PAVE Research Institute
1600 Lee Road 151
Opelika, AL 36804
www.pavetrack.com
334-844-6857

at Auburn University

Report on

TMC RP-1102 (SAE J1321) Type II Fuel Consumption Test with

TMC RP-1115 Fuel Economy Benefit Product Qualification

Conducted for

World NCI
1701 County Road – Suite #S
Minden, NV 89423

March 5, 2007

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Research Engineer

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INTRODUCTION

Recent historical increases in the cost of diesel fuel have resulted in an unprecedented interest in products that have the potential to improve fuel economy. At the request of World NCI, the PAVE Research Institute at Auburn University recently conducted a fuel economy test utilizing class 8 diesel trucks. The purpose of the testing was to quantify any benefits derived from the installation and utilization of a hardware retrofit known commercially as the Fuel and Air Saver™.

The procedure chosen for this evaluation was the *TMC/SAE In-Service Fuel Consumption Test Procedure – Type II*, also known as TMC's RP 1102 and SAE's J1321. This procedure was developed specifically to meet the needs of the trucking industry, and it is an integral part of TMC's *Guidelines for Qualifying Products Claiming a Fuel Economy Benefit* (RP 1115). Both recommended practices are included in the scope of this study.

To facilitate the experiment, fuel consumption in a treatment vehicle was compared to fuel consumption in an identical control vehicle before and after the installation of the retrofit hardware. Because the vendor claimed that several thousand miles were needed to realize the full potential of the device, post-treatment testing was conducted with very low miles and again after approximately 24,000 miles had been run. This process resulted in three separate test segments: untreated baseline testing, early stage treatment testing, and advanced stage treatment testing. The completion of each stage of post-treatment testing allowed for the determination of percent savings in fuel consumed.

PRODUCT INFORMATION

Technological Overview

According to the World NCI website (www.worldnci.com), The Fuel and Air Saver™ (shown schematically in Figure 1 and installed on a PAVE test vehicle in Figure 2) is a retrofit system for pre-2007 engines that is installed between the open venting crankcase tube and the intake to the combustion chamber. As crankcase gases enter the Fuel and Air Saver™, a patented process separates harmful non-combustible vapors such as contaminated oil, water, and soot from unburned fuel vapors. The non-combustible vapors condense into a liquid and settle to the bottom of twin collection containers, but the lighter unburned fuel vapor (reported to make up approximately 10 percent of the total crankcase vapor volume) is routed into the intake of the combustion chamber. The liquid that settles in the container is disposed of with the crankcase oil during routine oil changes. The vendor asserts that returning the unburned fuel vapors to the air intake produces numerous performance benefits, including reduced emissions and increased fuel economy.

