(5,055.64)	(86.8%)	
	Blowdowns	Vented	3734			3403	154	5257.561	309	1,855	54.5%	155	100.6%	1,523.56	40.8%	
	Component Vented Emissions	Vented	866.3			0	0	0	0	-	#DIV/0!	-	#DIV/0!	(866.30)	(100.0%)	
	Compressor and Component Fugitive Leaks	Fugitive	2592.74			83.7408	7	11.27	1	(72)	(86.5%)	(6)	(85.7%)	(2,581.47)	(99.6%)	
	Dehydrator Vent Emissions	Fugitive	0			0	0	0	0	-	#DIV/0!	-	#DIV/0!	-	#DIV/0!	
Unusual Large Leaks	(Description)									-	#DIV/0!		#DIV/0!	-	#DIV/0!	
		Total	**13015.52**			**4309.2008**	NA	**6035.671**	NA	1,726	40%	NA	NA	**(6,979.85)**	(53.6%)	

[Gill Ranch Storage LLC.], [June 13, 2025]

Rulemaking (R.) 15-01-008 to Adopt Rules and Procedures Governing Commission Regulated Natural Gas Pipelines and Facilities to Reduce Natural Gas Leaks Consistent with Senate Bill 1371, In Response to Data Request, R15-01-008, 2025 June Report

Appendix 8; Rev. 03/27/2025

System Wide Leak Rate Data

1/1/2024 - 12/31/2024

The highlighted cells show the volumes that are summed together as the throughput for calculating the system wide leak rate.

Gas Storage Facilities:

Average Close of the Month Cushion Gas Storage Inventory (Mscf)	Average Close of the Month Working Gas Storage Inventory (Mscf)	Total Annual Volume of Injections into Storage (Mscf)	Total Annual Volume of Gas Used (Mscf)	Total Annual Volume of Withdrawals from Storage (Mscf)	Explanatory Notes / Comments
3,543,307	16,570,099	13,334,016	24,165	12,225,001	

Transmission System:

Total Annual Volume of Gas Used (Mscf)	Total Annual Volume of Gas Transported to or for Customers* in State (Mscf)	Total Annual Volume of Gas Transported to or for Customers* out of State (Mscf)	Total Annual Volume of Gas Transported to utility-owned or third-party storage fields for injection into storage (Mscf)	Explanatory Notes / Comments
NA	NA	NA	NA	

Distribution System:

Total Annual Volume of Gas Used (Mscf)	Total Annual Volume of Gas Transported to or for Customers* in State (Mscf)	Total Annual Volume of Gas Transported to or for Customers* out of State (Mscf)	Explanatory Notes / Comments
NA	NA	NA	GRS HAS NO DISTRIBUTION SYSTEMS

*The term customers includes anyone that the utility is transporting gas for, including customers who purchase gas from the utility.
Customers can be anyone including residential, businesses, other utilities, gas transportation companies, etc.

[Company Name], [Date Submitted]

Rulemaking (R.) 15-01-008 to Adopt Rules and Procedures Governing Commission Regulated Natural Gas Pipelines and Facilities to Reduce Natural Gas Leaks Consistent with Senate Bill 1371,

In Response to Data Request, R15-01-008, 2025 June Report

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Summary Tables:

Natural Gas Properties	Average Mole Percent	Explanatory Notes / Comments
Methane	92.3	
Carbon Dioxide	0.86	
Ethane	4.75	
C3+	0.228	
C6+	0.008	
Oxygen	0.193	
Hydrogen	0	
Sulfur	0	
Water	0	
Carbon Monoxide	0	
Particulate Matter	0	
Inert Gas	1.65	
Odorant	0	

[Gill Ranch Storage LLC.], [June 13, 2025]

Rulemaking (R.) 15-01-008 to Adopt Rules and Procedures Governing Commission Regulated Natural Gas Pipelines and Facilities to Reduce Natural Gas Leaks Consistent with Senate Bill 1371, Leno.

