

August 28, 2015

VIA CERTIFIED MAIL AND FAX TO: 405-425-8421

Mr. Mark A. Fischer
Chairman & CEO
Chaparral Energy, LLC
701 Cedar Lake Blvd.
Oklahoma City, OK 73114

Re: CPF No. 4-2015-5017H

Dear Mr. Fischer:

Enclosed is a Corrective Action Order issued in the above-referenced case. It requires Chaparral Energy, LLC, to take certain corrective actions with respect to its Coffeyville CO2 line that failed on August 25, 2015, near Shidler, Oklahoma. Service is being made by certified mail and facsimile. Service of the Corrective Action Order by electronic transmission is deemed complete upon transmission and acknowledgement of receipt, or as otherwise provided under 49 C.F.R. § 190.5. The terms and conditions of this Order are effective upon completion of service.

Thank you for your cooperation in this matter.

Sincerely,

Jeffrey D. Wiese
Associate Administrator
for Pipeline Safety

Enclosure

cc: Ms. Linda Daugherty, Deputy Associate Administrator for Field Operations, OPS
Mr. Rodrick Seeley, Southwest Regional Director, OPS

**U.S. DEPARTMENT OF TRANSPORTATION
PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION
OFFICE OF PIPELINE SAFETY
WASHINGTON, D.C. 20590**

_____)	
In the Matter of)	
)	
Chaparral Energy, LLC,)	CPF No. 4-2015-5017H
)	
Respondent.)	
_____)	

CORRECTIVE ACTION ORDER

Purpose and Background:

This Corrective Action Order (Order or CAO) is being issued, under the authority of 49 U.S.C. § 60112, to require Chaparral Energy, LLC (Chaparral or Respondent), to take the necessary corrective action to protect the public, property, and the environment from potential hazards associated with the recent failure on Chaparral’s Coffeyville carbon dioxide (CO2) pipeline.

On August 25, 2015, a reportable accident occurred on the Coffeyville CO2 line, resulting in the release of approximately 2,648 barrels of carbon dioxide (Failure). The Coffeyville CO2 line (Coffeyville Line) is an 8-inch diameter pipeline approximately 65.7 miles in length that transports carbon dioxide from the Coffeyville Resources Nitrogen Fertilizer Plant in Coffeyville, Kansas, to the North Burbank production fields near Shidler, Oklahoma. The cause of the Failure has not yet been determined. Pursuant to 49 U.S.C. § 60117, the Pipeline and Hazardous Materials Safety Administration (PHMSA), Office of Pipeline Safety (OPS), initiated an investigation of the accident. The preliminary findings of the ongoing investigation are as follows.

Preliminary Findings:

- Chaparral is a privately owned company with oil and gas operations and 480 employees operating in Oklahoma, the Texas Panhandle and Southwest Kansas.¹
- The Coffeyville Pipeline System consists of 67.5 miles of 8" carbon dioxide pipeline running from the Coffeyville Resources Nitrogen Fertilizer Plant in Coffeyville, Kansas, to the North Burbank production field near Shidler, Oklahoma. The pipeline originates in Montgomery County, Kansas, and travels through Nowata, Washington, and Osage

¹ See <http://www.chaparralenergy.com/operations>. Current as of August 27, 2015.

Counties, Oklahoma, a distance of approximately 67.5 miles (Affected Segment). The Failure occurred 1.7 miles east of mainline valve (MLV) 14 between milepost (MP) 67 and MP 66 near Shidler, Oklahoma (Failure Site).

