



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

820 Bear Tavern Road, Suite 103
West Trenton, NJ 08628
609.989.2171

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

OVERNIGHT EXPRESS DELIVERY

September 04, 2014

T. Scott Collier
Vice President, Performance Assurance & Asset Integrity
Buckeye Partners, L.P.
Five TEK Park
9999 Hamilton Boulevard
Breinigsville, PA 18031

CPF 1-2014-5003

Dear Mr. Collier:

On August 21, 2012, a representative of the Pipeline and Hazardous Materials Safety Administration (PHMSA), Office of Pipeline Safety (OPS), pursuant to Chapter 601 of 49 United States Code, conducted an on-site investigation into an accident that occurred on June 17, 2012, at Buckeye Partners, L.P.'s (Buckeye) Emmaus, Pennsylvania station and tank farm complex (Macungie Station).

On June 17, 2012, at 5:52 a.m. EST, Tank 228, a steel aboveground tank, overfilled at the Macungie Station spilling approximately 100 barrels of gasoline (26.5 barrels were recovered) in a high consequence area (HCA)¹, resulting in costs of \$87,000. The accident resulted in no injuries or fatalities.

¹ An HCA is defined as: (1) a *commercially navigable waterway*, which means a waterway where a substantial likelihood of commercial navigation exists; (2) a *high population area*, which means an urbanized area, as defined and delineated by the Census Bureau, that contains 50,000 or more people and has a population density of at least 1,000 people per square mile; (3) an *other populated area*, which means a place, as defined and delineated by the Census Bureau, that contains a concentrated population, such as an incorporated or unincorporated city, town, village, or other designated residential or commercial area; and (4) an *unusually sensitive area*, as defined in § 195.6. 49 C.F.R. § 195.450.

Buckeye performs tank operations and batch changes at the Macungie Station. At 11 p.m. on June 16, 2012, Tank 228 was simultaneously receiving product from Line 620 and pumping product into Line 714² (an operational process performed at the Macungie Station called “Tank Floating”).³ By 1:55 a.m. on June 17, 2012, Tank 228 had discontinued pumping product to Line 714 but continued to receive product from Line 620. At 5:50 a.m., the Night Shift Operator was outside preparing to manually move incoming product to Tank 222 when he heard an independent Hi Hi Alarm.⁴

Even though he registered the independent Hi Hi Alarm, by 5:52 a.m., the Night Shift Operator completed the tank swing in the manifold from Tank 228 to Tank 222. Between 5:55 a.m. and 6:15 a.m., the Night Shift Operator acknowledged the Safe Fill Alarm on the tank gauging system and the independent Hi Hi Alarm on the Tank Farm Master Operator Interface Panel. At 6:50 a.m., both the Macungie Night Shift Operator and the incoming Day Operator reviewed the Safe Fill Alarm and volume reading on the tank gauging system that showed 3,000 barrels below the overfill level. Reassured by the volume reading, both operators disregarded the independent Hi Hi Alarm.

On June 18, 2012 at 9:00 a.m., a Macungie Pipeliner went to Tank 228 to prepare for an outbound movement. He smelled gasoline, so he inspected the tank shell gate valve pit and discovered product in the pit. He notified the Macungie Day Shift Operator to report a potential release. At 2:18 p.m., Buckeye filed a report with the National Response Center (NRC Report # 1014928).

Buckeye submitted two accident reports to PHMSA, the last of which was submitted on August 24, 2012 (Accident Report). The Accident Report stated the cause of the accident was the failure of Buckeye personnel to follow its procedures.

As a result of the investigation, it appears that you have committed probable violations of the Pipeline Safety Regulations, Title 49, Code of Federal Regulations. The items inspected and the probable violations are:

1. §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: . . .

² Buckeye’s 20” Line 620 pumps product from the Linden Station in Linden, New Jersey to the Macungie Station. From Macungie Station, Buckeye’s 14” Line 714 pumps product to the Sinking Springs Station, in Sinking Springs, Pennsylvania. Both lines are controlled by a Control Center located in Breinigsville, Pennsylvania.

³ Buckeye’s incident investigation report dated August 20, 2012 (Internal Report).

