



U.S. Department of Transportation
**Pipeline and Hazardous Materials
Safety Administration**

8701 S. Gessner, Suite 630
Houston TX 77074

**NOTICE OF PROBABLE VIOLATION,
PROPOSED CIVIL PENALTY,
and
PROPOSED COMPLIANCE ORDER**

ELECTRONIC MAIL - RETURN RECEIPT REQUESTED

May 26, 2022

David Sheppard
SVP - Operations
Denbury Gulf Coast Pipeline, LLC
5320 Legacy Drive
Plano, Texas 75024

CPF 4-2022-017-NOPV

Dear Mr. Sheppard:

On February 23, 2020, representatives of the Pipeline and Hazardous Materials Safety Administration (PHMSA) pursuant to Chapter 601 of Title 49 United States Code (U.S.C.), initiated an inspection of Denbury Gulf Coast Pipelines, LLC's (Denbury) pipeline operations following an accident that occurred in February 2020. Specifically, on February 22, 2020, at 7:06 p.m. Central Standard Time (CST), Denbury's 24-inch Delta-Delhi (Delta) pipeline ruptured, releasing liquid carbon-dioxide (CO₂) that immediately began to vaporize at atmospheric conditions (Failure). The Failure was located within a 7.5-mile area between Denbury's Tinsley Field and the crossing at Highway 3 and Highway 433, which had a high potential for ground movement due to non-cohesive soils and significant rainfall recorded in recent years. The specific location of the Failure was on the northeast side of Highway 433 in Yazoo County, approximately one mile southeast of Satartia, Mississippi.

At 7:07 p.m. CST, Denbury's supervisory control and data acquisition (SCADA) system alerted control room personnel of a drop in pressure on its Delta pipeline. Control room personnel responded by remotely closing the three main line block valves (MLBVs) upstream at Denbury's Tinsley Station and downstream at Satartia and Redwood. At 7:19 p.m. CST, Denbury dispatched personnel to confirm closure of the MLBVs, as well as to identify the location of the release. Meanwhile the Yazoo County Office of Emergency Management (Yazoo County OEM) began receiving reports around 7:15 p.m. CST of a foul smell along Highway 433 and an individual having a possible seizure. According to the Yazoo County OEM, these initial reports suggested a chlorine leak from a nearby water well and ordered closure of Highway 433.

Shortly thereafter, emergency responders confirmed it was not a chlorine leak but instead a CO₂ release, further ordering the closure of Highway 3 and Mechanicsburg Road and the evacuation of approximately 200 people near the rupture site, including the town of Sartatia (around 50 residents) and three homes across the Yazoo River. Forty-five people sought medical attention at local hospitals though none required inpatient hospitalization as a result of the Failure. No fatalities resulted. At 7:48 p.m. CST, Denbury received additional information from first responders confirming the pipeline had ruptured and describing the response measures underway. At 9:06 p.m. CST, a Denbury representative notified the National Response Center (NRC) of the rupture (NRC Report No. 1271847).

In response to the Failure, representatives from PHMSA's Accident Investigation Division and Southwest Region conducted an investigation, which included an onsite visit to the Failure site. The investigation revealed that the Failure location was on a steep embankment adjacent to Highway 433, which had experienced land subsidence. The subsidence caused axial strain on the Delta pipeline, which resulted in the full circumferential girth weld failure that occurred on February 22, 2020. Denbury reported an estimated total of 31,405 barrels of CO₂ was released.¹ PHMSA's investigation and compliance inspection are on-going and may result in the issuance of additional enforcement actions.

As a result of the investigation and inspection performed to date, it is alleged that Denbury has committed probable violations of the Pipeline Safety Regulations, Title 49, Code of Federal Regulations (CFR). The items inspected and the probable violations are:

1. **§ 195.52 Immediate notice of certain accidents.**

(a) Notice requirements. At the earliest practicable moment following discovery, of a release of the hazardous liquid or carbon dioxide transported resulting in an event described in § 195.50, but no later than one hour after confirmed discovery, the operator of the system must give notice, in accordance with paragraph (b) of this section of any failure that:

- (1) Caused a death or a personal injury requiring hospitalization;**
- (2) Resulted in either a fire or explosion not intentionally set by the operator;**
- (3) Caused estimated property damage, including cost of cleanup and recovery, value of lost product, and damage to the property of the operator or others, or both, exceeding \$50,000;**
- (4) Resulted in pollution of any stream, river, lake, reservoir, or other similar body of water that violated applicable water quality standards, caused a discoloration of the surface of the water or adjoining shoreline, or deposited a sludge or emulsion beneath the surface of the water or upon adjoining shorelines; or**
- (5) In the judgment of the operator was significant even though it did not meet the criteria of any other paragraph of this section.**

¹ See Final Accident Report – Hazardous Liquid Pipeline Systems, Form PHMSA F-7000.1, submitted by Denbury on November 25, 2020.

