Attachment 3

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.

Annual Report Template

Gill Ranch Storage, LLC

Natural Gas Leakage Abatement Report

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.

> And In Response to Data Request Gill Ranch Storage, LLC - R15-01-008 2019 Annual Report By: Richard Gonzalez

> > Date: 6/15/2020

Introduction

The following data¹ 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 our responses to Data Requests Gill Ranch Storage, LLC R15-01-008 2019 Annual Report.

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 State Air Resources Board (ARB):

 A summary of changes to utility leak and emission management practices from January 1, 2019 through December 31, 2019. The report must include a detailed summary of changes, including the reasoning behind each change and an explanation of how each change will reduce methane leaks and emissions. Response:

No changes were made in 2019

¹ As described in Data Request Gill Ranch Storage, LLC R15-01-008 2019 Annual Report

(2) <u>A list of new graded and ungraded gas leaks discovered, tracked by</u> geographic location in a Geographic Information System (GIS) or best equivalent, by grade, component or equipment, pipe size, schedule and material, pressure, age, date discovered and annual volume of gas leaked for each, by month, from January 1, 2019 through December 31, 2019. Response:

See Appendices

(3) <u>A list of graded and ungraded gas leaks repaired, tracked by geographic</u> <u>location in a Geographic Information System (GIS) or best equivalent, by</u> <u>month, from January 1, 2019 through December 31, 2019. Include the</u> <u>grade, component or equipment, pipe size, schedule and material,</u> <u>pressure, age, date discovered, date of repair, annual volume of gas leaked</u> <u>for each and the number of days from the time the leak was discovered</u> <u>until the date of repair.</u> Response:

See Appendices

(4) <u>A list of ALL open graded and ungraded leaks, regardless of when they</u> were found, tracked by geographic location in a Geographic Information System (GIS) or best equivalent that are being monitored, or are scheduled to be repaired, by month, from January 1, 2019 through December 31,
2019. Include the grade, component or equipment, pipe size, schedule and material, pressure, age, date discovered, scheduled date of repair, and annual volume of gas leaked for each.

Response:

See Appendices

(5) System-wide gas leak and emission rate data, along with any data and computer models used in making that calculation, for the 12 months ending December 31st, of the reporting year. Response:

See Appendices

 (6) <u>Calculable or estimated emissions and non-graded gas leaks, as defined in</u> <u>Data Request [Company Name] R15-01-008 2018 Annual Report for the</u> <u>12 months ending December 31, 2019.</u> Response:

See Appendices

(END OF ATTACHMENT 3)

Rulemaking (R.) 15-01-008 to Adopt Rules and Procedures Governing Commission Regulated Natural Gas Pipelines and Realities to Reduce Natural Gas Leaks Consistent with Senate Bill 1371, Leno. In Response to Data Request, R15-01-008 - 2020 June Report Appendix 1 - Rev. 03/31/20

Notes: Emissions included in the Report are based on miles of transmission pipeline. Therefore provide the miles of transmission pipeline in your system here. The following data on transmission pipeline leak 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 corput and paste 4s-value. 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 Le (psi) Gr	ak Above Ground or ade 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 TRANSMIS	93637	STEEL	30"	116	1450 NA	В	NA	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 232 COMPONENTS ON THE ABOVE GROUND FACILITIES LOCATED ON THE 27 MILE PIPELINE DURING THE QUARTERLY LEAK INSPECTIONS. MILL TEST FOR PIPE WAS DONE 11-2-2009 AND WAS PUT IN SERVICE IN OCTOBER 2010. PIPE SIZE: 30 " (762MM) OD * 0.506" (12.9 MM) WT MATERIAL GRADE: API SL GRADE X-70M PSL 2

Sum total 0

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 - 2020 June Report

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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

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
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27 MILE TRANSMISSION PIPELINE

Sum total 0

No damgages.

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 - 2020 June Report Appendix 1 - Rev. 03/31/20

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.

Transmission Pipeline Blowdowns:

ID	Geographic Location	Number of Blowdown Events	Annual Emissions (Mscf)	Explanatory Notes / Comments
27 MILE TRANSMIS	SION PIPELINE		Ν	lo blowdowns

Sum total

0

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 2020 June Report Appendix 1 - Rev. 03/31/20

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

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
27 MILE TRANSMISSION	PIPELINE					No vented emissions

Sum total

0

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 2020 June Report

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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

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
										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

27 MILE TRANSMISSION PIPELINE

Sum total

FACILITIES LOCATED ON THE 27 MILE PIPELINE

DURING THE QUARTERLY LEAK INSPECTIONS.

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 2020 June Report

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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

Transmission Pipeline Odorizers:

ID	Geographic Location	Number of Units	Emission Factor (Mscf/yr)	Annual Emission (Mscf)	Explanatory Notes / Comments
					GRS does not have an Odorant system.

