



Lodi Gas Storage, L.L.C.
A Rockpoint Gas Storage Company
PO Box 230, Acampo CA 95220-0230
T 209.36839277 F 209.368.9276
rockpointgs.com

June 17, 2019

Mr. Ed Charkowicz
Safety and Enforcement Division
California Public Utilities Commission
2nd Floor
505 Van Ness Ave.
San Francisco, CA 94102
Ed.charkowicz@cpuc.ca.gov

VIA ELECTRONIC MAIL

**RE: Lodi Gas Storage, L.L.C.
R15-01-008 2019 Annual Report**

Dear Mr. Charkowicz:

Lodi Gas Storage, L.L.C. (LGS) respectfully submits this 2019 Annual Report to the California Public Utilities Commission (CPUC) pursuant to R15-01-008. The attached 2019 Annual Report is comprised of this cover letter and the following documents:

- Attachment 3 – Natural Gas Leakage Abatement Report
- Appendix 1 – Transmission Pipelines
- Appendix 7 – Underground Storage
- Appendix 8 – Summary Tables

If you have any questions, or require more information, please contact me at gclark@lodistorage.com or at (209) 368-9277 x21.

Sincerely,

A handwritten signature in blue ink that reads 'Gregory N. Clark'.

Gregory N. Clark
Compliance Manager

Enclosures (Attachment 3, Appendix 1, Appendix 7, Appendix 8)

cc: File #S3.03
T. Ferreira (terrel.ferreira@arb.ca.gov)
A. Anderson, J. Dubchak, M. Fournier (via e-mail)

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

Lodi Gas Storage, L.L.C.

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
Lodi Gas Storage, L.L.C. R15-01-008 2019
Annual Report

By:

Date: 6/17/19

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 Lodi Gas Storage, L.L.C. 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):

- (1) A summary of changes to utility leak and emission management practices from January 1st, 2018 to December 31st, 2018. 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:

LGS procedures that address how gas leaks are identified, classified and repaired are contained within the LGS Operations and Maintenance (O&M) Manual, as submitted to CPUC as a part of the Safety Plan. The LGS O&M Manual is reviewed and updated annually in accordance with 49 CFR 192.605(a) and changes to the O&M Manual are documented in the Record of Revisions section.

LGS updated sections of the O&M Manual pursuant to the Best Practices detailed in the Compliance Plan submitted to CPUC in March 2018. Specifically, Procedure 2.01 (recordkeeping) and Procedure 9.03 (purging pipelines) were revised to include language from the Compliance

¹ As described in Data Request Lodi Gas Storage, L.L.C. R15-01-008 2019 Annual Report

Plan. These procedural changes are not expected to reduce methane emissions since LGS, in practice, has been maintaining methane leakage abatement records and scheduling pipeline purging activity, whenever practicable, to minimize methane emissions. However, incorporating these procedural changes aligns the LGS procedures with SB 1371 and promotes the minimization of methane emissions to the atmosphere.

(2) A list of new graded and ungraded gas leaks discovered, tracked by 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 1st, 2018 through December 31st, 2018.

Response:

See Appendices

(3) A list of graded and ungraded gas leaks repaired, tracked by geographic location in a Geographic Information System (GIS) or best equivalent, by month, from January 1st, 2018 through December 31st, 2018. Include the grade, component or equipment, pipe size, schedule and material, pressure, age, date discovered, date of repair, annual volume of gas leaked for each and the number of days from the time the leak was discovered until the date of repair.

Response:

See Appendices

(4) A list of ALL open graded and ungraded leaks, regardless of when they 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 1st, 2018 through December 31st, 2018. 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) Calculable or estimated emissions and non-graded gas leaks, as defined in Data Request [Company Name] R15-01-008 2019 Annual Report for the 12 months ending December 31st, 2018.

Response:

See Appendices

(END OF ATTACHMENT 3)

Lodi Gas Storage, L.L.C., June 17, 2019
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 - 2019 June Report
Appendix 1 - Rev. 03/29/19

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 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-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 (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
N/A															No transmission pipeline leaks in 2018

Sum total 0

Lodi Gas Storage, L.L.C., June 17, 2019

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 - 2019 June Report

Appendix 1 - Rev. 03/29/19

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
N/A													No 3rd party damage emissions in 2018	

Sum total 0

Lodi Gas Storage, L.L.C., June 17, 2019
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 - 2019 June Report
Appendix 1 - Rev. 03/29/19

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
1	95220	10	5.24	Preventive maintenance on meter runs
2	94585	1	0.01	Preventive maintenance on meter runs
Sum total			5.25	

