

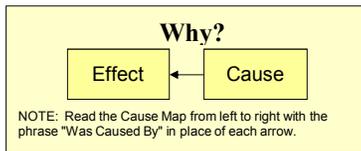
# 1 Problem

What	Problem(s)	Crude oil train derailment
When	Date	February 16, 2015
	Time	1:30 PM
Where	Different, unusual, unique	Heavy snow, new design of train cars
	Facility, site	Train tracks near Mount Carbon, WV
	Unit, area, equipment	Freight train
	Task being performed	Transporting crude oil from North Dakota to Virginia

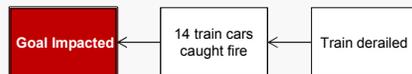
Impact to the Goals	
Safety	1 injury
Environmental	Oil spilled into creek and ground
Customer Service	More than 100 people evacuated
Regulatory	Formal investigation
Production/ Schedule	Road adjacent to train tracks closed
	Train tracks closed to traffic
Property/ Equipment	Major damage to train
	Residence destroyed by fire
Labor/ Time	Significant emergency response/ investigation required

"This accident is another reminder of the need to improve the safety of transporting hazardous materials by rail. That is why this issue is included on our Most Wanted List. If we identify any new safety concerns as a result of this derailment, the Board will act expeditiously to issue new safety recommendations."

- Christopher A. Hart, NTSB Acting Chairman



Basic Level Cause Map - Start with simple Why questions.



Basic Cause-and-Effect

The significant aftermath of this derailment is known, but little has been released about what specifically caused the train to derail. It was snowing heavily at the time of the accident, which may have played a role. Data from the digital data recorder has shown that the train was not speeding at the time of the accident.

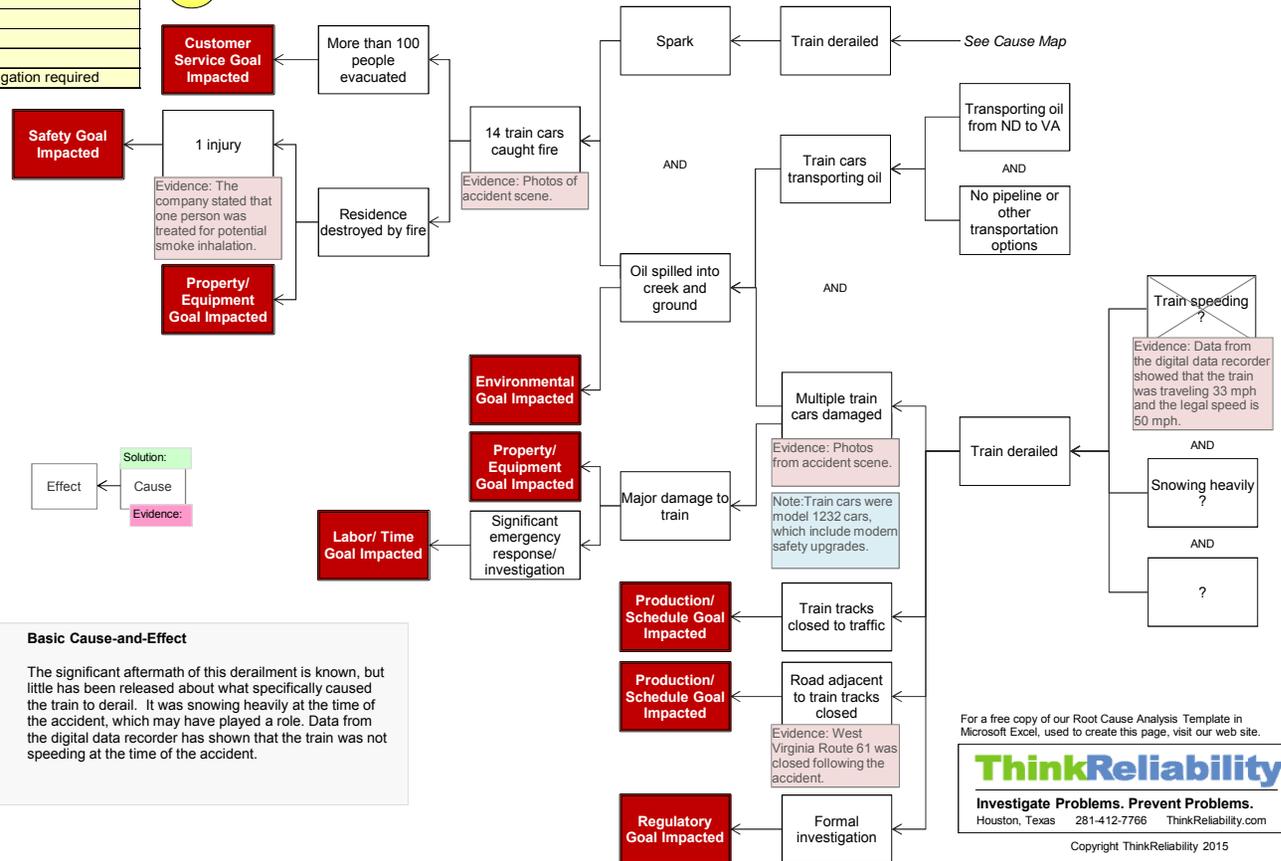
# TRAIN DERAILS IN WV

Cause Map

## Investigation into the fiery accident underway

On February 16, 2015, a train hauling 109 tank cars of crude oil derailed in Mount Carbon, West Virginia. It has been reported that 27 tank cars in the train derailed. Some of the tank cars were damaged and released an unknown amount of crude oil, resulting in a large fire. Hundreds of families in the surrounding area were evacuated, but only one injury was reported.

## 2 Analysis



Cause Mapping is a Root Cause Analysis method that captures basic cause-and-effect relationships supported with evidence.

### CAUSE MAPPING

Problem Solving • Incident Investigation • Root Cause Analysis

- Step 1 Problem** - What's the Problem?
- Step 2 Analysis** - Why did it happen?
- Step 3 Solutions** - What will be done?

For a free copy of our Root Cause Analysis Template in Microsoft Excel, used to create this page, visit our web site.

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