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Shelburne Vineyard Relies on Wireless Sensors and the Cloud to Monitor its Vines

Shelburne, VT – Shelburne Vineyard has recently deployed a wireless environmental sensing system to monitor key conditions during the growing season. Monitoring temperature lows during the spring and fall is critically important to ensure that grapes are not damaged by frost. During the last week of April in 2012, a cold snap threatened the health of Shelburne Vineyard's newly budding Marquette crop. Using a distributed network of low-power wireless nodes from Williston, VT based MicroStrain, Inc. (www.microstrain.com) and a new cloud-based data service called SensorCloud™, they remotely monitored temperatures in real-time to ensure crop health. Shelburne Vineyard uses the SensorCloud platform to access unlimited continuous environmental data, to analyze trends and to create alerts, which notify key personnel when environmental thresholds are exceeded. The scalable network proactively monitors all the vineyard's plant varieties and supports cost-effective condition based cultivation and harvesting.

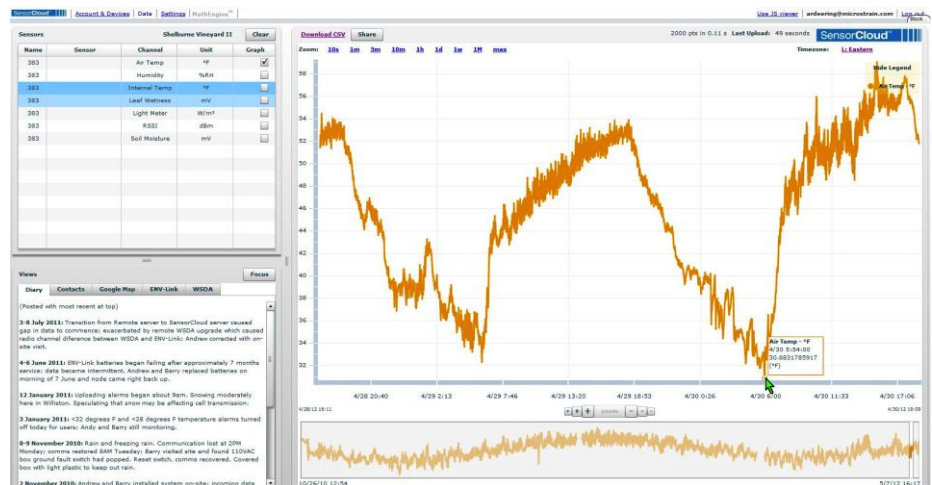


Vermont's springtime cold snaps can harm the delicate buds forming on grape vines

Using two MicroStrain ENV-Links® and a highly synchronized wireless sensor data aggregator (WSDA®) equipped with cellular communication, Shelburne Vineyard remotely monitors temperature, relative humidity, soil moisture, leaf wetness, and solar radiation sensors across multiple locations that can be up to 2km apart.

This year, a mild Vermont spring made Shelburne Vineyard's budding crop especially vulnerable to frosts. The Marquette grape is very hardy and can withstand Vermont's cold winters, but once the grapes have formed buds, any dip below 30 degrees Fahrenheit is very detrimental. A cold snap during the last week of April exposed Shelburne Vineyards to temperatures dangerously close to this threshold. At stake were 5 acres of vines, or roughly 15,000 bottles of wine. Fortunately, the lowest temperature at vital locations in the vineyards was measured at 30.88 degrees Fahrenheit, so the vines survived.

"Before adopting MicroStrain's monitoring tool, we monitored temperature with a rudimentary min-max field thermometer," says Ken Albert, the founder of Shelburne Vineyard. "This thermometer did not provide any timeframe for when the max or min temperature was reached. As a result, we were forever resetting it on site and going back the next day to see results. Now, not only can we verify the exposure of our crops to multiple variables, but we can remotely track these variables over time to better respond and manage our resources such as water and fertilizer."



MicroStrain's SensorCloud™ portal displaying time stamped temperature data between April 28-30 where vineyard lows briefly dipped to 30.88 degrees Fahrenheit.

“The Shelburne Vineyard project gave us a great opportunity to demonstrate both the autonomous monitoring and big data capabilities of our latest wireless technology,” said MicroStrain President and CEO, Steven Arms. “We’re proud to support Shelburne Vineyard with our wireless sensing and cloud computing services. In the cloud, not only can users remotely view real-time data with custom alerts, but they also have low-cost access to unlimited historical data using any web-connected terminal. Coupled with our MathEngine™ analytical tools, our users can create custom “virtual sensors” which fit their application’s specific needs. We’re excited to bring these tools to the greater monitoring community.”

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[Shelburne Vineyard](#)

Founded in 1998 by Ken Albert, [Shelburne Vineyard](#) is a pioneer in Cold Climate Viticulture. Committed to sustainable agriculture and responsible vineyard practices, Shelburne Vineyard is dedicated to producing high quality wines from it’s own Vermont grown, Northern Varietal grapes, as well as grapes regionally sourced from other Northern growers. Shelburne Vineyard grows nine different grape varieties across four distinct vineyard sites, encompassing a total of seventeen acres of vines.

Shelburne Vineyard is a destination that offers visitors a truly unique Vermont wine experience. With it’s state of the art winery, inviting tasting room, winery tours and award-winning wines available for purchase, Shelburne Vineyard is proud to be a leader in the fast growing Vermont winemaking industry.

[MicroStrain, Inc.](#)

MicroStrain, Inc based in Williston, Vermont is a leading manufacturer of very small, highly accurate sensing systems. Our range of sensing solutions include inertial measurement systems, micro-displacement transducers, wireless sensor networks, and energy harvesting technologies. MicroStrain's sensors are used in a variety of industrial, defense, and medical applications including testing of new designs, controlling critical manufacturing processes, navigating unmanned vehicles, platform stabilization, wearable tracking systems and wirelessly monitoring machines and structures. MicroStrain’s newest sensor data storage, visualization, and remote management platform, [SensorCloud](#)[®], leverages powerful cloud computing technologies to provide sensor data to users anytime, anywhere. Recognized as a leader in the sensor industry, MicroStrain has received multiple awards for product innovation. Visit www.microstrain.com to learn more about our company, products, and solutions.