Lodi Gas Storage, L.L.C., June 17, 2019

**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 2019 June Report
Appendix 1; Rev. 03/29/19**

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 intentional 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
N/A						No component vented emissions in 2018
				Sum total	0	

Lodi Gas Storage, L.L.C., June 17, 2019

**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 2019 June Report
Appendix 1; Rev. 03/29/19**

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
N/A										No component leak emissions in 2018

Sum total 0

Lodi Gas Storage, L.L.C., June 17, 2019
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 2019 June Report
Appendix 1; Rev. 03/29/19

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
N/A					
No odorizer emissions in 2018					

Sum total

0

Lodi Gas Storage, L.L.C., June 17, 2019

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 2019 June Report Appendix 7; Rev. 03/29/19

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
LDAR Q1	95242 W/C		2	3/12/2018	3/14/2018	3	0.0288	0.1728	
LDAR Q1	94585 W/V		7	3/14/2018	3/23/2018	10	0.1080	7.5600	
LDAR Q2	95242 W/C		10	6/21/2018	6/27/2018	7	0.0288	2.0160	
LDAR Q2	95242 W/V		7	6/21/2018	6/29/2018	9	0.1080	6.8040	
LDAR Q2	95242 W/V		3	6/21/2018	12/31/2018	194	0.1080	62.8560	Delay of Repair filed with CARB, leaks fixed on April 25, 2019.
LDAR Q2	94585 W/C		5	6/22/2018	7/3/2018	12	0.0288	1.7280	
LDAR Q2	94585 W/V		2	6/22/2018	7/3/2018	12	0.1080	2.5920	
LDAR Q3	95242 W/C		7	9/9/2018	9/12/2018	4	0.0288	0.8064	
LDAR Q3	95242 W/V		6	9/9/2018	9/11/2018	3	0.1080	1.9440	
LDAR Q3	94585 W/C		1	9/8/2018	9/11/2018	4	0.0288	0.1152	
LDAR Q3	94585 W/V		8	9/8/2018	9/13/2018	6	0.1080	5.1840	
LDAR Q4	95242 W/C		4	12/7/2018	12/11/2018	5	0.0288	0.5760	
LDAR Q4	95242 W/V		2	12/7/2018	12/11/2018	5	0.1080	1.0800	
LDAR Q4	94585 W/C		1	12/5/2018	12/5/2018	1	0.0288	0.0288	
LDAR Q4	94585 W/V		4	12/5/2018	12/17/2018	13	0.1080	5.6160	
LDAR Q4	94585 W/V		1	12/5/2018	12/31/2018	27	0.1080	2.9160	Delay of Repair filed with CARB, leak fixed on February 5, 2019.
Sum Total								101.9952	

Lodi Gas Storage, L.L.C., June 17, 2019
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 2019 June Report
Appendix 7; Rev. 03/29/19

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 compressor. Any intentional release of natural gas for safety or maintenance purposes should be included on the Blowdowns worksheet.

Underground Storage Facility Compressor Vented Emissions (see note above):

ID	Geographic Location	Compressor Type	Prime Mover	Number of Cylinders in Compressor	Number of Seals	Seal Type	Operating Mode: Pressurized Operating (hours)	Operating Mode: Pressurized Idle (hours)	Operating Mode: Depressurized Idle (hours)	Emission Factor: Pressurized Operating (scf/hr)	Emission Factor: Pressurized Idle (scf/hr)	Emission Factor: Depressurized Idle (scf/hr)	Emissions (Mscf)	Explanatory Notes / Comments
1000	94585 R	C		4	4	W	2363	6322	76	259.8	0	0	613.91	Measured compressor rod packing vented emissions rate from 9/10/18
2000	94585 R	C		4	4	W	2309	6181	270	259.8	0	0	599.88	Measured compressor rod packing vented emissions rate from 9/10/18
3000	94585 R	C		4	4	W	659	7617	484	192.6	0	0	126.92	Measured compressor rod packing vented emissions rate from 9/10/18
4000	94585 R	C		6	6	W	1104	6928	728	192.6	0	0	212.63	Measured compressor rod packing vented emissions rate from 9/10/18
Sum Total												1553.34		

Lodi Gas Storage, L.L.C., June 17, 2019

**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 2019 June Report

Appendix 7; Rev. 03/29/19

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 Blowdowns:

ID	Geographic Location	Source	Compressor Type	Number of Blowdown Events	Annual Emissions (Mscf)	Explanatory Notes / Comments
1000	94585 C		R	6	24	Preventive maintenance, Blowdown to fix LDAR leaks
2000	94585 C		R	7	28	Preventive maintenance, Blowdown to fix LDAR leaks
3000	94585 C		R	10	100	Preventive maintenance, Blowdown to fix LDAR leaks
4000	94585 C		R	9	135	Preventive maintenance, Blowdown to fix LDAR leaks
				Sum Total	287.00	

Lodi Gas Storage, L.L.C., June 17, 2019

**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 2019 June Report
Appendix 7; Rev. 03/29/19**

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 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):

ID	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
N/A										Quarterly LDAR conducted in 2018. Component leak emissions captured on Compressor & Component Leaks worksheet.

