

### Company

R&D Systems, Inc. is a bio-tech company based in Minneapolis, MN. They specialize in producing biological reagents, such as antibodies and proteins, clinical controls, and enzyme assay kits.

### Intern Project

Reduce water and energy usage in the laboratories. Areas of interest include the reagent grade water system, the sterilizers and washers.

### Incentives to Change

Optimize systems to save water and energy.  
Extend water system's lifetime.



## Solutions

### Reduce Purge Stream flow rate on Point-of-Use Polishers

PUPs purge water 24/7. Reducing flow rate will save water and energy

### Increase RO Unit Recovery

Using a smaller venturi injector will result in less water going down the drain.

### Increase Temp Set Point for Ultra-Low Temp Freezers

Save electricity by raising freezer temperature from  $-80^{\circ}\text{C}$  to  $-70^{\circ}\text{C}$

### Install VFDs on Water System Pumps

Adjusts motor speed to develop needed pressure change



### Retrofit Autoclave with Temperature Controlled Solenoid

Rather than using a constant stream of cooling water, use water only when needed

### Reuse RO Reject Water as Cooling Water