PO Box 530
Momence, IL. 60954
Tel: 815-472-2700
Toll Free: 877-489-2681
Fax: 815-472-2930
www.AppliedMechTech.com

White Paper - Crude Oil Rail Car Tank Cleaning

We are frequently asked to describe how our systems are used to clean crude oil tank and railcars. We start by using our many years of tank cleaning systems experience to design commercial quality cleaning systems for some of the heaviest duty tank cleaning applications. From Chemical grade dealing with latex to resin and from crude oil to ethanol and food grade application from milk to sugar to lecithin, we've done it all (or almost all anyway).

When it comes to crude oil we are finding a shift in our energy independence with the new drilling and extraction technologies. More crude oil is becoming available in areas where it was not previously available and is lacking in the infrastructure to move it. As a result the rail industry has stepped up to the challenge and is providing the "pipe on track" needed to deliver this valuable product to the refinery market along the gulf coat of the US.

These railcars have to be certified, tested, repaired, and coatings repaired or re-done. In other cases they are shifted from one commodity to another. In each case what is encountered, and what is needed to clean them can differ. With over 20 kinds of crude oil found in north America alone, the task can be daunting. We have the solutions.

I general, we find that with our heavy duty systems using hot water and high pressure, a pre-solve wash, and the proper techniques you can clean the entire variety of crude oil railcars found in the US.

Cleaning can often require "dig out". A process where the operators must enter the car (with proper safety gear) and physically dig the material out. A process we like to avoid if possible. It also results in considerable fees. In our experience a dig out comes most likely from C20-C70 range of petroleum distillates or from old crude cars that were not cleaned prior to storage. The C20-C70 range includes Canada Sands crude, bitumen, asphalt, #6 and various bunker oils. The heavy fractions. Your frequency of dig out will depend on where the cars come from and what they transport.

The major sources of crude oil in North America are from Bakken, Marcellus and Canada Sands to the north. Eagle Ford from west Texas, and various sites in New Mexico, Oklahoma and Colorado. These all are fairly easy to clean with some being more waxy than others and waxy buildup takes longer to clean. Bakken is considered some of the easiest to clean.

Then there is the Canadian Sands. This product is best described as bold and thick with grit. The toughest to clean by far. Dig out is needed often, it's often gritty and can damage pumps etc.

Typical cleaning techniques vary but include hot diesel pre- wash or diesel steaming. This can take 20 minutes or in some cases 1-3 hours. Then lots of hot water pre-rinse, and lots of hot detergent washing using a various detergents, some of which can be pretty expensive. Detergents are used more/less depending on final cleanliness desired.

The diesel pre-solv and pre-rinse are sent to holding to allow for oil water separation. The wash solution is recycled for approximately 10-20 railcar washes depending on how well your pre-wash/rinse was performed. Then the solution is dumped and refreshed.

A high efficiency wash system like the Applied Mechanical Technology CIP-CGC, when in the right trained hands (we provide the training) provides the capability to perform 3-5 railcar washes/day/bay/shift including hook up, diesel pre-wash, pre-rinse, wash, final rinse, and un hook. Dig out not included which can take several hours per car to perform.

Contact Applied Mechanical Technology today for more information. 815-472-2700