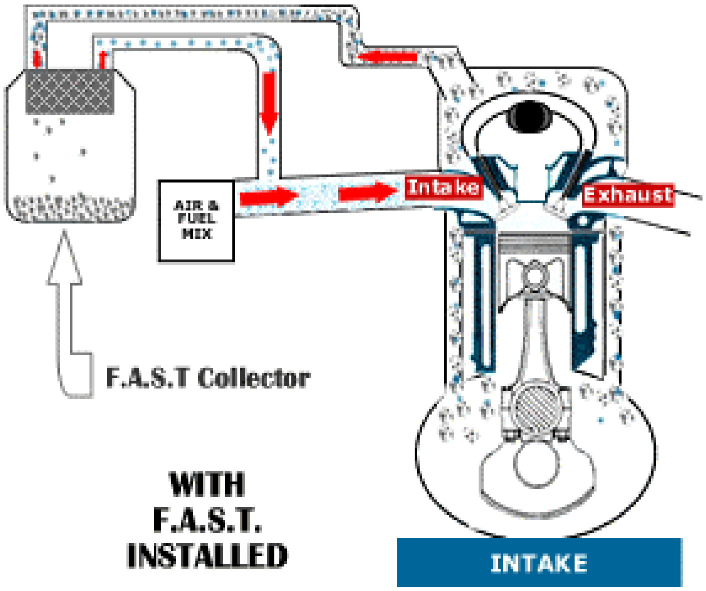

Figure 1 – Schematic Illustration of Technology from www.worldnci.com

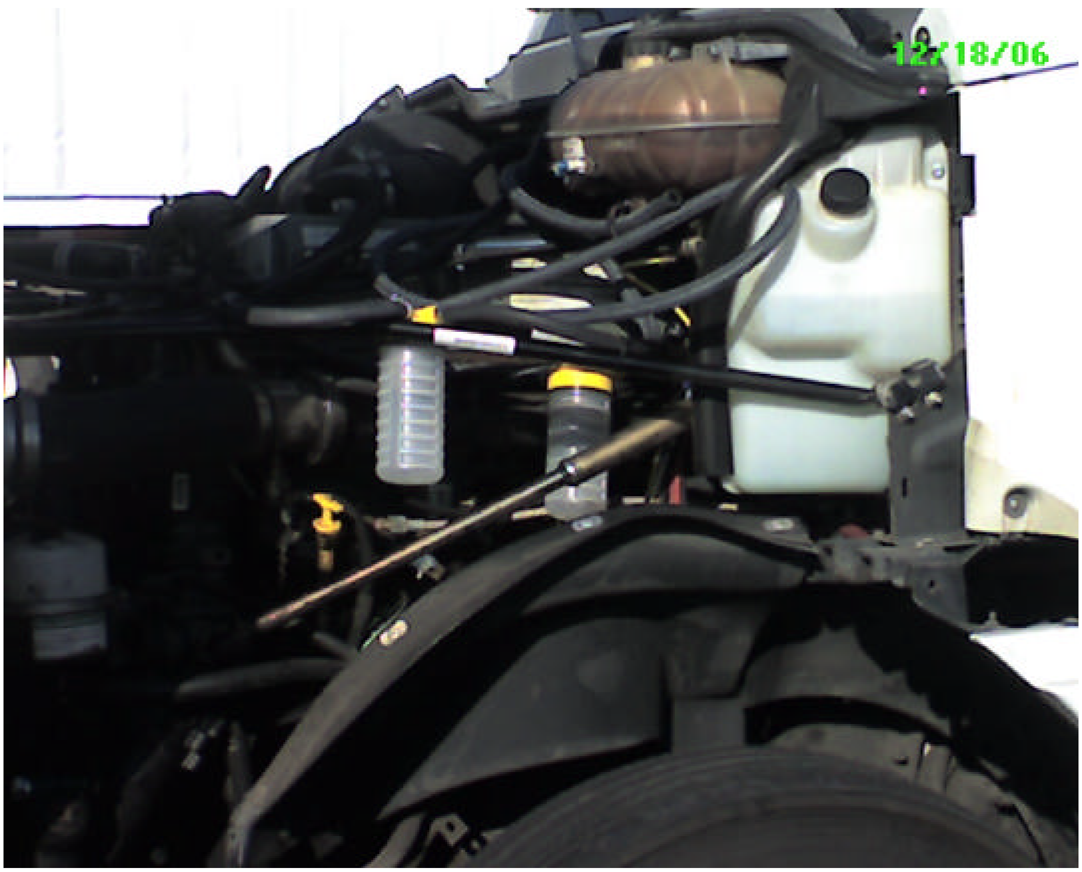

Figure 2 - The Fuel and Air Saver™ Installed on a PAVE Test Vehicle

RP 1115 Qualification

The purpose of RP 1115 is to provide equipment users with guidelines on how to qualify products that claim to improve fuel economy. TMC recommends that manufacturers of such products conduct a Type II, III or IV fuel economy test to verify product claims. It is also recommended that such products must be readily available on the market with firm equipment user validation before any fuel economy improvement claims are made.