Denbury failed to notify the NRC at the earliest practicable moment following the discovery of a release of CO₂ resulting in an event described in § 195.50,² but no later than one hour after confirmed discovery. On February 22, 2020, at approximately 7:06 p.m. CST, Denbury experienced a pipeline rupture on its Delta pipeline that resulted in the unintentional release of more than five barrels (approximately 9,532 barrels) of CO₂ and over \$3.9 million dollars of property damage.

According to NRC Report No.1271847, Denbury claimed that it had verified the leak on February 22, 2020 at 8:46 p.m. CST, however, post-accident investigation and interviews revealed that Denbury was alerted to the sudden drop in pressure at 7:07 p.m. CST and also received notification from the Yazoo County OEM Incident Command, who were onsite at 7:48 p.m. CST, confirming there was a CO₂ release from the Delta pipeline. Despite having this knowledge, Denbury did not notify the NRC until 9:06 p.m. CST, which was at least 1 hour and 18 minutes after it had been notified by Yazoo County OEM, or confirmed discovery, of the Failure on February 22, 2020.

2. § 195.401 General requirements.

(a)...

(b) An operator must make repairs on its pipeline system according to the following requirements:

(1) *Non Integrity management repairs.* Whenever an operator discovers any condition that could adversely affect the safe operation of its pipeline system, it must correct the condition within a reasonable time. However, if the condition is of such a nature that it presents an immediate hazard to persons or property, the operator may not operate the affected part of the system until it has corrected the unsafe condition.

Denbury failed to correct conditions that could adversely affect the safe operation of its pipeline system within a reasonable time. Denbury operates CO₂ pipelines in Mississippi and Louisiana, in areas subject to geohazards, such as those that contributed to the Failure.

² § 195.50 Reporting accidents.

An accident report is required for each failure in a pipeline system subject to this part in which there is a release of the hazardous liquid or carbon dioxide transported resulting in any of the following:

(a) Explosion or fire not intentionally set by the operator.

(b) Release of 5 gallons (19 liters) or more of hazardous liquid or carbon dioxide, except that no report is required for a release of less than 5 barrels (0.8 cubic meters) resulting from a pipeline maintenance activity if the release is:

(1) Not otherwise reportable under this section;

(2) Not one described in § 195.52(a)(4);

(3) Confined to company property or pipeline right-of-way; and

(4) Cleaned up promptly;

(c) Death of any person;

(d) Personal injury necessitating hospitalization;

(e) Estimated property damage, including cost of clean-up and recovery, value of lost product, and damage to the property of the operator or others, or both, exceeding \$50,000.

Denbury was aware of the risk of geohazards to its pipeline system, but did not correct the adverse condition, in particular the strain posed by the geohazards, for its pipeline located in non-high consequence areas (HCAs) within a reasonable time. This strain to the pipeline caused the Failure on February 22, 2020.

Specifically, Denbury did not address the terrain, elevation changes, or seismicity of the area surrounding the Delta pipeline as conditions that could adversely affect the safe operation of the pipeline, despite being aware of these geohazard conditions. During the investigation, Denbury's District Manager stated that on average the Delta pipeline experiences two to three land movement issues per year. The investigation revealed that the Failure location was on a steep embankment adjacent to Highway 433, which had experienced land subsidence. The subsidence caused axial strain on the Delta pipeline, which resulted in the full circumferential girth weld failure that occurred on February 22, 2020. The Failure was located within a 7.5-mile area between Denbury's Tinsley Field and the Highway 3 crossing that had a high potential for ground movement due to non-cohesive soils and significant rainfall recorded in recent years.

