COOLING TOWER

Cooling Tower Inspection Case Study Nellis Air Force Base, USA

A *Hydro*FLOW® i160 installation enabled chemical-free cooling tower operation, with no biofouling or scale return and easy removal of loosened deposits.

0	10 mo	✓	4 yrs on
Chemicals Used	Chemical-Free Operation	Deposits Removed	Excellent Condition

⇄ BEFORE & AFTER

BEFORE

- ✗ Chemical treatment required for control
- ✗ Risk of scale and biofouling buildup
- ✗ Deposits adhered inside the tower

AFTER

- ✓ No chemicals used for 9–10 months
- ✓ No biofouling or scale return observed
- ✓ Deposits became loose and easy to remove

BEFORE

Manual hose cleaning of fouled tower

AFTER

Debris removed during cleaning process

OVERVIEW

At Nellis Air Force Base, cooling tower 11 was used to evaluate Hydropath technology over a six month period. Inspection confirmed no significant scale or biofouling, while a later 2019 review found the tower and *Hydro*FLOW® i160 operating in excellent condition.

CHALLENGE

The cooling tower required scale and biofouling control while reducing reliance on industrial water treatment chemicals.

- Risk of scale accumulation
- Biofouling affecting system cleanliness
- Dependence on treatment chemicals
- Deposits difficult to remove

SOLUTION

A *Hydro*FLOW® i160 unit was installed on cooling tower 11 to evaluate chemical-free operation and scale behaviour.

UNIT INSTALLED
1x *Hydro*FLOW® i160

INSTALLATION POINT
Cooling tower 11

EVALUATION PERIOD
6 months

INSPECTION DATE
18 July 2015

SITE

Inspection of cooling tower fill section

SITE

Cooling tower access and pipework inspection

SITE

Spray nozzles operating in cooling tower

RESULTS

No significant fouling observed
No significant scale or bio buildup was found during inspection.

Chemical-free operation
No chemicals used during 9–10 months of operation

No scale return
No return of scale observed after stopping chemicals.

Easy cleaning
Loose deposits removed easily using a water hose.

Scale softened and removable
Deposits became soft and easy to remove.

Large deposits removed
Deposits removed during cleaning reached up to 6 inches.

TESTIMONIAL

> *"We have not utilized any industrial water treatment chemicals at all in the last 9-10 months of operation."*
>
> — James Romero, HVAC Foreman

KEY TAKEAWAY

Summary

*Hydro*FLOW® i160 enabled chemical-free cooling tower operation with no fouling, no scale return, and easy removal of loosened deposits.

0	10 mo	✓
CHEMICALS USED	CHEMICAL-FREE	DEPOSITS REMOVED

RELATED CASE STUDY

Commercial Building Cooling Tower Case Study

Honolulu, Hawaii

HydroFLOW® units installed on a commercial building cooling tower in Hawaii eliminated the need for chemical biocides while dramatically reducing water waste through blow-down reduction, delivering over $121,000 in annual savings with a 3-4 month return on investment.

85% Biocide Reduction

Near-total elimination of chemical biocide dosing on the cooling tower system

50% Blow-down Reduction

Halved water waste by reducing blow-down cycles significantly

$121K Annual Savings

Combined chemical, water and maintenance cost savings per year