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)								
Tab: Pipeline Leaks									
ID									
Geographic	GIS. zip code, or equivalent								
Location									
D ¹	PB = cathodically protected steel, bare								
Pipe	PC = cathodically protected steel, coated								
watena	UB = unprotected steel, bare								
Pine Size	oc = unprotected steer, coaled								
(nominal)									
Pipe Age									
(months)									
Pressure	MOP = maximum operating pressure over the past year								
(psi)									
	1 = grade 1								
	2 = grade 2								
	2+ = grade 2+								
Leak	3 = grade 3								
Grade	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	A = above ground								
Ground	B = below ground								
Discovery Date									
(MM/DD/YY)									
Repair Date	Date that the pipeline repair stopped the leak. Any associated blowdowns resulting								
(MM/DD/YY)	from the repair should be included in the blowdowns tab.								
Scheduled	If leak is open specify the scheduled date of repair or type "M " signifying that the leak								
Repair Date	is being monitored with no scheduled date of repair.								
(MM/DD/YY)	Then, provide the reason for not scheduling a repair in Column for that purpose.								
Reason for Not Scheduling	If not scheduled for repair (e.g. with a "M" for monitoring the leak in Scheduled Repair								
a Repair	Date), then provide the reason for not scheduling a repair.								
	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.)								
Number									
of	(For days leaking for leaks carried over use January 1st as start date for emissions								
Days Leaking	calculations.)								
	For O&M discovered leaks, assume that the leak begins with the discovery date <u>thru</u>								
	repair date or December 31st of subject year, whichever is earlier.								
Emission Factor									
(Mscf/Day)									
Annual Emissions									
(Misct) Explanatory Notes /									
Comments									
Tab: All Damages									
ID									
Geographic	GIS zin code or equivalent								
Location	יייט, בוף נטעב, טו בקעווימובווג								
Damage	E = excavation damage								
Type	N = natural force damage								
, r -	O = other outside force damage								

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н	eader column "Comment" boxes displayed below for reference.
Column Heading	Description and Definition of Required Contents (IF not self-explanatory)
	PB = cathodically protected steel, bare
Pipe	PC = cathodically protected steel, coated
Material	UB = unprotected steel, bare
	UC = unptotected steel, coated
Pipe Size	
(nominal) Pipe Age	
(months)	
Pressure (psi)	MOP = maximum operating pressure over the past year
	1 = grade 1
Look	2 = grade 2
Grade	2+ = grade 2+
Grade	3 = grade 3
	N = non-graded or ungraded
	AH = above ground, hazardous
Above Ground or Below	AN = above ground, non-hazardous
Ground	B = below ground
Discovery Data	
(MM/DD/YY)	
Repair Date	
(MM/DD/YY)	
	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
Number	circumstances of damages, then these may be applied to like damage events. The
Of Deve Leaking	emissions factors should be adequately supported and explained in the filing.
Days Leaking	
	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.
Emission Factor	
(Mscf/Day)	
Annual Emissions	
Explanatory Notes /	Provide method of calculation and example of formula.
Comments	Explain how any EF's used were derived.
Tab: Blowdowns	
ID	
Geographic Location	GIS, zip code, or equivalent
Number of Blowdown	
Events Annual Emissions (Meef)	
Explanatory Notes /	
Comments	Provide method of calculation and example of formula.
Tab: Component Ven	ted Emissions
Geographic Location	GIS, zip code, or equivalent
	C = connector
	O = open-ended line
Device Type	M = meter
2F -	P = pneumatic device
	PR = pressure reliet valve
	V = valve

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н	eader column "Comment" boxes displayed below for reference.						
Column Heading	Description and Definition of Required Contents (IF not self-explanatory)						
	L = low bleed						
Plead Pate	l = intermittent bleed						
bleed kate	H = high bleed						
	NA = not applicable						
Manufacturer							
	Because the emissions are a factor of design or function, these emissions counted for						
	the entire year.						
Annual Emissions (Mscf)	E.G. 365 days times the actual volume emitting if known, or the approved Emissions						
	Factor.						
Explanatory Notes /	Note whether the emissions are based on actual volumetric measures.						
comments							
Tab: Component Leak	(S						
ID							
Geographic Location	GIS, zip code, or equivalent						
	C = connector						
	O = open-ended line						
	M = meter						
Device Type	P = pneumatic device						
	PR = pressure relief valve						
	V = valve						
	L = low bleed						
Rigad Data	I = intermittent bleed						
bleed kate	H = high bleed						
	NA = not applicable						
Manufacturer							
	List the actual discovery date.						
Discovery Date	If the leak was discovered in the vear of interest, then we will assume the component						
(MM/DD/YY)	was leaking from the beginning of the year for emissions reporting purposes, or prior						
	survey date if surveyed previously within the year of interest.						
Ropair Data (MM/DD/VV)	Date that the component repair stopped the leak. Any associated blowdowns as a						
	result of the repair should be included in the blowdowns tab.						
	Assume Leaking from January 1 of subject year or prior survey date, whichever is later						
	thru the renair date (if renaired in year of interest) or December 31 of subject year						
	whichever is earlier.						
Number of Days Leaking							
	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.						
Annual Emissions (Mscf)							
Explanatory Notes /							
Comments							
Tab: Odorizers							
ID Geographic							
Location	GIS, zip code, or equivalent						
Number of Units							
Emission Factor							
(Mscf/yr)							
Annual Emission	All of the emissions from the odorizing process and equipment.						
(IVISCT) Explanatory Notes /							
Comments							