Furthermore, despite the ongoing risk of geohazards and having experienced prior land movement on the pipeline, Denbury's Operations and Maintenance (O&M) manual lacked substantive information regarding geohazard identification, assessment, remediation, and training for employees for non-HCA areas to correct the condition. The O&M manual only provided minimal guidance and did not require the identification of geohazards for evaluation and remediation as needed.

3. § 195.402 Procedural manual for operations, maintenance, and emergencies.

(a) *General.* Each operator shall prepare and follow for each pipeline system a manual of written procedures for conducting normal operations and maintenance activities and handling abnormal operations and emergencies. . . .

(c) *Maintenance and normal operations.* The manual required by paragraph (a) of this section must include procedures for the following to provide safety during maintenance and normal operations:

(1) . . .

(12) Establishing and maintaining liaison with fire, police, and other appropriate public officials to learn the responsibility and resources of each government organization that may respond to a hazardous liquid or carbon dioxide pipeline emergency and acquaint the officials with the operator's ability in responding to a hazardous liquid or carbon dioxide pipeline emergency and means of communication.

(e) *Emergencies.* The manual required by paragraph (a) of this section must include procedures for the following to provide safety when an emergency condition occurs;

(1) . . .

(7) Notifying fire, police, and other appropriate public officials of hazardous liquid or carbon dioxide pipeline emergencies and coordinating with them preplanned and actual responses during an emergency, including additional precautions necessary for an emergency involving a pipeline transporting a highly volatile liquid.

Denbury failed to have and follow a manual of written procedures for conducting normal operations and handling emergencies. Specifically, Denbury failed to plan emergency response activities and develop proper coordination with local officials who would respond to potential emergencies in accordance with § 195.402(c)(12) and (e)(7). Denbury was unable to provide documentation of its efforts to maintain liaison through regular meetings or documentation of its liaison activities, such as copies of meeting invitations sent by Denbury to response officials, lists of officials who attended liaison meetings, agendas showing topics discussed during the meetings, and materials provided to officials at the meetings or alternatively sent to those officials who did not attend.

Denbury's written *O&M 0232, Damage Prevention and Public Awareness (rev 02/12/2020) Section 3.3.2.2 Emergency Responders Field Responsibilities* requires Field Management personnel to make arrangements to meet with the appropriate emergency responders in their area and provide them with messaging regarding their pipeline. Additionally, Field Management personnel are required to meet with the appropriate emergency responders to coordinate mutual response to pipeline emergencies in "order to minimize hazards to life and property," and document the meeting on *O&M Form OM0232-01 Public Awareness/Liaison Record*. PHMSA requested records of Denbury's meetings with emergency responders on form OM0232-01, however Denbury was unable to provide any record documenting such meeting occurred or that any communication with the affected public and public authorities for the safe operations of its pipeline was provided.

In addition, local responders indicated to PHMSA that Denbury personnel had not attended any of their emergency training. PHMSA's investigation discovered first responders in the Yazoo County area practiced a full-scale county response during a drill for a rail accident on November 8, 2019. Denbury had not conducted any drills with local responders, nor participated in this county event. PHMSA further reviewed records of Denbury drills and attendance sheets for the Brandon District area, which includes Yazoo County, for calendar years 2018, 2019, and 2020 and did not note the attendance of any local response officials. Likewise, Denbury could not provide a record of inviting any first responders to attend or participate in any of its drills conducted within this time frame.

4. § 195.408 Communications.

(a) Each operator must have a communication system to provide for the transmission of information needed for the safe operation of its pipeline system.

(b) The communication system required by paragraph (a) of this section must, as a minimum, include means for:

(1) Monitoring operational data as required by § 195.402(c)(9);

- (2) Receiving notices from operator personnel, the public, and public authorities of abnormal or emergency conditions and sending this information to appropriate personnel or government agencies for corrective action;**
- (3) Conducting two-way vocal communication between a control center and the scene of abnormal operations and emergencies; and**
- (4) Providing communication with fire, police, and other appropriate public officials during emergency conditions, including a natural disaster.**

Denbury failed to establish a communication system to communicate with fire, police, and other appropriate public officials during emergency conditions. Upon notice of a pressure drop on its SCADA system at 7:07 p.m. CST on February 22, 2020, Denbury personnel did not establish communication with fire, police, and other appropriate public officials during this emergency condition. Rather, local officials contacted Denbury to notify the operator that its pipeline had ruptured 42 minutes after it occurred.

