RAILROAD COMMISSION OF TEXAS
HEARINGS DIVISION

OIL AND GAS DOCKET NO. 7C-0321945

APPLICATION OF LAREDO PETROLEUM, INC. (OPERATOR NO. 486610) FOR AN EXCEPTION TO STATEWIDE RULE 32 FOR THE BOOK-190 TB (17289) LEASE, THE CH SUGG-187 TB (17194) LEASE, AND THE GRAHAM-186 TB (17027) LEASE, SPRABERRY (TREND AREA) FIELD, REAGAN COUNTY, TEXAS

OIL AND GAS DOCKET NO. 7C-0321946

APPLICATION OF LAREDO PETROLEUM, INC. (OPERATOR NO. 486610) FOR AN EXCEPTION TO STATEWIDE RULE 32 FOR 5 FLARE POINTS IN THE GRAHAM 186-187 HORIZ TB LACT, COMMINGLING PERMIT NO. 6054, SPRABERRY (TREND AREA) FIELD, REAGAN COUNTY, TEXAS

OIL AND GAS DOCKET NO. 7C-0321947

APPLICATION OF LAREDO PETROLEUM, INC. (OPERATOR NO. 486610) FOR AN EXCEPTION TO STATEWIDE RULE 32 FOR 3 FLARE POINTS IN THE HOLT 112-110 HORIZ TB LACT, COMMINGLING PERMIT NO. 6344, SPRABERRY (TREND AREA) FIELD, REAGAN COUNTY, TEXAS

OIL AND GAS DOCKET NO. 7C-0321948

APPLICATION OF LAREDO PETROLEUM, INC. (OPERATOR NO. 486610) FOR AN EXCEPTION TO STATEWIDE RULE 32 FOR THE HOLT-A-136 TB (17013) LEASE, THE HOLT T-B-112 TB (18515) LEASE, THE HOLT-C-132 TB (17006) LEASE, THE HOLT-D-114 TB (17850) LEASE, AND THE HOLT-E-130 TB (17096) LEASE, SPRABERRY (TREND AREA) FIELD, REAGAN COUNTY, TEXAS

OIL AND GAS DOCKET NO. 7C-0321949

APPLICATION OF LAREDO PETROLEUM, INC. (OPERATOR NO. 486610) FOR AN EXCEPTION TO STATEWIDE RULE 32 FOR THE SRH-A-11 TB LACT, THE SRH-A 11 SL TB LACT, THE SRH-B-6 TB, THE SRH-B—11 TB, THE SRH-C-23 TB, THE SRH-C-80 TB, THE SRH-D-5 TB, AND THE SRH-D-8 TB, SPRABERRY (TREND AREA) FIELD, REAGAN COUNTY, TEXAS

OIL AND GAS DOCKET NO. 7C-0321950

APPLICATION OF LAREDO PETROLEUM, INC. (OPERATOR NO. 486610) FOR AN EXCEPTION TO STATEWIDE RULE 32 FOR 4 FLARE POINTS ON THE SRH-A-9 HORIZ TB LACT, COMMINGLING PERMIT NO. 6130, SPRABERRY (TREND AREA) FIELD, REAGAN COUNTY, TEXAS

OIL AND GAS DOCKET NO. 7C-0321951

APPLICATION OF LAREDO PETROLEUM, INC. (OPERATOR NO. 486610) FOR AN EXCEPTION TO STATEWIDE RULE 32 FOR 6 FLARE POINTS IN THE SUGG-A-141 HZTL TB LACT, COMMINGLING PERMIT NO. 6329, SPRABERRY (TREND AREA) FIELD, REAGAN COUNTY, TEXAS

OIL AND GAS DOCKET NO. 7C-0321952

APPLICATION OF LAREDO PETROLEUM, INC. (OPERATOR NO. 486610) FOR AN EXCEPTION TO STATEWIDE RULE 32 FOR THE SUGG-A-169 TB LACT, SPRABERRY (TREND AREA) FIELD, REAGAN COUNTY, TEXAS

OIL AND GAS DOCKET NO. 7C-0321953

APPLICATION OF LAREDO PETROLEUM, INC. (OPERATOR NO. 486610) FOR AN EXCEPTION TO STATEWIDE RULE 32 FOR FLARE POINTS IN THE SUGG-A-171 SL TB LACT, COMMINGLING PERMIT NO. 6209, SPRABERRY (TREND AREA) FIELD, REAGAN COUNTY, TEXAS

OIL AND GAS DOCKET NO. 7C-0321954

APPLICATION OF LAREDO PETROLEUM, INC. (OPERATOR NO. 486610) FOR AN EXCEPTION TO STATEWIDE RULE 32 FOR FLARE POINTS IN THE SUGG-A-184 SL TB LACT, COMMINGLING PERMIT NO. 6120, SPRABERRY (TREND AREA) FIELD, REAGAN COUNTY, TEXAS

OIL AND GAS DOCKET NO. 7C-0321955

APPLICATION OF LAREDO PETROLEUM, INC. (OPERATOR NO. 486610) FOR AN EXCEPTION TO STATEWIDE RULE 32 FOR 12 FLARE POINTS IN THE SUGG-B-HOLT-E ALLOC TB LACT, COMMINGLING PERMIT NO. 6009, SPRABERRY (TREND AREA) FIELD, REAGAN COUNTY, TEXAS

