

CAVE SPRING

VINEYARD

Winery Profile



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IMPORTANT FACTS

VINEYARDS

The wines of Cave Spring originate principally from our eponymous vineyard located within the Niagara Peninsula's Beamsville Bench sub-appellation. Three sites in the Lincoln Lakeshore sub-appellation round out our vineyard selections, two of which are estate, with the third owned and farmed by our vineyard manager, Christopher Andrewes. All told, estate vineyards total 77 ha (190 ac)

• Cave Spring Vineyard	Estate	Beamsville Bench VQA	125–155 m (410–510 ft)	64.3 ha (158.9 ac)
• Myers Vineyard	Estate	Lincoln Lakeshore VQA	80 m (265 ft)	9.7 ha (24.0 ac)
• Tufford Road Vineyard	Estate	Lincoln Lakeshore VQA	80 m (265 ft)	2.8 ha (6.8 ac)
• Andrewes Vineyard	Grower	Lincoln Lakeshore VQA	80 m (265 ft)	8.7 ha (21.5 ac)

Estate Plantings

• Riesling	31.7 ha (78.2 ac)	• Gamay	6.6 ha (16.4 ac)
• Chardonnay	13.5 ha (33.3 ac)	• Pinot Gris	2.5 ha (6.2 ac)
• Cabernet Franc	12.4 ha (30.7 ac)	• Gewürztraminer	0.7 ha (1.7 ac)
• Pinot Noir	9.4 ha (23.2 ac)		

Andrewes Plantings

• Pinot Gris	3.5 ha (8.5 ac)	• Cabernet Franc	2.0 ha (5.0 ac)
• Chardonnay	2.0 ha (5.0 ac)	• Riesling	1.2 ha (3.0 ac)

WINES

Ninety percent of our wine production is Estate Grown from our Beamsville Bench and Lincoln Lakeshore vineyards. The remainder is sourced from Andrewes Vineyard. By origin, 75% of production originates from the Beamsville Bench and 25% from the Lincoln Lakeshore. Total production is approximately 55,000 cases (9L), with the following varietal breakdown:

White Varieties | 75%

- 50% Riesling, 19% Chardonnay, 5% Pinot Gris, 1% Gewürztraminer

Red Varieties | 25%

- 14% Cabernet Franc, 6% Pinot Noir, 4% Gamay

All Cave Spring wines are certified by the Vintners Quality Alliance of Ontario (VQA) for origin and Sustainable Winemaking Ontario (SWO) for environmental practices. The portfolio is organized into four collections according to the VQA appellations from which the wines originate, reflecting our commitment to provenance and *terroir*.

REGIONAL COLLECTION

Niagara Peninsula

- Riesling | Riesling Dry
- Chardonnay | Pinot Gris
- Rosé

Niagara Escarpment

- Pinot Noir

Beamsville Bench | Estate Grown

- Gamay | Cabernet Franc

DOLOMITE COLLECTION

Beamsville Bench | Estate Grown

- Riesling | Chardonnay | Brut NV
- Pinot Noir | Cabernet Franc

ESTATE COLLECTION

Beamsville Bench | Estate Grown

- Riesling | Riesling Brut
- Chardonnay | Chardonnay Musqué Blanc de Blancs
- Pinot Gris | Gewürztraminer
- Gamay | Pinot Noir | Cabernet Franc

Lincoln Lakeshore | Estate Grown

- Riesling Select Late Harvest
- Riesling Icewine

CSV & PROPRIETARY COLLECTION

Beamsville Bench | Estate Grown

- Riesling CSV
- Riesling Adam Steps
- Chardonnay CSV
- Blanc de Blancs CSV
- La Penna
- Prova