During the investigation, PHMSA's accident investigator interviewed the Yazoo County OEM and discovered that the Chief of the District Three Volunteer Fire Department, who commanded the role of incident command (IC), contacted Denbury at 7:48 p.m. CST to inform Denbury that its Delta pipeline ruptured and to relay the response measures taken by the fire department. Despite the emergency occurring for approximately 42 minutes by this point, Denbury had never established communications with the appropriate officials.

Furthermore, Denbury's failure to establish a communication system to communicate with local responders and officials increased the severity of the accident by causing a delay in local responders' awareness, preparation, and other potential issues associated with the emergency response efforts. For instance, Yazoo County OEM's initial response focused on responding to a possible chlorine leak based preliminary reports it received. However, it was not until 7:30 p.m. CST, nearly 25 minutes after the rupture occurred, that the Yazoo County OEM, after receiving a report from a Yazoo County responder that they heard what they thought was a gas line erupting, that they began modeling for the CO₂ release and evacuating Satartia.

5. § 195.412 Inspection of rights-of-way and crossings under navigable waters.

- (a) Each operator shall, at intervals not exceeding 3 weeks, but at least 26 times each calendar year, inspect the surface conditions on or adjacent to each pipeline right-of-way. Methods of inspection include walking, driving, flying or other appropriate means of traversing the right-of-way.**

Denbury failed to conduct inspections of its rights-of-way (ROWs) in accordance with the § 195.412 and its written O&M procedures to adequately inspect the surface conditions on or adjacent to each pipeline ROW. Denbury adopted written procedure *O&M 0215, Patrolling and Leak Detection (rev. 02/01/2016)*, in accordance with § 195.412(a). The procedure provides for the observation of surface conditions during patrolling for signs of:

- *Unusual conditions of activity*
- *Evidence of leaking or spilled products*
- *Evidence of fires*
- *Excavation or construction activity*
- *Logging activity*
- *Vandalism*
- *Erosion, washouts, or subsidence*
- *Exposed portions of the pipeline*
- *Excessive vegetation or tree canopy that might impede inspection or maintenance of the pipeline*
- *Missing or damaged pipeline markers*
- *Any other factors that could affect public safety and operations.*

Denbury's pipeline patrolling program was typically performed by aerial patrol. While the records reviewed by PHMSA during the investigation confirmed that these patrols were performed 26 times per year at intervals not to exceed three weeks, the records did not include information to indicate Denbury followed its written procedures to identify any land movement concerns despite Denbury's O&M procedure requiring them to observe for signs of "erosion, washouts, or subsidence." Additionally, during the accident investigation, Denbury's District Manager stated that on average, the operator experiences two to three land movement issues per year on the Delta pipeline, which is further evidence that Denbury failed to follow its procedures to regularly patrol its ROWs for erosion, washouts and subsidence conditions affecting safety.

6. § 195.440 Public awareness.

- (a) Each pipeline operator must develop and implement a written continuing public education program that follows the guidance provided in the American Petroleum Institute's (API) Recommended Practice (RP) 1162 (incorporated by reference, *see* § 195.3).**
- (b) The operator's program must follow the general program recommendations of API RP 1162 and assess the unique attributes and characteristics of the operator's pipeline and facilities.**
- (c) The operator must follow the general program recommendations, including baseline and supplemental requirements of API RP 1162, unless the operator provides justification in its program or procedural manual as to why compliance with all or certain provisions of the recommended practice is not practicable and not necessary for safety.**
- (d) The operator's program must specifically include provisions to educate the public, appropriate government organizations, and persons engaged in excavation related activities on:**
 - (1) Use of a one-call notification system prior to excavation and other damage prevention activities;**
 - (2) Possible hazards associated with unintended releases from a hazardous liquid or carbon dioxide pipeline facility;**

- (3) Physical indications that such a release may have occurred;**
- (4) Steps that should be taken for public safety in the event of a hazardous liquid or carbon dioxide pipeline release; and**
- (5) Procedures to report such an event.**
- (e) The program must include activities to advise affected municipalities, school districts, businesses, and residents of pipeline facility locations.**
- (f) The program and the media used must be as comprehensive as necessary to reach all areas in which the operator transports hazardous liquid or carbon dioxide.**
- (g) The program must be conducted in English and in other languages commonly understood by a significant number and concentration of the non-English speaking population in the operator's area.**
- (h) Operators in existence on June 20, 2005, must have completed their written programs no later than June 20, 2006. Upon request, operators must submit their completed programs to PHMSA or, in the case of an intrastate pipeline facility operator, the appropriate State agency.**
- (i) The operator's program documentation and evaluation results must be available for periodic review by appropriate regulatory agencies.**