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 2020 June Report

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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

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

GILL RANCH STORAGE, LLC 06.15.2020 Rulemaking (R.) 15-01-000 to Adopt Rules and Procedures Governing. Commission Regulator Marcal Car Spectra Res 2014 (Standard Car Speciase and Facilities to Reduce Natural Gas Leaks Consistent with Senate Bill 1371, Leno. In Response to Data Request, RE5-10-000 2020 june Report Appender 7, Res, 031220

Note: Use a standardented value with the tenula and in the Annuel Emission column. Direct user a copy and park-an value. All for and a Annuel Emission Column, and a summation table a value fail, and then highlydromapy. The mension required and the hospitate Harmingson and and and a fail of the displayment. Any statistical values of natural gas for sality or maintenance parposes should be included on the Elevadores workhow.



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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 2020 June Report

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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		64	1029.247	START UP AND MAINTENANCE BLOWDOWNS
C-220	С	R		36	576.783	START UP AND MAINTENANCE BLOWDOWNS
C-230	С	R		29	413.985	START UP AND MAINTENANCE BLOWDOWNS
C-240	С	R		46	687.841	START UP AND MAINTENANCE BLOWDOWNS
C-250	C	R		66	1080.176	START UP AND MAINTENANCE BLOWDOWNS
WELL 201	Р			4	25.012	MAINTENANCE BLOWDOWNS
WELL 203	Р			3	6.361	MAINTENANCE BLOWDOWNS
WELL 204	Р			3	6.361	MAINTENANCE BLOWDOWNS
WELL 205	Р			1	13.158	MAINTENANCE BLOWDOWNS
WELL 103	Р			1	152.823	MAINTENANCE BLOWDOWNS
WELL 106	Р			2	273.627	MAINTENANCE BLOWDOWNS
						ANNUAL EMERGENCY SHUT DOWN TESTING. THIS TEST CONFIRMS
FACILITY	Р			1	1040.594	THAT THE FACILITY VENT VALVES OPEN IN CASE OF AN EMERGENCY
PIT- 3008	р			1	47.986	BLOWDOWN TO REDUCE DIFFERENTIAL PRESSURE ACROSS A VALVE BLOWDOWNS TO REDUCE DIFFERENTIAL PRESSURE ACROSS A
PIT 3000	р			20	446.099	VALVE
						BLOWDOWNS TO ALLOW OPERATIONS TO SAFELY REMOVE
SC 113 123 133	р			2	139.758	CORROSION COUPONS. THIS IS DONE TWICE A YEAR
F-301	p			2	95.905	BLOWDOWNS FOR FILTER CHANGE OUT
F-302	р			1	74.405	BLOWDOWN FOR FILTER CHANGE OUT
F-255	p			1	125	BLOWDOWN FOR FILTER CHANGE OUT
PIT-1232	р			1	258.537	MAINTENANCE BLOWDOWNS
PIT-1332	p			1	248.556	MAINTENANCE BLOWDOWNS
PIT-1132	р			2	246.082	MAINTENANCE BLOWDOWNS

287 6988.2960

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 2020 June Report

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Notes:

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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):

