



VORTEX FLUID OPTIMIZER CORP. TRUCK FUEL OPTIMIZERS

Vortex Fluid Optimizer Corp.

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I. Introduction

The Vortex Fuel Optimizer was tested on five different tractors at four different fleets. Ten other tractors were outfitted with two different systems. The five Vortex systems referred to as Mark I units ranked one through five by increases in MPG of the 15 units tested. The five tractors among four trucking fleets obtained an **average Fuel Economy increase of 16% and an average Driving Economy increase of 12%.**

Vortex will start offering the current system for sale, rent-to-own, or a negotiated shared savings while we continue to work to improve on these results.

II. Test Results

The four fleets participating in this demonstration and their respective unit particulars are as follows:

<u>Company</u>	<u>Truck</u>	<u>Model</u>	<u>Manufacturer</u>	<u>Engine</u>	<u>HP</u>	<u>Liters</u>
	<u>Internal</u>	<u>ID</u>				
Fleet 1	P311	2005	Freightliner	Detroit	470	14
Fleet 2	1459	2006	Peterbilt	Caterpillar	475	15
Fleet 2	1481	2006	Peterbilt	Caterpillar	475	15
Fleet 3	329	2007	Freightliner	Mercedes	450	12.9
Fleet 4	B-968	2007	Freightliner	Detroit	470	14

The Truck Internal ID will be used for presentation purposes. This section of the report will present summary information. For information on each individual unit, please refer to the raw test data report entitled Individual Unit Test Results.

The overall Fuel Economy, with each data point made available to Vortex is as follows:

<u>Truck</u>	<u>Fuel</u>						<u>Percent</u>
	<u>Economy</u>	<u>After</u>	<u>After</u>	<u>After</u>	<u>After</u>	<u>After</u>	<u>Improvement</u>
<u>ID</u>	<u>Baseline</u>	<u>#1</u>	<u>#2</u>	<u>#3</u>	<u>#4</u>	<u>#5</u>	
P311	4.44	4.65	4.51	5.04	4.91*	5.19	13.51%
1459	5.04	5.43	5.67				12.50%
1481	5.34	5.64	5.87				9.93%
329	5.75	6.11	6.82				18.61%
B-968	3.64	3.82	4.16	**	4.58		25.82%
AVERAGE INCREASE IN MPG							16.07%

* Truck broke down and was repaired during this data period. As we consider the data corrupted, we will only use the data through data point #3. The savings after data point #5 was 16.8%.

** Data is missing from 4/19 through 5/09/08

Please note how the Fuel Economy increased with each additional data point (with the exception of P311 having a slight dip from After #1 to After #2, and again while the truck was in need of repair). This illustrates the Transition Period as the engine transitions to a fully magnetized state for complete combustion. We expect that 95% of the savings will be achieved between 7000 and 17,000 miles in the current configuration. It is interesting to note that in gas powered automobiles, we have seen some vehicles experience further increases in MPG up to six months later.

Vortex is well aware that variables such as idling time can affect overall Fuel Economy, which is why we present the Driving Economy savings. Below is the summary of the Driving Economy:

Truck Internal ID	Driving Economy						Percent Improvement
	Baseline	After #1	After #2	After #3	After #4	After #5	
P311	5.27	5.29	5.19	5.61	5.38*	6.07	6.45%
1459	not provided						
1481	not provided						
329	6.16	6.35	6.99				13.47%
B-968	4.11	4.19	4.45	²	4.79		16.55%
AVERAGE INCREASE IN MPG							12.16%

* Truck broke down and was repaired during this data period. As we consider the data corrupted, we will only use the data through data point #3. The savings after data point #5 was 15.1%. Using Data point #5 would have increased the Average Increase in MPG by almost three full percentage points.

² Data is missing from 4/19 through 5/09/08

While slightly less than the Fuel Economy, the savings is still quite impressive.

The fuel consumption while Idling was reduced significantly, but varied widely with unit 329 saving over 14% and B-968 saving 40%. Similar savings and variation occurred with VSG (PTO). Vortex is also well aware of the current industry trend of installing APUs to decrease fuel consumption during Idling. For these reasons, the savings (which in some cases would be several hundred dollars per month) are NOT included in the dollar savings calculated in the next section.

III. BENEFIT SUMMARY

It should be clear since there is more complete combustion, the *Vortex Fuel Optimizer* will also reduce emissions and save on engine maintenance, as well as extend the life of the engine and keep units on the road that would otherwise have to be retired due to emissions

failures. However, we all agree, the primary benefit is saving money by reducing fuel consumption.

Fleet 1 obtained the lowest percentage savings and Fleet 4 obtained the highest, so let's calculate the range of savings.

For mileage numbers, the Fleet 1 demonstration trucks averaged (for the periods we have complete and continuous data using the after numbers) 243, 262 and 281 miles per day and 247, 266 and 517 on the before miles, so let's be conservative and throw out the 517 miles per day truck and say 260 miles per day. This is an all-inclusive number covering all downtime, including weekends, holidays and maintenance to make the math easy to follow.

With the Driving Economy of 5.27 on P311's (Fleet 1) before data, this works out to be 1480.2 (260 divided by 5.27 = 49.34 times 30 days/month = 1480.2) gallons of fuel consumed per month, so let's call it 1480 gallons per month, and again, let's be conservative and say \$4.50 per gallon (even though the national average price for diesel on May 30, 2008 was \$4.79), for a total monthly expenditure of \$6660.

Fleet 1 obtained the lowest Driving Economy of 6.45% (if we used the increase in MPG after the truck was fixed, it would be 15.1%), which would equate to a savings (\$6660 times 6.45%) of \$429.57 per month, so let's call it \$425 per month.

Fleet 4 demonstration trucks averaged 246, 264 and 293 miles per day, an average of 267.7, so let's use 265 miles per day. Using the same formulas as above, and with their Driving Economy of 4.11 for truck 968, this works out to be (265/4.11*30) 1934 gallons per month, so let's call it 1900 gallons purchased per month, for a total monthly expenditure of \$8550 per month.

Fleet 4 obtained a Driving Economy of 16.55%, which would equate to a savings (\$8550 times 16.55%) of \$1415 per month, so let's round it down and call it \$1400.

Please note, there are additional savings as previously mentioned, such as while Idling and extended engine life that are not included in the savings calculations above. Vortex has also been conservative in calculating the miles per day, the fuel consumption and the price per gallon.

The savings per month using a *Vortex Fuel Optimizer* is between \$425 and \$1400 per month.