

March 9, 2005

Dr. John L. Oscarson  
350 CB  
Chemical Engineering Department  
Brigham Young University  
Provo, UT 84602

Dear Dr. Oscarson,

The attached report is in response to your memo of July 14 asking Stan Harding and me to evaluate a proposal to add a third heat exchanger to our antibiotic process feed stream. We have conducted measurements using a triangular channel in the laboratory (as a prototype of the channels in the exchangers) and have performed analyses relative to the proposal.

The report provides details of those measurements and analyses, and presents our recommendations that the proposal not be implemented unless some modification is also included.

Please feel free to contact me with questions or other discussion about this project.

Sincerely,

Thomas H. Fletcher