The following verbiage is provided on the World NCI website:

> "The technological principles of the Fuel and Air Saver™ were developed and patented by a pioneering inventor and to the inventor's credit there are thousands of field results validating how well the technology performed in improving fuel economy and reducing emissions. However, while the science and technological design and its results were solid, the manufacturing design and process possessed physical defects which resulted in the product routinely experiencing physical failure. In 2003, World NCI acquired all rights, title, interest, and assets of the original inventor's company. World NCI's goal was to utilize our redeveloping technology and proven scientific principles, in conjunction with a solid manufacturing design and production procedures, to reduce consumers' fuel costs and improve air quality. World NCI successfully accomplished its goals of innovatively re-developing and improving the technology into a durable product that will withstand the test of time with a lifetime guarantee offered by World NCI.
>
> In 2005, World NCI was issued United States and world patents for its scientific re-development as well as technological and manufacturing innovations to the existing technology. As a result the Fuel and Air Saver™ System was released for manufacturing. During 2005 and 2006 World NCI invested substantial time and financial resources in having the newly patented Fuel and Air Saver™ System tested and validated by independent EPA and SAE laboratory testing. Concurrently, the company worked with various private and public companies as well as individual consumers to have product testing and evaluation completed. World NCI has received consistent testing results from companies and consumers validating the effectiveness of the Fuel and Air Saver™ with respect to increasing fuel economy and decreasing emissions. Additionally, in the third quarter of 2006, the company received the final evaluation report from the independent SAE laboratory, West Virginia University Center for Alternative Fuels Engines and Emissions, which validated the effectiveness of the Fuel and Air Saver™ with respect to fuel savings, decreasing emissions and producing the only known 100% closed crankcase system.
>
> World NCI is currently launching its International marketing and sales program with the goal of assisting transportation fleets, municipalities, and consumers reduce their fuel costs while improving our environmental air quality."

The manufacturer indicated to PAVE that the product is currently available for purchase via the following contact information:

World NCI
Peter Clark
peter@worldnci.com
775-782-5252

The initial cost of all necessary components is reported to be between $560 and $795 (depending on quantity), so on long haul vehicles the cost per mile would be relatively low and the return on investment would be relatively short (much less than one year making reasonable assumptions about annual miles, mpg and fuel cost). World NCI has indicated it offers a 100 percent money back guarantee for any installation that does not provide the anticipated results (with proper documentation of a prescribed testing plan). The product is reported to be currently in use by several fleets, whose names were provided to PAVE in the form of a reference letter shown as Appendix A.

The vendor indicates it guarantees the material and workmanship in the Fuel and Air Saver™ for the life of the vehicle, which they consider to be 15 years. This is limited to the original owner of the vehicle/hardware, with the hoses and clamps only warranted for one year. The product is not intended to require any special maintenance, other than disposing of condensed non-combustible vapors each time the oil is changed. In the case of PAVE's operations, these materials were disposed of weekly by combustion in the onsite garage's waste oil heater. The product should be considered by regulatory authorities as environmentally friendly because it reduces the overall emissions of the vehicle.

World NCI asserts on their web page that engine manufacturers recognize the need for and are working towards closed crank case systems. They claim that use of the Fuel and Air Saver™ will not void a manufacturer's warranty because it would have to be proven that the device had caused a direct malfunction. They further claim that EPA tests have shown the system does not cause any engine malfunctions. Although maintenance issues are beyond the scope of the Type II test, engine condition was closely monitored as miles accumulated on the PAVE test vehicle.

TEST PROCEDURE

Test Vehicles

The control and treatment tractors used in the experiment were sequential serial number 2004 Freightliner Columbia series Model C120 day cabs with no aerodynamic modifications. Both units were equipped with Detroit Diesel 60 Series DDEC-IV (EGR) engines rated at 435 hp at 2,100 rpm, with odometer readings of approximately 365,000 miles. Both tractors were equipped with Eaton Fuller 9 speed manual transmissions and cruise control, which produced approximately 1450 rpm at cruise speeds. No air conditioning or other accessories that would have pulled inconsistent auxiliary power were used during Type II testing. Mirrors and windows were maintained in the same position for all stages of operation. Each tractor pulled flatbed triple trailer trains (shown during testing in Figure 3) with every axle loaded up to the legal limit. This produced identical gross vehicle weights of approximately 160,000 pounds. The control truck was identified as unit #3, while the treatment truck was identified as unit #4.