- The Coffeyville Line was installed in 2012 and began operating in 2013. The Affected Segment consists of 8-inch diameter, 0.220" wall thickness and Grade X65 pipe. The pipe was manufactured in 2011, and the pipe at the Failure Site has not had any changes in material since its installation.
- The maximum operating pressure (MOP) of the pipeline is 2,220 psig, as established by hydrostatic test in 2013. At the time of the Failure, the pipeline was not operating. Chaparral received a report from a landowner regarding a potential leak on the company's Coffeyville Line at 9:00 a.m. CST on August 25, 2015. Chaparral personnel arrived on site shortly before 10 a.m. CST and confirmed the leak and resulting release of approximately 2,648 barrels of carbon dioxide from the pipeline. Review of data indicates the leak may have started as early as August 18, 2015. The Failure occurred in a remote location, and was reported to the National Response Center (NRC Report No. 1126631) on August 25, 2015, at approximately 10:36 a.m. CST.
- The Coffeyville Line was shut-in at the time of the Failure since the source plant at Coffeyville was offline. After notification from the landowner regarding a vapor cloud, Chaparral responded to the site and closed the valves immediately upstream and downstream of the failure location. The MLV at valve location 12 was closed at 11:55 am CST, and the MLV at valve location 13 was closed at 12:35 p.m. CST. Chaparral "blew down" the line from both valve locations (MLV 12 & MLV 13) at 12:35 p.m. CST, a total distance of 20 miles.
- The Failure occurred in a remote location so PHMSA was the only agency to respond to the scene.
- The cause of the Failure is unknown and the investigation is ongoing. The Coffeyville Line was installed in 2012 and began operating in 2013. Since the line has been in service, there has been both a reported corrosion failure on May 4, 2015, and an excavated dig site that identified a section of pipe with a 43% wall loss. Preliminary indications from the Failure also indicate the presence of external corrosion on the pipeline. Chaparral did not have adequate cathodic protection on the line until the year following initial construction. The pipeline currently remains out of service.
- The accident did not cause any known injuries and no one was evacuated. There are no impacts to any water body. A vapor cloud was formed from released CO₂, but has since cleared.
- Following construction of the pipeline, a deformation in-line inspection tool was run through the pipeline. The tool run resulted in the identification of 19 anomalies. Chaparral has recently completed the investigation of those anomalies and made repairs to all but one of the anomalies as required. One of the anomalies identified by the pre-operational dent tool indicated a 43% wall loss due to external corrosion.

Determination of Necessity for Corrective Action Order and Right to Hearing:

Section 60112 of Title 49, United States Code, provides for the issuance of a Corrective Action Order, after reasonable notice and the opportunity for a hearing, requiring corrective action, which may include the suspended or restricted use of a pipeline facility, physical inspection, testing, repair, replacement, or other action, as appropriate. The basis for making the determination that a pipeline facility is or would be hazardous, requiring corrective action, is set forth both in the above-referenced statute and 49 C.F.R. § 190.233, a copy of which is enclosed.

Section 60112 and the regulations promulgated thereunder provide for the issuance of a Corrective Action Order, without prior notice and opportunity for hearing, upon a finding that failure to issue the Order expeditiously would result in the likelihood of serious harm to life, property, or the environment. In such cases, an opportunity for a hearing and expedited review will be provided as soon as practicable after the issuance of the Order.

After evaluating the foregoing preliminary findings of fact, I find that continued operation of the pipeline without corrective measures is or would be hazardous to life, property, or the environment. Additionally, having considered the release of product from the pipeline that resulted in a vapor cloud that could have affected the public and would be a problem in a subsequent release (the line originates in a populated area and traverses through populated areas and CO₂ is an asphyxiant), the risk to the environment which would result in frostbite to skin and eyes or the formation of frozen ground during a high pressure release from the pipeline, and a history of known problems on this pipeline, I find that a failure to issue this Order expeditiously to require immediate corrective action would result in the likelihood of serious harm to life, property, or the environment.

Accordingly, this Corrective Action Order mandating immediate corrective action is issued without prior notice and opportunity for a hearing. The terms and conditions of this Order are effective upon receipt.

Within 10 days of receipt of this Order, Respondent may contest its issuance and obtain expedited review, either by answering in writing or requesting a hearing under 49 C.F.R. § 190.211, to be held as soon as practicable under the terms of such regulation, by notifying the Associate Administrator for Pipeline Safety in writing, with a copy to the Director, Southwest Region, PHMSA (Director). If Respondent requests a hearing, it will be held telephonically or in-person in the Southwest Region office or Washington, D.C.

