

U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Midville Derailment - Removal Polrep
Final Removal Polrep



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region IV

Subject: POLREP #3
Final
Midville Derailment
B4D4
Midville, GA
Latitude: 32.8170432 Longitude: -82.2183323

To:
From: Randy Nattis, OSC
Date: 4/21/2011
Reporting Period: 0800 NOV 22 - 1200 NOV 23

1. Introduction

1.1 Background

Site Number:	B4D4	Contract Number:	
D.O. Number:		Action Memo Date:	
Response Authority:	CERCLA	Response Type:	Emergency
Response Lead:	PRP	Incident Category:	Removal Action
NPL Status:	Non NPL	Operable Unit:	
Mobilization Date:	11/21/2010	Start Date:	11/21/2010
Demob Date:	11/23/2010	Completion Date:	11/23/2010
CERCLIS ID:		RCRIS ID:	
ERNS No.:		State Notification:	
FPN#:		Reimbursable Account #:	

1.1.1 Incident Category - Transportation-related emergency response

1.1.2 Site Description - The derailment occurred at milepost S95.5 near the Midville city limits in Burke County, Georgia, between the Jones Street (SR-56) crossing and the North Herndon Road crossing. This section of track is south of and runs parallel to Lee Street (SR-17). There are no houses within 1,000 ft of the derailment location. However, most of the city of Midville, with approximately 457 residents, lies within one mile of the derailment location. The east and west ends of the derailment were accessible from Lee Street (SR-17) through two pathways.

1.1.2.1 Location - Midville, GA

1.1.2.2 Description of Threat - toxic and corrosive materials in damaged tank cars

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results:

At approximately 1707 on November 21, 2010, 38 cars of a Norfolk Southern freight train derailed in Midville, Burke County, Georgia resulting in the release of hazardous material (hazmat) into the surrounding environment. According to incident reports filed with the National Response Center (NRC), hazmat contained in some of the derailed cars included: one car containing methyl ethyl ketone (MEK) (with railcar identification label - SCMX 4309); three cars containing sodium hydroxide solution (TILX 160381, GATX 90681, TCIX 6193); and five cars containing liquid chlorine residue (UTLX 900269, OLNK 117086, OLNK 8077, OLNK 114053, OLNK 8075). Residue refers to the hazmat remaining in the car after its contents have been unloaded and before the car is refilled or cleaned of hazmat and purged to remove any hazardous vapors. In addition, cars containing sodium carbonate peroxyhydrate (TCMX 450166), hexamethylenediamine, anhydrous ammonia, potassium chloride, and sulfur were also identified in the derailment according to the NRC incident reports.

On November 21, EPA On-Scene Coordinators (OSC) Randy Nattis and Terry Stilman mobilized to the site to provide technical support to the Incident Commander and monitor cleanup efforts. Norfolk Southern was in the process of mobilizing contractors and equipment to respond to the derailment and began to assess the situation. Initial information indicated that the railcar containing MEK was the only car that was confirmed to be leaking. At approximately 0050 on November 22, Tetra Tech START arrived at the site to support OSCs Nattis and Stilman, and began

calibrating air monitoring equipment and installing chlorine and ammonia sensors on the AreaRAE units.

At approximately 0345 on November 22, EPA, Tetra Tech START, and Hepaco representatives made an entry into the eastern end of the derailment area using level B personal protective equipment (PPE) to conduct air monitoring and assess the condition of the MEK and chlorine railcars (see Figure 3 of Appendix A). During the entry, Hepaco personnel identified a 3- to 5-inch cut in the hull of one of the chlorine railcars (OLNX 114053), which was situated adjacent to the MEK rail car and two of the other chlorine railcars. Hepaco personnel reported a chlorine vapor concentration of 30 parts per million (ppm) at the cut. Tetra Tech START observed a maximum concentration of volatile organic compounds (VOC) up to 300 ppm (using a MultiRAE) at a distance of approximately 15 feet from the chlorine railcar. Upon exiting the eastern derailment area, personnel noted an organic odor, presumably MEK, and measured VOC concentrations up to 3 ppm.

At approximately 0800 on November 22, EPA and Tetra Tech START met with CTEH representatives to discuss air monitoring activities and coordinate placement of AreaRAE units at fixed monitoring locations along the perimeter of the derailment area to protect public health and safety. Each AreaRAE unit included sensors for chlorine and VOCs as well as other parameters such as ammonia (NH₃), oxygen (O₂), and lower explosive limit (LEL). Based on discussions, AreaRAE units were placed at the following locations:

- West of the derailment area on the northern side of the tracks near the intersection of 1st Avenue and Alice Street (Tetra Tech START location).
- Northeast of the derailment area at the equipment staging area near the Faith Baptist Church (Tetra Tech START location).
- Northwest of the derailment area on the north side of Route 17 (CTEH location).
- Immediately east of the derailment area along the tracks (CTEH location).
- South of the derailment area along Field Road (CTEH location).
- West of the derailment area on the southern side of the tracks along Field Road (CTEH location).

2. Current Activities

2.1 Operations Section

2.1.1 Narrative - After patching the cut in the damaged chlorine railcar (OLNX 114053), Norfolk Southern uprighted the car and staged it along the northern side of the tracks to facilitate depressurization of the remaining residue. A sodium hydroxide solution was used to depressurize the contents of the car by converting the residual chlorine into a bleach solution, an operation referred to as sparging. Initial readings of the damaged railcar indicated a pressure of approximately 150 pounds per square inch (psi) inside the railcar. The objective of the sparging operation was to reduce the pressure gradually to below 20 psi, and then use air pumped into the railcar to clear out the remaining chlorine vapors. Sparging operations were estimated to require approximately 12 to 24 hours.

