



U.S. Department  
of Transportation

**Pipeline and Hazardous  
Materials Safety  
Administration**

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

SEP 14 2011

Mr. Jeremiah Ashcroft  
Vice President, Field Operations  
Buckeye Partners, L.P.  
One Greenway Plaza, Suite 600  
Houston, TX 77046

**Docket No. PHMSA-2010-0261**

Dear Mr. Ashcroft:

On September 14, 2010, Buckeye Partners, L.P. (Buckeye) wrote to the Pipeline and Hazardous Materials Safety Administration (PHMSA), requesting a special permit to waive compliance from 49 CFR §195.452(h)(4)(i)(D), of PHMSA's Federal pipeline safety regulations. This request is for the 2.64 miles of 8.625-inch PY742PL pipeline that connects from Paulsboro, New Jersey, crossing the Delaware River to the Philadelphia, Pennsylvania Airport. The regulation requires that a dent greater than 6% of the nominal pipe diameter and is located at or above the 4 and 8 o'clock position must be remediated as an immediate repair condition. Buckeye discovered an 8.2% dent at the 12:45 o'clock position on this line and requested a waiver of the immediate repair requirements.

However, Buckeye's application for a special permit purported that this pipeline dent is not within pipeline safety regulatory compliance requirements, and illustrated that the 8.625-inch pipe has a metallic short to the 12.75-inch casing installed across the Delaware River. Buckeye has failed to meet the requirements of §§195.452 (h)(4)(i)(D) and 195.575. Upon review of this application, PHMSA finds that granting a special permit to operate a segment of a pipeline transporting jet fuel in a HCA, with a 8.2% deep top-side dent and a metallic short, to be inconsistent with pipeline safety. The request for special permit is hereby denied.

Pursuant to § 190.341(i), reconsideration of this decision may be sought by petition to the Associate Administrator. Petitions must be received by PHMSA within 20 calendar days of the notice of the denial and must contain a brief statement of the issue and an explanation of why the petitioner believes the decision is not in the public interest. The Associate Administrator may grant or deny, in whole or in part, any petition for reconsideration without further proceedings. The issuance of this denial now requires Buckeye to bring the PY742PL pipeline into compliance with §§195.452 (h)(4)(i)(D) and 195.575. Byron Coy, PHMSA's Eastern Region Director, will be contacting you about Buckeye's remediation plan and any related PHMSA compliance actions.

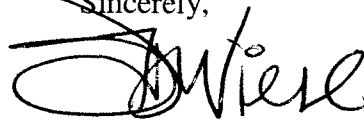
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Mr. Jeremiah Ashcroft  
Buckeye Partners, L.P.

For additional information concerning PHMSA's review of your application and the basis for our special permit denial decision, please see the enclosed Special Permit Analysis and Findings document. This and all other pertinent documents are available for review in Docket No. PHMSA-2010-0261 in the Federal Docket Management System (FDMS) located on the internet at [www.Regulations.gov](http://www.Regulations.gov).

My staff would be pleased to discuss this special permit denial or any other pipeline safety matter with you. John Gale, Director, Division of Standards and Rulemaking (202-366-0434), may be contacted on regulatory matters and Jeffery Gilliam, Director of Engineering and Research Division (202-366-0568), may be contacted on technical matters specific to this matter.

Sincerely,

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

Jeffrey D. Wiese

Associate Administrator for Pipeline Safety

Enclosure: Special Permit Analysis and Findings Document

U.S. DEPARTMENT OF TRANSPORTATION  
PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION (PHMSA)  
**Special Permit Analysis and Findings**

**Special Permit Information:**

**Docket Number:** PHMSA-2010-0261  
**Pipeline Operator:** Buckeye Partners, L.P.  
**Date Requested:** September 14, 2010  
**Code Section(s):** 49 CFR § 195.452(h)(4)(i)(D)

**Purpose:**

The Pipeline and Hazardous Materials Safety Administration (PHMSA) provides this information to describe the facts of the subject special permit application submitted by Buckeye Partners, L.P. (Buckeye) to discuss any relevant public comments received with respect to the application, to present the engineering/safety analysis of the special permit application, and to make findings regarding whether the requested special permit should be granted, and if so under what conditions.

**Pipeline System Affected:**

This special permit application request involves one (1) *special permit segment* along the Buckeye 8-inch PY742PL pipeline, a 2.64 miles hazardous liquid pipeline that transports jet fuel. This pipeline connects the Paulsboro refinery located in Paulsboro, New Jersey, and crosses the Delaware River to the Philadelphia, Pennsylvania Airport. The *special permit segment* is located in Gloucester County, New Jersey and Delaware County, Pennsylvania.

A special permit, if granted, would allow Buckeye to continue to operate the one (1) 8.625-inch PY742PL pipeline *special permit segment* at its current maximum operating pressure (MOP) of 274 pounds per square inch gauge (psig).