After receiving and analyzing additional data in the course of this investigation, PHMSA may identify other corrective measures that need to be taken. In that event, PHMSA will notify Respondent of any additional measures that are required and an amended Order issued, if necessary. To the extent consistent with safety, Respondent will be afforded notice and an opportunity for a hearing prior to the imposition of any additional corrective measures.

Required Corrective Actions:

The “*Affected Segment*” means the entire 67.8 miles of Chaparral’s 8-inch pipeline from its origination in Coffeyville, Kansas, to Chaparral’s North Burbank production field near Shidler,

Oklahoma. The pipeline originates in Montgomery County, Kansas, and travels through Nowata, Washington, and Osage Counties, Oklahoma.

The "*Isolated Segment*" means the 20-mile segment of Chaparral's 8-inch Line from the company's MLV at valve location 12 to MLV 13. It is the portion of the "*Affected Segment*" that was shut-in after the Failure on August 25, 2015, by closing main line valves MLV 12 (upstream of the Failure Site) and MLV 13 (downstream of the Failure Site) and that must remain shut-in until a restart plan is approved by the Director.

The "*Director*" means the Director, Pipeline and Hazardous Materials Safety Administration (PHMSA), Office of Pipeline Safety, Southwest Region. The Director's address is 8701 S. Gessner, Suite 1110, Houston, Texas 77074.

Pursuant to 49 U.S.C. § 60112, I hereby order Chaparral to immediately take the following corrective actions for the Affected Segment and Isolated Segment, as applicable:

CORRECTIVE ACTIONS:

1. ***Shutdown of Pipeline.*** Chaparral must not operate the *Affected Segment* until authorized to do so by the Director.
2. ***Restart Plan.*** Prior to resuming operation of the *Affected Segment*, develop and submit a written *Restart Plan* to the Director for prior approval.
 - a. The Director may approve the *Restart Plan* incrementally without approving the entire plan but the *Affected Segment* cannot resume operation until the *Restart Plan* is approved in its entirety.
 - b. Once approved by the Director, the *Restart Plan* will be incorporated by reference into this Order.
 - c. The *Restart Plan* must provide for adequate patrolling of the *Affected Segment* during the restart process and must include incremental pressure increases during start up, with each increment to be held for at least two hours.
 - d. The *Restart Plan* must include sufficient surveillance of the pipeline during each pressure increment to ensure that no leaks are present when operation of the line resumes.
 - e. The *Restart Plan* must specify a day-light restart and include advance communications with local emergency response officials.
 - f. The *Restart Plan* must provide for a review of the *Affected Segment* for conditions similar to those of the Failure, including a review of construction, operating and maintenance (O&M) and integrity management records such as in-line inspection (ILI) results, hydrostatic tests, root cause failure analysis of prior failures, aerial and ground patrols, corrosion, cathodic protection, excavations and pipe replacements. Operator must address any findings that require remedial measures to be implemented prior to restart.
 - g. The *Restart Plan* must also include documentation of the completion of all mandated actions, and a management of change plan to ensure that all procedural modifications are incorporated into Chaparral's operations and maintenance procedures manual.

