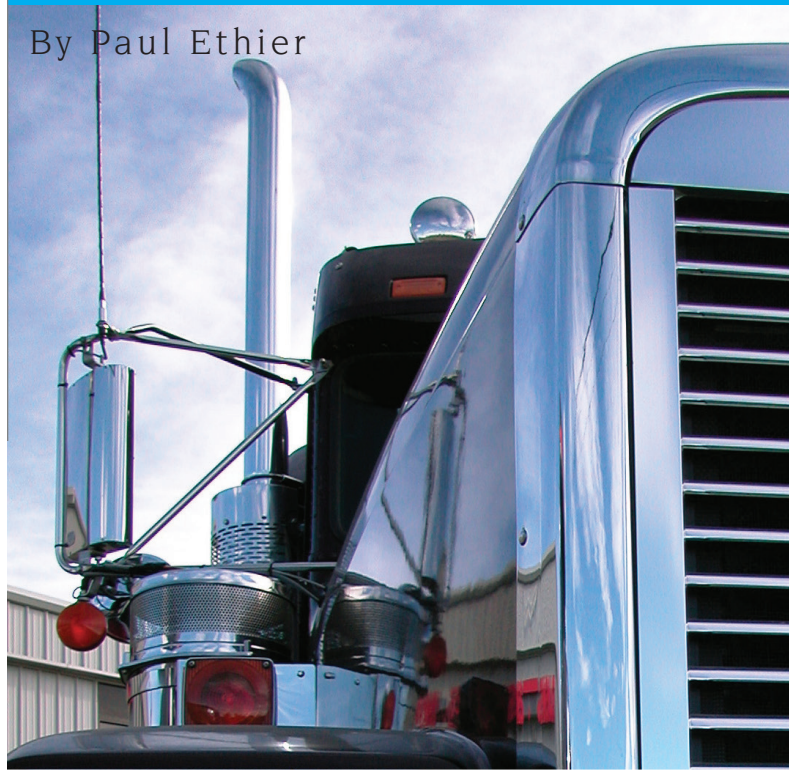


By Paul Ethier



## WATER, THE LIFEBLOOD OF EVERYTHING

"Whether you're washing an oil field truck covered in 5,000 pounds of mud or you're cleaning a chromed-out road truck, water is a huge consideration," said Jyrki Koro, president of Truck Wash Technologies in Sault Ste. Marie, Ont.

With 21 years in the truck wash industry, Koro started his company in 1999. Designing superior automation and water treatment technology that can adapt to a very diverse trucking industry was key, but equally important was minimizing capital costs related to building and land, and developing a service and operational standard which allowed the business model to work.

"Until recently, little had changed in the truck wash industry in the past 40 years or so," said Koro. "We aim to provide a fast and affordable public wash that offers value and consistency while delivering what every owner wants: a clean and shiny truck."

Koro's wash system utilizes advanced technology that delivers a high wash quality with minimal labour costs. Conditioned fresh water is used for the portion of the wash that uses cleaning chemicals, as well as during the final, spot-free rinse.

"We researched the trucking industry to determine the needs of the end user and tailored a system using innovative designs and vendors to complement the application with quality components," said Koro.

The fresh water portion of the system includes filtration, scale prevention and reverse osmosis for uncompromising purity.

◀ All water from the wash bay passes first through a bar screen before moving toward one of three grit chambers.



## CLEAN WATER protects A ROLLING INVESTMENT

A tractor trailer is more than just a large piece of on-road equipment. It's a major investment, foundation to a livelihood and a home away from home. Collectively, big rigs are the engine that keeps industries and economies in motion.

A new truck and trailer can cost well over a quarter-million dollars, and that's not including a lot of chrome and aftermarket equipment so often added to personalize vehicles. And washing big rigs – from over-the-highway trucks to off-road energy-industry trucks – is infinitely more involved than washing cars. They're bigger, sure, but they also come in a wide variety of sizes and shapes. That's where innovative and creative plumbing technology can help.

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A volume water heater, water softener, carbon filter and flow tanks complete the water treatment for all chemical application and fresh water rinsing.

## SEDIMENT REMOVAL

Each Truck Wash Technologies system uses recycled water for the bulk of the washing process. Heavily soiled trucks can require as much as 12,000 gallons of recycled water, but never less than 2,000.

"We have off-road trucks come in with so much mud that it actually reduces the amount of cargo they can legally haul," said Koro. "Needless to say, this cuts into their pay cheque."

As the system's moving gantry makes pass after pass over the vehicle, tons of sediment drains into an in-floor catchment system. A series of screens and settlement tanks strain solids from the liquid.

A cluster of high-volume hydro cyclones provides a second level of water filtration, spinning fine dirt out of the stream in a centrifuge. Finally, a liquid polymer is injected into the water. This substance binds any remaining fine solids together so that they settle out more quickly. All sediment is continuously removed from the wash water and dewatered for ease of disposal.



Three high-volume pumps provide water to various wash function in the wash process. In the background, five high-pressure pumps apply a final fresh water rinse.

## TWO TYPES OF FRESH WATER TREATMENT

As fresh water comes into the facility from a well or municipal supplies, it's treated for scale prevention either by TAC (template-assisted crystallization) technology or a traditional water softener with a brine tank.

If it's being used for high-pressure rinsing applications, water first goes through a 100-gpm anti-scale system for treatment before entering a large storage tank. This chemical-free, TAC anti-scale technology bonds calcium ions together so that they're inert, and won't build up on surfaces downstream.

For fresh water used during the chemical application process, a different anti-scale approach is used.

"Because calcium and magnesium rapidly absorb the cleaning chemicals and render them less effective, we need to be absolutely sure that all minerals are removed from the water stream for chemical application," Koro explained.

"TAC reduces scale buildup, but the ions are still in the water. A commercial water softener conditions the water used in the chemical application. This amounts to roughly 30 gallons per truck wash."

Fresh water first passes through a large carbon filter that features automatic backwashing. The activated carbon in the large tank is generally used for dechlorination, removal of tastes, odors and as pretreatment for reverse osmosis systems. Chlorine destroys reverse osmosis membranes and polymer-based ion-exchange resins used in water softeners.

A spot-free, final rinse is the very last phase of a truck wash. For this, water is treated by a large reverse osmosis system. A 4,400 gpd (gallon per day) reverse osmosis system provides ample water volume. It removes any remnant of minerals that could otherwise create powdery-looking spots on vehicle surfaces after drying.

## ON DOWN THE ROAD



A Truck Wash Technologies installation will service upwards of 1,000 trucks each month. As drivers wait 15 or 20 minutes for their rig to come out sparkling clean, they're oblivious to the high-tech processes going on in the background.

Truck Wash Technologies currently has two truck washes in Canada, and a third under construction in Tacoma, WA. The company is slowly watching trends in the industry shift favorably.

**"Being the first mover in a large, untapped market, it's imperative we remain involved in all facets of the truck wash business to maximize the potential for our customers' success,"** Koro said. **"The superior technologies we've developed and assembled speak for themselves."**

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