OIL AND GAS DOCKET NO. 7C-0321959

APPLICATION OF LAREDO PETROLEUM, INC. (OPERATOR NO. 486610) FOR AN EXCEPTION TO STATEWIDE RULE 32 FOR THE SUGG-B-109 TB, THE SUGG-B-131 TB LACT, THE SUGG-B-133 HZTL TB LACT, THE SUGG-B-137 TB LACT, THE SUGG-B-163 TB LACT, THE SUGG-B-168 TB LACT, THE SUGG-B-195 TB, THE SUGG-C-165 TB LACT, THE SUGG-D-104 TB, THE SUGG-D-104 HZTL TB LACT, AND THE SUGG-D-106 TB LACT, SPRABERRY (TREND AREA) FIELD, REAGAN COUNTY, TEXAS

OIL AND GAS DOCKET NO. 7C-0321960

APPLICATION OF LAREDO PETROLEUM, INC. (OPERATOR NO. 486610) FOR AN EXCEPTION TO STATEWIDE RULE 32 FOR 22 FLARE POINTS IN THE SUGG-E & A (ALLOC) 208 TB LACT, COMMINGLING PERMIT NO. 6056, SPRABERRY (TREND AREA) FIELD, REAGAN COUNTY, TEXAS

OIL AND GAS DOCKET NO. 7C-0321961

APPLICATION OF LAREDO PETROLEUM, INC. (OPERATOR NO. 486610) FOR AN EXCEPTION TO STATEWIDE RULE 32 FOR THE VON GONTEN-160 TB (17044) LEASE, SPRABERRY (TREND AREA) FIELD, REAGAN COUNTY, TEXAS

OIL AND GAS DOCKET NO. 7C-0321963

APPLICATION OF LAREDO PETROLEUM, INC. (OPERATOR NO. 486610) FOR AN EXCEPTION TO STATEWIDE RULE 32 FOR 10 FLARE POINTS IN THE LACT JOHN LEE MCMASTER-155 TB FACILITY, COMMINGLING PERMIT NO. 6043, SPRABERRY (TREND AREA) FIELD, REAGAN COUNTY, TEXAS

OIL AND GAS DOCKET NO. 7C-0321964

APPLICATION OF LAREDO PETROLEUM, INC. (OPERATOR NO. 486610) FOR AN EXCEPTION TO STATEWIDE RULE 32 FOR 10 FLARE POINTS IN THE LACT TAYLOR-A & B-14 TB FACILITY, COMMINGLING PERMIT NO. 5833, SPRABERRY (TREND AREA) FIELD, REAGAN COUNTY, TEXAS

OIL AND GAS DOCKET NO. 7C-0321972

APPLICATION OF LAREDO PETROLEUM, INC. (OPERATOR NO. 486610) FOR AN EXCEPTION TO STATEWIDE RULE 32 FOR 6 FLARE POINTS IN THE LACT BODINE-A-174 TB FACILITY, COMMINGLING PERMIT NO. 6094, SPRABERRY (TREND AREA) FIELD, REAGAN COUNTY, TEXAS

OIL AND GAS DOCKET NO. 7C-0321974

APPLICATION OF LAREDO PETROLEUM, INC. (OPERATOR NO. 486610) FOR AN EXCEPTION TO STATEWIDE RULE 32 FOR 2 FLARE POINTS IN THE SRH-A-9 HORIZ TB LACT, COMMINGLING PERMIT NO. 6130, SPRABERRY (TREND AREA) R 40 EXC FIELD, REAGAN COUNTY, TEXAS

OIL AND GAS DOCKET NO. 7C-0321975

APPLICATION OF LAREDO PETROLEUM, INC. (OPERATOR NO. 486610) FOR AN EXCEPTION TO STATEWIDE RULE 32 FOR 4 FLARE POINTS IN THE SUGG-A-171 SL TB LACT, COMMINGLING PERMIT NO. 6209, SPRABERRY (TREND AREA) R 40 EXC FIELD, REAGAN COUNTY, TEXAS

OIL AND GAS DOCKET NO. 7C-0321976

APPLICATION OF LAREDO PETROLEUM, INC. (OPERATOR NO. 486610) FOR AN EXCEPTION TO STATEWIDE RULE 32 FOR 7 FLARE POINTS IN THE SUGG B 163-162 HORIZ TB LACT, COMMINGLING PERMIT NO. 6315, SPRABERRY (TREND AREA) R 40 EXC FIELD, REAGAN COUNTY, TEXAS

OIL AND GAS DOCKET NO. 7C-0322002

APPLICATION OF LAREDO PETROLEUM, INC. (OPERATOR NO. 486610) FOR AN EXCEPTION TO STATEWIDE RULE 32 FOR THE SUGG-B-134 TB LACT, COMMINGLING PERMIT NO. 6199, SPRABERRY (TREND AREA) FIELD, REAGAN COUNTY, TEXAS