								Emission Factor,		
ID	Geographic Location	Device Type	Bleed Rate	Manufacturer	Pressure (psi)	Survey Date (MM/DD/YY)	Number of Days Emitting	Engineering or Manufacturer's based Estimate of Emissions (Meef/day)	Annual Emissions (Mscf)	Explanatory Notes / Comments
PCV-8110	93637	Р	L	FISHER	110		365	0.216	78.84	MANUFACTURER'S ESTIMATE
PCV-8210	93637	Р	L	FISHER	110		0	0.216	0	MANUFACTURER'S ESTIMATE. WELL 202 WAS STILL NOT IN OPERATION.
PCV-8310	93637	Р	L	FISHER	110		365	0.216	78.84	MANUFACTURER'S ESTIMATE
PCV-8410	93637	Р	L	FISHER	110		365	0.216	78.84	MANUFACTURER'S ESTIMATE
PCV-7710	93637	Р	L	FISHER	110		365	0.216	78.84	MANUFACTURER'S ESTIMATE
PCV-7810	93637	Р	L	FISHER	110		365	0.216	78.84	MANUFACTURER'S ESTIMATE
PCV-7510	93637	Р	L	FISHER	110		365	0.216	78.84	MANUFACTURER'S ESTIMATE
PCV-7610	93637	Р	L	FISHER	110		365	0.216	78.84	MANUFACTURER'S ESTIMATE
PCV-7110	93637	Р	L	FISHER	110		365	0.216	78.84	MANUFACTURER'S ESTIMATE
PCV-7210	93637	Р	L	FISHER	110		365	0.216	78.84	MANUFACTURER'S ESTIMATE
PCV-7310	93637	Р	L	FISHER	110		365	0.216	78.84	MANUFACTURER'S ESTIMATE
PCV-7410	93637	Р	L	FISHER	110		365	0.216	78.84	MANUFACTURER'S ESTIMATE

867.24

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 2020 June Report

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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

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.