Denbury failed to develop and implement a written continuing public education program in accordance with § 195.440. Firstly, Denbury failed to conduct activities described in both its written O&M plan and its Public Awareness and Damage Prevention Program (PA) developed to comply with § 195.440. Denbury's written procedure *OMO 0232 Damage Prevention and Public Awareness Section 3.3 Stakeholder Groups (Revised 2/12/2012)* identifies the stakeholder groups and which stakeholders will receive communications from Denbury. These stakeholders include the Affected Public, Emergency Officials, and Local Public Officials. Furthermore, Section 3.5 references Denbury's separate PA used to incorporate API RP 1162.

Additionally, Denbury's written *Public Awareness & Damage Prevention Program (revised 5/6/2020) Section 4. Program Objectives* states that Denbury, as part of its Program, will:

- *Raise the awareness of the affected public and key stakeholders of the presence of pipelines in their communities and increase their understanding of the role of pipelines in transporting energy.*
- *Educate stakeholders on the appropriate steps to take into account in the event of a pipeline release or emergency.*
- *Educate stakeholders that pipelines are a relatively safe mode of transportation, that a variety of measures are undertaken to prevent pipeline accidents and that the company has anticipated and planned for management of accidents if they occur.*

PHMSA interviewed certain stakeholders identified in Denbury's written program and procedures following the Failure. These interviews revealed that they had not received any communication from Denbury pursuant to the written procedures or PA prior to the accident.

Secondly, Denbury failed to comply with § 195.440 by not including residents of Satartia in its PA program. *Section 6.1.1 Third-Party Vendors Used to Identify Stakeholders* defines the Audience for the Affected Public for its CO₂ pipelines as “Residents located adjacent to CO₂ transmission pipeline ROW, and those who live with the impact corridor of a CO₂ transmission pipeline ROW.” The program further states that the impact corridor for CO₂ pipeline is in accordance with Denbury’s integrity management program (IMP):

1. *CO₂ – The criteria used for carbon dioxide pipeline buffers can be found in Section 4.3.4.4 and Appendix F3 of the Denbury CO₂ Integrity Management Plan.*
2. *Natural Gas – The criteria used for natural gas pipeline buffers is based on the Potential Impact Radius (PIR), as defined in 49 CFR 192.903. This buffer must be no less than 660 feet.*
3. *An additional 400 feet has been added to these buffers on each side of the CO₂ and natural gas pipelines to capture addresses that may have otherwise been missed.*
4. *Denbury has the option to increase the buffer in its entirety or in specific locations to capture areas of population outside the designated buffer found in Appendix F3 of the Integrity Management Plan and paragraph 3 of this section. This buffer increase can be based on topography, diameter, pressure, population size, damage prevention concerns, or for any other reason Denbury feels is necessary for the safety of the public and for the safe operation of the pipe.*

Denbury’s 2011 CO₂ dispersion model created as part of the IMP and applied to the Delta pipeline significantly underestimated the potentially affected area that could be impacted by a release of CO₂. Due to this inaccurate dispersion model and identification of an affected buffer zone for a potential CO₂ release, the residents of Satartia and others within the impact corridor had not been included in any public awareness efforts conducted by Denbury. Also, Denbury did not implement *Item 4* of its procedure where it had the option to increase the buffer based on topography. Following the accident, the dispersion was recalculated, and the new affected buffer zone was expanded, placing Satartia in the affected zone for Denbury’s Program.

7. § 195.452 Pipeline integrity management in high consequence areas.

(a) *Which pipelines are covered by this section?* This section applies to each hazardous liquid pipeline and carbon dioxide pipeline that could affect a high consequence area, including any pipeline located in a high consequence area unless the operator effectively demonstrates by risk assessment that the pipeline could not affect the area. (Appendix C of this part provides guidance on determining if a pipeline could affect a high consequence area.) Covered pipelines are categorized as follows:

- (1) Category 1 includes pipelines existing on May 29, 2001, that were owned or operated by an operator who owned or operated a total of 500 or more miles of pipeline subject to this part.**

(2) Category 2 includes pipelines existing on May 29, 2001, that were owned or operated by an operator who owned or operated less than 500 miles of pipeline subject to this part.

