



U.S. Department
of Transportation

**Pipeline and Hazardous
Materials Safety
Administration**

1200 New Jersey Avenue, SE
Washington, D.C. 20590

AUG 30 2012

VIA CERTIFIED MAIL AND FAX TO: (610) 904-4645 & (847) 439-0831

Mr. Clark Smith
President & Chief Executive Officer
Buckeye Partners, L.P.
One Greenway Plaza
Suite 600
Houston, TX 77046

Mr. Carl Ostach
Vice President, Domestic Field Operations
West Shore Pipeline Company
5 Tek Park, 9999 Hamilton Blvd.
Breinigsville, PA 18031

Re: CPF No. 3-2012-5019H

Dear Sirs:

Enclosed is a Corrective Action Order issued in the above-referenced case. It finds that operation of the 12-inch diameter West Shore hazardous liquid pipeline, Line 230, is hazardous to life, property, and the environment without immediate corrective action. The Corrective Action Order requires you to take certain corrective actions to protect the public, property, and the environment in connection with the failure of Line 230 that occurred on August 27, 2012, in Palos Heights, Illinois. 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 failure to ensure the safe operation of the pipeline. Please direct any questions on this matter to David Barrett, Director, Central Region, OPS, at (816) 329-3800.

Sincerely,

A handwritten signature in black ink, appearing to read "J. Wiese". The signature is fluid and cursive, with a large initial "J" and "W".

Jeffrey D. Wiese
Associate Administrator
for Pipeline Safety

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

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

cc: Mr. Robert Malecky, President of Domestic Pipelines & Terminals, Buckeye Partners, LP, 5 Tek Park, 9999 Hamilton Blvd., Breinigsville, PA 18031
Mr. Alan Mayberry, Deputy Associate Administrator for Field Operations, OPS
Mr. David Barrett, Director, Central Region, PHMSA

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

In the Matter of

Buckeye Partners, L.P. and

West Shore Pipeline Company,

Respondent.

CPF No. 3-2012-5019H

CORRECTIVE ACTION ORDER

Purpose and Background

This Corrective Action Order (Order) is being issued, under authority of 49 U.S.C. § 60112, to West Shore Pipeline Company¹ (West Shore or Respondent), the operator of the 12-inch diameter hazardous liquid pipeline designated as Line 230 that runs from Respondent's East Chicago, Indiana facility to Canal Junction, Illinois (Affected Pipeline). This Order finds that continued operation of the pipeline without corrective action would be hazardous to life, property, or the environment and requires Respondent to take immediate action to ensure the safe operation of the pipeline.

On August 27, 2012, Respondent experienced a failure that required a shutdown of the Affected Pipeline, which remains out of operation as of the date of this Order. West Shore subsequently reported a 1,000 barrel jet fuel release to the National Response Center (NRC).

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 Failure. OPS has determined that the release originated from the Affected Segment, but the cause of the Failure has not yet been determined. The preliminary findings of the investigation are as follows:

¹ Buckeye is the fifty percent owner of a joint venture partnership that owns interest in West Shore Pipe Line Company. West Shore owns and operates the refined products pipeline system. <http://www.buckeye.com/BusinessOperations/JointVenturesMinorityInterests/tabid/589/Default.aspx> (last accessed July 20, 2012)