At approximately 2200 on November 22, OSC Nattis directed Tetra Tech START to the eastern end of the derailment area, where a fire had ignited. Personnel observed flames approximately 20 feet tall in the vicinity of the MEK railcar as well as the damaged chlorine railcar (OLNX 114053) that was actively being depressurized. The fire also burned in a small wooded area around the MEK railcar, where MEK had previously leaked into soil on the northern side of the tracks. Air monitoring results obtained during the incident did not indicate any significantly elevated concentrations at the fixed perimeter locations. Subsequent roving air monitoring conducted at 0141 on November 23 while the fire still smoldered indicated chlorine concentrations up to 0.2 ppm and VOC concentrations up to 2 ppm at a distance of approximately 20 yards from the fire.

At approximately 0630 on November 23, an operations briefing was held during which Norfolk Southern reported that crews had moved the potassium chloride (salt) railcars and gained access to the sodium hydroxide railcars. Based on the weight of the sodium hydroxide railcars, Norfolk Southern determined that only minimal amounts of the material had apparently leaked. OSC Nattis measured the pH of some small pools of black liquid in the area at approximately 12 to 13. Norfolk Southern subsequently constructed soil berms along the northern side of the railroad tracks to provide a temporary containment and staging area for the sodium hydroxide railcars. By approximately 1020 on November 23, Norfolk Southern had completed moving and staging the three sodium hydroxide railcars.

At approximately 1100 on November 23, Norfolk Southern had cleared all railcars from the track and continued to place ballast and install pre-constructed track panels on the right-of-way to get the line running again.

2.1.2 Response Actions to Date:

- The MEK railcar, which was empty, had been staged on plastic for future transportation; small fires in the area where the fire occurred were still burning, but were being monitored by CTEH and site personnel.
- Chlorine sparging operations had reduced the pressure inside the damaged railcar (OLNX 114053) to approximately 19 psi. The four remaining intact chlorine railcars would be loaded onto a flatbed car for transport within 10 to 14 days.
- The three sodium hydroxide railcars were secured inside the bermed area along the northern side of the tracks and arrangements were in progress to transfer their contents for transportation to Olin Corporation (Augusta, Georgia). Contaminated soil in the vicinity of the

sodium hydroxide railcars was being excavated to native material and placed into rolloff containers for future disposal.

- Although the evacuation of local residents was to be lifted, CTEH would continue to conduct air monitoring at the site during the remainder of the response activities.

Air monitoring Activities:

Based on the hazardous materials that were initially reported to be involved in the derailment according to the NRC incident reports, air monitoring concerns focused on chlorine, VOCs (MEK), and ammonia. A combination of one MultiRAE and four AreaRAE units were used by Tetra Tech START to measure these parameters as well as percent oxygen and lower explosive limits. The Acute Exposure Guideline Levels (AEG), specifically AEG-1 for chlorine, ammonia, and VOCs were used as threshold values for comparison of air monitoring results. In addition, threshold values for LEL and O2 were obtained from the Occupational Safety and Health Administration (OSHA) Standards, 29 CFR 1910.146(b), that define a hazardous atmosphere.

Maximum readings obtained at roving locations were detected during the level B entry made from the eastern end of the derailment area to assess the condition of the damaged chlorine railcar (OLNX 114053). During this entry, chlorine concentrations up to 30 ppm were measured by Hepaco representatives at the cut observed in the side of the railcar and VOC concentrations up to 300 ppm were measured by Tetra Tech START in the vicinity of the railcar, presumably attributable to the MEK that was spilled nearby.

2.1.3 Enforcement Activities, Identity of Potentially Responsible Parties (PRPs) - NS has accepted responsibility for accident and have begun to remedy the impact.

2.1.4 Progress Metrics

<i>Waste Stream</i>	<i>Medium</i>	<i>Quantity</i>	<i>Manifest #</i>	<i>Treatment</i>	<i>Disposal</i>

2.2 Planning Section

2.2.1 Anticipated Activities - GA EPD Solid waste program to assume lead for removal oversight and Health and Safety for the remainder of the site.

2.2.1.1 Planned Response Activities - GA EPD will explore any potential soil contamination due to the spilled chemical during the derailment. U.S. EPA will have no further involvement.

2.2.1.2 Next Steps - EPA and START will demobilize

2.2.2 Issues - Soil contamination

2.3 Logistics Section

No information available at this time.

2.4 Finance Section

No information available at this time.

2.5 Other Command Staff

No information available at this time.

3. Participating Entities

3.1 Unified Command

Midville FD (IC)

Burke County EMA

Midville PD

U.S. EPA OSC - Randy Nattis, Terry Stilman and Stephen Ball

GA EPD

Federal Railroad Administration

3.2 Cooperating Agencies

4. Personnel On Site

Midville Fire Department

Midville Police Department

Burke County EMA
Georgia Environmental Protection Agency (GA EPD)
U.S. EPA Region 4
Tetra Tech START - EPA Contractor
Norfolk Southern (NS)
Center for Toxicology and Environmental Health (CTEH) - Consultant for NS
Hepaco - Cleanup contractor for NS
Eagle / SWS - Cleanup contractor for NS
Federal Railroad Administration

5. Definition of Terms

No information available at this time.

6. Additional sources of information

No information available at this time.

7. Situational Reference Materials

No information available at this time.