(3) Category 3 includes pipelines constructed or converted after May 29, 2001, and low-stress pipelines in rural areas under § 195.12.

...

(d) *When must operators complete baseline assessments?* Operators must complete baseline assessments as follows:

(1) *Time periods.* Complete assessments before the following deadlines:

If the pipeline is:	Then complete baseline assessments not later than the following date according to a schedule that prioritizes assessments:	And assess at least 50 percent of the line pipe on an expedited basis, beginning with the highest risk pipe, not later than:
Category 1	March 31, 2008	September 30, 2004.
Category 2	February 17, 2009	August 16, 2005.
Category 3	Date the pipeline begins operation	Not applicable.

Denbury failed to identify a segment of the Delta pipeline near the rupture location at mile post 6.6 as a “pipeline that could affect” an HCA subject to § 195.452 and to conduct a baseline assessment according to § 195.452(d)(1). Denbury placed the Delta pipeline in service on February 27, 2012, but did not incorporate the segment including mile post 6.6 into its IMP and consequently did not conduct a baseline assessment of the segment.

Denbury’s 2011 CO₂ dispersion model, which was applied to the Delta pipeline, significantly underestimated the affected area that could be impacted by a release. As a result of the flawed dispersion model, Denbury failed to identify the town of Satartia³ as being impacted a potential CO₂ release, , and therefore a could affect HCA. Consequently, the segment of the Delta pipeline near the rupture location was not incorporated into Denbury’s IMP.

In June 2021, Denbury conducted a new dispersion study, which showed that a potential CO₂ release from the Delta pipeline would extend to the town of Satartia. Denbury added the segment of the Delta pipeline near the rupture location to its IMP as a could affect HCA.

8. § 195.452 Pipeline integrity management in high consequence areas.

(a) ...

(f) *What are the elements of an integrity management program?* An integrity management program begins with the initial framework. An operator must continually change the program to reflect operating experience, conclusions drawn from results of the integrity assessments, and other maintenance and surveillance data, and evaluation of consequences of a failure on the high consequence area. An operator must include, at minimum, each of the following elements in its written integrity management program:

(1) ...

³ Satartia is an HCA because it is an incorporated municipality that meet the definition of other populated area pursuant to §195.450.

- (6) Identification of preventive and mitigative measures to protect the high consequence area (see paragraph (i) of this section);**
- (i) *What preventive and mitigative measures must an operator take to protect the high consequence area?* -**
- (1) *General requirements.*** An operator must take measures to prevent and mitigate the consequences of a pipeline failure that could affect a high consequence area. These measures include conducting a risk analysis of the pipeline segment to identify additional actions to enhance public safety or environmental protection. . . .
- (2) *Risk analysis criteria.*** In identifying the need for additional preventive and mitigative measures, an operator must evaluate the likelihood of a pipeline release occurring and how a release could affect the high consequence area. This determination must consider all relevant risk factors, including, but not limited to:
- (i) Terrain surrounding the pipeline segment, including drainage systems such as small streams and other smaller waterways that could act as a conduit to the high consequence area;**
 - (ii) Elevation profile;**
 - (iii) Characteristics of the product transported;**
 - (iv) Amount of product that could be released;**
 - (v) Possibility of a spillage in a farm field following the drain tile into a waterway;**
 - (vi) Ditches alongside a roadway the pipeline crosses;**
 - (vii) Physical support of the pipeline segment such as by a cable suspension bridge;**
 - (viii) Exposure of the pipeline to operating pressure exceeding established maximum operating pressure.**
 - (ix) Seismicity of the area.**

Denbury failed to conduct a risk analysis of its pipeline to identify additional actions to enhance public safety or environmental protection. Denbury operates CO₂ pipelines in Mississippi and Louisiana that are located in HCAs or could affect HCAs. These pipelines are subject to geohazards, such as those that contributed to the February 22, 2020 accident. PHMSA's investigation confirmed that Denbury was aware of the threat of geohazards on its pipeline. Specifically, during the accident investigation interviews, Denbury's District Manager stated that on average, Denbury experiences two to three issues per year involving land movement along its Delta pipeline. However, despite having this knowledge, a review of Denbury's records showed that it had not conducted a risk analysis nor taken any preventative and mitigative measures to address the impact of these geohazards for its pipelines located in HCAs or could affect areas.