⁴ Both the tank gauging system and an independent Hi Hi Level Switch initiate certain tank alarms. The tank gauging system has three alarm level settings: Hi Hi Alarm, Hi Alarm, and Safe Fill Alarm. When product reaches certain levels in a tank, alarms should be triggered. As the tank fills, the safe fill alarm should sound first, followed by the Hi Alarm and then the Hi Hi Alarm, if the level of product exceeds safe levels. In a separate process, a level switch located on the roof of the tank can trigger the independent Hi Hi Alarm, which is an alarm system separate from the tank gauging system. When the independent Hi Hi Alarm is triggered, it is displayed on the “Tank Farm Master” Operator Interface Panel. This alarm setting is set to match the Hi Hi setting of the tank gauging system.

(3) Operating, maintaining, and repairing the pipeline system in accordance with each of the requirements of this subpart and subpart H of this part.

Buckeye failed to follow its manual of written procedures for conducting normal operations and maintenance activities and handling abnormal operations and emergencies. Specifically, Buckeye failed to follow the procedure in its Operating Manual, *B-10- Filling Tanks Issued: 06/08*, which requires that tanks be filled in a safe and controlled manner.

According to this procedure:

2.10.2 If the tank volume causes the annunciation of a high-high alarm, immediately shut down the incoming stream and notify the Control Center. . .

2.13 Operators and Controllers share responsibility for monitoring tank alarms in SCADA. If a critical Hi Hi alarm is received from a physical device or SCADA⁵ software alarm, both parties are responsible for investigating and shutting down a receipt into the tank if a cause is not verified immediately. Controller will respond if a Field Operator is not available, immediately. . .

The Night Shift Operator failed to immediately shut down the incoming product stream to Tank 228 and notify the Control Center when the Hi Hi alarm sounded. Also, once the Controller was aware of the Hi Hi alarm, he failed to immediately shut down the line and investigate the cause of the alarm. According to the Internal Report, the independent Hi Hi alarm was received into SCADA and the Controller was prepared to shut down the Macungie Station and Linden pumps. However, because the Controller saw that the next scheduled tank, Tank 222, was being filled, he decided to not interrupt the schedule by shutting down the line. Furthermore, in the Internal Report, Buckeye acknowledges the failure of its employees to follow its procedures in its internal report, which states that the “Macungie Night Shift Operator did not respond appropriately to Hi Hi alarm received at 05:52 a.m., as per Operating Manual B-10 Filling Tanks, Section 2.13. . . .”

Buckeye did not respond to the Hi-Hi alarm in accordance with *B-10- Filling Tanks*.

2. §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: . . .

(3) Operating, maintaining, and repairing the pipeline system in accordance with each of the requirements of this subpart and subpart H of this part.

Buckeye failed to follow its manual of written procedures for conducting normal operations and maintenance activities and handling abnormal operations and emergencies. Specifically, Buckeye failed to follow its inspection and testing procedure *H-09 – Tank Alarms and Gauging Equipment, Issued: 9/10*. According to this procedure, “[o]n each tank, the level alarm/shutdown systems and tank volume gauging equipment, including the associated transmitting-receiving units for remote monitoring, shall be inspected

⁵ SCADA software here is referring to the tank gauging system.

and a functional test shall be conducted within the time frequency listed on the comprehensive scheduling chart⁶”

Buckeye personnel are required to inspect and test at intervals not exceeding 15 months but at least once a calendar year by manually gauging the tank volume and adjusting the gauge to match the manual hand line gauge. From 2010 to 2011, Buckeye did not manually gauge Tank 228. As a result, the side gauge and tank gauging system were inaccurate and the Tank 228 overfilled on June 17, 2012.

Subsection 3.2 *Tank Gauging System for H-09 – Tank Alarms and Gauging Equipment*, states:

3.2.1 Manually gauge the tank using a hand line.

3.2.2 Adjust the side gauge to agree with the manual hand line gauge.

3.2.3 Set the transmitter unit⁷ to the corresponding side gauge reading and confirm that the proper level is shown on control panel at the remote monitoring location.