This special permit application applies to the *special permit segment* and *special permit inspection area* defined as follows:

- *Special permit segment* is defined as the portion of the 8.625-inch PY742PL pipeline that crosses the Delaware River and is installed in a 12.75-inch casing pipe from Survey Station 4+27 to Survey Station 62+74, approximately 5,847 feet. The *special permit segment* is located in Gloucester County, New Jersey, and Delaware County, Pennsylvania.
- *Special permit inspection area* is defined as the portion of the 8.625-inch PY742PL pipeline that connects the Paulsboro refinery located in Paulsboro, New Jersey and crosses the Delaware River to the Philadelphia, Pennsylvania Airport. The *special permit inspection area* is approximately 2.64 miles in length and includes the *special permit segment*. The *special permit inspection area* is located in Gloucester County, New Jersey and Delaware County, Pennsylvania.

### **Special Permit Request**

On September 14, 2010, Buckeye submitted an application to PHMSA for a special permit seeking relief from the Federal pipeline safety regulations in 49 CFR § 195.452(h)(4)(i)(D), for a 0.71-inch deep dent (8.2% of pipe diameter) on one (1) segment of Buckeye's 8.625-inch PY742PL hazardous liquid pipeline. On June 30, 2009, and November 4, 2009, while conducting liquid integrity management in-line inspections (ILI) using deformation/caliper and magnetic flux leakage (MFL) tools, Buckeye found an 0.71-inch deep dent (8.2% deep dent, 5.3 inches long by 7 inches wide located on top of the pipe at the 12:45 o'clock position). The dent is located 75 feet off the north bank of the Delaware River in a 12.75-inch casing pipe. As requested in the special permit application, a special permit would allow Buckeye to continue to operate the pipeline *special permit segment* at its current MOP of 274 psig.

The Federal pipeline safety regulations in 49 CFR § 195.452(h)(4)(i)(D), require a hazardous liquid pipeline operator to repair dents found during integrity assessments as follows:

- (i) *Immediate repair conditions.* An operator's evaluation and remediation schedule must provide for immediate repair conditions. To maintain safety, an operator must temporarily reduce operating pressure or shut down the pipeline until the repairs of these conditions are completed. An operator must calculate the temporary reduction in operating pressure using the formula in section 451.7 of

ASME/ANSI B31.4. An operator must treat the following conditions as immediate repair conditions:

- (D) A dent located on the top of the pipeline (above the 4 and 8 o'clock positions) with a depth greater than 6% of the nominal pipe diameter.

A special permit, if granted, would allow Buckeye to continue to operate the *special permit segment* at its existing MOP, and with conditions on how to conduct integrity management and operations and maintenance operations on the *special permit segment* and *special permit inspection area*.

In its application, Buckeye submitted an Engineering Critical Assessment of the 8.2% dent conducted by DNV Columbus. Buckeye requested a special permit for the *special permit segment* (8.2% dent) that would not require remediation in accordance with §195.452(h)(4)(i)(D), but would allow re-assessment of the *special permit segment* in 2014.

**Public Notice:**

On March 3, 2011, PHMSA posted a notice of this special permit request in the Federal Register (76 FR 11853). PHMSA received no public comments on this application for a special permit (waiver) of 49 CFR § 195.452(h)(4)(i)(D). The request letter, Federal Register notice, and all other pertinent documents are available for review in Docket No. PHMSA-2010-0261 in the Federal Docket Management System (FDMS) located on the internet at [www.Regulations.gov](http://www.Regulations.gov).

**Analysis:**

Background:

PHMSA reviews all special permit applications based upon the age and manufacturing process of the pipe; system design and construction; environmental, operating and maintenance histories; and integrity management program elements. PHMSA will grant special permits when pipe conditions, maintenance, and active integrity management provides a level of safety greater than or equal to a pipe replacement or pressure reduction.

### Operational Integrity Compliance:

PHMSA reviewed Buckeye's special permit application request to ensure that integrity threats to the pipeline in the *special permit segment* are being assessed in the operator's operations and management plan (O&M Plan), to provide a systematic program to review and remediate the pipeline for safety concerns.

