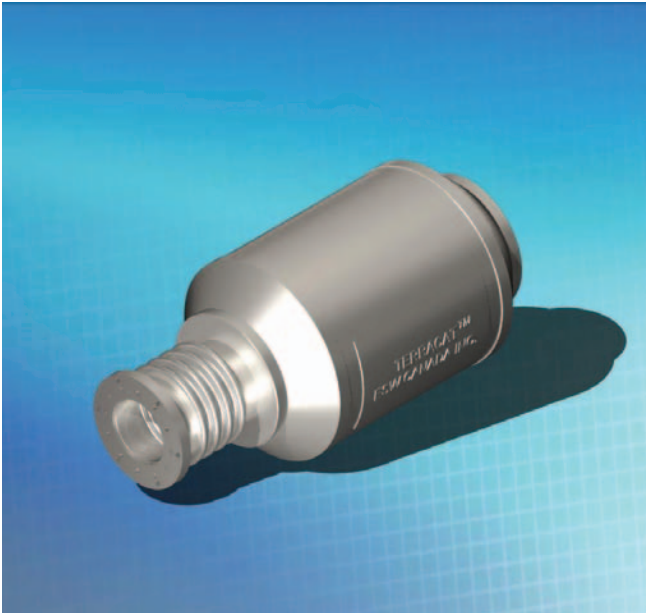


## Summer Is Busy Time For Environmental Solutions Worldwide



ESW Canada (ESWC) has signed a long-term agreement with Filter Services and Testing Corp. (FST) that enables both companies to market ESWC's proprietary M Cat mining catalyst with FST's proprietary liquid-cooled canister and disposable filter system. The new product, branded the Terra Cat system, is engineered to be a direct replacement for the OEM exhaust system on a wide range of mining equipment, such as scoops, load-haul-dump vehicles, skid-steer loaders, utility vehicles and personnel carriers.

Late summer is supposed to be the lazy time of year, but you'd never know it by looking at Environmental Solutions Worldwide (ESW) — because the first week of August saw three major announcements from the Concord, Ontario, Canada, manufacturer of engine emissions control technologies.

On Aug. 2, ESW's wholly owned subsidiary, ESW Canada (ESWC), signed a long-term agreement with Filter Services and Testing Corp. (FST) that enables both companies to market ESWC's proprietary M Cat mining catalyst with FST's proprietary liquid-cooled canister and disposable filter system.

The new product, branded the Terra

Cat system, was launched in late spring following successful performance testing with the U.S. Mine Safety and Health Administration (MSHA).

The Terra Cat system combines the M Cat unit with FST's high temperature filter within a liquid-cooled canister. The entire unit is engineered to be a direct replacement for the OEM exhaust system on a wide range of mining equipment, such as scoops, load-haul-dump vehicles, skid-steer loaders, utility vehicles and personnel carriers.

The M Cat is an integrated catalyst/muffler that incorporates a proprietary metallic substrate with a high-performance catalyst coating within a heavy-gauge stainless-steel can. It is engi-

neered to withstand high thermal and mechanical shocks with no effect on its emission reduction performance. When combined with FST's liquid-cooled canister and high-temperature filter into the Terra Cat system, filter life is said to dramatically increase.

ESW said that the Terra Cat System has undergone extensive successful field trials in a number of different mining equipment applications, ranging from heavy-duty full-sized scoops powered by high-horsepower diesel engines to small skid-steers loaders. Results from the scoop applications indicate the lifespan between replacements of the disposable filter has been extended from an average of six hours to over 80 hours by the integration of



**ESW Canada will supply 1000 catalyst/muffler units for the Marine Corps' amphibious Light Armored Vehicle (LAV) platform.**

the combination system. Similar results have been documented from skid-steer loader applications.

This, ESW said, represents a ten-fold increase in the useful lifespan of the disposable filter between change-outs. The system also achieves reductions in excess of +85% for PM and CO, while NO<sub>2</sub> levels remained within MSHA's standards, the company said.

