Earthwise Environmental Inc.

- Founded in 1995; Mission to provide more “environmentally friendly” methods of treating water.
- Our staff: Over 150 years of combined experience, 4 CWT’s on staff.
- “Experts” for our clients in evaluating new technologies; chemical minimization, “Green Solution Providers”
- Engineer, Design, and SERVICE our solutions
- Not a chemical manufacturer
- Clients include Northwestern University and Hospitals, University of Chicago, UIC, and over 400 customers in IL, IN, and WI.

Executive Team

- Robert S. Miller CWT President/Owner 29 years
- Robert Warnecke CWT VP of Eng. 33 years
- Robert Tschannen CWT New Const. 30 years
- Larry McLaughlin CWT District Manager 32 years

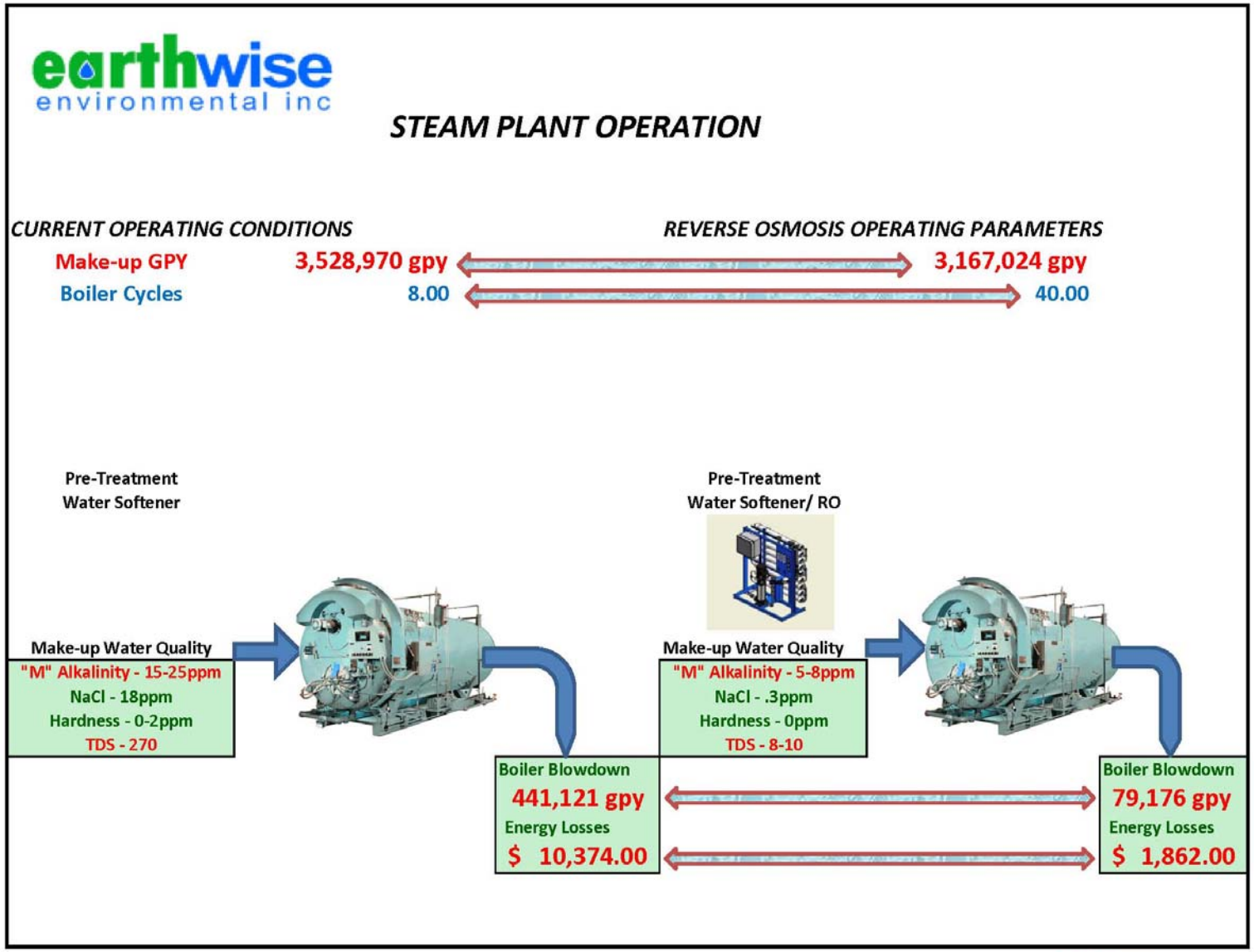
Potential Areas of Impact

- **Steam Systems**
  - Main Steam Plants Reverse Osmosis Retro-fit (ECM, WCM)
  - Clean Steam Removal (ECM,WCM, Maintenance, DI Tanks)
- **Condenser Water Systems**
  - *e*Solution (WCM)