Figure 3 – Control and Treatment Trucks During the Testing Process

Test Route

As seen in Figure 4, the test route consisted of a 1.7-mile closed loop oval adjacent to a research staging area. The Pavement Test Track at Auburn University is a controlled access facility on which a fleet of 5 heavy triple trucks each run over 3,000 miles a week in order to damage experimental pavements. Interest in the Track is not limited to pavements, and the operation of the heavy truck fleet on the closed loop oval provides an excellent opportunity to study the effect of various treatments on fuel economy.

The due east-west straight sections on the Auburn track are precisely 2600 feet long, connected with spiral-curve-spiral sections approximately 1900 feet in length. The east curve profile travels down a –0.5 percent grade, while the west curve profile travels up a +0.5 percent grade. The maximum super-elevation of both curves is 15 percent, which supports a design speed of approximately 46½ mph. The profiles of both the north and south straight sections are level with 2 percent normal cross-slopes (the typical interstate standard). Consequently, the duty cycle consists of approximately 60 percent on level pavement (with 2 percent normal cross-slope), 15 percent up grade and 15 percent down grade (both with 15 percent super-elevation). The pavement type changes every 200 feet such that the surface of the track represents a microcosm of the national interstate highway system, with materials hauled in from all over the country to maximize the quality of the simulation.

Figure 4 – Auburn University Track Used for Type II Test Route

Each Type II test run consisted of at least 28 miles of continuous operation on the closed oval in this manner, with vehicles spaced out in order to prevent aerodynamic interaction. Vehicle spacing (1500 ft) during testing is shown in Figure 5. The travel speed of the test vehicles was maintained between 45 and 50 mph using cruise control, running in 8th gear to produce rpm levels comparable to interstate speeds.

Figure 5 – Proper Spacing During Testing To Avoid Aerodynamic Interaction

RP 1102 Methodology

A work plan was developed based upon the TMC/SAE Recommended Practice 1102 (In-Service Fuel Consumption Test Procedure – Type II). In this procedure, fuel consumption measurements in a test vehicle (T) are compared to measurements from a control vehicle (C) before and after treatment. The difference between the before and after T/C ratios are used to calculate a fuel savings percentage presumably resulting from the treatment. For the purpose of this study, a test run was defined as at least 28 miles of continuous driving on the Pavement Test Track. Vehicle operation was synchronized using handheld radios to ensure precisely identical duty cycles. Both trucks were outfitted with removable fuel tanks (shown in Figure 6) that were weighed between each test run in order to determine the amount of fuel consumed. The weighing process is shown in Figure 7, with fuel temperature documentation shown in Figure 8. The T/C ratios for all test runs were calculated, and the first 3 ratios that fell within TMC's prescribed 2 percent filtering band were used to compute an average value representing each segment of testing.

Figure 6 – Removing Portable Tank for Fuel Weight Determination

Figure 7 – Weighing Portable Tank to Within a Tenth of a Pound

Figure 8 – Checking Temperature of Fuel in Portable Tank Between Test Runs

Type II Test Data

All experimental data for the Type II procedure are provided in Table 1. Both baseline testing and low mileage testing were completed on December 18, 2006. After approximately 24,000 miles had been driven, the high mileage portion of the study was completed. The high mileage stage was originally planned for February 2, 2007 (after approximately 15,000 miles); however, a leak in one of the quick-disconnect fuel lines invalidated the data and it was necessary to reschedule for a later time that would facilitate a permanent repair. While this was an inconvenience at the time, it did allow for the accumulation of additional miles before the completion of the study (thus, more daily performance data and more maintenance history with the technology).

Run Date	Test Segment	28-Mile Test Runs	Mid Time	$Fuel_T$ (lbs)	$Fuel_T$ (°F)	$Fuel_C$ (lbs)	$Fuel_C$ (°F)
12/18/2006	Baseline	1	1022	45.6	118	45.1	111
		2	1120	44.9	134	44.3	129
		3	1210	43.4	151	44.5	146
		4	1309	43.8	154	44.3	149
		5	1404	42.9	156	43.3	150
12/18/2006	Low Mile Test (0 miles)	1	1528	45.0	129	44.6	123
		2	1624	42.8	141	43.7	135
		3	1714	44.0	142	45.2	137
		4	1804	45.1	143	45.7	138
2/27/2007	High Mile Test (24k miles)	1	938	43.3	138	45.0	120
		2	1031	43.8	151	45.3	143
		3	1125	43.1	154	45.8	145
		4	1221	42.6	157	44.9	151