Underground Storage, Compressor and Component Fugitive Leaks (see note above).	Undergro	ound Storage:	Compressor and	Component Fu	ugitive Leaks	(see note above):
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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 Davs Leaking	Emission Factor or Engineering Estimate (Mscf/day)	Emissions (Mscf)	Explanatory Notes / Comments
HV-1867	93637 C		NA	NA	3220	03/04/19	03/04/19	12/07/18	70.00	0.1342	9.3940 GS-	700 BY HEATHE CONSULTANTS USED FOR SURVEYING
XV-8201A	93637 C		NA	NA	3220	03/04/19	03/05/19	12/07/18	71.00	0.1342	9.5282 GS-	700 BY HEATHE CONSULTANTS USED FOR SURVEYING
HV-2007	93637 C		NA	NA	3220	03/04/19	03/04/19	12/07/18	70.00	0.1342	9.3940 GS-	700 BY HEATHE CONSULTANTS USED FOR SURVEYING
FV-8020	93637 C		NA	NA	3220	03/04/19	03/04/19	12/07/18	70.00	0.1342	9.3940 GS-	700 BY HEATHE CONSULTANTS USED FOR SURVEYING
HV-2032	93637 C		NA	NA	3220	03/04/19	03/04/19	12/07/18	70.00	0.1342	9.3940 GS-	700 BY HEATHE CONSULTANTS USED FOR SURVEYING
PR-132 DOOR	93637 C		NA	NA	3220	03/04/19	03/05/19	12/07/18	71.00	0.1342	9.5282 GS-	700 BY HEATHE CONSULTANTS USED FOR SURVEYING
PR-131 DOOR	93637 C		NA	NA	3220	03/04/19	03/05/19	12/07/18	71.00	0.1342	9.5282 GS-	700 BY HEATHE CONSULTANTS USED FOR SURVEYING
H-134 FUEL GAS	93637 C		NA	NA	3220	03/04/19	03/05/19	12/07/18	71.00	0.1342	9.5282 GS-	700 BY HEATHE CONSULTANTS USED FOR SURVEYING
H-115	93637 C		NA	NA	3220	03/04/19	03/05/19	12/07/18	71.00	0.1342	9.5282 GS-	700 BY HEATHE CONSULTANTS USED FOR SURVEYING
H-114	93637 C		NA	NA	3220	03/04/19	03/05/19	12/07/18	71.00	0.1342	9.5282 GS-	700 BY HEATHE CONSULTANTS USED FOR SURVEYING
C-210 THROW 3	93637 C		NA	NA	3220	03/05/19	03/05/19	12/07/18	71.00	0.1342	9.5282 GS-	700 BY HEATHE CONSULTANTS USED FOR SURVEYING
C-210 THROW 4	93637 C		NA	NA	3220	03/05/19	03/05/19	12/07/18	71.00	0.1342	9.5282 GS-	700 BY HEATHE CONSULTANTS USED FOR SURVEYING
C-250 THROW 5	93637 C		NA	NA	3220	03/05/19	03/05/19	12/07/18	71.00	0.1342	9.5282 GS-	700 BY HEATHE CONSULTANTS USED FOR SURVEYING
FV-2212	93637 C		NA	NA	3220	03/06/19	03/06/19	12/07/18	72.00	0.1342	9.6624 GS-	700 BY HEATHE CONSULTANTS USED FOR SURVEYING
WELL 104 TREE PA(93637 C		NA	NA	3220	5/15/2019	5/15/2019	03/06/19	70.00	0.1342	9.3940 GS-	700 BY HEATHE CONSULTANTS USED FOR SURVEYING
WELL 101 ANNULU	93637 C		NA	NA	3220	5/15/2019	5/15/2019	03/06/19	70.00	0.1342	9.3940 GS-	700 BY HEATHE CONSULTANTS USED FOR SURVEYING
WELL 101 HV-1889	93637 C		NA	NA	3220	5/15/2019	5/15/2019	03/06/19	70.00	0.1342	9.3940 GS-	700 BY HEATHE CONSULTANTS USED FOR SURVEYING
WELL 201 ANNULU	93637 C		NA	NA	3220	5/15/2019	5/15/2019	03/06/19	70.00	0.1342	9.3940 GS-	700 BY HEATHE CONSULTANTS USED FOR SURVEYING
WELL 203 ANNULU	93637 C		NA	NA	3220	5/15/2019	5/15/2019	03/06/19	70.00	0.1342	9.3940 GS-	700 BY HEATHE CONSULTANTS USED FOR SURVEYING
WELL 203 V-831 PS	93637 PI	R	NA	NA	3220	5/15/2019	5/15/2019	03/06/19	70.00	0.9518	66.6260 GS-	700 BY HEATHE CONSULTANTS USED FOR SURVEYING
WELL 204 ANNULU	93637 C		NA	NA	3220	5/15/2019	5/15/2019	03/06/19	70.00	0.1342	9.3940 GS-	700 BY HEATHE CONSULTANTS USED FOR SURVEYING
H-115 FLANGE CON	93637 C		NA	NA	3220	6/1/2019	6/1/2019	03/06/19	86.00	0.1342	11.5412 GS-	700 BY HEATHE CONSULTANTS USED FOR SURVEYING
PR-801 DOOR	93637 C		NA	NA	3220	9/8/2019	9/9/2019	5/15/2019	117.00	0.1342	15.7014 GS-	700 BY HEATHE CONSULTANTS USED FOR SURVEYING
WELL 203 XV-8203	93637 C		NA	NA	3220	9/8/2019	9/9/2019	5/15/2019	117.00	0.1342	15.7014 GS-	700 BY HEATHE CONSULTANTS USED FOR SURVEYING
PR-103 DOOR	93637 C		NA	NA	3220	9/8/2019	9/9/2019	5/15/2019	117.00	0.1342	15.7014 GS-	700 BY HEATHE CONSULTANTS USED FOR SURVEYING
FIT-7111	93637 C		NA	NA	3220	9/8/2019	9/9/2019	5/15/2019	117.00	0.1342	15.7014 GS-	700 BY HEATHE CONSULTANTS USED FOR SURVEYING
FIT-7211	93637 C		NA	NA	3220	9/8/2019	9/9/2019	5/15/2019	117.00	0.1342	15.7014 GS-	700 BY HEATHE CONSULTANTS USED FOR SURVEYING
C-210 F-215	93637 C		NA	NA	3220	9/10/2019	9/11/2019	5/15/2019	119.00	0.1342	15.9698 GS-	700 BY HEATHE CONSULTANTS USED FOR SURVEYING
XV-3064	93637 C		NA	NA	3220	9/10/2019	9/11/2019	5/15/2019	119.00	0.1342	15.9698 GS-	700 BY HEATHE CONSULTANTS USED FOR SURVEYING
H-134 1" PLUG	93637 C		NA	NA	3220	9/15/2019	9/15/2019	5/15/2019	123.00	0.1342	16.5066 GS-	700 BY HEATHE CONSULTANTS USED FOR SURVEYING
PR-703 DOOR	93637 C		NA	NA	3220	9/15/2019	9/15/2019	5/15/2019	123.00	0.1342	16.5066 GS-	700 BY HEATHE CONSULTANTS USED FOR SURVEYING
PR-701 DOOR	93637 C		NA	NA	3220	9/16/2019	9/16/2019	5/15/2019	124.00	0.1342	16.6408 GS-	700 BY HEATHE CONSULTANTS USED FOR SURVEYING
FIT-7211	93637 C		NA	NA	3220	9/16/2019	9/16/2019	5/15/2019	124.00	0.1342	16.6408 GS-	700 BY HEATHE CONSULTANTS USED FOR SURVEYING
H-134 FLANGE	93637 C		NA	NA	3220	12/20/2019	12/20/2019	9/8/2019	103.00	0.1342	13.8226 GS-	700 BY HEATHE CONSULTANTS USED FOR SURVEYING
PCV-1150	93637 C		NA	NA	3220	12/21/2019	12/21/2019	9/8/2019	104.00	0.1342	13.9568 GS-	700 BY HEATHE CONSULTANTS USED FOR SURVEYING
HV-1962	93637 C		NA	NA	3220	12/21/2019	12/21/2019	9/8/2019	104.00	0.1342	13.9568 GS-	700 BY HEATHE CONSULTANTS USED FOR SURVEYING
XV-3064	93637 C		NA	NA	3220	12/21/2019	12/21/2019	9/8/2019	104.00	0.1342	13.9568 GS-	700 BY HEATHE CONSULTANTS USED FOR SURVEYING
WELL 202 PORT	93637 C		NA	NA	3220	12/28/2019	12/28/2019	9/8/2019	111.00	0.1342	14.8962 GS	700 BY HEATHE CONSULTANTS USED FOR SURVEYING

