Investigation of the Conrail Train
Derailment with Hazardous Materials
Release in Paulsboro, New Jersey
On November 30, 2012

NTSB Docket No. DCA-13MR002

Conrail's Party Submission

INTRODUCTORY STATEMENT

Conrail appreciates the opportunity to provide this Party Submission to the NTSB. From the earliest moments following the derailment up to the present, Conrail has been committed to assisting those in the Borough of Paulsboro affected by the derailment, assisting emergency personnel, fire and law enforcement officers who responded to the derailment, and working with other Party members and the NTSB in the investigation of the derailment. Conrail also appreciates the efforts of the men and women who responded to the derailment in order to provide safety and security to the citizens of Paulsboro. Many of these responders were volunteers, and Conrail employees worked side by side with these volunteers and others in the days and weeks following the derailment.

On February 18, 2014, Conrail received an invitation to provide a written submission to the NTSB relative to the investigation of the derailment, including submissions of proposed findings of fact, probable cause, and safety recommendations. Conrail fully supports the NTSB's mandate to determine the causes of the derailment and issue safety recommendations aimed at preventing future accidents. It is with these goals in mind that Conrail submits comments related to the response to the derailment. As these aspects of the NTSB investigation are complete, Conrail believes it would be appropriate to comment on these issues. Specifically, the NTSB public hearing on July 9-10, 2013, along with the other evidence developed by the NTSB as part of its investigation, provided a great deal of information regarding the response to the derailment.

Because of pending litigation relating to the derailment, Conrail believes it would be inappropriate and perhaps premature for Conrail to substantively address issues relating to the probable cause of the accident itself. Conrail is sensitive to the NTSB's concern that its

investigative process not be used to promote litigation interests, and is cognizant that the NTSB has removed one party representative from the investigation process due to involvement in litigation relating to this accident. Further, although Conrail has appreciated the opportunity to work with the NTSB as part of various working groups formed by the NTSB to investigate the derailment, Conrail has not to this point been given full access to all evidence obtained by the NTSB as part of its investigation, and has not had the opportunity to do its own independent testing and examination of various key pieces of evidence.

In accordance with 49 C.F.R. § 831.14, Conrail herewith submits its proposed findings to be drawn from the evidence produced in the investigation.

1. **About Conrail**

Conrail began operations on April 1, 1976 following the conveyance to Conrail of rail properties of various bankrupt railroads. In 1997, Conrail agreed to be acquired by Norfolk Southern Corporation and CSX Corporation, and the transaction was memorialized by a Transaction Agreement dated June 10, 1997 and submitted to the U.S. Surface Transportation Board ("STB") for review and approval. Following STB approval, the closing date for the transaction was set as June 1, 1999. On the closing date, Conrail transferred a significant portion of its real property and operating assets to each of two Conrail subsidiaries, one to be operated by Norfolk Southern Railway Company ("NSR") and one by CSX Transportation, Inc. ("CSXT"). Conrail itself continued freight rail operations utilizing real property and operating assets that it retained. Some Conrail employees became employees of Norfolk Southern, some became employees of CSX, and some remained Conrail employees.

Following a 2003 decision by the STB, in 2004 the two subsidiaries were spun off from Conrail and became direct subsidiaries of, and were merged into, NSR and CSXT, respectively.

As a result, each of CSXT and NSR acquired the real property and operating assets previously operated pursuant to Operating Agreements. The 2003 STB decision did not affect the assets retained by Conrail.

Today, Conrail is a switching and terminal railroad that operates in Northern New Jersey, Southern New Jersey/Philadelphia, Staten Island, Northern Delaware, and Detroit as a legal entity separate and distinct from Norfolk Southern and CSX, although it receives claims handling services from Norfolk Southern and environmental response services (including the provision of employees who assisted in the response to the incident at Paulsboro) from CSX pursuant to service provider agreements.

2. <u>Paulsboro Moveable Bridge</u>

The Paulsboro bridge is one of many moveable bridges in operation on Conrail's system and throughout the United States on other railroads. The bridge is designed to permit marine traffic on Mantua Creek, which flows beneath the bridge, as well as to permit rail traffic to move over the bridge when it is closed for train operations. The Paulsboro moveable bridge is located on what is referred to as Conrail's Penns Grove secondary line.

Conrail maintains a stringent bridge inspection program which has been reviewed by the Federal Railroad Administration. Although there have been some references in published reports to the bridge "collapsing" as a result of the derailment, it is important to note that the bridge did not collapse at the time of this derailment. An independent consultant's analysis post-derailment confirmed the bridge was structurally sound. In fact, Conrail restored service across the bridge within hours after the last derailed car was recovered on December 16, 2012.

Except in the winter months when the bridge is generally closed to marine traffic, the normal position for the bridge is open to permit boating activity on Mantua Creek. The bridge is

currently in a locked position and unable to swing open. Conrail is in the process of obtaining Coast Guard approval to construct a new bridge to replace the structure in place at the time of the derailment.

