SoCalGas, June 15th, 2022

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, R.15-01-008 2022 June Report
Appendix 8; Rev. 03/31/22

Summary Tables:

System Categories	Emission Source Categories	Fugitive or Vented	For Reference Only: 2015 Baseline Emissions (Mscf)	2015 Proposed Adjusted Baseline Emissions (Mscf)	2020 Total Annual Volume of Leaks & Emissions (Mscf)	2020 Total Annual Count of Leak & Emission Items	2021 Total Annual Volume of Leaks & Emissions (Mscf)	2021 Total Annual Count of Leak & Emission Items	Emission Change for Year Over Year Comparison from 2020 to 2021 (Mscf)	Percentage Change for Year Over Year Comparison from 2020 to 2021	Count Change for Year Over Year Comparison from 2020 to 2021	Percentage Change for Year Over Year Comparison from 2020 to 2021	Emission Change for Year Over Year Comparison from Proposed Adjusted 2015 to 2021 (Mscf)	Percentage Change for Year Over Year Comparison from Proposed Adjusted 2015 to 2021	Explanation for Significant Percentage Change for Year Over Year Comparison from 2019 to 2020
Transmission Pipelines	Pipeline Leaks	Fugitive	1,324	1,324	1,255	Leak count: 9 Total System Mileage: 3341	1,292	Leak count: 0 Total System Mileage: 3440	37	3.0%	99	3.0%	-32	(2.4%)	Transmission Milage increase from 2020 to 2021 can be attributed to: -Transmission pipeline acquisition from Pacific Gas & Electric -New installed line DOT-D with above 20% Specified minimum yield strenegth (SMYS)
	All Damages	Fugitive	0	0	9,692	Number of emission items: 2	24	Number of emission items: 1	(9,668)	N/A	(1)	N/A	24	N/A	Emission is due to a third-party excavation damage.
	Blowdowns	Vented	199,970	199,970	76,006	Number of blowdown events: 1,162	12,757	Number of blowdown events: 1,603	(63,249)	(83.2%)	441	38.0%	-187,213	(93.6%)	Blowdown emissions are a function of activity level. Blowdown volume varies by activity, depending on the type of work performed. Emission reductions can be attributed to: -SoCalGas' continuous effort to increase the capabilities of the centralized organization responsible for high-pressure pipeline blowdown reduction activities through procurement and implementation of cross compressions and gas capture technologies. -Revised internal policies and improved planning and coordination from Project Managers and Planners have resulted in decrease of average volume of planned high pressure blowdown events. -SoCalGas bundled work on high-pressure lines when it was practical and safe to do so and coordinated blowdown reduction for high-pressure projects across departments. -Less high-pressure pipeline blowdown events took place in 2021
	Component Emissions	Vented	0	8,182	6,370	Number of devices: 303	1,198	Number of devices: 57	(5,172)	(81.2%)	(246)	(81.2%)	-6,984	N/A	The decrease in emissions and number of devices can be attributed to: - Asset verification projects of Transmission Pipeline components, resulting in more accurate inventory of component count. - Asset verification projects of Transmission Pipeline components, resulting in capabilities to improve identification of service vs. monitor components. The monitor component serves as a standby component and only functions (e.g., actuates) when the service component fails. In previous years, SoCalGas reported counts included service and monitor components which resulted in overestimating in counts of devices and emissions.
	Component Leaks	Fugitive	N/A	0	0	Number of leaks: 41	0	Number of leaks: 36	-	N/A	(5)	(12.2%)	-	-	
	Odorizers	Vented	2,434	2,434	2,626	Number of units: 242	2,727	Number of units: 293	101	3.9%	51	21.1%	293	12.0%	New Renewable Natural Gas (RNG) project stations resulted in increasing the number of analyzers and odorizer units
Transmission M&R Stations	Station Leaks & Emissions	Fugitive	340,142	110,296	108,741	Number of facilities: 568	109,930	Number of facilities: 539	1,189	1.1%	(29)	(5.1%)	-366	(0.3%)	The decrease in number of facilities is due to Asset verification projects of Transmission MR Stations, resulting in a more accurate inventory of Transmission maintained Tap Facilities.
	Blowdowns	Vented	95	95	11	Number of blowdown events: 903	289	Number of blowdown events: 855	278	2,515.4%	(48)	(5.3%)	194	204.2%	Blowdowns emissions are a function of activity level. Blowdown volume varies by activity, depending on the type of work performed. The increase in emission can be attributed to tie-in projects in the stations.
Transmission Compressor Stations	Compressor Emissions	Vented	34,810	34,810	27,851	Number of compressors: 38	22,334	Number of compressors: 38	(5,517)	(19.8%)	-	0.0%	-12,476	(35.8%)	
	Compressor Leaks	Fugitive	N/A	NA	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	Blowdowns	Vented	7,268	7,268	17,166	Number of blowdown events: 883	22,809	Number of blowdown events: 667	5,643	32.9%	(216)	(24.5%)	15,541.00	213.8%	Blowdown emissions are a function of activity level. Blowdown volume varies by activity, depending on the type of work performed.
	Component Emissions	Vented	N/A	4,300	5,340	Number of devices: 254	2,922	Number of devices: 139	(2,418)	(45.3%)	(115)	(45.3%)	N/A	N/A	The decrease in emissions and number of devices are due to asset verification projects of Transmission Compressor Station components, resulting in a more accurate component inventory.
