



U.S. Department
of Transportation

**Pipeline and Hazardous
Materials Safety
Administration**

1200 New Jersey Avenue SE
Washington, DC 20590

March 25, 2014

VIA CERTIFIED MAIL [Mr. Charles Maser] AND FACSIMILE

Charles E. Maser
President of Mid-Valley Pipeline Co.
1818 Market Street, Suite 1500
Philadelphia, PA 19103

Re: CPF No. 3-2014-5002H

Dear Mr. Maser:

Enclosed please find the Corrective Action Order issued by the Associate Administrator for Pipeline Safety in the above-referenced case. It requires Mid-Valley Pipeline Co. to take immediate corrective actions with respect to its hazardous liquid pipeline failure discovered on March 18, 2014, in Colerain, Hamilton County, Ohio. Service is being made by certified mail and facsimile. Your receipt of this Corrective Action Order constitutes service of that document under 49 C.F.R. § 190.5. The terms and conditions of this Order are effective upon receipt.

We look forward to a successful resolution of the concerns arising out of this recent pipeline failure and to ensure the safety of the line. Please direct any questions on this matter to Linda Daugherty, Director, Central Region, OPS, at (816) 329-3821.

Sincerely,

Jeffrey D. Wiese
Associate Administrator
for Pipeline Safety

Enclosures: Corrective Action Order and Copy of 49 C.F.R. § 190.233

cc: Mr. Michael Hennigan, President and Chief Executive Officer
Ms. Linda Daugherty, Director, Central Region, OPS

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

In the Matter of
Mid-Valley Pipeline Company,
Respondent.

CPF No. 3-2014-5002H

CORRECTIVE ACTION ORDER

Purpose and Background

This Corrective Action Order (Order) is being issued, under authority of 49 U.S.C. § 60112, to require Mid-Valley Pipeline Company (Mid-Valley or Respondent), to take necessary corrective action to protect the public, property, and the environment from potential hazards associated with a failure involving Respondent's 20-inch-diameter hazardous liquid pipeline running from Hebron, Kentucky, to Lima, Ohio (Affected Pipeline).

On March 18, 2014, a failure was identified on the Affected Pipeline in Hamilton County, Ohio, resulting in the release of at least 364 barrels of crude oil. The commodity exited the pipeline through a bottom-side dent that contained a 5-inch axial through-wall crack containing some metal loss. 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 agency's ongoing investigation are as follows:

Preliminary Findings

- Mid-Valley is a subsidiary of Sunoco Logistics Partners, LP, which operates both crude and refined product pipelines. The Sunoco Logistics Crude Oil Pipeline System consists of approximately 4,900 miles of crude oil trunk pipelines and 500 miles of crude oil gathering pipelines in the southwest and midwest regions of the United States. The pipelines in the southwest United States consist of approximately 2,950 miles of crude oil trunk pipelines and approximately 300 miles of crude oil gathering pipelines in Texas. The Texas system is connected to the Mid-Valley pipeline system.¹
- The Mid-Valley Pipeline system (approximately 1000 miles) starts in Longview, Texas and continues on to Samaria, Michigan. The Affected Pipeline is part of the Mid-Valley Pipeline system.

¹ See Sunoco Logistics Partners, LP., website, available at <http://www.sunocologistics.com/Customers/Business-Lines/Crude-Oil-Pipeline-System/55/> (last accessed March 24, 2014).