3. The Paulsboro Train Derailment

On Friday, November 30, 2012 at approximately 6:59 a.m. EST, southbound Consolidated Rail Corporation ("Conrail") Freight Train FC4230, consisting of two locomotives and 82 cars, derailed seven cars, the sixth through the twelfth, near mile post 13.7 on the Conrail Penns Grove Secondary track in Paulsboro, New Jersey. The derailment occurred as the train traveled over the Paulsboro moveable bridge.

Engineer Mark Mather and Conductor Wilbert denOuden were the crew members operating the train at the time of the derailment. Mather and denOuden arrived with their train in the vicinity of the bridge at approximately 6:49 a.m.[1] When the train approached the bridge, the bridge was already in the closed position rather than the normal open position.[2] The crew encountered a red signal upon their arrival at the bridge. After stopping for the red signal, the Engineer attempted to code the bridge using the radio keypad to clear the signal to green so that the train could proceed across the bridge.[3] However, coding attempts were unsuccessful and the signal continued to display red.[4] At that time, the Conductor departed the train and examined the bridge from the ground in accordance with NORAC Operating Rule 241(d).[5] He testified that upon inspection he found that the bridge was locked and aligned.[6] He has specifically stated that all four of the locks were in place.[7]

[1] Operations Factual Report, p. 2
[2] Conrail Engineer Interview, p. 5
[3] Conrail Engineer Interview, p. 5
[4] Conrail Engineer Interview, p. 5
[5] Conrail Engineer Interview, p. 5; Conrail Conductor Interview, p. 5
[6] Conrail Conductor Interview, p. 5
[7] Hearing Transcript, p. 29

After the Conductor inspected the bridge, he relayed information to the Engineer regarding his inspection. At approximately 6:56 a.m., the Engineer notified the Dispatcher of the issue with the red signal and asked for permission to proceed. In accordance with NORAC Rule 241, the dispatcher asked: "Is the bridge lined [and] locked for your movement there?"[8] The Engineer replied that the Conductor had walked the bridge and determined that it was lined and locked.[9] Following that exchange, the dispatcher gave the crew permission to proceed across the bridge.

The Engineer testified that as the train was traveling across the bridge, he observed that the bridge was locked and lined.[10] Nevertheless, after the two locomotives and first five cars cleared the bridge on the south side, the train began to derail. The derailment resulted in the breach of one car containing vinyl chloride, causing a release of vinyl chloride in a defined area near the derailment site.

4. <u>Scope of Conrail's Submission</u>

As noted above, Conrail does not feel it is appropriate at this time to comment on potential probable causes of the derailment. Conrail's submission will therefore be limited to issues regarding training and hazardous materials response, as those items were extensively discussed at the NTSB public hearing and significant information has been developed as part of the NTSB investigation. In this respect, Conrail appreciates and acknowledges that the emergency response to the derailment posed significant challenges to all parties involved. Conrail's submission is not intended to be critical of any of the personnel or agencies involved, but is intended to comply with the NTSB's directive to identify findings of fact and proposed

[8] Operations Factual Report, p. 2
[9] Operations Factual Report, p. 2
[10] Conrail Engineer Interview, p. 13

recommendations to reduce the likelihood of future incidents and mitigate the consequences of such accidents.

CONRAIL'S PROPOSED FINDINGS

Finding Number 1: NORAC Rule 241(d) sets forth the procedures and requirements for proceeding past a stop signal protecting a moveable bridge.

Conrail operates under the Northeast Operating Rules Advisory Committee (NORAC) operating rules.[11] The NORAC operating rules govern the operation of nearly 60 railroads in addition to Conrail.[12] NORAC Rule 241(d) sets forth the procedure for proceeding past a stop signal protecting a moveable bridge.[13] Rule 241(d) requires that the crew must contact the train dispatcher before proceeding.[14] The dispatcher cannot give permission to proceed unless a "qualified employee" determines that "[the rails are] properly lined and the bridge is safe for movement" and this information is relayed to the dispatcher.[15] This rule applies to all railroads, including Conrail, operating under the NORAC operating rules and is similar to operating rules that prevail throughout the country.[16]

Finding Number 2: Conrail's Engineer and Conductor were "qualified employees" in accordance with NORAC Rule 241(d).

Based on the training received by Conrail's Engineer and Conductor, they both were "qualified employees" in accordance with Rule 241(d). Federal Regulations set forth the qualifications and certification requirements for conductors, and define "qualified" as follows: "Qualified means a person who has successfully completed all instruction, training and examination programs required by the employer, and the applicable parts of this chapter and that

[11] Hearing Transcript, p. 52.
[12] Hearing Transcript, p. 52
[13] Hearing Transcript, p. 52
[14] NORAC Rule 241(d)
[15] NORAC Rule 241(d)
[16] NORAC Rule 241(d)

the person therefore may reasonably be expected to be proficient on all safety related tasks the person is assigned to perform."[17] A similar definition of "qualified" is found in the regulations pertaining to locomotive engineers.[18] Additionally, Federal Regulations also specify the factors a railroad must consider in determining whether a conductor has the requisite knowledge to safely perform as a conductor.[19] The specific factors listed in this regulation include completion of the railroad's training program, passing scores on testing, and demonstration of qualifications on the physical characteristics of the railroad, or its pertinent segments, over which that person will perform service.