While Denbury's IMP identified "geo-technical hazards" as a risk to the pipeline, it did not evaluate those geohazards in a risk analysis. For example, the IMP lacked details concerning threat assessment or preventative and mitigative measures, such as using in-line inspection tools with inertial measurement unit sensors, conducting bending strain analysis, or conducting geohazard assessments, for the geohazard risks.

Specifically, for the Old Jackson MLV on its Tinsley 8” pipeline located in Madison County, Mississippi, (a designated HCA or could affect HCA) Denbury did not evaluate the impact of geohazards in its IMP.

Additionally, Denbury routinely performed aerial patrols of its ROWs in HCAs and could affect HCAs. However, a review of the patrol records confirmed that these patrols did not identify any land movement concerns until Denbury performed additional photogrammetry surveys following the accident. Specifically, an evaluation performed by Denbury following the accident, which utilized photogrammetry survey via drone overflight, identified 10 geohazard areas on the Delta pipeline segment. As part of the IMP process, Denbury was required to have incorporated such data into its risk analysis. However, due to this lack of information regarding land movement as recorded by Denbury, the patrol inspection records could not support the risk analysis for geohazards.

Proposed Civil Penalty

Under 49 U.S.C. § 60122 and 49 CFR § 190.223, Denbury Gulf Coast Pipeline, LLC is subject to a civil penalty not to exceed \$239,142 per violation per day the violation persists, up to a maximum of \$2,391,412 for a related series of violations. For violation occurring on or after May 3, 2021 and before March 21, 2022, the maximum penalty may not exceed \$225,134 per violation per day the violation persists, up to a maximum of \$2,251,334 for a related series of violations. For violation occurring on or after January 11, 2021 and before May 3, 2021, the maximum penalty may not exceed \$222,504 per violation per day the violation persists, up to a maximum of \$2,225,034 for a related series of violations. For violation occurring on or after July 31, 2019 and before January 11, 2021, the maximum penalty may not exceed \$218,647 per violation per day the violation persists, up to a maximum of \$2,186,465 for a related series of violations. For violation occurring on or after November 27, 2018 and before July 31, 2019, the maximum penalty may not exceed \$213,268 per violation per day, with a maximum penalty not to exceed \$2,132,679. For violation occurring on or after November 2, 2015 and before November 27, 2018, the maximum penalty may not exceed \$209,002 per violation per day, with a maximum penalty not to exceed \$2,090,022.

We have reviewed the circumstances and supporting documentation involved for the above probable violations and recommend that you be preliminarily assessed a civil penalty of \$ **3,866,734** as follows:

<u>Item</u>	<u>Penalty</u>
2	\$2,251,334
3	\$ 46,600
4	\$ 46,600
5	\$ 46,600
6	\$ 46,600
7	\$ 46,600
8	\$1,382,400

Proposed Compliance Order

With respect to Items 2, 3, 5, 6, 7, and 8, pursuant to 49 U.S.C. § 60118, the Pipeline and Hazardous Materials Safety Administration propose to issue a Compliance Order to Denbury Gulf Coast Pipeline, LLC. Please refer to the *Proposed Compliance Order*, which is enclosed and made a part of this Notice.

Warning Item

With respect to Item 1, we have reviewed the circumstances and supporting documents involved in this case and have decided not to conduct additional enforcement action or penalty assessment proceedings at this time. We advise you to promptly correct these items. Failure to do so may result in additional enforcement action.

Response to this Notice

Enclosed as part of this Notice is a document entitled *Response Options for Pipeline Operators in Compliance Proceedings*. Please refer to this document and note the response options. All material you submit in response to this enforcement action may be 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).

Following the receipt of this Notice, you have 30 days to submit written comments or request a hearing under 49 CFR § 190.211. If you do not respond within 30 days of receipt of this Notice, this constitutes a waiver of your right to contest the allegations in this Notice and authorizes the Associate Administrator for Pipeline Safety to find facts as alleged in this Notice without further notice to you and to issue a Final Order. If you are responding to this Notice, we propose that you submit your correspondence to my office within 30 days from receipt of this Notice. This period may be extended by written request for good cause.

In your correspondence on this matter, please refer to **CPF 4-2022-017-NOPV**, and for each document you submit, please provide a copy in electronic format whenever possible.

