



March 22, 2016

Mr. Tim Korn  
Muhlenberg College  
2400 Chew Street  
Allentown, PA 18104

RE: ProAsys PT 2700 Purified Tannin

Tim,

For the past three and a half years, we have been treating the steam boilers at the CUP and the Seegers building with ProAsys PT 2700, purified tannin. This unique technology is used to prevent scale and oxygen attack on boiler internals. Additionally, it has enabled us to significantly reduce the amount of blowdown on each of these steam boilers. PT 2700 is a certified organic product (made from tree bark), and offers the following benefits:

- 1) Improves boiler efficiency by removing old deposits
- 2) Complies with green initiatives by replacing traditional boiler chemicals with a natural, sustainable and biodegradable product.
- 3) Reduces boiler blowdown
- 4) Reduces water consumption
- 5) Reduces carbon emissions
- 6) Safer to handle than traditional boiler chemistries.
- 7) Improves protection of the steam/condensate system by lowering the amount of CO<sub>2</sub> in the steam due to less makeup water usage.

Prior to implementation of the Purified Tannin program, the four steam boilers had been effectively treated with an effective polymer/sodium sulfite program. The neutralized boiler conductivity was maintained at approximately 3500  $\mu$ S on all boilers. After the introduction of the purified tannin technology, we were able to maintain boiler water neutralized conductivity at approximately 7000  $\mu$ S, which represents a 50% reduction in boiler blowdown, and saves both water and energy while reducing the carbon footprint.

It is worth noting that prior to feeding tannin, the steam boilers at Seegers, which are equipped with needle valves for surface blowdown, were often blowing down continuously, in addition to daily bottom blowdowns. Since introduction of the tannin program, the surface blowdown valves have mostly remained closed, and operating personnel perform only one short bottom blowdown per day.

Muhlenberg College remains one step ahead of other educational institutions as it is the only college or university in Pennsylvania that is using this green technology.

Regards,

*Bernard Kiefer, CWT*