Conrail has an extensive training program for its engineers and conductors, which consists of both formal training and on-the-job training. Engineers and conductors on the Penns Grove Secondary Line are trained and must be qualified on the physical characteristics of that territory, which includes the Paulsboro moveable bridge.[20] This training includes 4 weeks of classroom instruction and at least 50 weeks of on-the-job supervised training in the field.[21] Additionally, qualification testing for engineers and conductors includes questions regarding bridge operations.[22] Conrail also maintains an operational testing program to monitor the rules compliance of its employees operating trains.

The Engineer, Mark Mather, underwent this training process and was a "qualified employee" under Rule 241(d). He has been an engineer since 2004 and operated trains on the Penns Grove Secondary Line for 14 months prior to the accident.[23] He was current on his locomotive engineer certification and scored a 95 percent on his annual rules examination in

[17] 49 C.F.R. § 242.7
[18] 49 C.F.R. § 240.7
[19] 49 C.F.R. § 242.11
[20] Hearing Transcript, p. 113
[21] Hearing Transcript, p. 52
[22] Hearing Transcript, p. 52
[23] Hearing Transcript, p. 32

January of 2012.[24] The Engineer was familiar with the bridge's locking mechanism. As part of the Engineer's on-the-job training, he was shown how to inspect the locking mechanism and what to look for to determine whether the bridge was locked.[25] The Engineer had successfully completed all instruction, training and examination programs. During his initial interview with the NTSB, the Engineer properly described the locking mechanism and correctly described how to inspect it.[26] During the 12 months preceding the accident, the Engineer was observed by Conrail supervisors on 66 different days as part of the operational testing program and no rules violations were noted.[27] There were 46 entries showing that he properly complied with stop signals and 10 entries whereby he was found to have complied with a stop signal associated with a moveable bridge in accordance with Rule 241(d).[28]

The Conductor, Wilbert denOuden, was also a "qualified employee" under Rule 241(d). He was hired by Conrail on September 22, 2008 and he was promoted to conductor in August of 2009.[29] He testified that as part of his on-the-job training he was shown by a senior conductor what to look for when inspecting the locks on the Paulsboro moveable bridge.[30] He knew that it was his duty and responsibility as a conductor to walk moveable bridges and ensure that the locks are engaged when a signal stays red.[31] The Conductor testified that he was confident in his ability to inspect the locks.[32] During his NTSB testimony, the Conductor properly described the

[24] Operations Factual Report, p. 11
[25] Hearing Transcript, p. 38
[26] Conrail Engineer Interview, p. 8
[27] Operations Factual Report, p. 11
[28] Operations Factual Report, p. 11
[29] Operations Factual Report, p. 12
[30] Hearing Transcript, p. 29-30
[31] Hearing Transcript, p. 29-30
[32] Hearing Transcript, p. 29-30

locking mechanism and correctly described how to inspect it.[33] His most recent annual operating rules examination was on January 23, 2012 and he scored a 95 percent.[34]

Finding Number 3: Following the derailment, Conrail immediately notified local authorities of the incident and diligently assisted first responders in assessing the incident.

Conrail personnel immediately notified first responders of the incident and diligently assisted them with their response. At approximately 7:00 a.m. on November 30, 2012, Conrail's train crew notified the dispatcher of the emergency immediately upon realizing that cars had derailed.[35] The dispatcher then notified the Conrail trouble desk, who relayed that information to local authorities in Paulsboro.[36] After notifying the dispatcher of the situation, the Engineer and Conductor retrieved the official consist for the train, which included any notations made by the crew regarding possible movement of cars within the consist or other notes the crew had made that morning reflecting changes, if any, to the consist. They also grabbed other paperwork from the cab of the locomotive. They then got off the locomotive and headed in different directions.[37] They went to separate nearby roads to warn travelers not to come into the area.[38] The Conductor also called the Conrail Trainmaster, who was in the nearby area, and notified him of the accident.[39]

At approximately 7:02 a.m., just three minutes after the derailment, the Paulsboro Police Department was dispatched to the accident scene.[40] Officer 218 arrived at the accident scene at approximately 7:05 a.m.[41] He was flagged down by the Conductor at the East Commerce Street crossing, which was approximately 750 feet west of the derailment site. The Conductor told the