	Component Leaks	Fugitive	8,430	10,784	2,527	Number of leaks: 153	1,587	Number of leaks: 124	(940)	(37.2%)	(29)	(19.0%)	(9,197.00)	(85.3%)	CARB Oil & Gas Rule decreased the leak detection threshold from 10,000 ppm to 1,000 ppm. Consequently, leaks > 10,000 ppm (Appendix 9 threshold) count is lower due to addressing and repairing leaks when detected at 1,000 ppm.
	Storage Tank Leaks & Emissions	Vented	0	275	165	Number of emission items: 5	165	Number of emission items: 5	-	0.0%	-	0.0%	(110.00)	N/A	
Distribution Main & Service Pipelines	Pipeline Leaks	Fugitive	797,426	576,261	545,429	Number of known leaks: 20,005 Estimated number of unknown leaks: 798 Total number of leaks: 20,803	465,687	Number of known leaks: 17,674 Estimated number of unknown leaks: 1,059 Total number of leaks: 18,733	(79,742)	(14.6%)	(2,070)	(10.0%)	(110,574.09)	(19.2%)	The decrease in emission can be attributed to: -SoCalGas's effort to reduce leak inventory. SoCalGas achieved 24 months leak inventory, meaning no leak older than 24 was carried to 2022. -Increased the capabilities of Decision Tree (DT) approach. DT approach helped identifying large emitting leaks and accelerating their repairs time based on their measured flow. Leaks that meet the DT criteria were accelerated to be repaired within 3 months rather than 24 months.
	All Damages	Fugitive	78,646	78,646	73,665	Number of damages: 3,455	68,708	Number of damages: 3,346	(4,957)	(6.7%)	(109)	(3.2%)	(9,938.00)	(12.6%)	Emissions associated with damages vary based on damage severity, damaged asset dimensions, and pipeline pressure.
	Blowdowns	Vented	4,828	4,828	221	Number of blowdown events: 26,673	182	Number of blowdown events: 23,061	(39)	(17.7%)			(4,646.00)	(96.2%)	Blowdown emissions are a function of activity level. Blowdown volume varies by activity, depending on the type of work performed
	Component Emissions	Vented	N/A	NA		Number of emission items: 0		Number of emission items: 0	-	-	-		N/A	N/A	
	Component Leaks	Fugitive	3,281	0	0	Number of leaks: 0	0	Number of leaks: 0	-	-			-	#DIV/0!	
Distribution M&R Stations	Station Leaks & Emissions	Fugitive	340,729	0	N/A	Number of stations: NA	N/A	Number of stations: NA	-	-		-	-	-	The population-based emissions calculation is included in Appedix 5 for informational purposes only
	All Damages	Fugitive	N/A	NA	0	Number of damages: 0	0	Number of damages: 0	-	-	-	-	-	-	
	Blowdowns	Vented	94	94	114	Number of blowdowns: 24,585	107	Number of blowdowns: 22,623	(7)	(6.3%)	(1,962)	(8.0%)	13.00	13.8%	Blowdown emissions are a function of activity level. Blowdown volume varies by activity, depending on the type of work performed
	Component Emissions	Vented	N/A	295	295	Number of emission items:14	420	Number of emission items:20		0.0%					
	Component Leaks	Fugitive	N/A	8,898	8,897	Number of leaks: 1,445	6,890	Number of leaks: 1,102	(2,007)	(22.6%)					
Customer Meters	Meter Leaks	Fugitive	846,235	620,481	396,489	Number of meters: 6,065,878	383,538	Number of meters: 6,096,494	(12,951)	(3.3%)	30,616	0.5%	(236,943.00)	(38.2%)	CPUC approved transitioning to leaker-based emission factors to estimate Customer Meters emissions. SoCalGas has the leaker-based data and information for 2021 & 2020. So to allow apples-to-apples comparability and data availability, the 2020 Data columns have been updated to reflect the approval of leaker-based emissions estimations for the 2020 dataset.
	All Damages	Fugitive	N/A		16,169	Number of damages: 1,354	16,031	Number of damages: 1411	(138)	(0.9%)	57	4.2%	-	-	
	Vented Emissions	Vented	2,063	2,063	666	Number of blowdown events: 349,807	902	Number of blowdown events: 354,967	236	35.4%	5,160	1.5%	(1,161.00)	(56.3%)	Blowdown emissions are a function of activity level. Blowdown volume varies by activity, depending on the type of work performed.
Underground Storage	Storage Leaks & Emissions	Fugitive	3,146	3,146	59	Number of emissions items: 134	94	Number of emissions items: 131	35	58.3%	(3)	(2.2%)	(3,052.00)	(97.0%)	
	Comprossor Emissions	Vented	84,609	84,609	1,489	Number of comprossors: 47	6,470	Number of comprossors: 47	4,981	334.4%	-	0.0%	(78,139.00)	(92.4%)	
	Compressor Leaks	Fugitive	N/A	NA	This worksheet was combined with Component Leaks worksheet in 2020 template.		This worksheet was combined with Component Leaks worksheet in 2020 template.								
	Blowdowns	Vented	10,812	10,812	1,783	Number of blowdown events: 3,054	2,154	Number of blowdown events: 3,791	371	20.8%	737	24.1%	(8,658.00)	(80.1%)	Blowdown emissions are a function of activity level. Blowdown volume varies by activity, depending on the type of work performed. There was more component inspection events in 2021 than 2020
	Component Emissions	Vented	N/A	5,281	2,773	Number of devices: 177	2,460	Number of devices: 117	(313)	(11.3%)	(60)	(33.9%)			Emissions reductions can be attributed to decommissioning components, converting components to operate via compressed air.
	Component Leaks	Fugitive	107	21,989	4,073	Number of leaks: 284	2,956	Number of leaks: 223	(1,117)	(27.4%)	(61)	(21.5%)	(19,033.00)	(86.6%)	CARB Oil & Gas Rule decreased the leak detection threshold from 10,000 ppm to 1,000 ppm. Consequently, leaks > 10,000 ppm (Appendix 9 threshold) count is lower due to addressing and repairing leaks when detected at 1,000 ppm.
	Dehydrator Vent Emissions	Fugitive	13,402	0	0	Number of facilities: 4	0	Number of facilities: 4	-	-	-	0.0%	-	-	
Unusual Large Leaks	(Description)		3,630,000						-				-		
		Total	**6,409,851**	**1,797,141**	**1,309,873**	N/A	**1,134,633**	N/A	(175,240)	-13%	N/A	N/A	**(662,508.09)**	**(36.9%)**	
			2,779,851												

