



BP Research Center Tour—May 4th

The Chicagoland Club was invited by our sister organization, the Chicagoland GS Club, to attend a technical session at the BP (Amoco) Research Center in Naperville.

This was a interesting look into the methods used by BP to verify the effect of additives in gasoline on engine performance and the reduction of engine deposits.

The tour consisted of a presentation on engine operation and fuel refining and additives, a tour of the facility, a dual—dynamometer demonstration, and views of the

engine tear-down labs.

Also included was an intriguing demonstration of quality fuel vs. average grade fuel and the resultant valve deposits. For this demonstration, boroscopes (microcameras on the end of flexible tubes) peered inside cylinder heads of a modern Pontiac GTO. One cylinder bank was run solely off of a tank of BP gas, while the passenger bank ran off of a tank of gas with minimum amount of additives as required by law—discount station gasoline. The Buick Club members could see the deposit buildup on the

valves after only 13,000 miles with low-grade gas.

The dyno' demonstration had 2 identical Chevrolet Cobalts running on side-by-side dynamometers. The right-side car had regular grade gas, the left, premium. The large LCD displays in front of each car showed in real time the effect of higher octane in increasing torque and horsepower.

Each participant received a \$20 gas card, compliments of BP. And best of all, there were free drinks and pizza.

Thanks to GS member Rich George for setting this up.



All companies share the same base gasoline stock. It is the additive packages and filtering that separate one brand from another.

Since all Chicago area gas contains 10% ethanol by law, the need to add alcohol such as Heet® to reduce water is unnecessary—you get it with every tankful already.

The Engineering Methods Used to Test Fuels Were the Stars of the Show

Despite what we all feel about the price of gas, keep in mind that this tour was provided by engineers at BP. This was a technical presentation that concentrated on the methods and machines used to show that detergents and additives do indeed have an effect on gas performance and the cleanliness of valves

and fuel injectors. The tools used to prove this were shown to the tour participants. Whether the price is fair was not discussed.

Note that the employees said even they do not get a discount at the pump.



Gasoline changes in volatility for winter and again for summer. Volatility is the ability of the fuel to vaporize. Only gas vapor burns—gas in liquid state does not. Benzene (lighter fluid) content is what changes in September and May to change the Reid Vapor Pressure index, or RVP.

U.S. Gasoline "Flavors"



"Boutique Gas" - The map at left shows the areas of the country that requires different blends of gasoline. These numerous unique formulations mean that gasoline stocks cannot be shared or shipped to other states if necessary. The formulations, called boutique gas in the news, are required by state, city, and EPA laws designed to improve air quality. There is a movement to get a more uniform standard. (map from BP presentation)