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## Louis DeFilippi, LLC, Industrial Consulting

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*You've tried the others  
now try the independent*

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June 1, 2004

Messrs. Andrew Dorman and Ken Greenbaum  
Baird, Patrick & Co., Inc.  
20 Exchange Place  
New York, NY 10005

Dear Gentlemen:

### BACKGROUND

The consulting firm, nLake Technology Partners LLC (nLake) was engaged by Messrs. Andrew Dorman and Ken Greenbaum of Baird, Patrick & Co., Inc. to perform an independent technical evaluation specific to the performance of the Coates Motorcycle engine, including parameters such as emissions, volumetric efficiency and fuel efficiency. The tasks were to include reviewing and analyzing existing test reports and other technical information available at the Coates engineering and manufacturing facility that are relevant to a new spherical rotary valve (SRV) motorcycle engine developed by Coates International Ltd. and Coates Motorcycle Company Ltd. nLake in turn involved their associate Dr. Louis DeFilippi, President, Louis DeFilippi LLC, an independent consulting firm based in Palatine, IL, to visit the Coates facilities, as well as the facility that performed the emissions testing, Compliance and Research Services, Inc., and to write an independent assessment.

### VISIT

During the visit to the Coates facility in Wall Township NJ, Mr. George Coates reviewed what he believed to be the advantages of the SRV engine. We toured the facility and were shown the operation of a number of functional stationary SRV engines of various sizes. The motors were operated and ran smoothly. Similarly, a natural gas fueled SRV engine was operated and ran smoothly. An SRV motorcycle was driven by a Coates employee and shown to function smoothly and without problems. A Mercedes fitted with the SRV engine was successfully revved up to 14,000 RMP while in a stationary position and without an extensive warm-up period. All engines appeared to run quieter than expected.

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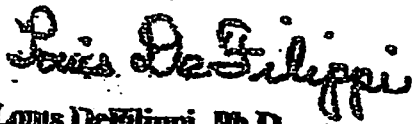
<http://www.flash.net/~defilip1/Default.htm>  
*Environmental & Regulatory Compliance, OSHA, EPA, FDA  
Effluent & Air Pretreatment, Microbiology, Analytical  
-Expert Consulting and Project Development-*

## ASSESSMENT

Concerning the motorcycle engine fitted with the SRV, these features have the potential to:

- Greatly improve the volumetric efficiency of the engine (this is based on assuming a valid air-flow benchmarking comparison to a Ford Lincoln 5.0 L engine that had air flow potential of 180 cfm with poppets, and 319 cfm for the SRV); which should result in an increase in fuel efficiency.
- Decrease required maintenance and adjustments, as well as simplify construction.
- Decrease the need for frequent oil changes.
- Reduce moving friction with a concomitant improvement in mechanical efficiency through reduction in friction horsepower, which should also result in an increase in fuel efficiency.
- Decrease emissions; the results obtained in emissions tests run by the EPA certified testing facility on a new motorcycle unit fitted with the CSRV on a 1650 cc engine are well below the current requirements. Assuming a comparison to the results obtained from the Mercedes tests is valid, one may conclude that emissions with the motorcycle engine fitted with the SRV system will be significantly lower than an equivalent poppet-fitted system.

Most Sincerely,



Louis DeFilippi, Ph.D.  
President, Louis DeFilippi, LLC  
Industrial Consulting



**United States Environmental Protection Agency**

**NVPHL**

**Ann Arbor, Michigan 48105**

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**LOCATION: Compliance and Research Services, Inc.**

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**DIVISION:**

**Certification & Compliance Division**

**DATE: May 26, 2005**

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**MESSAGE: Bob**

**Here is the Coast Motorcycle request for reduced testing, accepted.**

**Bruce Schuck**

**Certification and Compliance Division**

**Environmental Protection Agency**

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### Tailpipe Emissions Data

Tailpipe emissions results for Motorcycle (obtained from independent testing facility) are as follows:

Item	Test range, MPH	HC (emissions) range, ppm	CO (emissions) range, ppm	NO <sub>x</sub> (emissions) range, ppm
SRV	—	1.5	6.8	NA
Current EPA limits	—	5.0	12.0	NA

I was also shown data collected from a direct comparison of tailpipe emissions for two Mercedes Benz 280SE Sedans, one fitted with a standard poppet valve system and one with the Coates SRV. The comparisons are:

Engine fitted with valve system	Test range, MPH	HC (emissions) range, ppm	CO (emissions) range, ppm	NO <sub>x</sub> (emissions) range, ppm
Poppett	37 - 38	36 - 57	10.0 - 20.0	118 - 300
SRV	26 - 33.3	10.17 - 19.2	5.9 - 7.3	3.3 - 30.87