Table 1 – Type II Test Raw Data (T=Treatment Vehicle, C=Control Vehicle)

Type II Calculations

It is seen in Table 2 that the installation of the Fuel and Air Saver™ produced apparent short-term fuel savings of 0.5 percent. TMC cautions that if the technology being tested shows a degree of improvement less than or equal to the accuracy limit of the procedure (in this case 1 percent), additional testing should be conducted to determine the true value. If additional testing does not show consistent results, fleets should conclude that any change resulting from the technology is not measurable by the procedure.

Since the short-term test value for the closed crank retrofit did not exceed the minimum value of 1 percent, and because the vendor asserted that fuel economy would continue to improve (up to a point) with additional miles, post-installation fleet records were used to further scrutinize performance. As previously mentioned, a final Type II test segment was run after the accumulation of approximately 24,000 miles in order to capture any long-term effect on fuel consumption. This final step resulted in an apparent long-term fuel savings computation of 2.6 percent using the conservative data filtering methodology prescribed in RP 1102. When all data points were used, computed fuel savings increased to 4.1 percent.

Run Date	Test Segment	28-Mile Test Runs	Mid Time	Air (°F)	Dew (%)	Hum (%)	Wind (mph)	Wind Dir	Precip (in)	$Fuel_T$ (lbs)	$Fuel_C$ (lbs)	T/C (All)	T/C (Band)	T/C (Filt)	T/C (Avg)	T/C (% Saved)
12/18/2006	Baseline	1	1022	66	55	68	5	140	0.0	45.6	45.1	1.011				
		2	1120	70	55	59	3	290	0.0	44.9	44.3	1.014				
		3	1210	72	54	53	3	330	0.0	43.4	44.5	0.975	98%	0.975		
		4	1309	73	54	51	0	0	0.0	43.8	44.3	0.989	100%	0.989		
		5	1404	75	54	48	6	300	0.0	42.9	43.3	0.991	100%	0.991	0.985	Baseline
12/18/2006	Low Mile Test (0 miles)	1	1528	73	54	51	3	340	0.0	45.0	44.6	1.009				
		2	1624	73	52	48	0	0	0.0	42.8	43.7	0.979	99%	0.979		
		3	1714	66	50	56	3	350	0.0	44.0	45.2	0.973	99%	0.973		
		4	1804	63	50	63	5	30	0.0	45.1	45.7	0.987	100%	0.987	0.980	0.5%
2/27/2007	High Mile Test (24k miles)	1	938	64	39	40	5	340	0.0	43.3	45.0	0.962	100%	0.962		
		2	1031	66	36	33	7	350	0.0	43.8	45.3	0.967	100%	0.967		
		3	1125	72	36	27	9	30	0.0	43.1	45.8	0.941				
		4	1221	72	34	25	10	320	0.0	42.6	44.9	0.949	98%	0.949	0.959	2.6%

Table 2 – Type II Fuel Economy Test Calculations

Daily Fleet Records

Each vehicle in the 5-truck fleet is run approximately 680 miles per day in order to damage experimental pavements on the Pavement Test Track. Detailed records of fleet operations are maintained to aid in minimizing cost as well as in supporting ongoing vehicle research projects. Single 100-gallon tanks on each truck are topped off using an onsite portable tank at the end of each 340 mile AM (5:00 AM until 2:00 PM) and PM (2:00 PM until 11:00 PM) shift. A driver shift change occurs at 2:00 PM; however, drivers are assigned to the same vehicle on a daily basis. A digital pumping system is used to dispense the fuel that is calibrated to the nearest one-thousandth of a gallon. Idling practices are identical for every truck in the fleet in order to produce duty cycles that do not confound test data. Overall average fuel economy ratios (treatment vehicle mpg divided by control vehicle mpg) from daily track operations are provided in Table 3. These data are in general agreement with the findings from the Type II experiment previously described, with the only difference being a greater improvement in the percentage of fuel saved.

