

US-based distillery drastically reduces its environmental footprint with the Russell Liquid Solid Separator™

Blue Valley Spirits optimizes its distilling process, reducing both its waste output and production downtime

In the past decade distilling in the United States has grown exponentially. No longer a niche industry, this multi-billion dollar enterprise is only continuing to expand, with the emphasis on profitability and production standardization becoming a key focus for many businesses. One key area of standardization is in the management of the waste by-product known as spent grains. As a result, more and more craft distilleries are searching for inventive methods to prevent their spent grains from going to waste.

In grain-based distilleries, a mash is created where grains are left residing in water as it is passed through the fermentation process and the natural sugars are transformed into alcohol & CO₂ with the action of yeast. This mash requires processing before or after the still to ensure that as much liquid as possible is removed from the spent grains, with this separation being achieved through mechanical filtration.

Searching for Eco-Friendly extraction solutions




Blue Valley Spirits, a distillery of fine craft spirit recipes based in Colorado, USA is a relatively new company, setting up its operations in 2017. It houses a 300 gallon copper/stainless steel hybrid still and four fermentation tanks used to produce spirits such as whiskey, vodka, gin, and rum. This distiller continuously pursues eco-friendly and sustainable solutions for the distillery's waste management, as disposal of spent grains can come with an unwanted cost and time-consuming processes for most distillers.

Despite its young age, Blue Valley Spirits is a distillery with a focus on longevity. It is dedicated to pursuing long-lasting and sustainable ways to manufacture its products, minimizing any negative environmental impact while complying with mandatory sanitation requirements.

With this in mind, Blue Valley Spirits sought out machinery that would fit their requirements, and subsequently contacted Russell Finex. After a consultation with a local sales engineer, the Russell Liquid Solid Separator™, which is installed in many distilleries across the US, was offered as

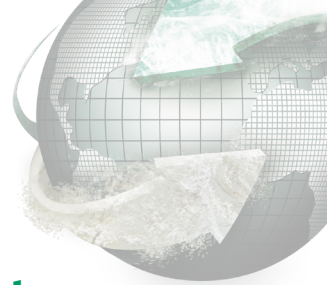


Figure 1. The Liquid Solid Separator™ is installed at Blue Valley Spirits to remove spent grains from ethanol

-  **Reduced costs** – including reducing the loss of good product and disposal costs of effluent and waste
-  **Improve productivity** – handling high flow rates of up to 2460 gallons/hr
-  **Operator friendly** – simple to operate and tune for optimum separation quality

the ideal unit to integrate into its existing spirit process to ensure its operation ran more efficiently and sustainably.

Distilleries often face challenging mandatory waste minimization as required by local and regional regulations. The installation of the Russell Liquid Solid Separator™ helped Blue Valley Spirits overcome this obstacle and improve



its waste management. By installing the unit into the spirit distilling process before and after fermentation, this allowed for more liquid to be extracted and sent to the fermenter, increasing production rates whilst simultaneously reducing liquid waste. With its small footprint this multi-purpose separator removed enough solids for their local municipality to allow for the liquid to be disposed into the sewer system, without taking up valuable floor space.

Distillery Owner Red Waldron commented that “The Liquid Solid Separator is a must buy for every distillery wanting to reduce its environmental footprint. By incorporating it into our processing line, Blue Valley Spirits has significantly reduced the waste made by the fermentation and distillation process.”

Reducing disposal compost waste to preserve sustainability

As the distillery usually processes over 300 gallons/4 batches of high quality craft spirits weekly, the Russell Liquid Solid Separator™ allowed the company to process the spirits with a flow rate of 20 gallons/minute – a far higher rate than other traditional centrifugal separators.

Furthermore, by incorporating the Russell Liquid Solid Separator™ before and after distillation allowed the distillery to efficiently reduce the amount of waste generated. This versatile separator provided Blue Valley Spirits with a highly efficient way of removing the leftover grains, producing dewatered mash and spent grains that were dry enough to be directly distributed as animal feed.

The distillery also achieved a return on investment in less than a few months. This was not just related to traditional ROI which evaluates the efficiency and success of a company, but also included the non-traditional ROI of time savings to make the business run efficiently.

Red adds: “This unit is highly efficient: both in terms of money saved and ROI but also in the time it saves for the business. This is a crucial step in the overall process, and one that has more than benefitted the entire business”

This centrifugal separator also decreased the number of trips necessary to deliver the spent grains to the farmer. As a result, Red can spend more time on his true passion: creating and perfecting new spirit recipes for his distillery to deliver to customers.



Figure 2. An example of the spent grains used as animal feed separated out by the Liquid Solid Separator™

The ultimate separation solution

Having operated in the distillation industry for several years, Russell Finex’s expertise is well placed to provide innovative separation and filtration solutions to a variety of companies.

This non-vibrating separator has a continuous production capacity of up to 2640 gallons / hour-a typical flow rate for distillers - acquiring a high productivity in the existing production line. This versatile unit can also be easily stripped down and cleaned by one operator, and is simple to operate and tune, further reducing product downtime and labor needed to operate the machine.

About Russell Finex

A worldwide leader in separation technology, Russell Finex has applied 85 years of expertise and proven separation technology to the design of the Russell Liquid Solid Separator™, helping companies to improve product quality and productivity while contributing eco-friendly innovative solutions to distilleries across the globe.

By installing this high-quality liquid separation solution into your production line, this equipment can greatly improve productivity. Russell Finex will continue to innovate, adapting and ensuring it meets the needs of a growing industry.