

# SIMULTANEOUS HEATING AND CONDENSING IS ACHIEVED WITH THIS UNIQUE BOILER

## BOILER CASE STUDY

### Charles Krug

St. Helena, California

Pump Testing

## CUSTOMER APPLICATION AND KEY CHALLENGES

Charles Krug, Napa Valley's first winery established in 1861, has been owned and operated by the Peter Mondavi family for more than four generations. Charles Krug is recognized as an innovator and pioneer in the winemaking industry, with their exquisite line of critically acclaimed wine vintages being enjoyed by aficionados and casual consumers alike.

To assist the fermentation step in the winemaking process, Charles Krug was utilizing a steam boiler to heat their wine to temperatures below 90°F. Unfortunately, the boiler was an older model and relies on a heat exchanger to produce high pressure steam; an unnecessarily expensive and inefficient technology. On top of that, the steam from the boiler was being routed to several different processes throughout the plant. Looking to improve their production process, Charles Krug consulted with R.F. MacDonald Co. to bring the quality of their wine to its fullest potential.



The Charles Krug Winery has been operated by the Mondavi family for four generations

## THE R.F. MACDONALD CO. ANALYSIS & SOLUTION

Charles Krug, Napa Valley's first winery, was exploring options to upgrade their boiler and improve their fermentation process, as well as consolidate their boiler and condenser into a single unit. R.F. MacDonald Co. recommended the Cleaver-Brooks Clearfire Model CFC, a boiler system that circulates water through both the boiler and a chiller to achieve any desired temperature, hot or cold. This feature allows Charles Krug to use just one system for both the heating and cooling of their wine tanks, which require different temperatures at various stages throughout the fermentation process.

Charles Krug approved R.F. MacDonald Co.'s recommendation, and the existing boiler was replaced with two Cleaver-Brooks Clearfire boilers. The Clearfire CFC boiler features a combustion system with a pre-mix down firing burner, which is fundamental to achieving efficiencies up to 99% and NOx levels less than 20 ppm. Using natural gas and propane, the Clearfire is suitable for central heating and indirect hot water supply at working pressures up to 3 bar or 5 bar, depending on the required output. A key feature to Charles Krug's application was the Clearfire's capabil-



Two Cleaver-Brooks Clearfire boilers were integrated into the winery process

BOILERS

PUMPS

SYSTEMS

SERVICE

PARTS

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By circulating water through both the boiler and a chiller the Clearfire can achieve any desired temperature, hot or cold

ity for simultaneous heating and condensing. Along with the Clearfire, R.F. MacDonald Co. also installed a Camus Boiler for barrel rinsing and domestic water wash downs, which decoupled the boiler from supplying steam to multiple processes at one time.

#### PROJECT RESULTS

Throughout the installation process, R.F. MacDonald Co. worked in conjunction with the installation crew and provided invaluable expertise and input during the design phase. R.F. MacDonald Co. is now the continuing service provider for the equipment, and proactively monitors and maintains the boiler system at the Charles Krug winery.

The boiler system itself is continuing to provide Charles Krug with the freedom to control thermals at the temperature they want, at the time they want. The fuel savings gained from the more efficient boiler, combined with the ease of operation, have culminated into an investment into boiler technology that Charles Krug considers to be a great decision.

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