



SGS Petroleum
Service Corporation

Transportation Challenges and Solutions

Crude Oil Quality Association

New Orleans, Louisiana

February 27, 2014





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Seminal Events in North American Transportation History



Seminal Events in North American Transportation History



Texas City 1947
Fertilizer Ship Explosion

Seminal Events in North American Transportation History



Valdez Alaska 1989

Marine Oil Spill

Seminal Events in North American Transportation History



Minot, North Dakota 2002

Ammonia Tank Car Explosion

Seminal Events in North American Transportation History



Graniteville, Tennessee 2005
Chlorine Tank Car Derailment

Seminal Events in North American Transportation History

Lac Megatonic 2013

Crude Oil Derailment/Fire

47 dead

THERE WILL BE REGULATORY CHANGES



Dot 111 Tank Cars

■ Likely design modifications:

- Increased head and shell thickness
- Normalized steel
- ½ inch thick head shields
- Top fitting protection

■ Possible Modifications:

- Higher flow safety valves
- Additional bottom outlet protection



Railroad Handling Modifications

- Potential procedural modifications by the railroads:
 - Rerouting of unit trains around highly populated areas.
 - Slower speeds (less than 50 MPH).
 - Mandatory supervision of idle trains outside rail yards.
 - More buffer cars required.

- Less Likely Modifications:
 - Higher quality of track infrastructure for crude trains.
 - PTC for crude trains/routes.

Largest Liability Issues for Crude Shippers

- Incorrect determination of packing group resulting in wrong railcar
- Improper shipping documentation - these are legal documents
- Improper securement of railcars - leaks may result in fines, personal injury, or environmental damage

SGS Oil Gas Chemical North American Laboratories

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- 40 OCG Laboratories throughout North America and newest location in Williston, ND with extensive crude capabilities servicing the Bakken and Rockies regions

A large, light gray map of North America is shown in the background. A prominent orange circle is drawn over the central part of the continent, containing the number '41' and the text 'North America' below it.

41
North America



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Portable Laboratories Available for Deployment to Remote Locations and New Producing Regions





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Tank Car Inspection and Loading





Overview of SGS Petroleum Service Corporation (PSC)

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■ Facility Operations ~80 sites

- Annual PSC Volume:
 - 400,000 railcars / trucks loaded and unloaded;
 - 300,000 “outbounded” railcars from rail switching operations.

■ Dock Operations ~70 docks

- Facilities range from large, multi-berth docks that PSC staffs 24/7 to smaller terminals receiving only a few vessels per week, staffed on-call.

■ Tankerman Operations ~36,000 barges annually

- Tankermen work in geographic pools via centralized dispatch in Baton Rouge.
- Training is provide through PSC’s Coast Guard-approved Tankerman Career Academy.

■ Alignment of Purpose

- PSC is not a terminal company, we are an operator. When we excel, this promotes the success of your terminal

■ Major Facility Customers

- Practically all major U.S. refineries as well as petrochemical facilities.

Representative PSC Operations: NuStar - St. James, LA

- State-of-the-art Unit Train crude oil unloading facility
- PSC collaboration with NuStar to maximize infrastructure operability
 - Managing vapor and accumulated pressure
 - Rail car fittings, hoses, wrenches
 - Ergonomics
 - “The devil is in the details”
- Averaging one unit train every 24-hour period
- Special qualifications for PSC employees
 - Mainline locomotive power stays with train
 - “DPU” – Distributed Power Unit training
 - Qualified Mechanical Inspector (“QMI”)
 - Train air brake testing and inspection allows for train release

Challenges and Solutions

- Challenges are getting complex with the diversity and amount of crude oil that is currently being transported throughout North America.
- Challenges include, but are not limited to, Quality, Quantity, Transportation & Logistics, Safety, Environmental, and Regulatory parameters.
- Solutions include, but are not limited to, proper understanding of product quality and transportation requirements, along with logistical and legislative understanding to protect your organization and the environment.

Questions, Answers and Contact Information

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