3.2.4 Restore all equipment to the proper operating condition. Contact local Operations and the Control Center. Have them verify that they have the same tank level as is being observed in the Field and that all alarms from testing have been cleared (emphasis added).

In its Internal Report, Buckeye acknowledges that, contrary to its procedure, “in the past year, Macungie Station suspended hand gauging tank volumes . . . [and that] this practice [was] not compliant with Company policy as per 195 O & M Manual F-35 Tank Alarm and Gauging Equipment, Section 3.2.”⁸

Although Buckeye acknowledged that it failed to conduct the required hand gauging, the PHMSA inspector requested additional records for Tank 228. In response, Buckeye produced work orders for Tank 228. However, these work orders did not indicate whether or not hand gauging was conducted on Tank 228 from 2010 to 2011 or include any measurements, calculations, confirmations or determinations.

	Work Order Number	Completion Date
1	660304	6/30/2010
2	746764	7/18/2011

After reviewing the Internal Report in conjunction with these work orders, the PHMSA inspector arranged a conference call with Buckeye to determine the extent of testing and inspection that occurred on Tank 228. On February 10, 2014, during a conference call with PHMSA representatives, Buckeye explained that its’ accident investigation revealed that its personnel failed to perform hand gauging on Tank 228.

⁶ Buckeye’s Comprehensive Scheduling Chart – Regulatory Inspection sheet requires “Breakout Tank Overfill Protection Inspections” to be conducted “At Least 1 Time per Calendar Year Not to Exceed 15 months.”

⁷ Transmitter unit refers to the tank gauging system.

⁸ F-35: Tank Alarms and Gauging Equipment (CFR TITLE 49: PART 195.428(d)), Issued: 12/11, Subsection 3.2 Tank Gauging System is a replica of H-09 – Tank Alarms and Gauging Equipment, Issued: 9/10, Subsection 3.2 Tank Gauging System.

Buckeye's Internal Report confirmed that there were deficiencies that affected both the trigger and the tank gauging system. "The trigger for the independent Hi Hi Alarm was improperly set 7 inches too high. . . [and the] Tank Side Gauge and tank gauging system [was] reading approximately 18" lower than actual level in tank (emphasis added)." The Accident Report also confirmed that Tank 228 gauge system was reading approximately 18 inches lower than the actual level in the tank. Moreover, the Accident Report stated that the tank gauge was showing the tank level to be at "MAX SAFE FILL" while the tank was overfilling.⁹

Buckeye provided a spreadsheet that recorded "Year 2012," "ZG Tank 228," and "SF 74223."¹⁰ In this spreadsheet, Buckeye wrote 73,884 net barrels at the time of the accident. According to Buckeye, it read the tank gauging system which showed 3,000 barrels room available before overfill. However, Tank 228 contained more than 73,884 net barrels at the time of the accident. This further illustrates that the side gauge and tank gauging system were inaccurate.

Following the accident, Buckeye recalculated and adjusted the tank gauge level and alarm level for Tank 228. Based on the information in the Internal Report and the new measurements, Buckeye had the incorrect alarm settings for Tank 228 since at least 2003.

Therefore, Buckeye failed to follow its procedure *H-09 – Tank Alarms and Gauging Equipment, Issued: 9/10*.

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: . . .

(3) **Operating, maintaining, and repairing the pipeline system in accordance with each of the requirements of this subpart and subpart H of this part.**

Buckeye failed to follow its manual of written procedures for conducting normal operations and maintenance activities and handling abnormal operations and emergencies. Specifically, Buckeye failed to follow a procedure in its Operations and Maintenance Manual titled *195 O and M Manual, F-37: Aboveground Tanks (In-Service) (CFR Title 49: PARTS 195.432(a), 195.432(b)) Issued: 9/12*, which requires an external inspection of an in-service aboveground breakout tanks at interval at least one time per month and not to exceed one month.¹¹ Buckeye did not inspect the local level gauge and hand gauge at Tank 228 from July 2011 to May 2012, as required by the procedure¹².

⁹ Accident Report at 14.

¹⁰ Per Buckeye, "SF 74223" stands for Safe Fill 74223 barrels.

