



SWT in Action: Helping a Fruit and Vegetables Processor Reduce Chemical Costs and Increase System Uptime

Spiral Water Technologies was contacted by a fruit and vegetable processor to help them address two major issues: how to reduce the level of chemical consumption while also increasing their system's processing uptime. Here's how our advanced automatic self-cleaning filters helped.

The problem

The Spiral Water team learned that this company (now a customer) wanted to address two issues: how to reduce chemical use and also increase the system's process uptime.

The customer was using large amounts of chlorine and peracetic acid to control microbiological issues that might occur in their organic flumes for fruit and vegetable processing.

The customer has a closed, continuously flowing system. Its several-hundred-gallon tank is filled with fresh water, which is treated with the chlorine and peracetic acid. Once the water hits a certain residual chlorine level (free chlorine and the total chlorine), processing can begin. The system is then brought up to speed and starts running, and the levels of chlorine are closely monitored.

As the residual chlorine decreased to a certain point, the customer would have to stop processing, because the system could not be re-dosed while it contained

product. The organic load of the system was far too high for it to continuously process their product.

Moreover, the temperature of the water must be maintained in order for the product to maintain its integrity. If the water becomes too warm (which could happen during shutdown), the vegetables begin to soften and break down, significantly losing their shelf life. In this case, the solids that were being removed were small enough to get into their plate and frame chiller—a drip plate and frame that would block up the holes, therefore preventing the chiller from operating at its optimum abilities.

Since this was a closed system, the only solution was to shut it down two or three times a day to change out the water, add the requisite chemicals and restart the system. Otherwise, it could not sustain the proper the microbiological treatment and/or the temperature from the chiller. This solution not only wasted costly chemicals but also resulted in the loss of several man-hours each day.

The Spiral Water solution

Spiral Water was tasked to remove as much of the organic material from the process water as possible to help keep the system operating continuously. After conducting tests, we discovered that the more organic material our advanced automated self-cleaning filter removed, the less chemicals were needed to continuously treat that system.

Our team installed a single Series H-1000 liquid/solid separator and automatic self-cleaning filter, which is engineered for medium to high flow, high pressure, high temperature applications and liquid/solids separation. It is designed for industrial use to remove ultra-high and variable total suspended solids (TSS) from a fluid stream. Each filter unit contains a motor-driven, spiral-shaped brush that continually cleans collected solids from inside the filter element. These solids collect at the bottom of the filter housing and can be expelled through an automatic purge valve or a continuous concentrate stream. The system does not require high pressures to operate and performs at very low differential pressure. No backwash, cross flow or booster pumps are needed.



Model H1000 Automatic Filters for Food Processing



Results

The Spiral Water team deduced that the customer was able to lower their chemical usage by approximately 30% and reduce their chemical cost by about 60%. For example, the required amount of peracetic acid went from three to four 55 gallon drums to just two or three. Of course, the corresponding cost of the chemicals was also reduced significantly.

In addition, since the installation of the Spiral Water filter several months ago, they have been able to continuously run throughout their operating hours without having to stop, dump, refill, treat, and restart the system several times a day. To the contrary—they have been able to keep it continuously processing the vegetables with considerable improvement in the processing uptime.

As a result of this success, the customer has installed the same Spiral Water solution in another one of their facilities.

[Click here](#) for more information about Spiral Water's advanced high solids separation and concentration filters.



To learn more, visit our website at www.spiralwater.com, call us at 1-732-629-7553 or email us at info@spiralwater.com.