OIL AND GAS DOCKET NO. 08-0322003

APPLICATION OF LAREDO PETROLEUM, INC. (OPERATOR NO. 486610) FOR AN EXCEPTION TO STATEWIDE RULE 32 FOR THE SUGG-B-134 TB LACT, COMMINGLING PERMIT NO. 6199, JAILHOUSE (FUSSELMAN) FIELD, GLASSCOCK COUNTY, TEXAS

OIL AND GAS DOCKET NO. 7C-0322005

APPLICATION OF LAREDO PETROLEUM, INC. (OPERATOR NO. 486610) FOR AN EXCEPTION TO STATEWIDE RULE 32 FOR THE SUGG-A-158 HZTL TB LACT, COMMINGLING PERMIT NO. 6080, SPRABERRY (TREND AREA) AND SPRABERRY (TREND AREA) R 40 EXC FIELDSFIELD, REAGAN COUNTY, TEXAS

HEARD BY: John L. Moore -Technical Examiner
Ezra A. Johnson Administrative Law Judge

HEARING DATE: October 11, 2019

RECORD CLOSE DATE: November 25, 2019

CONFERENCE DATE: February 11, 2019

APPEARANCES: **REPRESENTING:**

APPLICANT: Laredo Petroleum, Inc.

Mickey Olmstead, Attorney
Amanda Thrash, Assistant General Counsel
Jody Boyd, Sr. Regulatory Analyst
Ben Klein, VP Midstream & Marketing

OBSERVER: Sable Permian Resources

Brenda Hoffman, Sr. Regulatory & Permitting Specialist

EXAMINERS REPORT AND RECOMMENDATION

Statement of the Case

Laredo Petroleum, Inc. ("Laredo") seeks a two-year exception to Statewide Rule 32[1] to flare casinghead gas from forty-three (43) flare points serving one hundred thirty (130) separate oil leases comprised of 629 active wells assigned to the Spraberry (Trend Area) Field, the Jailhouse (Fusselman) Field, or the Spraberry (Trend Area) R 40 EXC Field, in Reagan or Glasscock Counties, Texas.

A Joint Notice of Hearing was issued for the twenty-three (23) subject dockets consolidating them into a single hearing, as all the affected leases and wells are either connected directly or indirectly (via two Laredo pipeline header systems) to the Targa Midstream Services, LLC ("Targa") gathering system in the Midland basin.

Targa's gathering system has historically been constrained in transport capacity and gas processing capacity. This periodic inability to take and/or process casinghead gas from the Laredo leases and pipeline header system has necessitated diverting Laredo's gas to centralized flare stacks for combustion when Laredo cannot physically deliver such gas into a sales line. The effects of capacity and processing constraints on Targa's system have been compounded by planned and unplanned outages on the Targa system. Operationally, Targa has not been able to comply with its contractual obligations to maintain specific pipeline pressures from time to time that would otherwise allow the delivery Laredo's casinghead gas production into the Targa system.

Targa has made efforts to upgrade its system to help alleviate these capacity and processing constraints. However, the increase in gas processing and gathering capacity has lagged behind the increase in connected gas deliverability from operators across its system. With the addition of new wells, Laredo's gas production has increased since September 2014 from approximately 3,600,000 Mcfd to 9,800,000 Mcfd. Laredo anticipates that it will develop another forty-three (43) new wells during the latter part of 2020 and early 2021, affecting eight (8) of the subject flare points. Each of these new wells is expected to add an incremental 1,200 Mcfd of casinghead gas at peak production.

Laredo has made efforts to maximize gas sales and minimize the flaring of its gas. These efforts include contracting with the predecessor of Coronado Midstream LLC ("Coronado") to build a receiving pipeline and connecting with Laredo's Reagan North Corridor pipeline header system. Gas is delivered into the Coronado system during periods when Targa fails to take the dedicated production from Laredo's leases on the Reagan North Corridor system. Flaring is the least favorable option as Laredo not only loses the revenues from gas sales and products extracted from the wet gas stream, but also pays royalty fees on any flared gas. Further, Laredo pays a contractual fee to Coronado if Laredo fails to deliver the minimum contract quality of gas.

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[1] 16 Tex. Admin. Code §3.32

Even so, capacity constraints on both the Targa and Coronado Systems occasionally prevent 100% of Laredo's gas from being sold. Laredo's monthly flare volumes under administrative exceptions during this period have ranged from zero to four percent (4%) of total production, with the highest flare volumes occurring in the summer months of 2019 during Targa's system upgrades and maintenance or unplanned outages.

Laredo originally requested a daily Statewide Rule 32 flare exception equal to one hundred percent (100%) of the total casinghead gas production from the existing wells for a two-year period. The Examiners recommend the approval of two-year exceptions to Statewide Rule 32 for the forty-three (43) flare points based on a maximum daily flare vole and a maximum monthly flare volume for each flare point. The recommended maximum daily flare volume is based upon the aggregate deliverability of the existing oil wells and leases connected to each respective flare point. The recommended maximum monthly flare volume is based upon evidence of either (i) actual monthly flared volumes; or (ii) the combined equivalent of five (5) days per calendar month of flaring authority, assuming the necessity to flare the recommended daily maximum flare volume for each flare point, as applicable. This is consistent with the evidence of past flaring resulting from routine system upsets presented by Laredo as to each of the flare points listed in Attachment A.