Preliminary Findings

- On August 27, 2012, at approximately 2:41 a.m. CDT Respondent experienced a sudden pressure drop on Line 230 between the East Chicago pump station and Canal Junction.
- The Failure site is located at Mile Post (M.P.) 20, approximately 300 feet west of South Highwood Drive and Illinois State Highway 83, approximately 16 miles southwest of Chicago.
- At the Failure site, the pipeline is identified as affecting multiple High Consequence Areas (HCAs), including highly populated areas, a navigable waterway, and unusually sensitive areas (USAs).
- Following the Failure, Respondent isolated the failed pipe by closing valves at M.P. 25.9 and M.P. 18.2 on August 27, 2012.
- On August 27, 2012, at 4:31 a.m. CDT, Respondent notified the National Response Center (NRC Report # 1022270) and reported that 1,000 barrels of jet fuel had been released.
- Due to the Failure site's proximity, Highway 83 was closed by the local fire department. Spilled jet fuel entered a nearby creek that is a tributary of the Calumet Sag Channel (an inland commercially navigable waterway). Product was noted in the channel waterway and the Calumet Sag was closed by the US Coast Guard on August 27, 2012.
- The 12-inch diameter Line 230 pipeline originates at West Shore's East Chicago facility in Indiana, proceeds west for approximately 26 miles, and terminates at the Canal Junction pump station in Illinois (the Affected Pipeline).
- The Affected Pipeline crosses and then runs parallel to a navigable waterway, the Calumet Sag Channel, is within a highly populated area, and crosses USAs, including ecological and drinking water resources. The pipeline also crosses railroads and public roads, including an interstate and multiple state highways.
- The cause of the failure is unknown and the investigation is ongoing. PHMSA initiated an onsite investigation upon receiving the NRC Report. Preliminary observation indicates the presence of a longitudinally oriented split in the pipe at approximately the 9 o'clock position. The pipeline is currently out of service.
- The Affected Pipeline was constructed in 1958 of 12-inch, grade X52, flash-welded seam pipe manufactured by A.O. Smith, with a 0.250-inch wall thickness at the Failure site. It has a somastic coating and an impressed-current cathodic protection system.
- The Affected Pipeline was constructed with approximately 24.8 miles of pipe manufactured by A.O. Smith pipe; 1.2 miles pipe was manufactured by Jones & Laughlin Steel Corporation.

- At the time of the Failure, the discharge pressure at the East Chicago pump station, located approximately 20 miles upstream of the Failure site, was 1,035 psig, and the suction pressure at Canal Junction, located six miles downstream, was 1,065 psig.
- The established maximum operating pressure (MOP) of the pipeline is 983 psig.
- The Respondent indicated that a valve had been closed at Canal Junction prior to the Failure, resulting in the pressure becoming elevated along the entire 26 mile long Affected Pipeline.
- In 1999, Respondent performed a hydrostatic test of the pipeline to a minimum test pressure of 1,196 psig. During the test, one failure occurred that was attributed to mechanical damage.
- Respondent last performed an inline inspection (ILI) of the pipeline utilizing a combination magnetic flux leakage (MFL) and geometry tool in December 2011. The pipe seam was last assessed using ultrasonic crack detection ILI technology in 2007.
- PHMSA's predecessor agency, the Research and Special Programs Administration, issued Alert Notice ALN-88-01 alerting operators of the susceptibility of failure of ERW seam pipe manufactured prior to 1970. The Alert Notice advised operators to take steps to prevent failures on pipe manufactured using a low frequency ERW process. Flash-weld seam pipe has similar characteristics as low frequency ERW pipe in that it is susceptible to seam failure.
- West Shore is an affiliate of Buckeye Partner, L.P., which owns and operates approximately 6,000 miles of pipelines transporting refined petroleum products and highly volatile liquids.²

Determination of Necessity for Corrective Action Order and Right to Hearing

Under 49 U.S.C. § 60112 and 49 C.F.R. § 190.233, the Associate Administrator for Pipeline Safety (Associate Administrator) may issue a corrective action order after providing reasonable notice and the opportunity for a hearing if he finds that a particular pipeline facility is or would be hazardous to life, property, or the environment. The terms of such an order may include the suspended or restricted use of a pipeline facility, physical inspection, testing, repair, replacement, or any other action as appropriate. The Associate Administrator may also issue a corrective action order without providing any notice or the opportunity for a hearing if he finds that a failure to do so expeditiously will result in likely serious harm to life, property or the environment. The opportunity for a hearing will be provided as soon as practicable after the issuance of the CAO in such cases.

² <http://www.buckeye.com/BusinessOperations/tabid/56/Default.aspx> and <http://www.buckeye.com/AboutUs/tabid/54/Default.aspx> (last accessed on July 19, 2012).