[33] Hearing Transcript, p. 29-30
[34] Operations Factual Report, p. 12
[35] Conrail Engineer Interview, p. 6
[36] Conrail Dispatcher Interview, p. 6
[37] Conrail Engineer Interview, p. 6-7
[38] Conrail Engineer Interview, p. 6-7
[39] Hearing Transcript, p. 28
[40] Timeline of Events and Communications, p. 1
[41] Timeline of Events and Communications, p. 1

officer that there may have been a hazardous chemical release and that the situation was "life threatening." [42] Officer 218 then radioed another officer and told him that there was a bridge collapse and there was a hazardous materials release.[43] Officer 218 stated in his interview: "From the conductor is the reason why I know [that it was] vinyl chloride…" [44] Officer 218 continued speaking to the Conductor who provided him with hazardous materials information from the train's consist. At 7:12 a.m., Officer 218 reported to county dispatch that the train was carrying ethanol alcohol and vinyl chloride.[45]

The Conrail Trainmaster arrived at the scene very shortly after the derailment.[46] Upon arrival, the Trainmaster ran to the derailment site for a quick assessment of the situation. He then ran back towards the Commerce Street crossing to locate the train crew and secure the consist.[47] He found the Conductor talking to Officer 218. At that point, he took possession of the consist and then instructed the Conductor to cut the locomotive away from the train and proceed to the Paulsboro yard.[48] This was done to guard against the possibility that the locomotive might ignite vapors that may have been released into the air. He then quickly ran back to the derailment site and used the consist to make a more detailed assessment as to what cars had derailed.[49] The Trainmaster noted that the first derailed car was alcohol and the last four were vinyl chloride.[50] He believed that one of those cars was punctured but he could not tell which one it was.[51] He immediately took this information to the first responders located at the

[42] Interview of Officer 1, p. 20
[43] Timeline of Events and Communications, p. 1
[44] Interview of Officer 1, p. 26
[45] Timeline of Events and Communications, p. 1
[46] Conrail Trainmaster Interview, p. 6
[47] Conrail Trainmaster Interview, p. 6
[48] Conrail Trainmaster Interview, p. 7
[49] Conrail Trainmaster Interview, p. 7
[50] Conrail Trainmaster Interview, p. 7
[51] Conrail Trainmaster Interview, pp. 7-8

Deputy Fire Chief's residence.[52] The Trainmaster estimates that it took him less than 10 minutes to make a determination of which cars had been derailed and relay that information to the first responders.[53] A radio dispatch from the Fire Chief shows that this information was relayed to him no later than 7:29 a.m.[54]

Conrail's Chief Risk Officer arrived at the accident scene sometime before 7:40 a.m.[55] As he drove toward the accident scene, he was able to observe the breached tank car and he wrote down the number of that car.[56] He then immediately secured the consist from the Trainmaster, identified the Fire Chief, and explained to him that cars 6 through 12 were derailed and that it looked like car number 9 was breached.[57] He then told the Fire Chief that car number 9 was a vinyl chloride car and relayed the information about vinyl chloride from the Emergency Response Guide attached to the consist.[58] He specifically noted that for a vinyl chloride release a half-mile evacuation radius was recommended if there was no fire.[59] The Chief Risk Officer then informed the Fire Chief that he was going to the north side of the bridge to ensure that there were no issues with the cars on that side.[60] This required driving back across the bridge to a crossing, from which point the Chief Risk Officer walked approximately one mile in and one mile back to check the train for other potential damage and hazardous materials releases. Once the Chief Risk Officer confirmed the other cars appeared un-damaged, he drove back to the command post to report on his observations.

[52] Conrail Trainmaster Interview, p. 7
[53] Conrail Trainmaster Interview, p. 27
[54] NTSB Timeline of Events and Communications
[55] Conrail Chief Risk Officer Interview, pp. 5-6
[56] Conrail Chief Risk Officer Interview, pp. 5-6
[57] Conrail Chief Risk Officer Interview, p. 6
[58] Conrail Chief Risk Officer Interview, p. 6
[59] Conrail Chief Risk Officer Interview, p. 6
[60] Conrail Chief Risk Officer Interview, pp. 6-7

The information contained in the consist was available for first responders immediately after the derailment. The only time the consist would not have been located in the immediate area of the first responders was when Conrail employees were utilizing it to check cars for damage and hazards. Moreover, by approximately 7:40 a.m., Conrail informed the Fire Chief which tank cars had derailed and what was in the derailed tank cars. Conrail employees retained the train's consist the remainder of the morning because they were using it in assisting with the response and because first responders never asked to take possession of it.[61] At approximately 10:00 a.m., the Trainmaster took it upon himself to make copies of the consist for distribution at the command post.

Conrail's assistance on the morning of the derailment was invaluable. As the Fire Chief testified with regard to the Chief Risk Officer: "And he was there, like I said, 7:30-ish, a half hour after the initial call went out, and he was helpful to us. He came up to me and said whatever you need, chief, you got."[62]

Finding Number 4: The emergency response training that Conrail provided to the crew was effective and played a significant role in assisting with the incident response.