FAMILY & WINERY HISTORY

The inaugural vintage for Cave Spring Vineyard was 1986 when the Pennachetti family and winemaker Angelo Pavan joined forces to make wines from some of the Niagara Peninsula's earliest *vinifera* plantings at the winery's eponymous vineyard on the Beamsville Bench. Cave Spring Vineyard's history dates to 1973 when John T. Pennachetti purchased the first 17 ha (42 ac) of land on Cave Spring Road, high up on the Beamsville Bench overlooking Lake Ontario. In 1978, together with his son Leonard (Len), John planted some of the first *vinifera* vines in the Niagara Peninsula. The vines for this 5 ha (12 ac) parcel included Riesling sourced from a German nursery that would come to have a family connection to the winery and Chardonnay clones of Burgundy origin. The success of these early plantings would be the catalyst for decades of wine-growing innovation grounded in a vision for Niagara as an internationally recognized wine region. This vision would extend to Len's co-founding of the Vintners Quality Alliance (VQA), a voluntary association of wine growers created to guarantee the origin and quality of wines made from 100% Ontario-grown grapes, in 1988.

Len's passion for wine-growing started as a young boy, working side-by-side with his grandfather Giuseppe, an Italian immigrant. In his retirement during the 1960s, 'Pa', as he was affectionately known, tended a hobby vineyard planted to native *labrusca* grape varieties. As Len's love of the vine grew, his father invested in better vineyards, planting the first parcels of *vinifera* at Cave Spring Vineyard (CSV) in 1978. Named by 18th-century European settlers for the limestone caves and mineral springs located throughout the property and situated on a gently sloping hillside of the Niagara Escarpment known as the Beamsville Bench, the site offered tremendous potential for premium wine-growing. Recognizing the possibilities, the family sought out and planted *vinifera* varieties that would best capture the site's full promise, including Riesling vines purchased from the German nursery Weis Reben in the Mosel Valley. The Weis family – also the driving force behind the acclaimed St. Urbans-hof estate winery – began exporting Riesling Clone 21 to Canada in the 1970s, and the Pennachettis were early patrons. The family connection remains to this day. Convinced of the possibilities for Riesling in Niagara, Herman Weis established vineyards in Niagara near CSV. His daughter, Anne, came to Canada to help manage the Niagara operation and later married Len's brother Tom, Vice-President of Sales and Marketing for Cave Spring.

VINEYARD SITES & TERROIR

From the Mosel to the Loire and the Oregon Coast, the world's great cool-climate wine regions invariably possess a specific combination of soil, sunshine, wind and water that makes them unique. Situated in the heart of the global wine belt at 43° latitude, the Beamsville Bench of Ontario's Niagara Escarpment is no exception. Here, limestone-rich soils and moderating breezes off Lake Ontario combine to create an ideal home for cool-climate winegrowing. First planted in 1978 by the Pennachetti family on an abandoned pear orchard, Cave Spring Vineyard would come to set a new standard for winemaking in Canada, consistently producing wines of clarity, elegance and *terroir*-infused, mineral character.

In 1973, realizing the untapped viticultural promise of the region, the Pennachetti family acquired its first 17 ha (42 ac) of land on the Beamsville Bench. More than anything, CSV founders John Pennachetti, Sr. and his son Leonard (Len) were drawn to the site's geology, aspect and mesoclimate. Located along a gently sloping terrace overlooking Lake Ontario, Cave Spring Vineyard benefits from glacial till soils deposited by continental ice drifts over the past 100,000 years. These stony clay tills, derived mainly from the sedimentary rock formations of the Niagara Escarpment – including limestone, shale and sandstone – with small amounts of granite and gneiss from the distant Canadian Shield, are distinct in the wine-growing world.

The vineyard's Oneida and Chinguacousy series clay-till soils are relatively low in organic matter, inhibiting excessive vegetation and yield. Their stony composition, coupled with the site's gradual slope, provides excellent water drainage. Above the vineyard, a dense Carolinian forest on the Escarpment brow slowly releases moisture downward through layers of limestone and shale into the benchlands below. Numerous groundwater springs nourish the vines from beneath during the summer months, eliminating the need for irrigation even in the driest conditions. This relentless hydraulic pressure feeds springs that irrigate the vines from beneath with heavily mineralized groundwater, helping to define the site's *terroir*.