After evaluating the foregoing preliminary findings of fact, I find that the continued operation of the pipeline without corrective measures would be hazardous to life, property and the environment. It should be noted that West Shore indicated that a December 2011 ILI was conducted and no anomaly was found on the pipe joint that eventually failed. An anomaly requiring repair or other remedial action would have been identified following the ILI and addressed prior to this failure. Failure of this pipe joint is therefore unexpected, potentially significant, and must be addressed accordingly. Additionally, after considering several circumstances, including: the age of the pipe; the necessity of closing highways, roads, and a navigable waterway; the proximity of the pipeline to populated areas, water bodies and drinking water resources, public roadways and high consequence areas; the exceedance of MOP on the affected pipeline by pumping against a closed valve; the hazardous nature of the product transported; the continuing uncertainty as to the cause of the failure; the uncertainty as to the extent or scope of the conditions giving rise to the Failure; the susceptibility of flash-weld seam pipe to seam failure; and the ongoing investigation; I find that a failure to issue this Order expeditiously to require immediate corrective action would result in likely serious harm to life, property, and 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 request a hearing, to be held as soon as practicable, by notifying the Associate Administrator for Pipeline Safety in writing, delivered personally, by mail or by telecopy at (202) 366-4566. The hearing will be held in Kansas City, Missouri or Washington, D.C., on a date that is mutually convenient to PHMSA and the Respondent.

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 Action

Pursuant to 49 U.S.C. § 60112, West Shore Pipeline Company is ordered to immediately take the following corrective actions to ensure the safe operation of the Affected Pipeline:

1. *Hydrostatic Testing.* Develop a written hydrostatic test plan for prior approval of the Director, Central Region, OPS (Director). Submit the written plan to the Director at the Pipeline and Hazardous Materials Safety Administration, 901 Locust Street, Suite 462, Kansas City, MO 64106-2641. The hydrostatic test must be in accordance with 49 CFR Part 195 - Subpart E, "Pressure Testing," and include the use of a spike test period to a minimum of 1.39 x Maximum Operating Pressure (MOP) of the pipeline. The test plan must include a detailed description of how the line will be evacuated and/or purged at minimum pressures in preparation for hydrostatic testing. Successful hydrostatic testing without leakage and submission of documentation required by Part 195 - Subpart E, "Pressure Testing," must be completed prior to restart of the pipeline. Any test failures

must be recovered and sent for metallurgical examination using a laboratory and protocols approved by the Director.

2. *Return to Service.* Develop and submit a written restart plan for prior approval of the Director. Obtain written approval from the Director prior to re-filling the pipeline and resuming operations. The plan must also provide for adequate patrolling of the Affected Pipeline during the restart process, include a daylight restart, and detail advance communications with local emergency response officials.
3. *Mechanical and Metallurgical Testing and Failure Analysis.* Within 45 days of receipt of this Order, complete mechanical and metallurgical testing and 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 seven days of receipt of this Order, develop and submit to the Director the testing protocol, including selection of the testing laboratory, for prior approval.
 - C. Prior to commencing the mechanical and metallurgical testing, provide the 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 Director at the same time as they are made available to Respondent.
4. *Root Cause Analysis.* Within 90 days of receipt of the Order, complete a root cause failure analysis to determine the underlying causes and contributing factors for the Failure, with such analysis being directed and reviewed by an independent third-party approved by the Director. Within seven days of receipt of this Order, submit to the Director the name of the proposed independent third-party contractor for prior approval. Elements of the root cause analysis must include, but are not limited to: a written scoping document; procedures associated with the root cause analysis; multiple methods used for the analysis and updates on each method as it progresses.

The root cause analysis must document all contributory factors and the decision-making processes involved in such factors. All reports in their entirety (all media), including semi-monthly progress reports whether draft or final, must be submitted to the Director at the same time they are made available to the Respondent. The final report, including any lessons learned, recommendations, and applicability to other parts of the West Shore system, shall be submitted for the Director's approval.