Key	Revised on 6/15/2023

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Summary Tables:

Natural Gas Properties	Average Mole Percent	Explanatory Notes / Comments
Methane	94	Interstate supplies
Carbon Dioxide	0.73	Interstate supplies
Ethane	3.91	Interstate supplies
C3+	0.24	Interstate supplies
C6+	0.006	Interstate supplies
Oxygen	0.2	Estimated to limit, Not Tested at all locations
Hydrogen		Not Tested
Sulfur	0.00028662	Estimated to include odorant
Water	0.0147	Estimated to Limit, Not Tested at all locations
Carbon Monoxide		Not Tested
Particulate Matter		Not Tested
Inert Gas	1.7	Interstate supplies
Odorant	0.00016	Estimated to guideline rate

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System Wide Leak Rate Data

1/1/2022 - 12/31/2022

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 by the Gas Department (Mscf)	Total Annual Volume of Withdrawals from Storage (Mscf)	Explanatory Notes / Comments
141,087,404	72,876,793	59,089,681	570,920	51,514,805	

Transmission System:

Total Annual Volume of Gas Used by the Gas Department (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
1,583,385	875,220,427	12,852,193	59,089,681	

Distribution System:

Total Annual Volume of Gas Used by the Gas Department (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
275,570	745,809,310	0	

*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.