- The Affected Pipeline is approximately 121 miles in length. Portions of the pipeline, including the failure site, are located in high consequence areas (HCAs) or could affect areas. The line crosses various roadways, the Ohio River, Great Miami River, several populated areas, and numerous streams. The Affected Pipeline includes one section of 20-inch loop line that remains activated from Headapohl to Lima (begins at Headapohl MP 898 and ends at Lima MP 912).
- The Affected Pipeline moves crude oil from Hebron, Kentucky, to Lima, Ohio.
- The manufacturer of the failed pipe is National Tube. The steel pipe at the failure location was constructed in 1950, is 20" in diameter, 0.358" wall thickness, grade X52, and seamless with a coal-tar coating. It has an impressed current cathodic protection system.
- The pressure at the Hebron, Kentucky, pump station prior to the failure was 927 psig. The maximum operating pressure (MOP) of this line segment is 936 psig.
- A portion of the pipeline running between Hedapohl and Lima was hydrotested in August 2005. However, other portions of the pipeline between Hebron and Lima were built prior to hydrotesting requirements and as a result are operated under the risk based alternative selection criteria as set forth in § 195.303.
- At approximately 01:02 am EDT on March 18, 2014, Respondent discovered that a failure had occurred on the Affected Pipeline, resulting in the release of an estimated 240 barrels of crude oil. The release volume has since been estimated to be greater than 364 barrels. The failure occurred at Mile Post 807 in the township of Colerain, Hamilton County, Ohio. The incident was reported by Sunoco to the National Response Center at 03:41 EDT am on March 18, 2012 (NRC Report No. 1076964).
- The accident occurred in a heavily wooded area adjacent to the Oak Glen Nature Preserve and other highly populated HCAs located less than a mile from the Great Miami River. The crude oil migrated off the pipeline right-of-way, contaminating the Oak Glen Nature Preserve. The last reported count of wildlife treated for contamination was 36. An unnamed creek bed continues to be washed down.
- Various state and federal agencies, including the United States Coast Guard, the Colerain Fire Department, EPA Region V, Ohio EPA and Ohio DNR, U.S. Fish and Wildlife, Department of Interior, Great Parks of Hamilton County, Hamilton County Public Health, numerous contractors working on behalf of the operator, and various operating personnel are continuing to perform clean-up, remediation, and monitoring activities.
- Spilled crude oil from Respondent's pipeline migrated into a ravine near the failure site and into a pond in the Oak Glen Nature Preserve. Removal of crude oil from the pond

is underway. The Great Miami River, located less than a mile away from the failure site, has not shown signs of being affected at the time of this order.

- The pipeline had been shut down prior to the failure due to normal operations. The pipeline was static at the time the failure was discovered. Public odor complaints led to the discovery of the crude oil spill. After becoming aware of the failure, Respondent's personnel isolated the pipeline using mainline block valves located at MP 802 and MP 808.
- The Affected Pipeline was more recently inspected using an in-line inspection (ILI) technology for deformation and metal loss anomalies in February of 2013. Three bottom-side deformation anomalies were reported in the area of the failure as being less than 2%. The ILI summary data presented to PHMSA on March 20, 2014 (several days after the initial failure) included findings that similar dents or larger had been identified in an additional 28 locations that had not yet been excavated as of the date of the failure.
- At least two major spills have occurred on the Mid-Valley Pipeline system in recent years. A large spill occurred in Florence, Kentucky, in October 2008 (20080331), when 3,650 barrels were released, with an incursion into the sanitary sewer system and nearby Gunpowder Creek. The same line had previously ruptured in January 2005 (20050073), causing a release of 6,909 barrels, mostly into the Kentucky River.
- Four days after the March 18 2014, failure, Mid-Valley provided a repair and restart plan to PHMSA for review. Originally, the repair plan involved using a "PLIDCO" repair fitting and three clocksprings. The repair plan that had been originally reviewed by PHMSA and discussed with DNV, a third party consultant, was subsequently modified such that a threaded o-ring ("TOR") was included on the PLIDCO. This revision occurred without initial review by DNV or PHMSA.

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 hazardous and requiring corrective action is set forth both in the above-referenced statute and 49 C.P.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 opportunity for notice and hearing upon a finding that failure to issue the Order expeditiously will likely result in serious harm to life, property or the environment. In such cases, an opportunity for a hearing will be provided as soon as practicable after the issuance of the Order.