In Response to Data Request, R15-01-008 2025 June Report

Appendix 9; Rev. 03/27/2025

System Categories	Emission Source Categories	Emission Factor Sources	Description [in natural gas volume]
Transmission Pipeline	Transmission Pipeline Leaks	Engineering Estimate	Emissions estimated from size of breach / pressure / duration calculation
	All damages (as defined by PHMSA)	Engineering Estimate	Emissions estimated either from modelling or size of breach / pressure / duration
	Transmission Pipeline Blowdowns	Engineering Estimate	Unique equipment volume (corrected for pressure and temperature)
	Pneumatic Devices - Pneumatic/Hydraulic Valve Operators, and Turbine Valve Operators	MRR	Low Continuous Bleed = 0.0336 Mscf/day/dev Intermittent Bleed = 0.0576 Mscf/day/dev High Continuous Bleed = 0.4457 Mscf/day/dev Hydraulic Valve Operator = TBD Turbine Valve Operator = TBD
	Pressure Relief Valves	MRR	Pressure relief valve = 0.9518 Mscf/day/dev
	Odorizer (Odorizer and Gas Sampling Vents)	TCR	1.27 Mscf/yr/odorizer (if manufacturing specs are available, use the manufacting specs instead of the default emission factor)
Transmission M&R	M&R Stations - Direct Industrial Sales	MRR	# of leaks > 10,000 ppm x Subpart W EF (ref: Table W-3 of Subpart W of Part 98) Direct Sale = 12.2 Mscf/yr/station (ref: Table W-4 of Subpart W of Part 98) **Compressor Components** Continuous Low Bleed = 0.163 Mscf/day/dev Continuous High Bleed = 0.720 Mscf/day/dev Intermittent Bleed = 0.055 Mscf/day/dev **Non-compressor Components** Valve = 0.154 Mscf/day/dev Connector = 0.137 Mscf/day/dev Open-ended line = 0.270 Mscf/day/dev Pressure relief valve = 0.048 Mscf/day/dev Meter = 0.070 Mscf/day/dev Other = 0.098 Mscf/day/dev
	M&R Stations - Transmission-to-Transmission Company Interconnect	MRR	# of leaks > 10,000 x Subpart W EF (ref: Table W-3 of Subpart W of Part 98) Trans-to-trans = 1554.8 Mscf/yr/stations (ref: Table W-4 of Subpart W of Part 98) **Compressor Components** Continuous Low Bleed = 0.163 Mscf/day/dev Continuous High Bleed = 0.720 Mscf/day/dev Intermittent Bleed = 0.055 Mscf/day/dev **Non-compressor Components** Valve = 0.154 Mscf/day/dev Connector = 0.137 Mscf/day/dev Open-ended line = 0.270 Mscf/day/dev Pressure relief valve = 0.048 Mscf/day/dev Meter = 0.070 Mscf/day/dev Other = 0.098 Mscf/day/dev
	Transmission M&R Leaks	MRR	(ref: Table W-4 of Subpart W of Part 98) **Compressor Components** Continuous Low Bleed = 0.163 Mscf/day/dev Continuous High Bleed = 0.720 Mscf/day/dev Intermittent Bleed = 0.055 Mscf/day/dev **Non-compressor Components** Valve = 0.154 Mscf/day/dev Connector = 0.137 Mscf/day/dev Open-ended line = 0.270 Mscf/day/dev Pressure relief valve = 0.048 Mscf/day/dev Meter = 0.070 Mscf/day/dev Other = 0.098 Mscf/day/dev
	Transmission M&R blowdown	Engineering Estimate	Unique equipment volume (corrected for pressure and temperature)

