

# Fuel Economy Savings Study

## Rogers Group



### Data Accumulated by Rogers Group

At The Rogers Group Facility in Louisville, KY and  
Columbia, TN.

### **Purpose of Testing**

To Track Fuel Economy With And Without The  
Rentar Fuel Catalyst

### **Type of Testing**

Comparison test on eighteen pieces of off road equipment including  
haul trucks, wheel loaders and generators.

### **Date of Testing**

Louisville, KY  
Comparison Study  
5/19/2003 – 8/26/03

Columbia, TN  
Comparison Study  
1/4/04 – 3/31/04

## Summary of Findings

Rogers Group conducted fuel economy studies. They solely managed and collected the data. The results are reported below.

In Louisville, KY and Columbia, TN at the Rogers Groups facilities, Rogers Group managed the creation of a baseline, installation of the Rentar Fuel Catalyst and collection of the "post" data. The results due to the Rentar Fuel Catalyst as recorded by Cameron Druyor, Rogers Group Equipment Manager, were a **7.5% average improvement in fuel consumption** on the eighteen pieces of equipment.

Cameron's study concluded that a Volvo L 330D wheel loader reduced fuel consumption by 6%. A Caterpillar 980C wheel loader reduced fuel consumption by 32% and a Terex 3309 haul truck reduced fuel consumption by 21.8%.

From 2004 through 2010 Rogers Group has installed the catalyst on every piece of equipment at most of the 66 quarries located in 6 states and 29 counties.

### **Effect On A Fleet Of 640 off road vehicles**

The effect of using the Rentar Fuel Catalyst on the Rogers Group fleet based on each vehicle averaging 10 gal per hour, operating 8 hours a day, 22 day a month and purchasing fuel at an average of \$3.00 per gallon would be a fuel cost reduction of \$3,041,000 or \$4750 per vehicle annually.

### **Return On Investment**

The return on investment (ROI) or repayment of the cost of the catalyst would be approximately 4 months.

### **Greenhouse Gas CO2 Emissions**

In addition to saving 1,013,700 gallons of fuel per year, Rogers Group would not be emitting 10,137 metric tons of CO2 greenhouse gas into the atmosphere. This number is based on an EPA standard which states that for every 100 gallons of diesel fuel burned equates to 1 metric ton of CO2 released into the atmosphere.

### **Being A Green Company**

Being a "green company" has its own inherent value in protecting the environment and the health of its employees and clients. A positive public image is created by being "Green".

### **Monetary Value Of Reducing CO2 Greenhouse Gases**

The 10,137 metric tons of CO2 not being emitted will have a monetary value that could become an additional income stream for Rogers Group. This would be the result of the upcoming cap & trade programs currently being adapted in the United States similar to the cap & trade programs in effect in 162 countries under the Kyoto Treaty.

## Test Protocol

### **Louisville, KY and Columbia, TN. - Controlled Comparison Testing**

Rogers Group selected 18 off road vehicles, including wheel loaders, haul trucks and generators. Beginning and ending odometer readings were taken by Rogers Group personnel under guidance of Cameron Druyor and Rentar staff. Rogers Group also supplied the fuel usage for each vehicle in each phase. Fuel usage was acquired from Rogers Group official fuel billing records, provided by Rogers Group, to ensure accuracy.

The testing was conducted at the Rogers Group facilities in Louisville and Columbia. The 18 vehicles were operated over their normal course of business and in similar weather conditions throughout the duration of the fuel economy study. At the conclusion of the Comparison Study, the fleet gallons/hr was compared prior to fuel catalyst installation to fleet gallons/hr after fuel catalyst installation

Data was collected over 180 days during which a total of 1440 hours were accumulated.

**The average fuel consumption improvement was 7.5%**

**Current Rogers Group Cost of Fuel and Estimated Savings through use of the Rentar Fuel Catalyst**

Basis of Data:

- |  |        |
|--|--------|
| 1) Gallons per month per vehicle       | 1760   |
| 3) What is the percentage of savings?  | 7.5%   |
| 4) What price per gallon?              | \$3.00 |
| 5) What average % fuel price increase? | 5%     |
| 6) How many trucks?                    | 640    |

	Gross Annual Fuel Cost	Gross Fuel Savings	Accumulated Fuel Savings	Avg. Monthly Savings
Year 1	\$40,550,400	\$3,041,280	\$3,041,280	\$253,440
Year 2	\$42,577,920	\$3,193,344	\$6,234,624	\$266,112
Year 3	\$44,706,816	\$3,353,011	\$9,587,635	\$279,418
Year 4	\$46,942,157	\$3,520,662	\$13,108,297	\$293,388
Year 5	\$49,289,265	\$3,696,695	\$16,804,992	\$308,058

Note: The results provided in this worksheet are estimates only, actual results may vary.