3. ***Return to Service.*** After the Director approves the *Restart Plan*, Chaparral may return the *Affected Segment* to service but the operating pressure must not exceed eighty percent (80%) of the actual operating pressure in effect immediately prior to the Failure.
4. ***Removal of Pressure Restriction.***
 - a. The Director may allow the removal or modification of the pressure restriction upon a written request from Chaparral, demonstrating that restoring the pipeline to its pre-failure operating pressure is justified based on a reliable engineering analysis showing that the pressure increase is safe, considering all known defects, anomalies, and operating parameters of the pipeline.
5. The Director may allow the temporary removal or modification of the pressure restrictions upon a written request from Chaparral demonstrating that temporary mitigative and preventive measures are implemented prior to and during the temporary removal or modification of the pressure restriction. The Director's determination will be based on the failure cause and provision of evidence that preventative and mitigative actions taken by the operator provide for the safe operation of the *Affected Segment* during the temporary removal or modification of the pressure restriction. Appeals to determinations of the Director in this regard will be decided by the Associate Administrator for Pipeline Safety.
6. ***Mechanical and Metallurgical Testing.*** Within 45 days of receipt of this Order, complete mechanical and metallurgical testing and failure analysis of the failed pipe, including an analysis of soil samples and any foreign materials. Complete the testing and analysis as follows:
 - a. Document the chain-of-custody when handling and transporting the failed pipe section and other evidence from the Failure Site.
 - b. Within 10 days of receipt of this Order, develop and submit the testing protocol and the proposed testing laboratory to the Director for prior approval.
 - c. Prior to beginning the mechanical and metallurgical testing, provide the Director with the scheduled date, time, and location of the testing to allow for an OPS representative to witness the testing.
 - d. Ensure the testing laboratory distributes all reports whether draft or final in their entirety to the Director at the same time they are made available to Chaparral.
7. ***Root Cause Failure Analysis.*** Within 90 days following receipt of this Order, complete a root cause failure analysis (RCFA) and submit a final report of this RCFA to the Director. The RCFA must be supplemented/facilitated by an independent third-party acceptable to the Director and must document the decision-making process and all factors contributing to the Failure. The final report must include findings and any lessons learned and whether the findings and any lessons learned are applicable to other locations within Chaparral's pipeline system.
8. ***Remedial Work Plan (RWP).***
 - a. Within 90 days following receipt of this Order, Chaparral must submit a Remedial Work Plan (RWP) to the Director for approval.
 - b. The Director may approve the RWP incrementally without approving the entire RWP.
 - c. Once approved by the Director, the RWP will be incorporated by reference into this Order.

- d. The RWP must specify the tests, inspections, assessments, evaluations, and remedial measures Chaparral will use to verify the integrity of the *Affected Segment*. It must address all known or suspected factors and causes of the Failure. Chaparral should consider both the risk of another failure and the consequence of another failure to develop a prioritized schedule for RWP related work along the *Affected Segment*.
- e. The RWP must include a procedure or process to:
- i. Identify pipe in the *Affected Segment* with characteristics similar to the contributing factors identified in the August 25, 2015 Failure.
 - ii. Gather all data necessary to review the failure history (in service and pressure test failures) of the *Affected Segment* and to prepare a written report containing all the available information such as the locations, dates, and causes of leaks and failures.
 - iii. Integrate the results of the metallurgical testing, root cause failure analysis, and other corrective actions required by this Order with all relevant pre-existing operational and assessment data for the *Affected Segment*. Pre-existing operational data includes, but is not limited to, construction, operations, maintenance, testing, repairs, prior metallurgical analyses, and any third party consultation information. Pre-existing assessment data includes, but is not limited to, ILI tool runs, hydrostatic pressure testing, direct assessments, close interval surveys, and DCVG/ACVG surveys.
 - iv. Determine if conditions similar to those contributing to the Failure are likely to exist elsewhere within the Chaparral pipeline systems.
 - v. Conduct additional field tests, inspections, assessments, and/or evaluations to determine whether, and to what extent, the conditions associated with the Failure and other failures from the failure history or any other integrity threats are present elsewhere on the *Affected Segment*. At a minimum, this process must consider all failure causes and specify the use of one or more of the following:
 - 1) ILI tools that are technically appropriate for assessing the pipeline system based on the cause of Failure on August 25, 2015 and that can reliably detect and identify anomalies;
 - 2) Hydrostatic pressure-testing;
 - 3) Close-interval surveys;
 - 4) Cathodic protection surveys, to include interference surveys in coordination with other utilities (e.g. underground utilities, overhead power lines, etc.) in the area;
 - 5) Coating surveys;
 - 6) Stress corrosion cracking surveys;
 - 7) Selective seam corrosion surveys; and
 - 8) Other tests, inspections, assessments, and evaluations appropriate for the failure causes.
- Note: Chaparral may use the results of previous tests, inspections, assessments, and evaluations if approved by the Director, provided the results of the tests, inspections, assessments, and evaluations are analyzed with regard to the factors known or suspected to have caused the August 25, 2015 Failure.
- vi. Describe the inspection and repair criteria Chaparral will use to prioritize, excavate,