Transmission Compressor Stations	Compressor station - Equipment leaks from valves, connectors, open ended lines, pressure relief valves, and meters (using leak detection)	MRR	**Leaker EFs-Compressor Station** **(Component Leaks identified per survey use the following EFs)** # of leaks > 10,000 ppm x Subpart W EF (ref: Table W-3 of Subpart W of Part 98) **Compressor Components** Valve = 0.3562Mscf/day/dev Connector = 0.1342 Mscf/day/dev Open-Ended Line = 0.4145 Mscf/day/dev Pressure Relief Valve = 0.9518 Mscf/day/dev Meter = 0.4639 Mscf/day/dev Other = 0.0984 Mscf/day/dev **Non-compressor components** Valve = 0.1541 Mscf/day/dev Connector = 0.1370 Mscf/day/dev Open-ended line = 0.2705 Mscf/day/dev Pressure relief valve = 0.0482 Mscf/day/dev Meter = 0.0703 Mscf/day/dev Other = 0.0984 Mscf/day/dev
	Compressor Station - Transmission storage tanks	MRR	Direct measurement of tank vapor vent stack + operating hours (pg 218-219 of Regulation for MRR)
	Compressors (Centrifugal) - Transmission--data collection will require time spent in modes (active, pressurized idle, de-pressurized idle), compressor venting	MRR	Direct measurement x operating hours (operating mode)
	Compressors (Reciprocating) - Transmission--data collection will require time spent in modes (active, pressurized idle, de-pressurized idle)compressor rod packing venting	MRR	Direct measurement x operating hours (operating mode)
	Compressor station - Equipment and pipeline blowdowns	MRR	Eq. W - 14A # of blowdowns * piping volume
	Compressor Station - Natual gas pneumatic device venting	MRR	Low Continuous Bleed = 0.0336 Mscf/day/dev Intermittent Bleed = 0.0576 Mscf/day/dev High Continuous Bleed = 0.4457 Mscf/day/dev
Distribution Mains and Services Pipelines	Distribution Mains (Below-Ground Leaks)	GRI (1996)	Unprotected Steel Main = 0.1548 Mscf/day/leak Protected Steel Main = 0.0612 Mscf/day/leak Plastic Main = 0.2988 Mscf/day/leak
	Distribution Mains (Above Ground Leaks) - Not MSA	GRI (1996)	Unprotected Steel Main = 0.1548 Mscf/day/leak Protected Steel Main = 0.0612 Mscf/day/leak Plastic Main = 0.2988 Mscf/day/leak
	Distribution Service (Below-Ground Leaks)	GRI (1996)	Copper = 0.0226 Mscf/day/leak Unprotected Steel Service = 0.0600 Mscf/day/leak Protected Steel Servce = 0.0276 Mscf/day/leak Plastic Service = 0.0089 Msc/day/leak
	Distribution Service (Above-Ground Leaks) - Not MSA	GRI (1996)	Copper = 0.0226 Mscf/day/leak Unprotected Steel Service = 0.0600 Mscf/day/leak Protected Steel Servce = 0.0276 Mscf/day/leak Plastic Service = 0.0089 Msc/day/leak
	Distribution Main, Pressure Relief Valves	MRR	Pressure relief valve = 0.00696 Mscf/day/dev
	Distribution Mains and Services blowdown	MRR	Equation W-14A , Eq. W-35 , Eq. W-36
	All damages (as defined by PHMSA)	MRR	Equation W-14A , Eq. W-35 , Eq. W-36
	Pneumatic Devices - Pneumatic/Hydraulic Valve Operators, and Turbine Valve Operators	Engineering Estimate	Manufacturer Supplied Information (e.g., Bristol, Becker, Moore, etc)