Temperate breezes from Lake Ontario – 3.5 km to the north – collide with the steep limestone cliffs that define the estate's southern limit, circulating vigorously along the gentle hillside vineyards below, which lie at elevations of 125–155 m (410–510 ft). Moderating air currents are drawn inland toward the steep, 35 m Escarpment cliff at the site's southern edge. The sharp rise creates a natural buffer along which these

CAVE SPRING

VINEYARD

lake-effect breezes circulate throughout the year, creating an optimal meso-climate for *vinifera* vines. Cool lake air draws up the hillside in summer, discouraging harmful fungus and bacteria and tempering excessive vegetation. In spring and fall, warm Lake breezes collide with the Escarpment, forcing cooler air down the hillside, preventing frost and lengthening the growing season. This same convection effect protects the vines from the deep cold of winter.

From the initial plantings in 1978, which included 4.8 ha (12 ac) of Mosel Riesling Clone 21 and mixed Chardonnay clones from Burgundy, the Pennachetti family has steadily expanded CSV. Today's total of 64.3 ha (159 ac) under vine includes 23 ha (57 ac) of Riesling, 13.5 ha (33 ac) of Chardonnay, 12.4 ha (31 ac) of Cabernet Franc and 9.4 ha (23 ac) of Pinot Noir, with the remainder planted to Gamay, Pinot Gris and Gewürztraminer. Situated at 125–155 m (410–510 ft) elevations in 37 distinct blocks or parcels – each offering subtle differences in elevation, soil and aspect, the Estate boasts some of the oldest *vinifera* plantings in Canada.

Over the years, the winery has also secured two prime Estate sites on the shores of Lake Ontario in the Lincoln Lakeshore sub-appellation. Acquired in 2007, the 2.8 ha (6.8 ac) Tufford Road Vineyard is located just 300 m from Lake Ontario at an elevation of 80 m (265 ft) and features well-drained, gravelly, clay-loam till rich in shale and sandstone, with traces of limestone. The cooling effect of the Lake makes it an ideal terroir for Riesling. A couple of km to the east, at a similar elevation, lies the 9.7 ha (24 ac) Meyers Vineyard. Located 900 m from the Lake, with a shale- and limestone-laced, clay *terroir*, it has been a prized part of Cave Spring's stable of Riesling sites since 1993, and farmed by the winery under lease since 2017.

VITICULTURE

Cave Spring currently farms 77 ha (190 ac) of Estate vineyards within the Beamsville Bench and Lincoln Lakeshore sub-appellations. These holdings secure 90% of the total grape supply and 10% purchased under a long-term contract from Andrewes Vineyard. In addition to managing the Cave Spring, Tufford Road and Myers sites, Chris custom farms his 8.7 ha (21.5 ac) Lincoln Lakeshore vineyard for the winery. Planted to Riesling, Pinot Gris, Chardonnay and Cabernet Franc, it lies a few km west of Tufford Road and Myers along the lakeshore. Sandy loam soils laced with shale and limestone complete the tapestry of *terroirs* that the winery has assembled within this emerging sub-appellation. Overall, 75% of the winery's grape supply originates from the Beamsville Bench, with 25% from the Lincoln Lakeshore.

Our wine-growing team – led by co-founders Len Pennachetti and Angelo Pavan, winemaker and viticulturist Gabriel Demarco, and vineyard manager Chris Andrewes – has brought to light many innovations taken for granted in the region today. The focus on core, cool-climate *vinifera* varieties was the early, momentous disruption to standard practices in the area. However, less well known are a host of behind-the-scenes recastings of viticultural convention brought forward by the winery. Among these, planting at densities of 3,600 vines per ha (1,455 per ac), unheard of in 1978 and still today higher than the regional norm, continues to pay dividends for ripening and vine health. In addition, vertical shoot positioning (VSP) with two-cane *Guyot* and *Pendelbogen* orientations has been used since 1978. Novel in the region, this method has become standard practice in the area only much more recently.

Experience through the decades has also led to the refinement of clone and rootstock combinations selected for the specific climate and soil conditions of individual vineyard parcels. From pruning to harvest, the vineyard team has also long employed precision viticulture practices tailored by vineyard block, including reduced bud counts, shoot thinning and leaf removal. Finely tuned adjustments according to seasonal conditions ensure optimal flavour development and cluster integrity at picking.