The Conductor and the Engineer both received effective training from Conrail regarding the proper procedures for responding to a hazardous materials release and these procedures were well implemented following the derailment. Conrail's conductors and engineers receive annual training on the procedures for responding to an incident involving hazardous materials.[63] These procedures were also outlined in writing in Conrail's Hazardous Materials Instructions for Rail (HM-1), which was given to the crew and carried on the train.[64] The hazardous materials response procedures provide that one of the crew's primary goals following an incident, after

[61] Conrail Chief Risk Officer Interview, p. 15
[62] Hearing Transcript, p. 174
[63] Hearing Transcript, pp. 98-99
[64] Conrail Hazardous Materials Instructions for Rail (HM-1); Hearing Transcript, p. 171

getting to a place of safety, is to notify first responders and provide them with as much information as possible.[65] The crew is trained to take the consist off of the train to help first responders identify the chemicals in any breached tank car and any tank cars surrounding it.[66] They are also instructed to assist in keeping members of the general public away from the incident site.[67] Conrail's crews are tested annually on the procedures for responding to such an incident.[68]

The Conductor and Engineer implemented these procedures very well on the day of the accident. As previously noted, following the derailment the crew immediately notified the dispatcher of the situation. They then retrieved the consist and other paperwork from the locomotive cab and got off the locomotive. They went in separate directions to different nearby roads and warned travelers not to come into the area.[69] The Conductor, who was at the East Commerce Street crossing, was able to flag down a Paulsboro police officer and provide him with hazardous materials information from the train's consist.[70] These actions of the Conductor and the Engineer not only sped up the response by helping first responders to identify the hazardous materials at issue, they also protected citizens by directing them away from the derailment site.

<u>Finding Number 5</u>: Different communication channels used by the police and fire departments potentially delayed the relay of the information provided by Conrail employees regarding the chemicals involved in the derailment.

Conrail acknowledges the challenges faced by first responders on the morning of the derailment. Nevertheless, the fact that the Paulsboro Police Department and Paulsboro Fire

[65] Hearing Transcript, pp. 98-99
[66] Hearing Transcript, pp. 98-99
[67] Hearing Transcript, pp. 98-99
[68] Hearing Transcript, p. 138
[69] Conrail Engineer Interview, p. 6-7
[70] Interview of Officer 1, p. 26

Department operated on different radio channels and the dispatcher was not relaying information between the two entities created issues with respect to the sharing of information obtained in the first few minutes following the derailment. In turn, this likely contributed to some confusion in the early moments of the emergency response.

At approximately 7:01 a.m., the Deputy Fire Chief was aware that a tank car had been breached and was leaking chemicals.[71] By 7:06 a.m., Officer 218 was notified by the Conductor that there were hazardous chemicals on the train and that the situation was "life threatening."[72] Officer 218 relayed this information about the hazardous materials over the police radio channel.[73] By 7:09 the Deputy Fire Chief identified the placard from one of the derailed cars as 1086, which is vinyl chloride.[74] By 7:12 a.m., the Conductor had informed Officer 218 that the derailed cars contained ethanol and vinyl chloride.[75] He also gave Officer 218 the placard numbers of 1987 and 1086.[76] This information was also relayed over the police radio channel. However, the Paulsboro Fire Department and Police Department were operating on separate radio communication channels and they had no direct line of communication between them.[77] As a result, information obtained by the Police Department was not being properly relayed to the Fire Department and vice versa.

If there had been common frequencies used by the Police Department and the Fire Department, the Deputy Fire Chief would have known by 7:06 a.m., that a hazardous chemical may have been released.[78] By no later than 7:12 a.m., the Conductor had already relayed the placard numbers for the derailed tank cars to Officer 218, as well as what was in the derailed

[71] NTSB Timeline of Events and Communications
[72] NTSB Timeline of Events and Communications; Interview of Officer 1, p 6.
[73] NTSB Timeline of Events and Communications
[74] NTSB Timeline of Events and Communications
[75] NTSB Timeline of Events and Communications; Interview of Officer 1, p. 6.
[76] NTSB Timeline of Events and Communications;
[77] Hearing Transcript, p. 157
[78] NTSB Timeline of Events and Communications

tank cars. Nevertheless, the Fire Chief arrived on scene at approximately 7:17 a.m., and at 7:25 a.m., reported across the radio that the derailed cars contained "bad stuff" but that they "can't get the placards" to determine what is in the cars.[79] It was not until 7:29 a.m., when the Conrail Trainmaster spoke face to face with him that the Fire Chief reported that the derailed cars contained vinyl chloride and requested guidance on how to handle vinyl chloride.[80] Moreover, at 7:29 the County dispatcher also informed the Fire Chief that vinyl chloride poses a significant health and safety risk. Yet at 7:30, Paulsboro police officers reported that the fog they were encountering was "non-toxic at this time."[81]

With respect to the channels of communication, the Police Chief testified: "Very early on -- well, you have to understand the police operate on one channel; the fire department operates on a different channel. So the communications very early on, we didn't have that direct line of communication."[82] To ensure accurate and timely relay of information between local fire and police departments, they should operate on the same radio frequency when responding to a hazardous materials spill. By operating on the same radio frequency in responding to a hazardous materials event, the incident commander and first responders will be able to ensure that they are fully aware of the pertinent facts concerning the situation. To the extent that other considerations prevent the fire and police departments from operating on the same frequency, Conrail recommends that a dispatcher or other trained local official be responsible for monitoring all communications by both departments and relaying pertinent information between them in real time.