  - Plate/Frame (ECM)
- **Water Reclamation**
  - Air Handler Condensate (WCM)
  - Roof Rain Recovery (WCM)
- **Closed Loop Systems**
  - Glycol Replacement (ECM, Capacity)

Main Steam Plants

- Implement a reverse osmosis (RO) system to reduce water and energy costs and increase steam quality.
- Implement removal of clean steam generators for energy savings.

Steam Boiler Water Chemistry & Losses



Clean Steam Systems

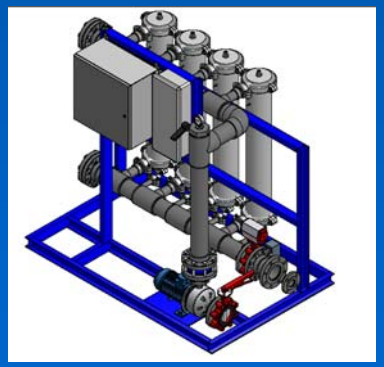
- Eliminate current clean steam generation and utilize new boiler RO plant as steam supply.

Condenser Water Systems

Design a program with the goals of reducing:

1) Water consumption a minimum of 20% and reduce/eliminate chemical treatments from the site.

2) Document energy saving potential of a plate/frame heat exchanger for low load periods.



Water Reclamation

- Capture and retain “free” water from condensation of chilled water coils now going to drain.
- Capture and retain rain water from roof areas.