- evaluate, and repair anomalies, imperfections, and other identified integrity threats. Include a description of how any defects will be graded and a schedule for repairs or replacement.
- vii. Based on the known history and condition of the *Affected Segment*, describe the methods Chaparral will use to repair, replace, or take other corrective measures to remediate the conditions associated with the Failure and to address other known integrity threats along the *Affected Segment*.
 - viii. Implement continuing long-term periodic testing and integrity verification measures to ensure the ongoing safe operation of the *Affected Segment*, considering the results of the analyses, inspections, evaluations, and corrective measures undertaken pursuant to the Order.
- f. Include a proposed schedule for completion of the RWP.
 - g. Chaparral must revise the RWP as necessary to incorporate new information obtained during the failure investigation and remedial activities, to incorporate the results of actions undertaken pursuant to this Order, and/or to incorporate modifications required by the Director.
 - i. Submit any plan revisions to the Director for prior approval.
 - ii. The Director may approve plan revisions incrementally.
 - iii. Any and all revisions to the RWP after it has been approved and incorporated by reference into this Order will be fully described and documented in the CAO Documentation Report (CDR).
 - h. Implement the RWP as it is approved by the Director, including any revisions to the plan.
9. **Reporting.** Submit quarterly reports to the Director that: (1) include all available data and results of the testing and evaluations required by this Order; and (2) describe the progress of the repairs or other remedial actions being undertaken. The first quarterly report is due on November 1, 2015. The Director may change the interval for the submission of these reports

Other Requirements:

1. **Documentation of Costs.** It is requested but not required that Respondent maintain documentation of the costs associated with implementation of this Order. Include in each monthly report the to-date total costs associated with: (1) preparation and revision of procedures, studies and analyses; (2) physical changes to pipeline infrastructure, including repairs, replacements and other modifications; and (3) environmental remediation, if applicable.
2. **Approvals.** With respect to each submission requiring the approval of the Director, the Director may: (a) approve the submission in whole or in part; (b) approve the submission on specified conditions; (c) modify the submission to cure any deficiencies; (d) disapprove the submission in whole or in part and direct Respondent to modify the submission; or (e) any combination of the above. In the event of approval, approval upon conditions, or modification by the Director, Respondent shall proceed to take all action required by the submission, as approved or modified by the Director. If the Director

disapproves all or any portion of a submission, Respondent must correct all deficiencies within the time specified by the Director and resubmit it for approval.

3. ***Extensions of Time.*** The Director may grant an extension of time for compliance with any of the terms of this Order upon a written request timely submitted and demonstrating good cause for an extension.

The actions required by this Corrective Action Order are in addition to and do not waive any requirements that apply to Respondent's pipeline system under 49 C.F.R. Part 195, under any other order issued to Respondent under authority of 49 U.S.C. § 60101, *et seq.*, or under any other provision of Federal or State law.

Respondent may appeal any decision of the Director to the Associate Administrator for Pipeline Safety. Decisions of the Associate Administrator shall be final.

Be advised that all material you submit in response to this enforcement action is subject to being made publicly available. If you believe that any portion of your responsive material qualifies for confidential treatment under 5 U.S.C. 552(b), along with the complete original document you must provide a second copy of the document with the portions you believe qualify for confidential treatment redacted and an explanation of why you believe the redacted information qualifies for confidential treatment under 5 U.S.C. 552(b).

Failure to comply with this Order may result in the assessment of civil penalties and in referral to the Attorney General for appropriate relief in United States District Court pursuant to 49 U.S.C. § 60120.

In your correspondence on this matter, please refer to CPF No. 4-2015-5017H and for each document you submit, please provide a copy in electronic format whenever possible.

The terms and conditions of this Corrective Action Order are effective upon receipt.

Jeffrey D. Wiese
Associate Administrator
for Pipeline Safety

Date Issued