To ensure a balanced relationship with the environment, biological and organic materials are used to the greatest degree possible in controlling fungal and bacterial disease, weeds and insects, with conventional materials employed only where necessary. Rigorous field scouting is a mainstay of disease prevention, helping reduce equipment and spray material use. Regenerative agriculture methods, including minimal tillage, composting and cover crop rotation using indigenous fauna, have long been practiced at CSV, encouraging microbial health and carbon conservation in the soil. The end goal is always optimal fruit quality at harvest, with the lowest possible carbon emissions and overall environmental impact. This approach culminated with Cave Spring Vineyard becoming Ontario's first winery to be Certified Sustainable in the vineyards and cellars by Sustainable Winegrowing Ontario (SWO).

WINEMAKING

In the cellars, our winemaking team of Gabriel Demarco and co-founding partner Angelo Pavan takes a minimal intervention approach, allowing the subtleties of the vineyard to be expressed in the finished wines. Knowing that wines of terroir require precision in the vineyard, they tally endless hours roaming the vines to ensure the fullest possible ripening at harvest. From crush pad to bottle, the goal is to create wines that possess clarity, complexity and texture through an approach of controlled oxidation using natural methods at all phases of vinification. All table wines are fermented exclusively using indigenous yeasts. There is a clear emphasis on minimizing the handling and filtration of the wines. Apart from the addition of low levels of sulphur (below organic standards), no adjuncts, enhancements or barrel substitutes are employed (all Cave Spring wines are vegan-friendly). For maturation, exclusively neutral oak is utilized, with the cooperage comprising 60% 225L *barriques*, 30% 500L *demis*, and 10% large format casks (2,500L–3,800L). All oak is of European origins, predominantly from France, with smaller quantities from Hungary and Germany.

The white wines at the Regional and Dolomite level are fermented predominantly in stainless steel, with selected bottlings partially barrel-fermented and barrel-aged for 4 to 10 months, with all lots aged *sur lie*. The Estate, CSV and Proprietary whites are primarily fermented and matured in barrel with extended ageing on the lees. For the Regional and Dolomite tier red wines, fermentation occurs in stainless steel, with 20% to 40% gravity feed to barrel where they are matured for 10 to 16 months. All Estate and Proprietary reds are fermented in small, open-top fermenters, with exclusively gravity feed to press and barrel ageing for 12 to 24 months. The mix of barrel formats and periods in oak varies according to vintage and variety for all wines.

WINE PORTFOLIO

With an international reputation as one of the New World's pre-eminent Riesling producers, it comes as no surprise that Cave Spring's portfolio revolves around this noble variety. Fifty percent of the winery's production is devoted to it, including nine different iterations. Rounding out the white wine portfolio, Chardonnay, Pinot Gris, and Gewürztraminer comprise about 20% of production. Red wines make up the remaining 30%, with Cabernet Franc leading the way, followed by Pinot Noir and Gamay.

All wines are designated by grape variety and origin, with all individual vineyard parcels, regardless of tier, cultivated from bud-break through harvest with the finished wine in mind. The entry-level **Regional Collection** – bearing the Niagara Peninsula, Niagara Escarpment or Beamsville Bench VQA appellations – is made from our entire stable of Beamsville Bench and Lincoln Lakeshore vineyards with a vine age of 10 to 20 years and yields of 68–85 hl/ha (3.75–4.75 mt/ac). Overall, 80% of the grapes producing the Regional tier are estate grown, with the remainder originating from Andrewes Vineyard in the Lincoln Lakeshore VQA sub-appellation.

Next in the range is the **Dolomite Collection**, named for the dolomitic limestone forming the caprock of the Niagara Escarpment above Cave Spring Vineyard. These wines are Estate Grown from various parcels at CSV and bear the Beamsville Bench VQA sub-appellation, with an average vine age of 20 to 25 years and yields of 63–72 hl/ha (3.5–4.0 mt/ac) in yield. Moving up the scale is the **Estate Collection**, produced from a selection of prime parcels and micro-crus at Cave Spring Vineyard. Also, within the Estate tier, the sweet wines originate exclusively from Myers Vineyard. Finally, the iconic **CSV and Proprietary Collection** sits at the top of the portfolio. The CSV wines originate from the finest micro-crus of Riesling and Chardonnay at the estate, some dating as far back as 1974. A similar selection of micro-crus is the source of the Riesling Adam Steps, La Penna – made from Cabernet Franc – and Prova, our small-lot trial series. The vineyard parcels and micro-crus for the Estate, CSV and Proprietary wines range from 15 to 48 years of age with yields of 45–68 hl/ha (2.5–3.75 mt/ac). Collectively, these wines embody our highest commitment to quality and authenticity.