Before Treatment Retrofit				After Treatment Retrofit				
Date of Operation	High Temp (°F)	Low Temp (°F)	Avg T/C Ratio	Date of Operation	High Temp (°F)	Low Temp (°F)	Avg T/C Ratio	% Fuel Saved
11/29/2006	66	63	1.00	12/22/2006	64	61	1.03	1.3%
11/30/2006	75	64	0.97	1/4/2007	63	55	1.06	3.7%
12/1/2006	63	37	1.02	1/5/2007	66	52	1.04	2.3%
12/2/2006	63	32	0.99	1/6/2007	70	52	1.05	3.1%
12/5/2006	57	28	1.00	1/9/2007	55	34	1.05	3.4%
12/6/2006	61	37	1.00	1/10/2007	52	32	1.06	4.0%
12/7/2006	55	27	0.99	1/11/2007	61	37	1.05	3.3%
12/8/2006	43	19	1.00	1/12/2007	70	48	1.05	3.6%
12/9/2006	54	25	1.02	1/13/2007	70	48	1.06	3.8%
12/11/2006	68	45	1.01	1/17/2007	46	34	1.06	3.8%
12/12/2006	68	50	1.02	1/18/2007	43	36	1.06	4.1%
12/13/2006	66	48	1.02	1/19/2007	54	43	1.05	3.2%
12/14/2006	66	48	1.02	1/20/2007	54	37	1.05	3.2%
12/15/2006	70	43	1.02	1/23/2007	43	37	1.05	3.4%
12/16/2006	72	43	1.02	1/24/2007	45	37	1.05	3.2%
				1/25/2007	54	36	1.05	3.5%
				1/26/2007	57	28	1.05	3.3%
				1/27/2007	61	34	1.05	3.5%
				1/30/2007	52	32	1.05	2.9%
				1/31/2007	48	25	1.05	3.1%
				2/1/2007	45	36	1.05	3.5%
				2/2/2007	45	30	1.05	3.5%
				2/6/2007	55	27	1.05	3.4%
				2/7/2007	66	43	1.06	3.6%
				2/8/2007	57	43	1.06	3.7%
				2/9/2007	43	36	1.06	3.8%
				2/10/2007	48	28	1.05	3.3%
				2/13/2007	57	52	1.05	3.4%
				2/14/2007	39	28	1.05	3.5%
				2/15/2007	43	25	1.06	3.6%
				2/16/2007	43	21	1.06	3.7%
				2/17/2007	54	25	1.06	3.7%
				2/20/2007	66	46	1.06	3.9%
				2/21/2007	61	52	1.06	3.9%

Table 3 – Records from Daily Fleet Operations

Maintenance Observations

Drivers did not report any change in performance of the test vehicle during the time the Fuel and Air Saver™ was being evaluated. The turbo systems on both the control and test vehicles were inspected after approximately 16,000 miles. At that time, a very thin but clean slick residue was noted on the turbo blades of the treatment vehicle, presumably the result of the Fuel and Air Saver™ introducing combustible crankcase vapor to the intake.

A major point of concern by PAVE's trucking coordinator was the presence of an oily residue throughout the inside of the engine compartment. This occurrence seemed to be related to an increase in crankcase pressure, for which bulging seals and occasional dipstick backpressure were cited as support evidence. After approximately 23,000 miles, it was determined by Freightliner during a service call that a malfunctioning waste gate had caused a loss of turbo boost regulation that led to sporadic increases in crankcase pressure. It was the opinion of the service technician that the installation of the Fuel and Air Saver™ could not possibly have been related to the failure of the waste gate. It was his further opinion that the waste gate malfunction had caused the oily residue on the inside of the engine compartment.

Oil was changed in the both the control and test vehicles every 15,000 miles. The results of sample analyses are pending.

DISCUSSION OF RESULTS

The closed crank retrofit was very easy to install and did not present any discernable mechanical problems. All environmental and experimental data for the Type II procedure have been provided in Tables 1 and 2. It was found that the installation of the Fuel and Air Saver™ produced apparent short-term fuel savings of 0.5 percent and apparent long-term fuel savings of 2.6 percent using the data filtering method prescribed in the Type II procedure. A greater percentage would be computed for both stages of testing if the entire dataset were used for savings computations (i.e., if the data were not filtered to represent the most conservative scenario).

