



Contract Report

Millipore Corporation - Bedford MA, USA

The scope of this project was to completely replace the antiquated and inefficient burners, and retrofit both Cleaver brooks 300Hp boilers with 2 high efficiency, low emission, low O2 Limpsfield LCN36 burners. This package would be complete with the existing ;
 Autoflame Mark 6 controller to provide micro modulation of air , fuel valves and dampers.
 EGA- Exhaust Gas Analyzer integrated to provide continuous combustion monitoring to the Mark 6 controller.
 DTI- Data Transfer interface will provide downloads of all combustion data.

This equipment would provide the following benefits:
 Significant Natural Gas Fuel Savings.
 Reduce Harmful Emission to the Environment.
 Produce improved, stable, and consistent emission profiles.

This project was projected to save:
 > 35,294.65 Therms/yr or 13.84 % of fuel consumption.

Millipore Corporation accepted our proposal and projected fuel savings, and placed an order for the 2 LCN36 burners

Limpsfield began the design and manufacturing and the project was installed and commissioned on site at Millipore, Bedford MA, USA.

Fuel savings were evident immediately, and encouraged a savings analysis report to be carried out by GDS associates, Inc.

Fuel saving studies had already been in progress since the Autoflame equipment had been installed 2 year previous.

A 1 year study was completed to measure the fuel savings of the Limpsfield burner against the Cleaver brooks burners also studied for the previous 2 years.

The fuel savings were remarkable! The study showed a **Natural gas saving of 30%** on average for the 1 year period after the burner upgrade. This equated to a saving of 71,250 Therms/year. More than double the savings originally projected!

With less than 3% O2 and 0ppm of CO throughout the whole burner firing range Millipore have achieved a payback of less than 1 year on their investment for Limpsfield burners. Millipore are continuing to make staggering fuel savings of \$101,896 annually!



BEFORE



AFTER

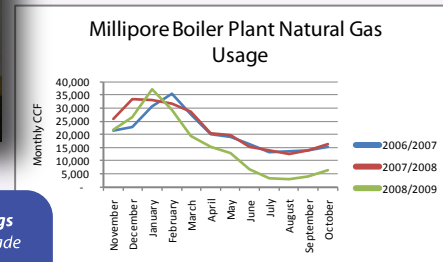


Figure 1: Natural Gas Usage Results

"The usage comparison found an average 30% savings when the gas usage from the 2 years prior to the upgrade is compared to the 1 year after the upgrade."
 GDS associates, Inc - Millipore savings analysis report.

*"These boilers at Millipore Bedford MA, were in very good shape and well taken care of. In other words we did not take poorly maintained equipment and install these upgrades and claim big savings.
 So I would conclude this is a testimony of the design of your equipment, the expertise of the installers and the exacting commissioning from Keith Fortner (Limpsfield, USA Technical sales manager). Great Team work !!!!"*
 Paul Lukitsch - Regional manager, Millipore Corporation