[79] NTSB Timeline of Events and Communications
[80] NTSB Timeline of Events and Communications
[81] NTSB Timeline of Events and Communications
[82] Hearing Transcript, p. 157;

<u>Finding Number 6</u>: Conrail provided advice to first responders, but only the Incident Commander had the authority to make decisions concerning the response to the derailment.

Conrail had no authority for establishing evacuation zones, requiring use of personal protective equipment, or making any other decisions in response to the accident. That authority rests with the incident commander, which is the local fire chief for a hazmat incident.[83] Conrail did assist first responders by relaying information as to the recommended evacuation radius for a vinyl chloride release.[84] At approximately 7:40 a.m., Conrail's Chief Risk Officer informed the Fire Chief that the chemical that they were dealing with was very likely vinyl chloride and that the Emergency Response Guide recommends a half mile evacuation zone for a vinyl chloride release.[85] The initial evacuation radius for the general public was just three blocks around the derailment site. However, due to resource constraints the Fire Chief chose not to follow this recommendation to expand the evacuation zone to a half mile at that time.[86] A half mile evacuation would have displaced approximately 3,000 people.[87] Yet Paulsboro only has one local bus and one school bus to use for evacuation of Paulsboro residents in spite of the fact that many citizens do not have personal automobiles.[88] According to the Fire Chief, "We just didn't have the resources to be able to go, okay, everybody get out – so we did a shelter in place." [89] The Chief believed that it was safer for people to shelter-in-place rather than attempt an evacuation.

The Fire Chief also chose not to relocate the incident command center until later in the morning or require the use of personal protective equipment (PPE). Although Conrail was

[83] Paulsboro EOP, Annex H; N.J.S.A. App. A:9-43.3
[84] Hearing Transcript, pp. 257-258, 333-334,
[85] Hearing Transcript, p. 174
[86] Hearing Transcript, pp. 140, 163-164
[87] Hearing Transcript, p. 163
[88] Hearing Transcript, pp. 140, 163-164
[89] Paulsboro Fire Chief Interview, p. 15

providing advice and recommendations to first responders as to the nature of vinyl chloride and proper safety precautions to be taken, the authority to move the command center rested with the Fire Chief.[90] The initial command center for first responders had previously been set up less than 50 yards from the derailment site. Even after it was confirmed that vinyl chloride had been released, the command center remained approximately 50 yards from the derailment site until approximately 8:30 a.m.[91]

Finding Number 7: Statements made by the New Jersey Department of Environmental Protection following the derailment likely contributed to confusion in the community.

The New Jersey Department of Environmental Protection (New Jersey DEP) held a press conference on the morning of the derailment that likely contributed to confusion among citizens. The Public Information Officer for the New Jersey DEP held a press briefing at 10:51 a.m. on the morning of the derailment during which he issued a statement on behalf of New Jersey DEP informing the public that the airborne hazard had already dissipated.[92] In contrast, a situation report from the EPA from approximately 11:00 a.m., stated: "New Jersey DEP is conducting air monitoring activities with hand held photoionization detectors. Readings indicate high levels of vinyl chloride over a half mile away from the derailment scene."[93]

The Director of Emergency Response was the senior member of the New Jersey DEP at the accident scene. He arrived at the scene at approximately 9:15 a.m., yet the comments made by the Public Information Officer were not authorized by or coordinated with him.[94] In fact, the Director of Emergency Response testified that he had no knowledge of the press conference until

[90] Paulsboro EOP, Annex H
[91] NTSB Timeline of Events and Communications
[92] Hearing Transcript, p. 344
[93] Hearing Transcript, p. 346
[94] Hearing Transcript, pp. 335, 346

well after it had occurred.[95] He believes that the Public Information Director obtained the information he reported at the press conference from the "incident command", but could not say who specifically provided this information.[96] He could only state that the Public Information Officer was "relying on information that he thought he understood at the time."[97]

Conrail believes that any statements related to the threat posed by the release of hazardous materials should be reviewed and approved by the incident commander in order to avoid the inadvertent spread of erroneous or inconsistent information to the general public. Although it is important to ensure that the general public gets timely information as to the nature of the threat, it is of paramount importance that information communicated is accurate and consistent. The incident commander would be the person best equipped to ensure the accuracy of the information in a proposed released. As a further protection, any such statements to the public should also be reviewed and approved by the senior on-scene official for the agency releasing the statement.