"We have been very pleased with sales of the new Terra Cat System product line to date," said David J. Johnson, ESW's president and CEO. "The question of whether to combine our MSHA performance-verified M Cat mining catalyst with FST's Cool Canister & Disposable Filter was an easy one to make. We believe this synergistic combination of technologies will benefit the entire industry."

Just two days prior to its agreement with FST was publicized, ESW announced that ESW Canada will supply 1000 catalyst/muffler units to Tri-County International Trucks Inc., via a subcontract with International Military and Government LLC, a wholly owned subsidiary of International Truck and Engine Corp.

Tri-County, a Warren, Mich., dealer, has won a \$2.8 million contract with the U.S. Army Tank Automotive and Armaments Command (TACOM) to supply ESW catalyst/muffler units to the United States military for the Marine's amphibious Light Armored Vehicles (LAVs). The units are an essential component in the re-outfit of

the Marine LAVs with new technologies in an endeavor to extend the effectiveness and life of the vehicles.

ESWC's engineering/design division developed a lightweight, stainless-steel muffler system, custom designed for the LAV application. The units' construction incorporates the company's proprietary catalyzed wire mesh substrate integrated into an advanced sound abatement system. The units were specifically engineered to decrease the vehicles' overall signature by reducing the diesel engines' black smoke, diesel engine emissions, and reducing temperature and sound.

The LAV originally manufactured by General Motors Defense of London, Ontario, Canada, is an eight-wheel-drive combat vehicle powered by a Detroit Diesel 6V-53T two-stroke diesel engine. It is capable of traveling in rugged terrain, cruising at more than 60 mph on roads and crossing rivers, streams and lakes in amphibious operations. With a combat weight of 14 tons, it can be easily loaded onto air transports, such as the C-130, C-141 and C-5, or helicopters, such as the CH-53E. The Marine Corps' intention is to continue to operate this vehicle well into the future until the Marine Expeditionary Family of Fighting Vehicles (MEFFV) is introduced sometime beyond 2020.

In an effort to keep the LAV reliable, capable and lethal until that time, the LAV is currently undergoing a Service Life Extension Program (SLEP).

## TECHNOLOGY OF CLEAN AIR

"This sale to International and subsequent P.O. to ESWC represents a milestone achievement in the building of our company's foundation," said Johnson. "Our catalyst/ muffler system was specified for this important application due to the extreme durability and high performance of our proprietary metallic substrates, catalyst coating and unique muffler design.

"Our military spec catalyst technology is in its element in these types of applications. We felt it was just a matter of time before our technology found its way into military programs, specifically one as significant as this. We believe that there is a potential for widespread deployment of our products across a large segment of diesel-powered military vehicles, generators and off-road equipment."



ESW has also received verification extension from CARB for its Level 2 Particulate Reactor diesel catalyst system, a passive, stand-alone diesel catalytic converter that incorporates an advanced catalyst coating technology with a torturous gas flow path created by the metallic wire mesh substrate.

## TECHNOLOGY OF CLEAN AIR

Finally, on Aug. 3, ESW announced that it received verification extension from CARB for its proprietary Level 2 Particulate Reactor diesel catalyst system.

The Particulate Reactor is a proprietary, passive, stand-alone diesel catalytic converter that incorporates an advanced catalyst coating technology with a torturous gas flow path created by the metallic wire mesh substrate. This combination utilizes the high catalytic surface area, which in turn provides the emissions reductions required to achieve the 50% or greater PM reductions needed to obtain Level 2 status, with no impact on durability, ESW said.

The original executive order verification in 2004 covered specific diesel engines from model years 1991 through to the end of 1993 used in on-road applications operating on standard CARB diesel fuel. The newly granted extension covers specific diesel engines from model year 1994 through to the end of 1997 used in on-road applications operating on standard CARB diesel fuel currently found at local service stations. Specific engine families and application guidelines for the original Particulate Reactor verification and the extension can be found in the executive order, which is posted on the CARB website.

Since the issuance of the first CARB executive order verification in 2004, the Particulate Reactor has been installed in North American applications ranging from school and transit buses to waste hauler trucks. Every Particulate Reactor in operation under the guidelines is performing to expectation without the need for service or maintenance, ESW said. **dp**

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