Water Reclamation Savings

earthwise environmental inc

AHU Cooling Coils Water/year

14,892,748

Roof Drains Water

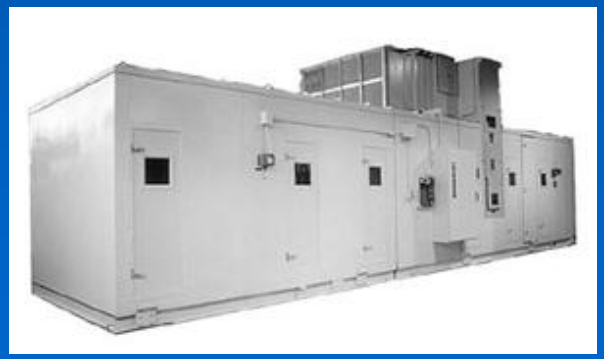
628,183

SAVINGS GLS / YEAR

TOTAL GALLONS RECOVERY 15,520,931

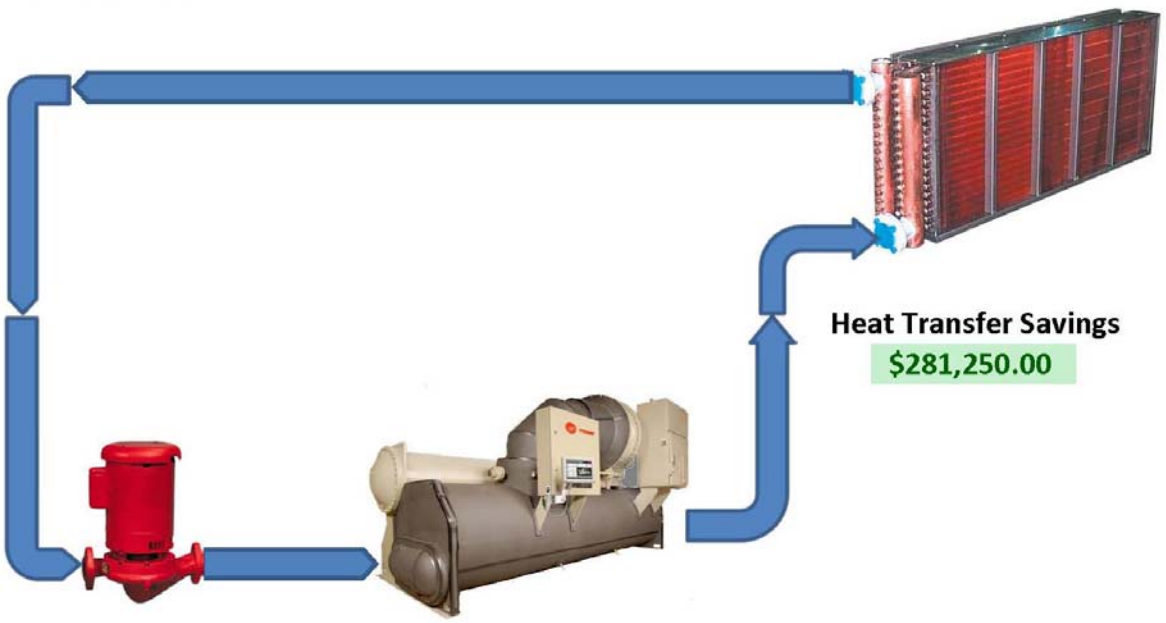
Closed Loops Glycol Replacement

- Replace current ethylene and propylene glycol with Formate product (higher thermal conductivity, lower viscosity, environmentally friendly)
- RESULT: Increased chiller & hot water efficiencies + decreased pumping HP needed to operate = ENERGY SAVINGS and INCREASED CAPACITY



Glycol Replacement Savings

earthwise environmental inc



Heat Transfer Savings
$281,250.00

Pumping Efficiency
$40,134.00

Added Chiller Capacity
678 tons

	SAVINGS / YEAR
INCREASED CHILLER CAPACITY	678 Tons
TOTAL ENERGY SAVINGS	$321,384.00

Condenser Water Usages & Savings

earthwise environmental inc

Roof Drain to Cooling Tower

628,183

Air handler condensate to Cooling Tower

14,892,748

RO Reject to Cooling Tower

1,505,794

Evaporation
36,390,000

Evaporation
36,390,000

Tower Cycles
4.0

Make-up GPY
48,520,000

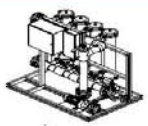
Make-up $$
$ 72,780.00

Tower Cycles
20.0

Make-up GPY
21,278,538

Make-up $$
$ 31,917.81

Bleed-off gls/yr
12,130,000
Bleed-off $$
$ 18,195.00



eSolution

Bleed-off gls/yr
1,915,263
Bleed-off Sewer $$
$ 2,872.89

SAVINGS / YEAR

WATER SAVINGS gls 27,241,462

TOTAL $ SAVINGS $ 56,184.30

Hospital Summary

- ***Water Savings Gallons (WCM):*** *19,408,568 gallons per Year*
- **Water/Sewer Savings $$:** *$63,583.00 per Year*
- ***Energy Savings (ECM):*** *$644,472.00 per Year*
- ***Operating Expense Savings:*** *$18,217.00 per Year*
- ***Labor Savings:*** *$20,000.00 per Year*

TOTALS – 19,408,658 GPY & $746,272/year

TOTAL PROJECT COSTS $1,449,958
with ROI of 1.94 years or 23 months

Conclusion

- By working together as “Green Partners”; NWM Hospitals Earthwise and ESD showed **dramatic reductions in NWM’s water and energy footprint**; putting NWM at the **forefront of sustainability** for hospitals across the country.