Finding Number 8: Lack of oversight by the Office of Emergency Management contributed to Paulsboro's outdated emergency operation plans.

Prior to the derailment, the Town of Paulsboro's Emergency Operations Plans (EOP) had not been reviewed, updated, and certified as required by New Jersey Law. The Paulsboro EOP in place at the time of the derailment was last updated and reviewed by the State Office of Emergency Management in July of 2006. Under the New Jersey Civilian Defense and Disaster Control Act, the EOP should have been updated by Paulsboro and reviewed by the Office of Emergency Management every four years.[98] Yet, when Paulsboro's EOP expired in 2010, no

[95] Hearing Transcript, pp. 345-46
[96] Hearing Transcript, p. 344
[97] Hearing Transcript, p. 344
[98] Hearing Transcript, p. 347; N.J.S.A. App. A:9-30, et. seq.

new plan was developed or submitted for recertification.[99] The Office of Emergency Management took no action to notify Paulsboro that its plan had lapsed and that a new one was due. Moreover, it had no procedures to monitor which municipalities' plans had lapsed or were delinquent.[100] Instead, they simply relied upon "county partners" to do "some of that oversight."[101]

The Office of Emergency Management is tasked with ensuring that the EOPs of municipalities are thorough and do not conflict with state plans. However, an official from the Office of Emergency Management testified that they are unable to "get into the weeds on every municipal plan."[102] Instead, they rely heavily on the counties as "clearinghouses" to review the substance of the plan.[103] When an EOP is forwarded from the County, the Office of Emergency Management makes no further inquiry and simply approves the plan if the county has recommended approval.[104] The Office of Emergency Management claims that it lacks the manpower and resources to conduct any audits or verification of the capabilities listed in the municipalities' EOPs.[105] The office is responsible for reviewing 268 plans with just eight personnel who also are responsible for responding to incidents all across the state.[106] Paulsboro's lack of an updated and certified EOP may have contributed to the disjointed communication among the various entities that responded to the accident and Paulsboro's inability to evacuate citizens.

The State of New Jersey should require that the Office of Emergency Management conduct more than a cursory review of the EOPs submitted by local municipalities. This review

[99] Hearing Transcript, p. 382
[100] Hearing Transcript, p. 350
[101] Hearing Transcript, p. 350-351
[102] Hearing Transcript, p. 348
[103] Hearing Transcript, p. 348
[104] Hearing Transcript, p. 349
[105] Hearing Transcript, p. 349
[106] Hearing Transcript, p. 350

should not only consider whether the plan is thorough and sufficient on paper, but it should also consider whether the local agencies have the training and resources necessary to carry out the plan. The Office of Emergency Management should also have a system in place to monitor which EOPs are scheduled to be reviewed each year and ensure that they are updated and reviewed in a timely fashion. This system should not only identify which plans are delinquent, but it should also identify which plans are scheduled to be updated and reviewed in the next 6 months. In order to conduct such a thorough monitoring and review of all municipalities throughout New Jersey, the State must provide the Office of Emergency Management with the tools and resources necessary to fully carry out their duties.

Finding Number 9: Prior to the derailment, Conrail offered first responder training that included hands on training with tank cars.

Conrail offers free emergency response training to first responders, which includes classroom training regarding general railroad safety and hands on training with tank cars.[107] The training with tank cars is part of the TRANSCAER operations program that brings Dow, Dupont, or CSX tank cars into several locations in New Jersey, Pennsylvania, and New York for training.[108] Conrail also offers tabletop emergency response drill for communities.[109] Conrail has been offering this training for more than 25 years.[110] This training was available to the Paulsboro Fire Department prior to the derailment, but they did not take part in any such training prior to the derailment in spite of the fact that the railroad is a specific hazard listed in the Paulsboro EOP.[111] To their credit, the Fire Department stated this event was a wakeup call and

[107] Hearing Transcript, p. 180
[108] Hearing Transcript, p. 180
[109] Hearing Transcript, p. 180
[110] Hearing Transcript, p. 181
[111] Hearing Transcript, p. 182; Paulsboro EOP, Annex H

has taken this training with Conrail subsequent to the derailment.[112] The Fire Chief praised the training and stated "[it] was probably the best training I've had anywhere." [113]

Fire chiefs, police chiefs, and any other potential incident commanders in New Jersey should take the railroad's emergency response training at least once every two years if a railroad operates in their jurisdiction. This training would help ensure that those incident commanders that are leading other first responders are well equipped to deal with specific issues presented by railroad accidents.

Finding Number 10: The U.S. Coast Guard did not make its plume modeling available to the Incident Commander in a timely fashion.