¹¹ Buckeye's Comprehensive Scheduling Chart – Regulatory Inspection sheet requires "Breakout Tank Inspections" to be conducted "At Least 1 Time per Month Not to Exceed 1 month."

¹² During the investigation, Buckeye provided a copy of *195 O and M Manual, F-37: Aboveground Tanks (In-Service) (CFR Title 49: PARTS 195.432(a), 195.432(b)) Issued: 9/12*. *195 O and M Manual, F-37: Aboveground Tanks (In-Service) (CFR Title 49: PARTS 195.432(a), 195.432(b)) Issued: 9/12, Subsection 3* requires personnel to

A portion of the form specifically inquires as to whether the “Local level gauge [matches the] hand gauge.”

Buckeye also provided copies of *Form B (Monthly Tank Inspection Report Form)* for Tank 228 from July 2011 to May 2012. Those records indicated that there was no deficiency with the local level gauge. But, in fact, the local level gauge was incorrect prior to the accident.

Buckeye’s Internal Report states that the “Tank Side Gauge and GSI Tracking System [read] approximately 18” lower than actual level in tank.”¹³ Also, during the conference call PHMSA representatives had with Buckeye, Buckeye explained that its personnel did not perform hand gauging on Tank 228.¹⁴ Lastly, in the Internal Report, Buckeye stated that “Monthly Tank Hand Gauging [was] not performed at Macungie Station, as per: . . . 195 O & M Manual, F-37, Subsection 3, Form B, Line 22. . .”

Buckeye could not demonstrate that it followed its procedure titled: *195 O & M Manual, F-37, Subsection 3, Form B, Line 22*.

Following the accident, Buckeye recalculated and adjusted the tank gauge level and alarm level for Tank 228.

4. §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: . . .

(3) Operating, maintaining, and repairing the pipeline system in accordance with each of the requirements of this subpart and subpart H of this part.

Buckeye failed to follow its manual of written procedures for conducting normal operations and maintenance activities and handling abnormal operations and emergencies. Specifically, Buckeye failed to follow *Section 16.0 Stock Variations* of its *Measurement Manual, A-01 – Measurement Issued: 11/11* because it did not investigate a volume discrepancy regarding Tank 228.

According to *Section 16.0*:

16.1 Transportation Variations

Transportation variation shall be reviewed for each Tender receipt. Variations greater than +/-0.25% for pipeline and marine receipts (vessel to shore) shall be investigated and the results documented.

It is strongly recommended that variations be reviewed immediately after the receipt/delivery has terminated. . .

use *Form B (Monthly Tank Inspection Report Form)* to record information. *Form B (Monthly Tank Inspection Report Form)* instructs personnel to inspect an item and note whether or not there is a deficiency.

¹³ Internal Report at 5.

¹⁴ PHMSA representatives had a conference call with Buckeye on February 10, 2014.

In the Internal Report, Buckeye stated that Tank 228 was emptied for Reid Vapor Pressure (RVP) turnover on March 31, 2012, and then filled with Summer Grade Product on April 1, 2012. Buckeye stated that there was a 1,299 barrel discrepancy on the refill movement and that it was not investigated, per *Measurement Manual A-01, 16.1 Transportation Stock Variation*.

The PHMSA inspector requested that Buckeye provide records and/or documentation that showed this volume discrepancy as well as documentation of an investigation that was conducted as a result of this volume discrepancy. In response, Buckeye provided a copy of a *Batch Change Report* and *Daily Activity Report* dated April 1, 2012, and a spreadsheet that recorded “Year 2012,” “ZG Tank 228,” and “SF 74223.” This spreadsheet showed dates ranging from March 28 through April 11, 2012. However, Buckeye could not produce any documentation of an investigation.

During a conference call PHMSA representatives had with Buckeye, PHMSA requested further information about this volume discrepancy and Buckeye described the following calculation:¹⁵

Calculation:

72,509 barrels (net meter) - 71,345 barrels (gross meter) = 1,164

Started empty but showed 135 barrels

1,164 barrels + 135 barrels = 1,299 barrels

Therefore, on April 1, 2012, there was a 1.8% variation at Tank 228 (calculation shown below).