The fuel economy performance of both the treatment and control vehicles were monitored on a daily basis for approximately 24,000 miles in order to validate these findings. This process resembled the Type IV revenue route procedure specified in RP 1109, except that the hardware was not swapped at the midpoint of each daylong "test run." As seen in Figure 9, fleet data collected immediately after the installation of the closed crank retrofit generally agreed with the short-term Type II data. Further, running additional miles eventually produced apparent long-term fuel savings that averaged between 3 and 4 percent. After an initial gradual increase, the savings percentage appeared to level off after approximately 5,000 miles. These findings are in general agreement with the long-term stage of the Type II test, where the result from the daily fleet records fell between the unfiltered and filtered Type II results.

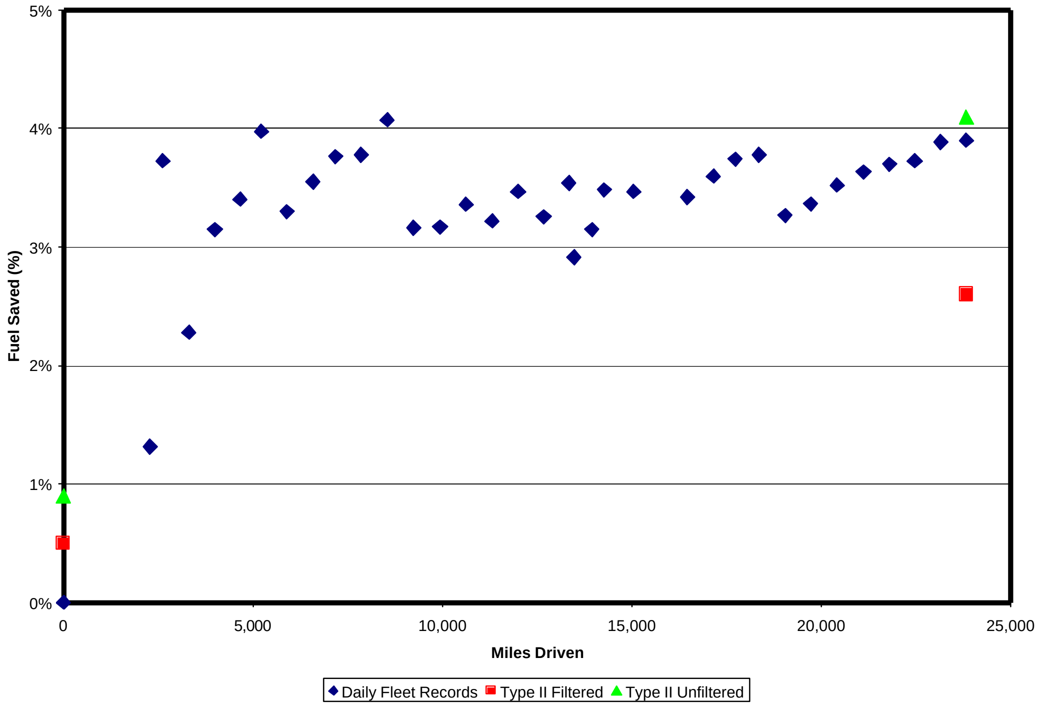

Figure 9 – Apparent Long-Term Fuel Savings

Please note that TMC cautions a single test is inconclusive regardless of the results; however, these positive findings should be interpreted by fleets as an indicator of the potential of the technology to produce real fuel savings in their own daily operations.

APPENDIX A – FLEET REFERENCES

New Conversion Inc.
World NCI
Reducing Emissions Through Innovative Technology
1701 County Road · Suite #5 · Minden, NV 89423
Tel: 775.782.5252 · Fax: 775.782.3559 · www.worldnci.com

February 2, 2007

Jim Bland
Better Life Products
235 Point Lane
Solomons, MD 20688-0174

Dear Jim,

I have listed three fleets below as you have requested. For further contact and to prevent any disturbance of the normal work day for this individuals, please contact me to set up any conversation or discussion.

CPS Express, Inc.