Lodi Gas Storage, L.L.C., June 17, 2019

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 2019 June Report

Appendix 7; Rev. 03/29/19

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):

ID	Geographic Location	Device Type	Bleed Rate	Manufacturer	Pressure (psi)	Discovery Date (MM/DD/YY)	12/31/2018	1/1/2018	Number of Days Leaking	Emission Factor or Engineering Estimate (Mscf/day)	Emissions (Mscf)	Explanatory Notes / Comments
							Repair Date (MM/DD/YY)	Prior Survey Date (MM/DD/YY)				
LDAR Q1	95242 C	NA		varies	1347	03/13/18	03/22/18		45.5	0.1342	91.59	Includes 15 components Includes 10 components, delay of repair
LDAR Q1	95242 C	NA		varies	1347	03/13/18	05/04/18		88.5	0.1342	118.77	filed with CARB
LDAR Q2	95242 C	NA		varies	1347	06/21/18	06/29/18	03/13/18	59	0.1342	126.68	Includes 16 components Includes 1 component, delay of repair
LDAR Q2	95242 C	NA		varies	1347	06/21/18	08/17/18	03/13/18	108	0.1342	14.49	filed with CARB
LDAR Q3	95242 C	NA		varies	1347	09/09/18	09/17/18	06/21/18	49	0.1342	46.03	Includes 7 components
LDAR Q3	95242 V	NA		varies	1347	09/09/18	09/17/18	06/21/18	49	0.3562	17.45	Includes 1 component
LDAR Q4	95242 C	NA		varies	1347	12/07/18	12/10/18	09/09/18	48.5	0.1342	65.09	Includes 10 components
LDAR Q4	95242 V	NA		varies	1347	12/07/18	12/13/18	09/09/18	51.5	0.3562	91.72	Includes 5 component
LDAR Q1	94585 C	NA		varies	1711	03/14/18	03/22/18		45	0.1342	60.39	Includes 10 components
LDAR Q2	94585 C	NA		varies	1711	06/22/18	07/03/18	03/14/18	62	0.1342	49.92	Includes 6 components
LDAR Q2	94585 V	NA		varies	1711	06/22/18	07/03/18	03/14/18	62	0.3562	44.17	Includes 2 components
LDAR Q3	94585 C	NA		varies	1711	09/10/18	09/14/18	06/22/18	45	0.1342	12.08	Includes 2 components
LDAR Q3	94585 V	NA		varies	1711	09/10/18	09/14/18	06/22/18	45	0.3562	16.03	Includes 1 component
LDAR Q4	94585 C	NA		varies	1711	12/06/18	12/20/18	09/10/18	58.5	0.1342	70.66	Includes 9 components
LDAR Q4	94585 V	NA		varies	1711	12/06/18	12/20/18	09/10/18	58.5	0.3562	41.68	Includes 2 components
Sum Total											866.75	

Lodi Gas Storage, L.L.C., June 17, 2019

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 2019 June Report
Appendix 7; Rev. 03/29/19**

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
ZZZ-3300	95242	Glycol	Y	13042987	0	N		Petrex dehydrator with electric driven glycol circulation pumps
ZZZ-4300	95242	Glycol	Y	13042987	0	N		Petrex dehydrator with electric driven glycol circulation pumps
PHASE 1	94585	Glycol	Y	3453437	0	N		QB Johnson dehydrator with electric driven glycol circulation pumps
BBC-5150	94585	Glycol	Y	7899219	0	N		QB Johnson dehydrator with electric driven glycol circulation pumps

Lodi Gas Storage, L.L.C., June 17, 2019
 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 2019 June Report
 Appendix 8; Rev. 03/29/19

Summary Tables:

System Categories	Emission Source Categories	Fugitive or Vented	For Reference Only: 2015 Baseline Emissions (Mscf)	2017 Total Annual Volume of Leaks & Emissions (Mscf)	2017 Total Annual Count of Leak & Emission Items	2018 Total Annual Volume of Leaks & Emissions (Mscf)	2018 Total Annual Count of Leak & Emission Items	Emission Change for Year Over Year Comparison from 2017 to 2018 (Mscf)	Percentage Change for Year Over Year Comparison from 2017 to 2018	Count Change for Year Over Year Comparison from 2017 to 2018	Percentage Change for Year Over Year Comparison from 2017 to 2018	Emission Change for Year Over Year Comparison from 2015 to 2018 (Mscf)	Percentage Change for Year Over Year Comparison from 2015 to 2018	Explanation for Significant Percentage Change for Year Over Year Comparison from 2017 to 2018
Transmission Pipelines	Pipeline Leaks	Fugitive	126	2128				(2,128)	(100.0%)	-	#DIV/0!	-126	(100.0%)	
	All Damages	Fugitive						-	#DIV/0!	-	#DIV/0!	0	#DIV/0!	
	Blowdowns	Vented	87	334.28		5.25		(329)	(98.4%)	-	#DIV/0!	-82	(94.0%)	
	Component Emissions	Vented						-	#DIV/0!	-	#DIV/0!	0	#DIV/0!	
	Component 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!	0	#DIV/0!	
	Blowdowns	Vented						-	#DIV/0!	-	#DIV/0!	0	#DIV/0!	
	Component Emissions	Vented						-	#DIV/0!	-	#DIV/0!	0	#DIV/0!	
	Component Leaks	Fugitive						-	#DIV/0!	-	#DIV/0!	0	#DIV/0!	
	Storage Tank Leaks & Emissions	Vented						-	#DIV/0!	-	#DIV/0!	0	#DIV/0!	
Distribution Main & Service 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 Emissions	Vented						-	#DIV/0!	-	#DIV/0!	0	#DIV/0!	
	Component Leaks	Fugitive						-	#DIV/0!	-	#DIV/0!	0	#DIV/0!	
Distribution M&R Stations	Station Leaks & Emissions	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!	
Customer Meters	Meter Leaks	Fugitive						-	#DIV/0!	-	#DIV/0!	0	#DIV/0!	
	All Damages	Fugitive						-	#DIV/0!	-	#DIV/0!	0	#DIV/0!	
	Vented Emissions	Vented						-	#DIV/0!	-	#DIV/0!	0	#DIV/0!	
Underground Storage	Storage Leaks & Emissions	Fugitive		306		101.99		(204)	(66.7%)	-	#DIV/0!	102	#DIV/0!	
	Compressor Emissions	Vented	99	1637.92		1553.34		(85)	(5.2%)	-	#DIV/0!	1,454	1,469.0%	
	Compressor Leaks	Fugitive						-	#DIV/0!	-	#DIV/0!	0	#DIV/0!	
	Blowdowns	Vented	182	150		287		137	91.3%	-	#DIV/0!	105	57.7%	Increased blowdowns to fix leaks identified by LDAR.
	Component Emissions	Vented	1144	1141				(1,141)	(100.0%)	-	#DIV/0!	-1,144	(100.0%)	Historical emissions in this category were calculated by applying emission factors to a component count. Replaced by LDAR.
	Component Leaks	Fugitive				866.75		867	#DIV/0!	-	#DIV/0!	867	#DIV/0!	Quarterly LDAR conducted in 2018. Component emissions captured in this category.
	Dehydrator Vent Emissions	Fugitive						-	#DIV/0!	-	#DIV/0!	0	#DIV/0!	
Unusual Large Leaks	(Description)													
Total			1638	5697.2	NA	2814.33	NA	(2,883)	-51%	NA	NA	1,176	71.8%	

Lodi Gas Storage, L.L.C., June 17, 2019
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 2019 June Report
Appendix 8; Rev. 03/29/19

System Wide Leak Rate Data

1/1/2018 - 12/31/2018

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
12260000	8488117	14135261	344531	24395643	

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
	24395643		14135261	Gas flow in transmission pipeline is bi-directional

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

*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.

Lodi Gas Storage, L.L.C., June 17, 2019
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 2019 June Report
Appendix 8; Rev. 03/29/19

Summary Tables:

Natural Gas Properties	Average Mole Percent	Explanatory Notes / Comments
Methane		Natural gas meets PG&E specifications
Carbon Dioxide		Natural gas meets PG&E specifications
Ethane		Natural gas meets PG&E specifications
C3+		Natural gas meets PG&E specifications
C6+		Natural gas meets PG&E specifications
Oxygen		Natural gas meets PG&E specifications
Hydrogen		Natural gas meets PG&E specifications
Sulfur		Natural gas meets PG&E specifications
Water		Natural gas meets PG&E specifications
Carbon Monoxide		Natural gas meets PG&E specifications
Particulate Matter		Natural gas meets PG&E specifications
Inert Gas		Natural gas meets PG&E specifications
Odorant		Natural gas meets PG&E specifications