514.8540

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 2020 June Report

Appendix 7; Rev. 03/31/20

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 State Air Resources Board (ARB): Note - Definitions in Data Request, R15-01-008 2018 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 2018 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	Ŷ	9,495,870	N	N	NA	

Appendix 7 - Rev. 03/31/20							
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							
(Misct/yr) Annual Emissions							
(Mscf)							
Explanatory Notes / Comments							
	Commences Vented Emissions						
	Compressor Vented Emissions						
Geographic	GIS, zip code, or equivalent						
Compressor	C = centrifugal						
Туре	R = reciprocating						
Prime	E = electric motor						
Mover	C = internal combustion engine						
Number of Cylinders in Compressor							
Number							
of							
Seals							
Seal	W = wet						
Туре	D = dry						
Measurment Frequency	A - Annual Q - Quarterly M - Monthly W - Weekly D - Daily						
Emission Factor: Measurement Date - Pressurized Operations							

Column Heading	Description and Definition of Required Contents (IF not self-explanatory)					
Operating Mode: Pressurized Operating (hours)	Use these EF columns as well as the columns for the Compressor Measurements noted in Columns R					
Operating Mode: Pressurized Idle (hours)	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					
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: Offline (scf/hr)	If the "Offline" hours are counted, then a measurement of "offline" emissions should be taken to determine whether emissions occur. (We should not assume they are zero.)					
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 Operating - Wet Seal Oil Degassing Vent (scf/hr)						
Emission Factor: Pressurized Operating - Wet Seal (scf/hr)	CPUC Staff strongly encourage more frequent measurement of the following compressor vented					
Emission Factor: Pressurized Operating - Dry Seal (scf/hr)	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					
Emission Factor: Pressurized Idle - Rod Packing (scf/hr)	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					
Emission Factor: Pressurized Idle - Blowdown Valve (scf/hr)	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.					
Emission Factor: Pressurized Idle - Wet Seal Oil Degassing Vent (scf/hr)	Advance notice for 2021 reporting, CPUC Staff will propose quarterly reporting at the winter workshop. Therefore, gas companies are requested to start measuring compressor emissions on at least a quarterly basis for the remainder of 2020, if not doing so already. This will ensure gas					
Emission Factor: Pressurized Idle - Wet Seal (scf/hr)	companies are prepared to report these emissions in accordingly in 2021.					

Column Heading	Description and Definition of Required Contents (IF not self-explanatory)
Emission Factor:	
Pressurized Idle - Dry Seal	
(scf/hr)	
Emission Factor:	
Pressurized Idle - Isolation	
Valve (scf/hr)	
Emissions	
(Mscf)	
Explanatory Notes / Comments	
	Blowdowns
ID	
Geographic Location	GIS, zip code, or equivalent
	W = wellhead rework
Sourco	C = compressor
Source	P= pipeline
	O = other
	C = centrifugal
CompressorType	R = reciprocating
Number	
of	
Blowdown Events	
Annual Emissions(Mscf)	
Explanatory Notes /	
Comments	
	Component Vented Emissions
ID	
Geographic	
Location	GIS, zip code, or equivalent
	C = connector
	OE = open-ended line
	M = meter
Device Type	P = pneumatic device
	PR = pressure relief valve
	V = valve
	$\Omega = $ other devices
	I - intermittent bleed
Bleed Rate	H = high blood
	NA = not applicable
Manufacturor	
Pressure	
(psi)	MOP = maximum operating pressure over the past year
Survey Date	
(MM/DD/YY)	
Number	
of	Because the emissions are a factor of design or function, these emissions counted for the entire year.
Days Emitting	
Manufacturor's based Estimate	Explain in the comment column the basis for your emission estimate
of Emissions	
(Mscf/dav)	

Column Heading	Description and Definition of Required Contents (IF not self-explanatory)
Annual Emissions	
(Mscf)	
Explanatory Notes / Comments	
	Compressor and Component Leaks
ID	
Geographic Location	GIS, zip code, or equivalent
	C = connector
	OE = open-ended line
	M = meter
Device Type	P = pneumatic device
	PR = pressure relief valve
	V = valve
	O = other devices
	L = low bleed
Bleed Rate	l = intermittent bleed
	H = high bleed
	NA = not applicable
Manufacturer	
Pressure (psi)	MOP = maximum operating pressure over the past year
	List the actual discovery date.
Discovery Date	
(MM/DD/YY)	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	Date that the component repair stopped the leak. Any associated blowdowns as a result of the repair
(MM/DD/YY)	should be included in the blowdowns tab.
	Before the discovery date of the leak, there was a "Prior Survey Date" when the compressor station
	was tested and no leak was found.
Prior Survey Date (MM/DD/VV)	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.

