

Sand City Brewing Company Evaluates its Water, Chemical, and Energy Usage



Sand City Brewing Company

Sand City Brewing Company (Sand City) is a craft brewery in Northport, New York that produces approximately 2,500 barrels of beer annually, primarily via the onsite tasting room. In addition to the Northport location, Sand City is currently building a larger brewery in Lindenhurst, NY that would be capable of producing upwards of 6,000 barrels of beer per year. Construction is expected to be completed by fall of 2020.

Challenge

Brewing beer is a resource intensive process that can have large environmental impacts if not carefully monitored and controlled. Sand City is very committed to environmental stewardship and, as a result, has already implemented a number of sustainability practices at their Northport location to reduce their environmental footprint. Sand City wanted a fresh perspective on their brewing process to identify additional sustainability opportunities to further reduce the impact of their brewery.

Solutions

Sand City was selected to receive a Pollution Prevention Opportunity Assessment as a part of the Brewery Sustainability Initiative being pursued by the New York State Pollution Prevention Institute (NYSP21). NYSP21 partnered with Cornell University to identify and evaluate opportunities to reduce the brewery's environmental footprint. NYSP21 conducted a virtual assessment of the facility to collect operational information and investigate Sand City's brewing process. NYSP21 and Cornell University used baseline data collected as part of the virtual assessment to identify sustainability opportunities.

Results

The work performed by NYSP21 and Cornell University led to key findings that can support Sand City with its goal of reducing its water, chemical, and energy usage and waste disposal:

Challenge

- Sand City wanted to identify sustainability opportunities that could be implemented at its current facility.

Solution

- NYSP21 and Cornell University collaborated to evaluate and identify opportunities to reduce Sand City's water, chemical, and energy usage and waste disposal.

Results

- Sand City has already implemented a number of sustainability practices to reduce its environmental footprint such as pretreating wastewater prior to discharge, insulating heat transfer pipes, and using cleaning chemicals derived from environmentally friendly sources.
- NYSP21 and Cornell University identified several additional opportunities to decrease the brewery's environmental impact such as installing low-flow water fixtures, composting brewing solids, and using low phosphorus chemistries for passivation.

Sand City has already implemented several sustainability practices, including:

- Insulating all heat transfer pipes.
- Using cleaning chemicals derived from environmentally friendly sources.

Several opportunities were identified that could potentially reduce the brewery's environmental impact, including:

- Installing low-flow fixtures on hoses, spray balls, and faucets to reduce water consumption.
- Sending waste brewing solids to a local composting facility to divert from landfill.
- Investigating if citric acid could be used for passivation of the brewery vessels in place of high phosphorus chemicals.

Implementation

- Since the assessment report, Sand City installed reduced-flow fittings on all their water lines, decreasing water use by 30%.
- Sand City has implemented a Clean-In-Place (CIP) skid which has enabled the reuse of 5,200 gallons water annually. This change has resulted in the reduction of sanitizer use, in the amount of 40 gallons/year at a cost savings of \$3,000 per year.
- Sand City now uses iodine sensors to determine when caustic solutions are spent or when they can be reused. This change has resulted in the reduction of at least 17K gallons of water annually along with savings of 6 gallons per year of caustic.
- Sand City has started using citric acid in their passivation process, a chemical that is less harmful to the environment than their previous nitrophosphoric acid used previously. This change has resulted in the reduction of 55 gallons of nitro-phosphoric acid annually.
- Sand City has switched to LED lighting across their brewery. This change has resulted in the reduction of 72–80 percent in energy use (Per the U.S. Department of Energy), with an estimated annual savings of \$250.

"We enjoyed working with NYSP2I. I was very impressed by the degree of their detail and insight."

Bill Kiernan
Co-owner

Sand City Brewing Company

60 Main Street
Northport, NY 11768
(631) 651-2767
www.sandcitybeer.com

Partners



For more information please contact us:

585-475-2512 | nysp2i.rit.edu | nysp2i@rit.edu

111 Lomb Memorial Drive, Bldg 78
Rochester, NY 14623

Although the information in this document has been funded wholly or in part by the United States Environmental Protection Agency under assistance agreement X9-96264400 to the New York State Pollution Prevention Institute at Rochester Institute of Technology, it has not gone through the Agency's publications review process and, therefore, may not necessarily reflect the views of the Agency and no official endorsement should be inferred.

Funding has also been provided by the Environmental Protection Fund as administered by the NYS Department of Environmental Conservation. Any opinions, findings, conclusions, or recommendations expressed are those of Rochester Institute of Technology and its NYS Pollution Prevention Institute and do not necessarily reflect the views of New York State. ©2020 Rochester Institute of Technology.