For each of the subject forty-three (43) flare points, the Examiners have compiled a recommended term, maximum daily flare volume and maximum monthly flare volume in an Attachment A, which is attached to the proposed final order for Commission consideration and action. Further, Attachment A represents the named flared point under each of the twenty-three (23) Oil and Dockets subject to this hearing.

Discussion of the Evidence

Mr. Ben Klein, VP Midstream & Marketing for Laredo, testified regarding Laredo's production, its two pipeline header systems, the impact of Targa's capacity and processing constraints, and Laredo's efforts to sale gas and minimize flaring.

Mr. Klein stated that the exceptions to Statewide Rule 32 are necessary because Targa and Coronado occasionally do not have the transport and/or processing capacity to take all of Laredo's produced casinghead gas. Shutting-in or curtailing wellhead production is not considered a preferred option for Laredo as it believes doing so will result in a loss of recoverable hydrocarbons.

Targa is the primary gatherer, purchaser and processor for the subject Laredo leases. Laredo delivers its casinghead gas to Targa in one of three ways; direct connection, Laredo's Reagan North Corridor pipeline header system, and Laredo's Reagan South Corridor pipeline header system. Targa collects Laredo's gas via sales meters on low pressure, small diameter pipelines. Without compression, Targa's field gathering lines feed a 20-inch "main line," oriented south to north along the western boundary of Reagan and Glasscock Counties. Targa's compression and processing facilities are located on this main line. Laredo's subject leases are located in the eastern

portion of Reagan and Glasscock counties, meaning Laredo's gas must be transported twenty-plus miles before entering Targa's main line. In general, the greater the distance between a sales delivery point and the Targa main line, the more sensitive that delivery point is to upsets and disruptions on the Targa system. Any planned or unplanned outages on Targa's main line cascade to negatively impact Laredo's delivery of casinghead gas.

Laredo installed its Reagan North Corridor gathering pipeline which delivers produced gas from Laredo wells into the Targa system at four separate sales delivery points. The Reagan North Corridor system is a low-pressure line without any compression. Laredo has negotiated a contractual obligation with Targa to maintain its gathering line pressure at twenty-five (25) psig at each of the four (4) sales delivery points and Laredo has designed its Reagan North Corridor system based on the contractually specified line pressure. When Targa's line pressure at the four (4) sales points exceeds 25 psig (as it often does), a greater percentage of produced gas must be diverted to either the Coronado Midstream LLC ("Coronado") system or to a flare point, as discussed below.

Laredo negotiated with the predecessor of Coronado Midstream LLC ("Coronado") to construct a pipeline and connect into Laredo's Reagan North Corridor gathering system. As an inducement to construct the additional pipeline, Laredo committed to deliver 20,000 Mcfd into what became the Coronado system. Laredo's production delivery commitment to Coronado is partially comprised of its production connected to the Reagan North Corridor system. During times when Targa curtails Laredo's production on the Reagan North Corridor system, Laredo delivers the gas to the Coronado system. If Laredo cannot fulfill its gas delivery commitment to the Colorado system, Laredo pays a fee to Colorado. This transaction allows Laredo to continue gas sales when Targa's capacity constraints result in curtailments from Laredo's production. During 2018, Laredo delivered approximately three (3) Bcf of gas from the Reagan North Corridor system into the Coronado system, that otherwise would have been flared due to Targa's inability to take the gas. Nevertheless, the gas production connected to the Reagan North Corridor system will sometimes exceed the respective dynamic daily operating capacities of the Targa system and the Coronado system. It is during these times that Laredo is seeking the exceptions to Statewide Rule 32 to flare gas from those connected flare points.

Laredo installed its Reagan South Corridor gathering pipeline that delivers produced gas from Laredo wells into the Targa system at two separate sales delivery points. The Reagan South Corridor system is a low-pressure line without any compression. Laredo has negotiated contractual obligation with Targa for it to maintain its gathering line pressure of forty (40) psig at each of the two (2) sales receipt points and Laredo has designed its Reagan South Corridor system based on the contractual forty (40) psig line pressure. The more that Targa's line pressure at the two (2) sales points exceeds forty (40) psig, the greater the percentage of produced gas that is diverted to the respective flare point.

The remainder of Laredo's subject leases are directly connected to other sales delivery points in the Targa system. Laredo has negotiated contractual obligation with

Targa for it to maintain its gathering line pressure of sixty-five (65) psig at each of the direct sales-connection points. The more that Targa's line pressure at the direct sales-connection points exceeds the sixty-five (65) psig, the greater the percentage of produced gas that is diverted to a respective flare point. Mr. Klein testified, "Targa is not fulfilling the commitment to provide the services to us they were supposed to provide." Mr. Klein provided a log of near-daily communication and correspondence between representatives of Laredo and Targa demonstrating the nature and extent of Targa's curtailments due to high line pressure and other causes.

