

EPA Clean Machine Case Study

EPA Diesel Emissions Management Workshop

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SITA Australia



THE LEADER
IN RESOURCE
RECOVERY

SITA Australia Company Overview

- Leader in resource recovery
- Providing integrated waste management and recycling solutions
- An add value approach and enhance sustainability outcomes for our customers
- Provide a seamless service offering, tailored to our customer's unique needs and objectives
- Our waste management services include collection, resource recovery, recycling and disposal.

The Challenge

Achieve a Reduction in Diesel Exhaust Particulates from our Non-Road Operations

- The on-road transport fleet is heavily regulated in terms of emissions and new trucks purchased reflect these changes, but what of our non-road fleet?
- The EPA Clean Machine Program is a pathway to provide the desired benefits.



CLEAN MACHINE PROGRAM – In 2013 SITA Australia Partnership With The EPA And RMS

Program Implementation

- The program commenced in 2012 with SITA attending the EPA Clean Machine Program Workshop, which highlighted the contribution that untreated exhaust emissions from diesel plants contribute to air pollution
- In 2013, the EPA conducted an audit of the NSW Infrastructure fleet based on an individual machines engine size, age, number of operating hours and fuel used per year. From this information the top emission emitters were selected.

Audit Results

Audit of High Emitters of Particulate Matter

Equipment Type	Engine size in Litres	Particle Reductions kg/year
Trommel	5.98	53.72
High Speed Grinder	18	47.93
Slow Speed Shredder	12.8	37.41
Trommel	5.98	35.39
Trommel	6.8	25.32
Wheel Loader	7.1	18.91
Wheel Loader	10.5	18.16
Wheel Loader	5.7	17.09
Tracked Excavator	5.7	16.75
Tracked Excavator	10.5	16.33
Slow Speed Shredder	16	15.45
Wheel Loader	5.7	11.73
Wheel Loader	5.7	11.73
Wheel Loader	5.7	11.73
Wheel Loader	7.1	10.04
Wheel Backhoe Loader	4.4	5.36
Total Particle Reduction		353.05

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The EPA estimated that SITA's diesel particle emissions would be reduced by 353 kg per year across the 16 machines (3.53 t over the next 10 years), which would in turn benefit the health of SITA employees and the local communities where the company operates.

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The Solution

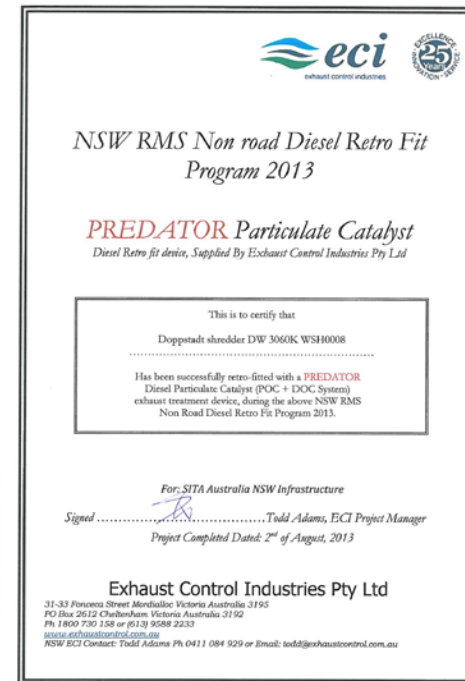
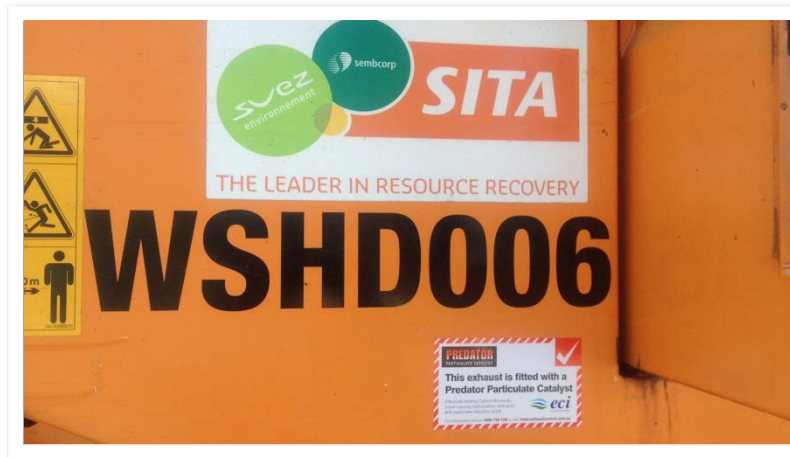
Retrofit of Selected Non Road Diesel Plant

- As a result of the audit, the EPA provided up to 80% of the funding to retrofit the aftermarket devices and process the fitting of particulate filters.
- In 2013 diesel particulate filters were installed to 16 machines including waste shredding and screening equipment, wheeled loaders and excavators across seven sites in New South Wales
- SITA found the process from contractor selection to the final outcome to be efficient, without impacting crucial operational time.

High Emitters Of Particulate Matter



Promoting The Fitting Of A Pollution Control Device



Procurement Practices

Purchasing Equipment

- The program has influenced SITA's procurement practices with the company amending new equipment specifications to meet the latest US or EU non-road diesel emissions standards where practical
- Implementing “Clean Machine Best Practice” strategies in securing machines whether they be short term rental or procure for ownership.

Operation Post Program Implementation

- Following the retrofit the feedback has been positive, with machine operators reporting that nil loss of performance or horsepower in the machine. The additional advantage to SITA is that the device does not require maintenance, which is a significant benefit when in comparison to similar devices currently on the market
- SITA's experience from the program has been positive from both an operational and public health perspective. SITA encourages others within the industry to partner with the EPA on similar projects.

Thank You

Questions?