Column Heading	Description and Definition of Required Contents (IF not self-explanatory)
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	

Column Heading	Description and Definition of Required Contents (IF not self-explanatory)
	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	

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 2020 June Report Appendix 8; Rev. 03/31/20

Summary Tables:														
System Categories	Emission Source Categories	Fugitive or Vented	For Reference Only: 2015 Baseline Emissions (Mscf)	2018 Total Annual Volume of Leaks & Emissions (Mscf)	2018 Total Annual Count of Leak & Emission Items	2019 Total Annual Volume of Leaks & Emissions (Mscf)	2019 Total Annual Count of Leak & Emission Items	Emission Change for Year Over Year Comparison from 2018 to 2019 (Mscf)	Percentage Change for Year Over Year Comparison from 2018 to 2019	Count Change for Year Over Year Comparison from 2018 to 2019	Percentage Change for Year Over Year Comparison from 2018 to 2019	Emission Change for Year Over Year Comparison from 2015 to 2019 (Mscf)	Percentage Change for Year Over Year Comparison from 2015 to 2019	Explanation for Significant Percentage Change for Year Over Year Comparison from 2018 to 2019
	Pipeline Leaks	Fugitive		0	0	0	0	-	#DIV/0!	-	#DIV/0!	0	#DIV/0!	
	All Damages	Fugitive		0	0	0	0	-	#DIV/0!		#DIV/0!	0	#DIV/0!	
Transmission Pipelines	Blowdowns	Vented		0	0	0	0	-	#DIV/0!	-	#DIV/0!	0	#DIV/0!	
	Component Emissions	Vented		0	0	0	0	-	#DIV/0!		#DIV/0!	0	#DIV/0!	
	Component Leaks	Fugitive		0	0	0	0	-	#DIV/0!		#DIV/0!	0	#DIV/0!	
	Odorizers	Vented		0	0	0	0	-	#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!	
	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!	
Transmission Compressor Stations	Component Emissions	Vented						-	#DIV/0!	-	#DIV/0!	-	#DIV/0!	
	Component Leaks	Fugitive						-	#DIV/0!	-	#DIV/0!		#DIV/0!	
	Storage Tank Leaks & Emissions	Vented						-	#DIV/0!	-	#DIV/0!		#DIV/0!	
	Pipeline Leaks	Fugitive						-	#DIV/0!	-	#DIV/0!	-	#DIV/0!	
	All Damages	Fugitive						-	#DIV/0!	-	#DIV/0!	-	#DIV/0!	
Distribution Main & Service Pipelines	Blowdowns	Vented						-	#DIV/0!	-	#DIV/0!	-	#DIV/0!	
	Component Emissions	Vented						-	#DIV/0!	-	#DIV/0!	-	#DIV/0!	
	Component Leaks	Fugitive						-	#DIV/0!	-	#DIV/0!	-	#DIV/0!	
	Station Leaks & Emissions	Fugitive						-	#DIV/0!	-	#DIV/0!		#DIV/0!	
Distribution M&R Stations	All Damages	Fugitive						-	#DIV/0!	-	#DIV/0!	-	#DIV/0!	
	Blowdowns	Vented						-	#DIV/0!		#DIV/0!	-	#DIV/0!	
	Meter Leaks	Fugitive						-	#DIV/0!	-	#DIV/0!	-	#DIV/0!	
Customer Meters	All Damages	Fugitive						-	#DIV/0!	-	#DIV/0!		#DIV/0!	
	Vented Emissions	Vented						-	#DIV/0!	-	#DIV/0!		#DIV/0!	
	Storage Leaks & Emissions	Fugitive	0	0	0	0		-	#DIV/0!	-	#DIV/0!		#DIV/0!	
	Compressor Emissions	Vented	5822.48	5629.03	5	10638	5	5,009	89.0%	-	0.0%	4,815.52	82.7%	
	Compressor Leaks	Fugitive	0	0	0	0	0	-	#DIV/0!	-	#DIV/0!		#DIV/0!	PACKING LEAK DETECTION EQUIPMENT INSTALLED IN MARCH 2019.
Underground Storage	Blowdowns	Vented	3734	8912.53	18	6988.296	287	(1,924)	(21.6%)	269	1,494.4%	3,254.30	87.2%	
	Component Emissions	Vented	866.3	867.24	11	867.24	11	-	0.0%	-	0.0%	0.94	0.1%	
	Component Leaks	Fugitive	2592.74	318.55	8	514.854	38	196	61.6%	30	375.0%	(2,077.89)	(80.1%)	
	Dehydrator Vent Emissions	Fugitive	0	0	0	0	0	-	#DIV/0!	-	#DIV/0!	-	#DIV/0!	
Unusual Large Leaks	(Description)		0	0	0	0	0	-		0%	#DIV/0!	-	#DIV/0!	
-	•	Total	13015.52	15727.35	NA	19008.39	NA	3.281	21%	NA	NA	5.992.87	46.0%	