During 2019, Targa installed several upgrades on its mainline system to increase its transport and processing capacity. Targa's upgrades include looping the 16-inch mainline with a 20-inch pipeline, repurposing the 16-inch mainline to a low-pressure gathering line and installing substantial additional processing capacity at several processing plants and compression facilities within the Targa system.

The Targa system delivers its residue gas, after processing, into connecting pipelines which are also constrained. The Gulf Coast Express, a two (2) Bcfd gas pipeline, recently came online. Targa is connected to this pipeline and it is expected to be at capacity within six (6) months of commissioning; i.e. the first quarter of 2020. Mr. Klein opined that two other, high capacity pipelines are slated to be in service in late 2020 or early 2021. Mr. Klein inferred that these pipelines will help to alleviate the transport bottlenecks in the Midland Basin.

Regarding the value of the wet gas stream, Mr. Klein expressed that Laredo is highly motivated to flare as little of its casinghead gas as is possible. This is especially true where Laredo has the physical ability to deliver gas into the Coronado system and meet Laredo's contractual volume commitment to Coronado. Further, as a company policy, Laredo pays royalty fees on any flared gas. Mr. Klein stated that while residue (dry) gas prices in West Texas have been negative over the summer of 2019, they Laredo did not experience a negative value for the produced wet gas stream. This strongly suggests that the products extracted from the produced wet gas stream are generally profitable.

Laredo produced evidence to demonstrate that when frac water remains in the reservoir for extended periods of time, it reduces the wells' ultimate recoveries, causing waste of recoverable reserves. Laredo generated and presented a chart based on approximately two hundred (200) of Laredo's newest wells completed across its entire Permian leasehold. The chart plots the estimate ultimate recovery on a barrel per wellbore lateral foot versus the number of days between the last day of fracture stimulation and the first day of flowing back the well. The chart reflects, on average, that wells that began flowing back after ten (10) days following the end of the frac operations ultimately produce approximately thirty-five (35) barrels of oil per lateral foot (350,000 barrels of oil assuming a 10,000-foot lateral). However, the wells that begin flowing back after fifty (50) days following the end of the fracture stimulation ultimately produce only twenty (20) barrels of oil per lateral foot (200,000 barrels of oil assuming a 10,000-foot lateral). This represents a forty-three percent (43%) decrease in ultimate recovery. Laredo stated that this loss of

ultimate reserves also applies to any existing offsetting wells whose drainage area is invaded by the frac water. Laredo has concluded from this evidence that allowing frac water to remain in the reservoir for extended periods of time reduces the wells' ultimate recoveries, causing the waste of recoverable reserves.

Laredo stated that it has plans to drill, complete and produce an additional forty-six (46) wells within two (2) years, which will impact a total of eight (8) flare points relevant to these dockets. For each of the eight (8) flare points impacted by the production from new wells, Laredo submitted production decline curves representing the expected average daily gas production from the existing wells and the new wells, as they are completed.

These forty-six (46) new wells will significantly increase the daily casinghead gas production behind eight (8) of the subject flare points. Laredo has estimated that each of the new wells will have the capacity to produce an average of approximately 1,200 Mcfd in its first year of production. Laredo expressed that it has met with Targa on multiple occasions to discuss Laredo's development plans and its future needs for additional transport and processing capacity. Based on Targa's historical performance, Laredo has little confidence that Targa can reliably meet Laredo's future gas transport and processing needs. However, Laredo's late-filed evidence also shows that they do not presently expect a recurrence of the extensive disruptions to the Targa System experienced earlier in 2019.

For each of the remaining thirty-five (35) flare points, where no new wells are planned within the next two years, Laredo submitted cumulative production decline curves demonstrating its estimate of the production capacity of the wells connected to each respective flare point. Laredo also submitted for each of the thirty-five (35) flare points charts of historical maximum daily flare volumes and historical monthly flare volumes. For each of these thirty-five (35) flare points, Laredo requested a daily Statewide Rule 32 flare exception equal to one hundred percent (100%) of the total casinghead gas production from the existing wells for a two-year period. However, Laredo also showed that it has actually flared only a small fraction of the casinghead gas produced from the existing wells after the Targa System was upgraded in 2019. Since that time, Laredo has not needed to flare substantially more than three times the requested daily rates.

Additional late-filed evidence submitted by Laredo shows that Laredo personnel are often unable to detect the occurrence of gathering system upsets for as many as 48 hours after flaring commences. After the upset is resolved, it often takes several hours to bring the Targa System fully online. Updated data for six of flare points subject to the above-referenced Applications shows that gas volumes flared after the hearing date due to periodic system upsets exceeded flared volumes shown in prior months by a considerable margin.

Examiners Discussion Regarding Recommending Flare Exception Volumes

In Section (f) of Statewide Rule 32, the Commission has established that there are certain releases (flaring) of gas resulting from routine oil and gas production operations which "are necessary in the efficient drilling and operation of oil and gas wells". The Commission has identified specific oil and gas production operations where the release of gas is authorized for finite periods without administrative or Commission action. Three of the named oil and gas production operations directly relate to Laredo's current and future field operations, namely:

(A) Gas may be released for a period not to exceed ten producing days after initial completion, recompletion in another field, or workover operations in the same field, including but not limited to perforating, stimulating, deepening, cleanout, well maintenance or repair operation.

