

## CASE STUDY

## ElectroCell Systems' Solutions-Based Technologies at Penn State Health Milton S. Hershey Medical Center

CHALLENGE: Provide Cleaner Greener Open and Closed Loops, remove 98-99% of Suspended Solids (down to one micron and below) Improve Heat Exchange Efficiencies 100% of operating time not just 3%, 10% or 30%.

SOLUTION: Continuously provide an optimum efficiency of Chiller and Cooling Tower operations. Save Make-Up Water 20-25% due to reduced compression pressure on chillers and improve the effectiveness of Chemical Water Treatment.

RESULT: Cleaner Greener Operation – less energy, water, maintenance, service and repair.

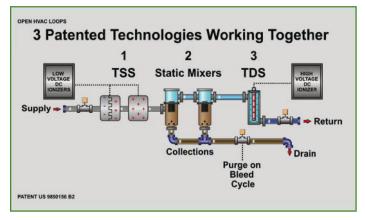
Operate at or below Manufacturers Specifications. WIN – WIN – WIN for all parties.

**SUMMARY:** The scope of this project involved five separate ElectroCell Systems: Two open loops in the Central Chiller Plant and two satellite chiller plants as well as addressing one central closed loop throughout the campus that service a total of 2.6 Million square feet of Medical Facility Operations.

Penn State Health Milton S. Hershey Medical Center is home to the Penn State College of Medicine. Founded in 1963 through a gift from The Milton S. Hershey Foundation, is one of the leading teaching and research hospitals in the country.

"ElectroCell is a good company to work with and has helped us improve our chilled water production capabilities", stated Kevin Kanoff Campus Energy Engineer. "Paul McLaine and his team were very capable and took extra time to understand our operation. Their understanding of chilled water production was beneficial in developing a side-stream particle precipitator system to meet our needs."

EAS Sampling Source: Cooling	ey Medical Center		93.8% particle reductio in 3 week	
		rty laboratory. Samples analyzed by el- h filtered water and particle data correc		
BASELINE SAMPLE - Prior to ElectroCell Start-up - 2-July-2019			AFTER 3 WEEKS with ElectroCell System - 23-July-2019	
PARTICLE COUNTS PER 100mL TEST PORTION			PARTICLE COUNTS PER 100mL TEST PORTION	
1 - 3 micron: 3 - 5 micron: 5 - 10 micron: 10 - 15 micron: 15 - 25 micron: Over 25 micron: TOTAL / 100mL:	1,572,500 208,140 233,520 100,080 132,220 178,920 2,423,380	1 - 3 micron: 3 - 5 micron: 5 - 10 micron: 10 - 15 micron: 15 - 25 micron: Over 25 micron: TOTAL / 100mL:	55,885 22,692 25,978 9,960 11,191 10,825 136,531	
SOLIDS PER 100 LITERS OF SYSTEM VOLUME ( mm³)			SOLIDS PER 100 LITERS OF SYSTEM VOLUME (mm³)	
1 - 5 micron: 5 - 10 micron: Over 10 micron: TOTAL / 100 Liters:	25.90 98.55 119.599.91 119,724.36 1197 ppm	1 - 5 micron: 5 - 10 micron: Over 10 micron: TOTAL / 100 Liters:	1.90 10.96 7.343.38 7,356.24 74 ppm	



www.youtube.com/channel/UCrrx\_4vMC0PS8SJHtZxl6Ng

Three Patented Process System address Scale,

Corrosion or Biological (especially Legionella), we integrate several processes for both Open and Closed Loops, reduce Kw Per ton on the Chiller, Reduce Make Up Water, enhances performance of Chemical Treatment Program and Reduces the Maintenance, Repair and Service. We also, improve the efficiency of the chillers, reduce the Kw on the Pumps and Fans in the Cooling Towers.

