



MONTANA EMERGENCY SERVICES BULLETIN



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(U) TRANSPORTING BAKKEN OIL

(U) In response to the request made on March 1, 2014 from firefighters at the Montana Fire Services' Mutual Aid meeting to the Montana All Threat Intelligence Center, the following is information on Bakken oil transported by rail.

(U) Capacity

(U) One rail tanker holds 30,000 gallons or 714 barrels of crude oil. (Source – Association of American Railroads, December 2013).

(U) Testing

(U) Crude oil and other hazardous liquids are considered Class 3 non-flammable hazardous materials; these materials are further broken down by packing group (PG); higher hazard commodities are classified in PG I and II, while low hazard commodities are Class 3. The PGs mean that the materials' flashpoint is below 73 degrees Fahrenheit and, for PG I materials, the boiling point is below 75 degrees Fahrenheit, meaning they pose significant fire risk if accidentally released. On January 2, 2014, U.S. Pipeline and Hazardous Materials Safety Administration provided notice that light sweet crude such as Bakken crude is typically assigned a PG of I or II. (Source - <http://www.downstreamtoday.com>, 21 January 2014)

(U) On February 25, 2014, the Secretary of Transportation issued an Emergency Restriction/Prohibition Order "requiring persons who offer bulk quantities of petroleum crude oil for transportation in commerce by rail in rail tank cars to ensure that the material is properly tested...and classed...[and] to treat Class 3 petroleum crude oil as a Packing Group (PG) I or PG II hazardous material only...prohibiting persons who ordinarily offer petroleum crude for shipment...from reclassifying...to circumvent the requirements of...[the] order." (Source – United States Department of Transportation)

(U) Transportation

(U) Bakken crude oil is transported in Department of Transportation (DOT) DOT-111 tank cars. DOT-111 tank cars are non-pressurized tank cars designed to carry a variety of liquid commodities, including hazardous materials and non-hazardous materials. In 2009, the American Association of Railroads (AAR) reexamined the DOT-111 tank car regulations and standards. By 2011, a new standard for construction of the DOT-111 tank car was established, including enhanced end-of-tank protection in the form of head shields, thicker

EMERGENCY SERVICES BULLETIN

tank steel or jackets, and top fittings protection. (Source - <http://www.downstreamtoday.com>, 21 January 2014)

(U) AAR estimated that approximately 92,000 tank cars are being used to transport flammable liquids, with approximately 78,000 of those requiring retrofit or phase out based on its proposal. Another 14,000 newer tank cars that comply with the latest industry standards also will need certain retrofit modifications under AAR's proposal. (Source - <http://www.downstreamtoday.com>, 21 January 2014)

(U) Railroads agreed with the DOT in February 2014 to slow crude-carrying trains by 10 miles per hour to 40 mph near 46 high threat urban areas as well as increase track inspections and install safety sensors about every 40 miles on oil routes. (Source - <http://www.claimsjournal.com>, 5 March 2014)

(U) **Past Incidents of Concern**

(U) On December 30, 2013, a westbound grain train derailed 13 cars near Casselton, ND. Simultaneously, an eastbound petroleum crude oil train reduced its speed and collided with the derailed grain train resulting in the derailment of 21 cars of the petroleum crude oil train. Ruptured tank cars ignited causing an explosion, 1,400 people were evacuated and the derailment further caused an estimated \$8 million in damages. (Source – USDOT)

(U) On November 8, 2013, a 90-car petroleum crude oil train originating in North Dakota derailed in Aliceville, AL. More than 20 cars derailed and at least 11 cars ignited causing an explosion and fire. No injuries were reported, but oil escaped and damaged a wetlands area. The damages are estimated at \$3.9 million. (Source – USDOT)

(U) On July 6, 2013, an unattended freight train carrying crude oil rolled down a descending grade and derailed in Lac-Megantic, Quebec, Canada. The derailment caused multiple explosions and fires taking the lives of forty-two people and presumed death of five more. The town's population of 2,000 had to be evacuated and the estimated damage exceeds \$1 billion. (Source – USDOT)

(U) On April 11, 1996 a Montana Rail Link train derailed near Alberton, MT releasing 130,000 pounds of chlorine gas, 85 gallons of sodium chlorate and 17,000 gallons of potassium hydroxide solution (oil refinery waste). The derailment forced the evacuation of more than 1,000 area residents. Approximately 350 people were treated for chlorine inhalation, 123 of whom sustained injury. Nine people, including members of the train crew, were hospitalized and a transient riding the train died from acute chlorine toxicity. (Source - <http://www.nts.gov>, 11 April 1996)

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