(B) Gas from a well that must un-loaded or cleaned-up to atmospheric pressure may be vented to the air for periods not to exceed 24 hours in continuous event or a total of 72 hours in one calendar month.

(C) In the event of a full or partial shutdown by a gas gathering system, compression facility, or gas plant, gas from a lease production facility served by that gas gathering system, compression facility or gas plant may be released for a period not to exceed 24 hours.

Beyond the oil and gas production operations named above, Statewide Rule 32 exceptions are granted administratively or by Commission formal action on a volume, term and flare point basis. In Laredo's case, a single flare point services multiple commingled oil leases and each oil lease may contain multiple oil wells. Gas from individual oil wells cannot be distinguished and treated separately at a respective flare point. It is therefore prudent and practical in these cases to consider the total aggregate gas deliverability at a respective flare point when evaluating and establishing the parameters of an exception to flare gas.

In making a recommendation concerning the necessity of Laredo's requested flare volumes, there are two major independent variables to consider; (i) the planned and unplanned events affecting operations of the Targa system, and (ii) the total volume of Laredo's casinghead gas production physically connected to each respective flare point. Regarding the first variable, all of the production connected to the subject forty-six (46) flare points is connected directly or indirectly to the Targa gathering system. Targa experiences maintenance outages and equipment failures. It has installed several processing and compression upgrades to improve its capacity and reliability. However, the evidence indicates that, even with its upgrades, Targa cannot consistently perform its contracted line-pressure obligations and ultimately the gathering, transport, and processing service it was supposed to provide. As a result, the delivery of Laredo's casinghead gas production into the Targa system at various points is subject to being curtailed from time to time and for varying durations and for reasons that are beyond the control of Laredo.

The evidence indicates that the majority of events where Laredo flared its gas occurred during the spring and summer of 2019, when Targa was experiencing substantial operational upsets due to equipment failure, system upgrades, or restrictions in connected pipelines taking Targa's residue gas after processing. For this reason, Laredo requested a daily Statewide Rule 32 flare exception equal to one hundred percent (100%) of the total casinghead gas production from the existing wells for a two-year period. However, Laredo also showed that it has actually flared only a small fraction of the casinghead gas produced from the existing wells after Targa System upgraded its system in 2019. Since that time, Laredo has not needed to flare substantially more than three times the daily rates originally requested at the hearing based upon one hundred percent 100% deliverability of the wells at each of the forty-three (43) flare stacks. Laredo's late-filed evidence further shows that they do not presently expect a recurrence of the extensive disruptions to the Targa System experienced earlier in 2019. Accordingly, Laredo has not established in the record whether it will be impacted more or less severely by Targa's curtailments in the future.

The second variable to consider is the total volume of Laredo's casinghead gas production physically connected to each respective flare point. As stated above, Laredo's flare points are connected to commingled oil leases and the oil leases contain multiple wells. Laredo submitted production decline curves demonstrating its estimate of the aggregate production capacity of the wells connected to a respective flare point. The Examiners relied on the Laredo's production decline curves of physically connected wells at each respective flare point to establish a recommended maximum daily exception flare volume.

The Examiners recognize that Laredo has expressed plans to develop an additional forty-six (46) wells at various times within the next two years and which impact eight (8) of the subject flare points. As previously stated, Laredo requested a daily Statewide Rule 32 flare exception at each of these respective flare points equal to one hundred percent (100%) of the additional casinghead volumes from the planned wells *plus* the total casinghead gas production from the existing wells for a two-year period. Laredo's request includes commencing the two-year flare exception on the day after the termination date of the respective administrative flare exception which was generally late July-early August 2019.

If Laredo's requested flare exception volumes are granted beginning on the day after the termination date of the respective administrative flare exception, the flare exception would cover flare volumes for wells that have not been drilled and completed as of the date of the hearing, and in most cases may not be drilled and completed until late 2020 and early 2021, according to Laredo's evidence. For example, the total *monthly* volume of gas flared at the flare point associated with the tank battery on the Book-190 lease was approximately 260 Mcf in June 2019. Laredo expects to add four (4) new wells behind this flare point in early 2021. The expected maximum casinghead gas deliverability from these four (4) wells is expected to peak in June 2021 at 4,327 Mcfd. Laredo has requested a maximum daily flare exception volume of 4,327 Mcfd beginning on August 19, 2019, the day after the termination of the administrative exception. Granting Laredo's

request would result in a highly inflated flare exception volume for twenty-one months of a two-year flare exception.

Accordingly, for these eight (8) flare points affected by the additional of new wells sometime in the future, the Examiners recommend that the maximum daily flare exception volume and commensurate maximum monthly flare volume be based on the *currently producing* wells serviced by the eight (8) separate flare points. In the event that Laredo determines it is necessary to flare casinghead gas volumes from any of the new wells above the recommended maximum daily and/or monthly flare exception volumes for that respective flare point, Laredo may seek additional relief under Statewide Rule 32 at a later time.