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 2020 June Report

Appendix 8; Rev. 03/31/20

System Wide Leak Rate Data 1/1/2019 - 12/31/2019

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
3,543,307	12,041,476	15,053,381	18,177	9,495,870	

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
NA	NA	NA	NA	

Distribution System:

of Gas Transported to of Gas Used by the Gas Department (Mscf) (Mscf) (Mscf) (Mscf) Explanatory Notes / Comments
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*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.

GILL RANCH STORAGE, LLC 06.15.2020 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 2020 June Report Appendix 8; Rev. 03/31/20

Summary Tables:

Natural Gas Properties	Average Mole Percent	Explanatory Notes / Comments
1ethane	93	
Carbon Dioxide	0.8	
Ethane	3.673	
C3+	0.2683	
C6+	0.0076	
Oxygen	0.1	
Hydrogen	1.5	
Sulfur	0.000015	
Water	NA	
Carbon Monoxide	0.1	
Particulate Matter	NA	
Inert Gas	NA	
Odorant	0.00008	

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 2020 June Report Appendix 9; Rev. 03/31/20

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 - Farm Taps & Direct Industrial Sales	MRR	 # of leaks > 10,000 ppm x Subpart W EF (ref: Table W-3 of Subpart W of Part 98) Farm Tap / Direct Sale = 12.2 Mscf/yr/station Non-compressor components Valve = 0.1572 Mscf/day/dev Connector = 0.1399 Mscf/day/dev Open-ended line = 0.276 Mscf/day/dev Pressure relief valve = 0.0492 Mscf/day/dev Meter = 0.0728 Mscf/day/dev
	M&R Stations - Transmission-to-Transmission Company Interconnect	MRR	# of leaks > 10,000 ppm x Subpart W EF (ref: Table W-3 of Subpart W of Part 98) Trans-to-trans = 1,554.8 Mscf/yr/station Non-compressor components Valve = 0.1572 Mscf/day/dev Connector = 0.1399 Mscf/day/dev Open-ended line = 0.276 Mscf/day/dev Pressure relief valve = 0.0492 Mscf/day/dev Meter = 0.0728 Mscf/day/dev
	Transmission M&R Leaks	MRR	# of leaks > 10,000 ppm x Subpart W EF (ref: Table W-3 of Subpart W of Part 98) Non-compressor components Valve = 0.1572 Mscf/day/dev Connector = 0.1399 Mscf/day/dev Open-ended line = 0.276 Mscf/day/dev Pressure relief valve = 0.0492 Mscf/day/dev Meter = 0.0728 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 = 0.4633 Mscf/day/dev Other = 0.0984 Mscf/day/dev Valve = 0.1541 Mscf/day/dev Connector = 0.1370 Mscf/day/dev Open-ended Line = 0.2432 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) - Transmissiondata 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) - Transmissiondata 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

System Categories	Emission Source Categories	Emission Factor Sources	Description [in natural gas volume]
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 Service = 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 Service = 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 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 M&R Stations	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 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)
	Residential Meters	GRI (1996)	0.148 Mscf/yr/meter
Commercial, Industrial and Residential Meters	Commercial and Industrial Meters	GRI (1996)	0.051 Mscf/yr/meter
nesidential meters	Vented Emission from MSA	Engineering Estimate	Estimated volume release by MSA and activity type
		GRI (1996)	One of the following three cases per dehydrator facility
			1 Clused debudrator with VDU and thermal evidiner = 0 Mcef
	Dehydrator Vents - Storage		1. Giycol denyulatol with vko and thermal oxidizer – O Mistr
			Glycol dehydrator with no control device = Engineering Estimate
			3. Desiccant dehydrator = 2.23E-03 mt CH4/MMscf (Alternative: Eq. 5 in MRR)
Underground Storage	Storage - piping leakage	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 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	Engineering Estimate	TBD
	Storage - Wellhead leakage	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
	Storage - Compressor & blowdowns	Engineering Estimate	Open-Ended Line = 0.0007 Mscf/day/dev Eq. 13 of MRR (piping volume x # of blowdowns)

System Categories	Emission Source Categories	Emission Factor Sources	Description [in natural gas volume]
	Storage - Wellhead Rework blowdown and bring-in	Engineering Estimate	Eq. 9,10,11,12 of MRR
	Pressure Relief Valves	MRR	Pressure relief vallve = 0.9518 Mscf/day/dev.
	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