After evaluating the foregoing preliminary findings of fact, I find that the continued operation of the Affected Pipeline without corrective measures would be hazardous to life, property and the environment. Additionally, after considering the age of the pipe, the lack of original hydrotesting on all portions of the Affected Pipeline, the circumstances surrounding this failure (i.e., a crack in a dent), the temporary repair plan being modified without review by all necessary parties, the presence of additional dents with similar characteristic on the Affected Pipeline as that near the failure location, the proximity of the pipeline to populated areas, public roadways, river crossings and other High Consequence Areas, the hazardous nature of the product being transported, the pressure required for transporting the material, the uncertainties as to the cause of the failure, and the ongoing investigation to determine the cause of the failure, I find that a failure to issue this Order to require corrective action would result in likely serious harm to life, property, and the environment and that additional dent indications should be addressed as quickly as possible.

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 request a hearing, to be held as soon as practicable, by notifying the Associate Administrator for Pipeline Safety in writing, with a copy to the Director, Central Region, PHMSA (Director). If a hearing is requested, it will be held telephonically or in-person in Kansas City, Missouri.

After receiving and analyzing additional data in the course of this investigation, PHMSA may identify other corrective measures that need to be taken. Respondent will be notified of any additional measures required and amendment of this Order will be considered. 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

Pursuant to 49 U.S.C. § 60112, I hereby order Mid-Valley Pipeline Company to immediately take the following corrective actions with respect to the Affected Pipeline:

1. Maintain a twenty percent (20%) pressure reduction in the operating pressure of the Affected Pipeline. At the time of the failure, the pipeline was flowing from Hebron, Kentucky, to Lima, Ohio. The pipeline must not reverse operations on a planned basis. The operating pressure may not exceed eighty percent (80%) of the operating pressure in effect immediately prior to the failure (927 psig reduced to 743 psig). This pressure restriction will remain in effect until written approval to increase the pressure or return the pipeline to its pre-failure operating pressure is obtained from the Central Region Director.
2. Within 90 days of receipt of this Order, cut out the failed pipeline section and complete mechanical and metallurgical testing, and perform failure analysis of the failed pipe, including 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, including selection of the testing laboratory, to the Central Region Director for prior approval.
 - C. Prior to commencing the mechanical and metallurgical testing, provide the Central Region Director with the scheduled date, time, and location of the testing to allow a PHMSA representative to witness the testing; and
 - D. Ensure that the testing laboratory distributes all resulting reports in their entirety (including all media), whether draft or final, to the Central Region Director at the same time as they are made available to Respondent.
3. Within 60 days following receipt of this Order, complete a root cause failure analysis for the March 18, 2014 accident that is supplemented and facilitated by an independent third party approved by the Director. Within 10 days of receipt of this Order, submit the name of the independent third-party contractor for approval by the Central Region Director. Elements of the root cause analysis must include, but not be limited to: a scoping document of the root cause analysis; procedures associated with root cause analysis; multiple methods used for the analysis and periodic (not to exceed monthly) updates on each method as it progresses. This root cause failure analysis shall include a detailed review of the failure mechanism, the control room activities prior to, during and after the failure discovery, including manual calculations associated with over and short material balance efforts, emergency response procedures and execution of these procedures by all personnel, and associated personnel performing field operations and maintenance response to the failure. Provide the Central Region Director with the scheduled date, time, and location of personnel interviews and document these interviews. The root cause analysis must document all contributory factors and the decision-making process. Submit a final report of the root cause analysis results to the Central Region Director, including any recommendations or lessons learned and whether the findings are applicable to other locations within Respondent's Mid-Valley Pipeline System.
 4. Within 90 days following receipt of this order, submit a remedial work plan (RWP) that includes integrity verification measures to the Central Region Director for approval. The plan must provide for the verification of the integrity of the Affected Pipeline and must address all factors known or suspected in the March 18, 2014 failure. The plan must include:
 - A. Integration of the results of the metallurgical analysis performed pursuant to Item 2 and the root cause failure analysis required by Item 3, with all relevant data,

including all historical repair information, construction, operating, maintenance, testing, metallurgical analysis or other third-party consultation information, and assessment data for the line segment. Data-gathering activities must include a review of the failure history (including both in-service and pressure-test failures) of the pipeline and development of a written report containing all available information regarding locations, dates, and causes of leaks and failures;