It appears, therefore, that three times the daily exception volumes requested by Laredo are all that is necessary to address routine system upsets which might occur within the two-year exception authority for each of the forty-three (43) flare stacks. However, due to the present limitations of its accounting software, Laredo personnel are often unable to detect system upsets for as many as 48 hours after flaring commences. Accordingly, the Examiners recommend maximum monthly exception flare volumes that represent five days of the maximum daily aggregate deliverability at each of the forty-three (43) flare stacks. This recommended maximum monthly exception flare volume is adequate for routine planned and unplanned outages and subsequent curtailments of gas by Targa for thirty-seven (37) of the forty-three (43) flare points listed on Attachment A. For the remaining six (6) flare points, Laredo presented late-filed evidence of flare volumes resulting from routine system upsets that exceed the equivalent of five times the requested daily volumes. As to these remaining flare points, the recommended maximum monthly exception flare volume is based upon evidence of necessity to flare these reported volumes.

For each of the subject forty-three (43) flare points, the Examiners have compiled their recommended term, maximum monthly flare volume and maximum daily flare volume in an Attachment A, which is attached to the proposed final order for Commission consideration and action. Further, Attachment A represents the named flared point under each of the twenty-three (23) Oil and Dockets subject to this hearing.

Findings of Fact

1. Laredo Petroleum, Inc. ("Laredo") seeks a two-year exception to Statewide Rule 32 to flare casinghead gas from forty-three (43) flare points serving one hundred thirty (130) separate oil leases assigned to the Spraberry (Trend Area) Field, the Jailhouse (Fusselman) Field, or the Spraberry (Trend Area) R 40 EXC Field, in Reagan or Glasscock Counties, Texas.

2. Laredo submitted a request for hearing on the Statewide Rule 32 exception flaring authority on May 29, 2019.

3. Laredo was previously granted an administrative exception to Statewide Rule 32 for each of the subject forty-three (43) flare points. Each of these administrative flare exceptions terminated in July or August 2019.

4. On September 17, 2019 the Hearings Division of the Commission sent a Joint Notice of Hearing ("Notice") to Applicant and all offsetting operators in the fields setting a hearing date of October 11, 2019. Consequently, the parties received more than 10 days' notice. The Notice contains (1) a statement of the time, place, and nature of the hearing; (2) a statement of the legal authority and jurisdiction under which the hearing is to be held; (3) a reference to the particular sections of the statutes and rules involved; and (4) a short and plain statement of the matters asserted. The hearing was held on October 11, 2019 as noticed. Applicant appeared and participated at the hearing. No one appeared in protest.

5. At the hearing, Laredo withdrew its applications for exception to Statewide Rule 32 for three (3) flare points contained in the Joint Notice of Hearing, relating to certain flare points included in the applications docketed under Oil and Gas Docket Nos. 7C-0321952 (the Sugg A-183 TB Lact), 7C-0321959 (the Sugg B-113 TB) and 7C-0321961 (the Bodine B 100 TB). These flare points are not included on Attachment A.

6. All of Laredo's leases and wells are either connected directly or indirectly (via two Laredo pipeline header systems) to the Targa Midstream Services, LLC ("Targa") gathering system in the Midland basin.

7. Laredo contracts with Targa to deliver casinghead gas from the subject one hundred-thirty (130) leases in one of three ways; Laredo's Reagan North Corridor pipeline header system, Laredo's Reagan South Corridor pipeline header system, or via direct connection to Targa's system.

    a. Laredo negotiated with Targa a maximum pressure of twenty-five (25) psig at the sales delivery points on the Reagan North Corridor pipeline header system. Laredo subsequently installed equipment and appurtenances on the Reagan North Corridor pipeline header system based on the delivery of gas to Targa at 25 psig.
    b. Laredo negotiated with Targa a maximum pressure of forty (40) psig at the sales delivery points on Laredo's Reagan South Corridor pipeline header system. Laredo subsequently installed equipment and appurtenances on the Reagan South Corridor pipeline header system based on the delivery of gas to Targa at forty (40) psig.
    c. Laredo negotiated with Targa a maximum pressure of sixty-five (65) psig at the remaining direct connect sales delivery points. Laredo subsequently installed equipment and appurtenances for the direct sales connections based on the delivery of gas to Targa at sixty-five (65) psig.

8. In the past, Targa was frequently unable to meet its contractual obligations concerning maximum pressures at sales delivery points within its system due to transport and processing capacity constraints. When Targa is unable to comply with its contractual maximum system pressure obligations at any one of Laredo's connection sales points, the delivery of Laredo's gas into Targa's system at that sales point is partially or wholly curtailed.

9. In addition, upsets on the Targa system due to planned and unplanned outages, transport and processing equipment up-grades and system failures have caused periodic and partial curtailment of the delivery of casinghead gas produced from the subject Laredo leases.

10. Laredo has negotiated with Coronado for the delivery and sale of gas from Laredo leases, including those connected to the Reagan North Corridor system, into the Coronado system. During periods of curtailment on the Targa system affecting the Reagan North Corridor system, Coronado takes delivery of gas from the Reagan North Corridor system. During 2018, Laredo delivered approximately three (3) Bcf of gas from the Reagan North Corridor system into the Coronado system, that otherwise would have been flared due to Targa's inability to take the gas.