$(1,299) / (72,509) = .018$ or $.018 * 100 = 1.8\%$ variation

In accordance with *Section 16.0 Stock Variations*, variations greater than +/-0.25% must be investigated and the results documented. However, Buckeye could not produce documentation of an investigation and the results of the volume discrepancy at Tank 228 that occurred on April 1, 2012. Thus, Buckeye failed to follow its procedure, *Section 16.0 Stock Variations of Measurement Manual, A-01 – Measurement, Issued: 11/11*.

Proposed Civil Penalty

Under 49 United States Code, § 60122, you are subject to a civil penalty not to exceed \$200,000 per violation per day the violation persists up to a maximum of \$2,000,000 for a related series of violations. For violations occurring prior to January 4, 2012, the maximum penalty may not exceed \$100,000 per violation per day, with a maximum penalty not to exceed \$1,000,000 for a related series of violations. The Compliance Officer has reviewed the circumstances and supporting documentation involved in the above probable violations and has recommended that you be preliminarily assessed a civil penalty of \$ 302,200 as follows:

<u>Item number</u>	<u>PENALTY</u>
1	\$ 54,700
2	\$ 100,000
3	\$ 100,000
4	\$ 47,500

¹⁵ PHMSA representatives had a conference call with Buckeye on January 31, 2014.

Proposed Compliance Order

With respect to items 1 and 2 pursuant to 49 United States Code § 60118, the Pipeline and Hazardous Materials Safety Administration proposes to issue a Compliance Order to Buckeye. Please refer to the *Proposed Compliance Order*, which is enclosed and made a part of this Notice.

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). 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.

Please submit all correspondence in this matter to Byron Coy, PE, Director, PHMSA Eastern Region, 820 Bear Tavern Road, Suite 103, W. Trenton, NJ 08628. Please refer to **CPF 1-2014-5003** on each document you submit and please, whenever possible, provide a signed PDF copy in electronic format. Smaller files may be emailed to Byron.Coy@dot.gov. Larger files should be sent on a CD accompanied by the original paper copy to the Eastern Region Office.

Additionally, if you choose to respond to this (or any other case), please ensure that any response letter pertains solely to one CPF case number.

Sincerely,



Byron Coy, PE
Director, Eastern Region
Pipeline and Hazardous Materials Safety Administration

Enclosures: *Proposed Compliance Order*
Response Options for Pipeline Operators in Compliance Proceedings

PROPOSED COMPLIANCE ORDER

Pursuant to 49 United States Code § 60118, the Pipeline and Hazardous Materials Safety Administration (PHMSA) proposes to issue to Buckeye Partners, L.P. (Buckeye) a Compliance Order incorporating the following remedial requirements to ensure the compliance of Buckeye with the pipeline safety regulations:

1. With respect to Item Number 1 of the Notice, Buckeye must amend its operations and maintenance (O & M) manual to include a detailed process for investigating an annunciation of a tank alarm that consists of, but is not limited to: inspecting on-site, communicating with appropriate personnel, and documenting the cause/results of the investigation and any other pertinent information.
2. With respect to Item Number 2 of the Notice, Buckeye must:
 - A. Amend its O & M manual to include a process for recording pertinent information to ensure the overfill protection system inspection and testing have been completed in accordance with applicable procedure(s) and federal pipeline safety regulations.
 - B. Establish and implement a program that ensures all Department of Transportation jurisdictional breakout tanks at the Macungie Station have the proper/correct tank level and alarm settings for operations.
3. Within sixty (60) days after receipt of a Final Order, Buckeye must submit documentation to the Director, Eastern Region, demonstrating that Items 1 and 2(A) have been completed.
4. Within one hundred and eighty (180) days after receipt of a Final Order, Buckeye must submit documentation to the Director, Eastern Region, demonstrating that Item 2(B) has been completed.
5. It is requested (not mandated) that Buckeye maintain documentation of the safety improvement costs associated with fulfilling this Compliance Order and submit the total to Byron Coy, PE, Director, Eastern 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) total cost associated with replacements, additions and other changes to pipeline infrastructure.