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Collecting the Drops:

**A Water
Sustainability
Planner**

Case Example

Pfizer Inc: Conserving Water through Site Operations: Four Ways by Pfizer

Good management practices can bring quick results. One Pfizer site realized early benefits through five key operational improvements—from reducing cooling tower blowdown, to recycling air conditioning condensate, improving its water treatment system, repairing its irrigation system repairs, and installing water meters—and that's just the start of an ongoing conservation program.

In 2003, the average well water extraction at Pfizer's Barceloneta, Puerto Rico site was 330,000 gallons per day. This amount was 92 percent of the site's water extraction entitlement. A team led by the engineering department implemented several small projects to reduce water extraction—and in 2004 cut average extraction levels to 287,000 gallons per day (just 80 percent of entitlement).

The water conservation projects included the following measures:

- Reduced cooling tower blowdown by increasing the cycles of concentration in the cooling tower.
- Captured air handling condensate from selected buildings and used the condensate as cooling tower makeup.
- Installed an efficient water treatment system in the utilities area that generates less wastewater per gallon of water treated, for example, during backwashing and hence reduces water usage
- Repaired the site's irrigation system to reduce the leaks and hence wasting of water from the system.

Installed water meters at various locations within the facility to understand its water usage. The facility is evaluating additional opportunities that the project team identified to further reduce water consumption:

- Replace certain sprinkler heads to apply water uniformly on the site's lawns, shrubs and green areas. Adjust the duration of the sprinkling time to apply the minimum amount of water needed to achieve the necessary watering.
- Meter the amount used to water the green areas. Require regular inspection of the system to ensure that leaks are promptly addressed.
- Reduce water makeup to aqueous scrubbers.
- Optimize water treatment systems that produce high quality water, for example, reverse osmosis systems to reduce the volume of the blow down streams.
- Collect blowdown streams from water treatment systems — for example, reverse osmosis brine stream reject and the distillation blowdown streams for use as makeup to the cooling tower.
- Collect and route air-handling condensates from additional buildings to the cooling towers for use as makeup water.
- Install a side stream filter on the cooling tower to further increase the cycles of concentration and thereby reduce cooling tower blowdown.
- Collect and recycle certain waste streams from the cooling tower water treatment system, such as the initial backwash of the softeners and sand filters.
- Look for opportunities to reduce the cooling load and consequently reduce water consumption in the cooling towers.
- Evaluate the use of low-flow shower fixtures and maintain dishwashers used in the cafeteria to reduce water usage.

Pfizer Inc: Protecting the Source: Ann Arbor Watershed Improvement (Cont.)

- Evaluate alternative cleaning methods to reduce fresh water requirements, e.g., use clean-in-place systems to reduce water usage for cleaning,
- Reduce steam and hence fresh water usage in the site's wastewater steam stripper
- Collect rainwater that accumulates in certain dikes and containment structures for use as makeup to the cooling tower.