11. During events of periodic and partial curtailment on the Targa system, the curtailed volumes of produced casinghead gas from the subject Laredo leases are either delivered and sold to Coronado, as is the case on the Reagan North Corridor system, or diverted to a central flare point for combustion.

12. Laredo has expressed plans to develop an additional forty-six (46) wells at various times within the next two years and which impact eight (8) of the subject flare points. Laredo's application requested a daily flare exception at each of these respective flare points equal to one hundred percent (100%) of the additional casinghead volumes from the planned wells *plus* the total casinghead gas production from the existing wells for a two-year period.

13. The two-year flare exceptions requested by Laredo are set to commence on the day after the termination date of the respective administrative flare exception, which extend through August 2019. If Laredo's requested flare exception volumes are granted beginning on the day after the termination date of the respective administrative flare exception, the flare exception would cover flare volumes for wells that have not been drilled and completed as of the date of the hearing, and in many cases may not be drilled and completed until late 2020 and early 2021, if at all. Granting Laredo's request would result in a highly inflated flare exception volume for an extended period during a two-year flare exception period. Further, Laredo predicts that aggregate deliverability for the producing wells presently serviced by these eight (8) flare points will decline substantially. If most of the planned new wells are drilled at or near the end of the two-year exception period, as presently expected, maximum permitted flare volumes based upon existing

deliverability will accommodate additional casinghead gas production from the planned wells.

14. The number of curtailment events on the Targa System have declined significantly since July 2019, and Laredo submitted evidence showing that substantially all of the casinghead gas produced from the 580 active wells presently connected to the flare points listed in Attachment A was sold to Targa or Coronado in August and September 2019. Laredo's late-filed evidence also shows that they do not presently expect a recurrence of the extensive disruptions to the Targa System experienced earlier in 2019.

15. Since August 2019, Laredo has not needed to flare substantially more than three times the daily exception rates requested at the hearing which were based upon one hundred percent 100% deliverability of the subject wells.

16. Due to the present limitations of its accounting system software, however, Laredo personnel are unable to detect such upsets for as many as forty-eight (48) hours after flaring commences.

17. Based upon the foregoing, the recommended maximum daily flare volume for thirty-seven (37) of the forty-three (43) flare points listed on Attachment A are based upon the daily aggregate deliverability of the existing oil wells and leases connected to those flare points and allowing for flaring to occur on five (5) days in the aggregate per calendar month.

18. For the remaining six (6) flare points (indicated with an asterisk on Attachment A) Laredo presented late-filed evidence of flare volumes resulting from routine system upsets that exceed the equivalent of five times the requested daily deliverability volumes. As to these remaining flare points, the recommended maximum monthly exception flare volume is based upon evidence of necessity to flare these reported volumes.

19. The Commission's issuance of two-year exceptions to Statewide Rule 32 to flare casinghead gas for limited periods of routine events related to planned/unplanned outages and transport/processing equipment up-grades and/or failures on a gas gatherer's system, with permitted flare volumes based on the aggregate deliverability of the oil wells connected to a particular flare point, is necessary to avoid curtailment of gas production which will result in a reduction of ultimate recovery from the applicable oil reservoir.

20. At the hearing, Laredo agreed on the record that a Final Order favorable to Laredo in this docketed case is to be final and effective when a Master Order relating to this Final Order is signed.

Conclusions of Law

1. Proper notice was issued to persons entitled to notice. *See, e.g.,* Tex. Gov't Code § 2001.051; 16 Tex. Admin. Code §§ 1.42, 1.45.

2. The Commission has jurisdiction in this case. *See, e.g.,* Tex. Nat. Res. Code § 81.051.

3. Statewide Rule 32 requires gas to be utilized for purposes and uses authorized by law. 16 Tex. Admin. Code § 3.32(b).

4. Statewide Rule 32 provides exceptions allowing the flaring of gas if certain requirements are met and the flaring is necessary. *See, e.g.,* 16 Tex. Admin. Code § 3.32(f), (h).

5. Laredo has met the requirements in Statewide Rule 32 to flare casinghead gas and the flaring of such gas is necessary.

6. Pursuant to the provisions of Texas Government Code § 2001.144(a)(4)(A), the Final Order in this docketed case can be final and effective on the date a Master Order relating to this Final Order is signed.

Examiners Recommendation

The Examiners recommend approval of two-year exceptions to Statewide Rule 32 to flare casinghead gas from forty-three (43) flare points serving one hundred thirty (130) separate oil leases assigned to the Spraberry (Trend Area) Field, the Jailhouse (Fusselman) Field, or the Spraberry (Trend Area) R 40 EXC Field, in Reagan or Glasscock Counties, Texas.

For each of the subject forty-three (43) flare points, the Examiners have compiled a recommended term, maximum monthly flare volume and maximum daily flare volume in an Attachment A, which is attached to the proposed final order for Commission consideration and action. Further, each Attachment A is representative of each named flared point under each of the twenty-three (23) Oil and Dockets subject to this hearing.

Respectfully submitted,

John L. Moore
Technical Examiner

Ezra A. Johnson
Administrative Law Judge