In reviewing Buckeye's application request and integrity submittals, PHMSA found the following materials, O&M, and integrity management (IM) assessment information:

- The pipe is 8.625-inch, 0.322-inch wall thickness, steel grade American Petroleum Institute (API) 5L Grade B, seamless. A portion of the *special permit inspection area* pipe is 0.277-inch wall thickness. The pipe is coated with coal tar coating. The pipe section that crosses the Delaware River is installed in a 12.750-inch casing pipe.
- The pipe location of the 8.2% dent is in a 12.750-inch casing pipe with a depth of soil cover of approximately 7 to 10 feet. The 8.2% dented pipe is located approximately 4,805 feet downstream of the Paulsboro refinery on the west bank of the Delaware River in Delaware County, Pennsylvania. Buckeye has identified a 4.4% dent and a corrosion area of 21.61% wall loss, downstream of the 8.2% dent at Survey Station 52+05 (5,205 feet of the Paulsboro refinery) Buckeye has no knowledge of any dredging over this section of the 8.625-inch PY742PL pipeline. Buckeye purchased the 8.625-inch PY742PL pipeline from another operator in 2005.
- Both the *special permit segment* and *special permit inspection area* are located in a high consequence area (HCA).
- The 8.625-inch PY742PL pipeline was hydrostatically tested on August 25, 2004, at a minimum of 370 psig (135% of MOP) for 8-hours. Previously, the 8.625-inch pipeline was tested on March 21, 1974, at a minimum of 525 psig (191% of MOP).
- Buckeye conducted a high resolution magnetic flux leakage (HR-MFL) and deformation tool inspections of the pipeline in 2009. The deformation tool run was conducted on June 30, 2009, and the HR-MFL tool was run on November 4, 2009. The HR-MFL tool run on the 8.625-inch PY742PL pipeline did not find any corrosion greater than 22% metal loss on the *special permit inspection area*. The HR-MFL tool did not find any metal loss in the vicinity of the 8.2% dent. Downstream of the 8.2% dent at Survey

Station 52+05 (5,205 feet downstream of the Paulsboro refinery) Buckeye has identified a 4.4% dent and a corrosion area of 21.61% wall loss.

- Buckeye took the HR-MFL and deformation tool information and contracted DNV Columbus to perform an Engineering Critical Assessment of the 8.2% dent. On September 8, 2010, DNV Columbus issued a report to Buckeye. The DNV Columbus Engineering Critical Assessment (ECA) Report and Buckeye application letter of September 10, 2010, concluded:
  - The 8.2% dent has a maximum strain of 5.95% when evaluated in accordance with ASME B31.8, Appendix R - Strain Assessment.
  - In burst tests of manufactured dents of similar depth to the subject feature, these type dents survived an internal test pressure of 1.3 times the SMYS of the 8.625-inch pipeline or 12.3 times the MOP of the 8.625-inch pipeline in testing performed by DNV Columbus.
  - DNV Columbus performed the ECA based upon pressure history analysis, strain analysis, and a comparison to fatigue and burst testing results. The finding of DNV Columbus analysis was that the fatigue life of this dent should be over 425,000 years.
  - Buckeye stated in its application letter that integrity assessment of the 8.625-inch PY742PL pipeline would be conducted in 2014.
- PHMSA requested Buckeye to furnish cathodic protection tests for the pipe and casing. Buckeye installed a casing test lead on the south side of the Delaware River and on February 18, 2011, submitted to PHMSA, initial pipe to soil readings for both the 8.625-inch pipeline and 12.75-inch casing as follows:
  - Pipeline = -2.26V
  - Casing = -2.25V
  - Initial test results by Buckeye indicated the pipe and casing are shorted. On February 25, 2011, Buckeye confirmed that additional tests confirmed the metallic short of the 8.625-inch pipeline and 12.75-inch casing.

The metallic short of the 8.625-inch pipeline and 12.75-inch casing does not meet the isolation, inspection, tests, and safeguards of §195.575.

Compliance History – 2006 through 2011:

A review of PHMSA enforcement actions from June 2, 2006, through June 2, 2011, shows the following closed enforcement actions against Buckeye (OPID 1845) and Buckeye Gulf Coast Pipeline, LP (OPID 31371).

- Letters - of Concern or Warning - 5 matters closed
- Notices – of Amendment or of Probable Violation – 4 matters closed
- Collected Civil Penalties - \$392,600 collected

This enforcement history reveals many compliance issues, including civil penalties.

PHMSA finds that Buckeye's non-compliance in following the Federal Regulations in 49 CFR §195.452(h)(4)(i)(D), for an 8.2% dent and §195.575 for a metallic short of the 8.625-inch pipeline and 12.75-inch casing, all in a high consequence area (HCA) such as the Delaware River and Philadelphia Airport areas, to be inconsistent with pipeline safety.

**Findings:**

Based on the information submitted by Buckeye and PHMSA's analysis of the technical, operational, integrity management, and compliance issues, PHMSA finds that granting a special permit to Buckeye to operate the proposed *special permit segment* of the 8.625-inch PY742PL pipeline, a hazardous liquid pipeline transporting jet fuel, with a 8.2% deep top-side dent and a metallic short both in a HCA, to be inconsistent with pipeline safety.

Completed in Washington DC on: SEP 14 2011

Prepared by: Engineering and Research Division