Sysco Food Service

Tahoe Unified School District

All the best,

Peter Clark
W. Peter Clark, VP
Sales & Marketing

APPENDIX B – TRACTOR SPECIFICATIONS

- Model Year – 2004
- GVW – 52,000
- Engine – Minimum 14.0 Liter 435HP @ 2100 RPM 1650 LB/FT Torque
- Batteries – (3) 12V with 2280 CCA
- Positive Post for jump starting the truck
- Compressor – Minimum of 15.9 CFM
- Clutch – Eaton Fuller 15-1/2" Adjust Free
- Exhaust – Right hand mounted vertical exhaust with 13' 06" curved vertical chrome tailpipe.
- Coolant filter – Fleetguard or approved equivalent
- Radiator – Minimum 1350 SQ-IN
- Antifreeze – Minimum rating of –34F
- Transmission – Eaton Fuller RTOC-16909A
- Transmission – Convert transmission to 13-speed at 500,000 miles (Provide total price for parts and labor as a separate line item)
- Transmission oil cooler – Air to oil
- Front Axle – Dana Spicer E-1200I 3.5" Drop Front Axle rated at 12,000 LB
- Front Brakes – Dana Spicer 15 x 4L ES LMS Extended Lube front brakes
- Front Suspension – 12,000 LB Taper-Leaf
- Front Slack adjusters – Dana Spicer LMS Extended Lube automatic front slack adjusters
- Front shock absorbers
- Rear Axle – Dana Spicer DSH40 rated at 40,000 LB
- Rear Axle Ratio – 3.70
- Main Driveline – Dana Spicer SPL250HD
- Interaxle Driveline – Dana Spicer SPL170 XL
- Interaxle Lockout – To include indicator light
- Synthetic Oil – 50W Transmission / 75W – 90W all axles
- Rear Brakes – Dana Spicer 16.5x7L LMS extended lube
- Rear Slack Adjusters – Dana Spicer LMS extended lube automatic rear slack adjusters
- Rear Suspension – Airliner 40,000 LB extra duty
- Air Suspension Dump Valve – Manual with indicator light and warning buzzer
- Rear Shock Absorbers – Both axles
- Trailer Air Hose – 15' coiled
- Trailer Electrical Cable – 15' Coiled
- Wheelbase – 187"
- Frame – 7/16" x 3-11/16" x 11-1/8" steel frame with a ¼" full C-Channel frame reinforcement with a minimum RBM rating 3,432,000 lbf-in per rail
- Frame Overhang – Minimum of 57 inches
- Front Tow Hooks – Frame mounted

- Clear Frame Rails 30” back of cab for cab guard mounting
- Air Slide 5^{th} Wheel – 24” with a vertical load capacity of 70,000 lbs and a trailing load capacity of 200,000 lbs
- Fuel Tank – 100 - gallon aluminum right hand mounted fuel tank
- Front Tires – 275/80R 22.5 14 PLY Michelin XZA2
- Front Wheels – Aluminum 10-Hub Pilot
- Rear Tires – 275/80R 22.5 14 PLY Michelin XDA H/T
- Rear Wheels – 10-Hub Pilot 5-hand steel wheels
- Cab – Minimum of 120” conventional cab
- Cab Mounts – Air ride
- Air Horn
- Utility Light – Flush mounted back of cab
- Mirrors – Dual West Coast heated mirrors with right hand remote 102” wide
- Convex Mirrors – 8” convex mirrors mounted under primary mirrors on driver and passenger sides
- Factory tinted windshield and glass
- Vent Windows
- Ash Tray and Lighter – Dash mounted
- Fire Extinguisher – Mounted left hand of drivers seat
- Heater and Defroster
- Air Conditioning
- Driver Seat – High back air ride driver seat with adjustable lumbar support and dual armrest
- Passenger Seat – High back non-suspension
- Seat Covers – Heavy duty vinyl
- Gauges – To include all standard gauges plus tachometer, trip meter, hour meter, voltmeter, air restriction indicator, low air pressure light and buzzer, primary and secondary air pressure gauges, engine coolant temperature, and engine oil pressure
- Radio – AM/FM/WB Cassette
- Trailer Brake – Hand Controlled
- Park Brake System – Two valve system with warning indicator