- B. Measures to identify and analyze the extent to which the root cause and other contributory factors apply to all pipe in the Affected Pipeline;
- C. The performance of additional field testing, inspections, and evaluations to determine whether, and to what extent, the conditions associated with the failure, or any other integrity-threatening conditions are present elsewhere on the Affected Pipeline. At a minimum within 6 months of the receipt of this order, run an In-Line Inspection (ILI) on the Affected Pipeline capable of detecting cracks and consider confirmatory hydrostatic testing. Include a detailed description of the criteria to be used for the evaluation and a prioritization of any integrity threats and anomalies that are identified and provide vendor summary reports to the Central Region Director;
- D. Include a detailed description of the inspection and repair criteria to be used in the evaluation and prioritization of identified integrity threats. This is to include a description of how any defects are to be graded and a schedule for repairs or replacement;
- E. Include provisions for continuing long-term periodic testing and integrity verification measures, considering the results of the analyses, inspections, and corrective measures undertaken pursuant to this Order, to ensure the ongoing safe operation of the Affected Pipeline;
- F. Identify all locations along the Affected Pipeline, by milepost, where PLIDCO fittings or clocksprings have been utilized for repairs. Within 6 months of receipt of this order, provide to the Central Region Director a table listing these locations, date of the installation, identification of the reason for the repair, and the specifics of any crack-like information (length and depth, if known). Include information about the length of the clockspring or PLIDCO utilized and identify whether the PLIDCO fitting has TORs installed directly on the fitting (size of the TOR to be included) and is welded
- G. Investigate and, where necessary upon field investigation, remediate all reported dents on the Affected Pipeline, as identified in the 2013 ILI run, and repair or replace any valves identified to be leaking or malfunctioning during the emergency response efforts following the March 18, 2014 failure, the subsequent repairs, or restart activities.

- H. Review existing procedures and include provisions to ensure that reviewed or approved repair or restart plans are not modified unless the approving official or agency has first reviewed the needed revision or activity and agreed with the proposed action prior to implementation.
 - I. Include a proposed schedule for completion of the actions required by paragraphs A-H of this Item.
5. Within 90 days of receipt of this order, provide a report to the Central Region Director that summarizes possible enhancements that could be implemented to improve leak detection capabilities, minimize operating over the maximum operating pressure “MOP” for any length of time, and improve emergency response along the Affected Pipeline. This should include, at minimum, a review of the deployment of an API 1130 compliant leak detection system on an accelerated basis, additional pressure and flow instrumentation, automated valve locations, automated calculations and associated alarms.
 6. Document and perform a detailed review of all local control room screens that have been or will be used in an emergency or in failure response-related maneuvers to determine consistency in equipment and location identifications between the Central Control room and the local control room.
 7. Upon approval by the Central Region Director, the remedial work plan becomes incorporated into this order and shall be revised as necessary to incorporate the results of actions undertaken pursuant to this order and, whenever necessary, to incorporate new information obtained during the failure investigation and remedial activities. Submit any such plan revisions to the Director for prior approval. The Central Region Director may approve plan elements incrementally.
 8. Implement the work plan as approved by the Central Region Director, including any revisions to the plan.

Other Requirements:

1. *Reporting.* Submit quarter reports to the Central Region Director that: (1) include all available data and results of the testing and evaluations required by this Order; (2) identify all excursions of MOP by location, date and time, and associated reason for excursion and (3) describe the progress of the repairs or other remedial actions being undertaken. The first quarterly report for the period from April 1, 2014, through June 30, 2014, shall be due by July 15, 2014. The Director may change the interval for the submission of these reports.
2. *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.

3. *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.
4. *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, 193, 192], 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. 3-2014-5002H 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

MAR 25 2014

Date Issued