Sincerely,

Mary L. McDaniel, P.E.
Director, Southwest Region
Pipeline and Hazardous Materials Safety Administration

Enclosures:

Proposed Compliance Order
Response Options for Pipeline Operators in Enforcement Proceedings

cc: Kevin Dahncke, Director of Operations, Denbury Resources, kevin.dahncke@denbury.com
Chad Docekal, Regulatory Compliance Specialist, Denbury Inc., chad.docekal@denbury.com

PROPOSED COMPLIANCE ORDER

Pursuant to 49 U.S.C. § 60118, the Pipeline and Hazardous Materials Safety Administration (PHMSA) proposes to issue Denbury Gulf Coast Pipelines, LLC (Denbury) a Compliance Order incorporating the following remedial requirements to ensure the compliance of the Pipeline Safety Regulations:

1. In regards to Items 2 and 8 of the Notice pertaining to Denbury's failure to identify and correct adverse and risk conditions, specifically the adverse effects of geohazards on its pipeline systems, Denbury must develop a geohazard program to address hazards on its pipelines as well preventative and mitigative measures to enhance public safety and safe operation of its pipeline system. The geohazard program must include substantive information regarding hazard identification on each pipeline, assessment, remediation, and hazard recognition training for employees responsible for identifying geohazard issues
2. In regards to Item 3 of the Notice pertaining to Denbury's failure to establish and maintain liaison with fire, police, and other appropriate public officials, Denbury must conduct a meeting with appropriate local responders and public officials ensuring they are aware of the pipelines in their response areas and provide a copy of the district area emergency response procedures. Documentation shall be maintained and submitted to PHMSA, Southwest Region, Director to demonstrate that all applicable emergency response organizations participated in or had the opportunity to participate in the meeting. The documentation provided to PHMSA shall have:
 - a. Record of invitation to each local responder;
 - b. Name and contact information (address, county, and phone numbers);
 - c. Attendance sheet with signatures of those in attendance;
 - d. Procedures and other information covered/discussed;
 - e. Record of documents provided to attendees; and
 - f. Record of documents mailed/provided to non-attendees.
3. In regards to Item 5 of the Notice pertaining to Denbury's failure to perform inspections of rights-of-way in accordance with its written procedure *O&M 0215, Patrolling and Leak Detection*, Denbury must complete a review of the procedure to include additional guidance for the identification of potential geohazard sites and train personnel on the amended procedures.
4. In regards to Item 6 of the Notice pertaining to Denbury's failure to identify affected persons in accordance with its written procedure *OMO 0232 Damage Prevention and Public Awareness Section 3.3 Stakeholder Groups (Revised 2/12/2012)*, Denbury must develop a comprehensive list of stakeholders utilizing the revised dispersion modeling calculations performed following the February 2020 accident.
5. In regards to Item 7 of the Notice pertaining to Denbury's failure to properly identify its pipelines as high consequence areas (HCAs) or could affect HCAs, Denbury must

update its CO₂ dispersion model and buffer zone considering terrain surrounding the Delta-Delhi 24-inch pipeline, elevation changes, characteristics of CO₂ upon release to the atmosphere, and seismicity. Additionally, Denbury must assess the extent and coverage of the vapor cloud by use of a vapor dispersion model, including allowances for variable inputs relating to foreseeable weather and pipeline operating conditions. Denbury must incorporate newly identified HCAs or could affect HCAs pipeline segments in its Integrity Management Program and Public Awareness Program and conduct a baseline assessment.

6. In regards to Item 8 of the Notice pertaining to Denbury's failure to conduct a risk analysis on its pipeline to identify additional actions to enhance public safety or environmental protection, Denbury must conduct a risk analysis and identify all threats that affect its pipeline.
7. Denbury must provide documentation that shows completion of the items above to Mary L. McDaniel, Director, Southwest Region within 60 days of receipt of the Final Order.

It is requested that Denbury's maintain documentation of the safety improvement costs associated with fulfilling this Compliance Order and submit the total to Mary McDaniel, Director, Southwest Region, Pipeline and Hazardous Materials Safety Administration. It is requested that these costs be reported in two categories: 1) total cost associated with preparation/revision of plans, procedures, studies, and analyses, and 2) the total cost associated with replacements, additions, and other changes to pipeline infrastructure.