The U.S. Coast Guard requested a plume model from the National Oceanic and Atmospheric Administration on the morning of the derailment. According to the Coast Guard Captain Moore, they received the plume model sometime between 10:00 a.m. and 11:00 a.m.[114] The Captain testified at the hearing that the plume model was "tremendously valuable" in terms of evaluating the exposure and the risk issues that they faced.[115] However, according to the Fire Chief, the Coast Guard did not share the plume model with him until sometime between 1 p.m. and 3 p.m.[116] Conrail believes that the plume model should have been shared with the fire chief and other members of Unified Command much earlier.

Finding Number 11: Any alleged failure by Conrail to timely report the hazardous materials event to the New Jersey DEP played no material role in affecting the emergency response.

Conrail disputes any allegations by the State of New Jersey that it violated the notification provisions of the Air Pollution Control Act, the Spill Compensation and Control Act,

[112] Hearing Transcript, p. 182
[113] Hearing Transcript, pp. 191-192
[114] Hearing Transcript, pp. 342-343
[115] Hearing Transcript, pp. 342-343
[116] Hearing Transcript, p. 372-373

or any rules enacted thereunder.[117] In fact, the Spill Compensation and Control Act notification requirements do not apply to vinyl chloride releases.[118] Even if they did, the evidence reflects that NJDEP had notice of the incident very early following the derailment, and that Conrail promptly provided notice once it determined the nature of the chemical that had been released.

The purpose of the Air Pollution Control Act's reporting requirements is to ensure that "help can be dispatched, evacuation started, traffic patterns rerouted, and local police, fire, hospitals, and ambulance squads…notified."[119] Within minutes of the derailment, the Paulsboro Fire Department, the Paulsboro Police Department, the Gloucester County Hazmat Team, the Paulsboro Refining Hazmat Team, the U.S. Coast Guard, and the New Jersey Office of Emergency Management were all notified of the fact that a derailment had occurred and that hazardous materials were involved.[120] By approximately 7:40 a.m., Conrail had confirmed that vinyl chloride was released and immediately informed the incident commander that the Emergency Response Guide recommended an evacuation zone of a half mile.

Additionally, New Jersey DEP was informed of the event at 7:40 a.m., via an email report from the New Jersey Regional Operational Intelligence Center (NJROIC).[121] The Director of Emergency Management for DEP also received phone calls from a "variety of sources" reporting the incident as early as 7:45 a.m.[122] New Jersey DEP also received a notice of the incident from the National Response Center (NRC) via its emergency response hotline at 7:56 a.m. [123] That notice from the NRC informed DEP that "at least one of the tanker cars holding

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[117] N.J.S.A. 26:2C-19(e); N.J.S.A. 58:10-23.11; N.J.A.C. 7:1E-5.3
[118] N.J.A.C. 7:1E-1.7;7:1E App. A
[119] *New Jersey Dep't of Envtl. Prot. v. Alden Leeds, Inc*., 708 A.2d 1161, 1169 (1998)(quoting *New Jersey Dep't of Envtl. Prot. & Energy v. Occidental Chem. Corp*., 672 A.2d 1167, 1169 (App. Div. 1995))
[120] NJ DEP Timeline and After Action Report, p. 2
[121] NTSB Timeline of Events and Communications; NJDEP Timeline and After Action Report, p. 2
[122] Hearing Transcript, p. 367
[123] NJ DEP Timeline and After Action Report, p. 2; NJ DEP Report of Incident 451136

1086 vinyl chloride has been compromised."[124] The fact that Conrail allegedly did not directly report the incident through the New Jersey DEP's emergency response hotline played no role in the response to the derailment. Although the Director of Emergency Management testified that if the agency had been contacted sooner its personnel could have been "on the road" sooner, it appears clear that this would not have made any practical difference since the first DEP member responded at approximately 9:00 a.m. and did not report any air monitoring results in spite of the fact that he was taking measurements for personal protection.[125] In fact, it was not until noon that New Jersey DEP even started developing an air monitoring plan that it could start implementing "down the road within the next few hours."[126]

CONCLUSION

On November 30, 2012, the Conrail train crew and dispatcher followed long-established NORAC Operating Rules in connection with the train's movement over the Paulsboro moveable bridge. Based on their inspection of the bridge, the crew firmly believed the bridge was safe for movement at the time they began to cross. Conrail deeply regrets the incident.

Following the derailment, Conrail immediately and decisively responded, offering extensive support both to the first responders and members of the community impacted by the derailment. Conrail acknowledges and appreciates the professionalism and hard work by the volunteer responders and others following the incident.

Conrail pledged to assist those in the community impacted by the derailment, and did so with the establishment of an assistance center within the first few hours following the derailment. Conrail also has devoted countless man-hours and extensive financial resources to aid in

[124] NJ DEP Report of Incident 451136
[125] Hearing Transcript, pp. 404-405
[126] Hearing Transcript, p. 345

responding to the derailment and assisting those impacted. Conrail continues to do so even today.

Conrail has been privileged to work with the NTSB and other party members in the course of this investigation. Conrail thanks the NTSB Board, staff and other party members for their tireless efforts in connection with this investigation.