5. *Operational Reliability Assessment.* Within 120 days following receipt of this Order, submit an Operational Reliability Assessment (ORA) to the Director for approval. The ORA must provide for the long-term integrity and safe operation of the Affected Pipeline

and must address all factors known or suspected in the August 27, 2012 failure, including, but not limited to the following:

- A. The integration of the results of the failure analyses and other actions required by this Order with all relevant operating data, including all historical repair information, construction, operating, maintenance, testing, metallurgical analysis or other third party consultation information, and assessment data for the delivery line. Data gathering activities must include a review of the failure history (in service and pressure test failures) of the Affected Pipeline and development of a written report containing all available information regarding locations, dates, and causes of leaks and failures;
 - B. 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 pipeline. At a minimum, the ORA must consider the remaining life of those defects surviving the hydrostatic test required per Item 1. Based on remaining life calculations, defect growth rates and operating cycles of the pipeline, the next assessment and methodologies shall be identified, with provisions to periodically review the assessment interval and methodology determination;
 - C. The performance of repairs or other corrective measures that fully remediate the condition(s) associated with the pipeline failure and any other integrity-threatening conditions everywhere along the Affected Pipeline, including implementation of continuing long-term periodic testing and integrity verification measures to ensure the ongoing safe operation. Include a detailed description of the criteria and method(s) to be used in undertaking any repairs, replacements, or other remedial actions;
 - D. The implementation of operational improvements, including but not limited to; engineering controls, modifications to pipeline surge analysis and overpressure protection, SCADA enhancements, such as modifications to displays for critical valves and equipment with indication of status and software enhancements for valve configurations, procedural revisions, training requirements, integrity management program revisions, and other measures for continuing safe operation of the Affected Pipeline considering the results of the analyses, inspections, and corrective measures undertaken pursuant to this Order, and;
 - E. A schedule for completion of Items A–D.
6. The ORA becomes incorporated into this Order. Respondent must revise the ORA 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, root cause analysis, and remedial activities. Submit any such plan revisions to the Director for prior approval. The Director may approve plan elements incrementally.

7. Implement the ORA as it is approved by the Director, including any revisions to the plan.
8. Submit monthly 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 monthly report for the period from August 29 through September 30, 2012, shall be due by October 5, 2012. The Director may adjust the reporting period upon written request of the Respondent.
9. It is requested, but not required that Respondent maintain documentation of the costs associated with implementation of this Corrective Action Order. Include in each monthly report submitted, the up-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.

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

With respect to each submission requiring the approval of the Director, the Director may: (a) approve, in whole or part, the submission; (b) approve the submission on specified conditions; (c) modify the submission to cure any deficiencies; (d) disapprove the submission in whole or in part, directing that Respondent modify the submission; or (e) any combination of the above. In the event of approval, approval upon conditions, or modification by the Director, Respondent must take all action required by the submission, as approved or modified by the Director. If the Director disapproves all or any portion of the submission, Respondent must correct all deficiencies within the time specified by the Director, and resubmit it for approval. If a resubmitted item is disapproved in whole or in part, the Director may again require Respondent to correct the deficiencies in accordance with the foregoing procedure, and the Director may otherwise proceed to enforce the terms of this Order.

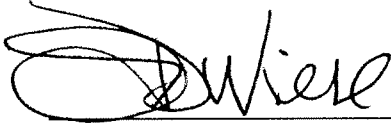
Be advised that all material you submit in response to this enforcement action may be made publicly available. If you believe that any portion of your responsive material qualifies for confidential treatment under 5 U.S.C. 552(b), you must provide, along with the complete original document, a second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

In your correspondence on this matter, please refer to "CPF No. 3-2012-5019H" and for each document you submit, please provide a copy in electronic format whenever possible. The actions required by this 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.

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.

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



Jeffrey D. Wiese
Associate Administrator
for Pipeline Safety

AUG 30 2012

Date Issued