Distribution M&R Stations	Distribution Above grade M&R Station Leaks (> 300 psi)	GRI (1996)	1,684.5 Mscf/yr/station
	Distribution Above grade M&R Station Leaks (100 - 300 psi)	GRI (1996)	896.5 Mscf/yr/station
	Distribution Above grade M&R Station Leaks (< 100 psi)	GRI (1996)	40.6 Mscf/yr/station
	Distribution Below grade M&R Station Leaks (> 300 psi)	GRI (1996)	12.176 Mscf/yr/station
	Distribution Below grade M&R Station Leaks (100 - 300 psi)	GRI (1996)	1.840 Mscf/yr/station
	Distribution Below grade M&R Station Leaks (< 100 psi)	GRI (1996)	0.964 Mscf/yr/station
	Distribution M&R Station, Leaker Based	MRR	**Leaker EFs** **(Component Leaks identified per survey use the following EFs)** Connector = 0.041Mscf/day/dev Block Valve = 0.013 Mscf/day/dev Control Valve = 0.224 Mscf/day/dev Pressure Relief Valve = 0.006 Mscf/day/dev Orifice Meter = 0.005 Mscf/day/dev Regulator = 0.019 Mscf/day/dev Open-Ended Line = 0.627 Mscf/day/dev
	M&R Stations - Farm Taps	MRR	# of leaks > 10,000 ppm x Subpart W EF (ref: Table W-3 of Subpart W of Part 98) Farm Tap = 12.2 Mscf/yr/station (ref: Table W-6 of Subpart W of Part 98) **Leaker EFs** (Component Leaks identified per survey use the following EFs) Connector = 0.041Mscf/day/dev Block Valve = 0.013 Mscf/day/dev Control Valve = 0.224 Mscf/day/dev Pressure Relief Valve = 0.006 Mscf/day/dev Orifice Meter = 0.005 Mscf/day/dev Regulator = 0.019 Mscf/day/dev Open-Ended Line = 0.627 Mscf/day/dev
	Distribution M&R Station Blowdowns	Engineering Estimate	Average Pressure x Average Volume x # of inspections & Maintenance Activities
	Distribution M&R Station Pneumatics	Engineering Estimate	Manufacturer Supplied Information (e.g., Bristol, Bettis Actuators, etc)
Commercial, Industrial and Residential Meters	Residential Meters	GRI (1996)	0.148 Mscf/yr/meter
	Commercial and Industrial Meters	GRI (1996)	0.051 Mscf/yr/meter
	Vented Emission from MSA	Engineering Estimate	Estimated volume release by MSA and activity type
Underground Storage	Dehydrator Vents - Storage (dehydrator vent emissions tab)	GRI (1996)	One of the following three cases per dehydrator facility 1. Glycol dehydrator with VRU and thermal oxidizer = 0 Mscf 2. Glycol dehydrator with no control device = Engineering Estimate 3. Desiccant dehydrator = 2.23E-03 mt CH4/MMscf (Alternative: Eq. 5 in MRR)
	Storage - piping leakage (compressor and component fugitive leaks tab)	MRR	**Leaker EFs-Storage Station, Gas Service** **(Component Leaks identified per survey use the following EFs)** Connector = 0.1342 Mscf/day/dev Valve = 0.3562 Mscf/day/dev Pressure Relief Valve = 0.9518 Mscf/day/dev Open-Ended Line = 0.4145 Mscf/day/dev Meter = 0.4639 Mscf/day/dev Other = 0.0984 Mscf/day/dev **Population EFs-Storage Wellheads, Gas Service** **(For all un-surveyed components use the following EFs)** Connector = 0.0002 Mscf/day/dev Valve = 0.0024 Mscf/day/dev Pressure Relief Valve = 0.0041 Mscf/day/dev Open Ended Line = 0.0007 Mscf/day/dev
	Storage - surface casing leakage (storage leaks and emissions tab)	Engineering Estimate	TBD

Underground storage	Storage - Wellhead leakage (storage leaks and emissions tab)	MRR	**Leaker EFs-Storage Wellheads, Gas Service** **(Component Leaks identified per survey use the following EFs)** Connector (other than flanges) = 0.0288 Mscf/day/dev Valve = 0.1080 Mscf/day/dev Pressure Relief Valve = 0.0984 Mscf/day/dev Open-Ended Line = 0.0600 Mscf/day/dev Flange = 0.0912 Mscf/day/dev Other = 0.0984 Mscf/day/dev **Population EFs-Storage Wellheads, Gas Service** **(For all un-Surveyed components, use the following EFs)** Connector = 0.0002 Mscf/day/dev Valve = 0.0024 Mscf/day/dev Pressure Relief Valve = 0.0041 Mscf/day/dev Open-Ended Line = 0.0007 Mscf/day/dev
	Storage - Compressor & blowdowns (Blowdowns tab)	Engineering Estimate	Eq. 13 of MRR (piping volume x # of blowdowns)
	Storage - Wellhead Rework blowdown and bring-in (Blowdowns tab)	Engineering Estimate	Eq. 9,10,11,12 of MRR
	Pressure Relief Valves (Component Vented Emissions tab)	MRR	Pressure relief vallve = 0.9518 Mscf/day/dev.
	Pneumatic Devices - Pneumatic/Hydraulic Valve Operators, and Turbine Valve Operators (Component Vented Emissions tab)	MRR	Low Continuous Bleed = 0.0336 Mscf/day/dev Intermittent Bleed = 0.0576 Mscf/day/dev High Continuous Bleed = 0.4457 Mscf/day/dev Hydraulic Valve Operator = TBD Turbine Valve Operator = TBD