Cave Spring also produces outstanding **Traditional Method sparkling wines**. The Non-Vintage (NV) Brut Dolomite and Blanc de Blancs Estate, both made from Chardonnay, are aged *sur lie* in bottle for a minimum of 18 and 36 months, respectively. The NV Riesling Brut Estate undergoes 18 months of ageing on the lees before release, while the NV Rosé Brut, produced from Gamay, is aged 36 months *sur lie* prior to release. In exceptional years, a small lot of vintage-dated Blanc de Blancs CSV is released within the CSV Collection. This wine originates from our finest micro-crus of Chardonnay, undergoing 60 to 72 months of lees ageing before disgorging. Top-flight **Late Harvest wines** from Riesling are another specialty for Cave Spring. These fall within the Estate Collection and are grown in specific micro-crus at Myers Vineyard, bearing the Lincoln Lakeshore VQA sub-appellation. The Riesling Select Late Harvest is made from fruit that is left to desiccate on the vine until late autumn, while the Riesling Icewine is pressed from the precious few clusters that endure until freezing solid with winter's first deep frosts.



SUSTAINABLE WINEMAKING ONTARIO CERTIFIED

In 2018, Cave Spring Vineyard became Ontario's first SWO certified vineyard and winery. Our sustainable approach to viticulture and winemaking combines organic and conventional methods to minimize our impact on the environment.

REGIONAL CLIMATE & WATER ACCESS

- It is important to note that the Niagara Peninsula's moderated, continental climate provides **ample precipitation** throughout the year.
- This is in contrast to more temperate, arid climates where irrigation is often required, necessitating environmentally invasive, energy-intensive infrastructure to divert and distribute water.

VINEYARD SITE & 'CLIMAT'

- Cave Spring Vineyard (CSV) is located on a gently sloping terrace of the Niagara Escarpment known as the Beamsville Bench; the site benefits from its proximity to Lake Ontario as **on-shore breezes** collide with the steep Escarpment cliff that rises above the vineyard.
- This **air circulation** not only reduces disease pressure in the warmer months but also prevents frost in the cooler months, eliminating the need for carbon-intensive wind machines common in lower lying areas.
- The slow seepage of water down the Escarpment slope through layers of sedimentary rock results in natural, mineralized **water springs** that provide subterranean irrigation to the vines.
- The site's stony, **limestone-rich soils**, augmented by drainage tiles in every row, efficiently drain away excess moisture, thereby minimizing humidity and disease pressure in the vine canopy.

SOIL MANAGEMENT

- The limestone clay soils at CSV are **naturally fertile** as they were fallow fields and pasture lands prior to the planting of the estate.
- Organic **compost** from local manure and our own grape pomace is spread every year to build organic matter in the soil.
- A mixture of **grasses** is sown to squeeze out undesirable weeds and discourage erosion; these grasses are tilled into the soil, augmenting the nutrient value.
- These **natural techniques**, combined with extensive analysis, make the need for nutrient amendments rare and highly targeted.

PEST CONTROL

Fungus

- The region's cool climate brings with it **high humidity**, which makes fully organic control of fungal and bacterial diseases challenging; common infections include powdery mildew (oidium), Downy mildew (peronospora), grey rot (botrytis) and black rot.
- 80% of our fungus control regime utilizes **organic treatments**. However, certain infections (e.g., black rot) have no known organic remedy, and most are extremely difficult to control using exclusively organic methods.
- Organic materials used include sulphur, copper, sodium bicarbonate and sodium metabisulphite. Specific **organic mixtures** (e.g., kelp with calcium) are used to strengthen berry skins and naturally combat disease infection.
- The exclusive reliance on organic materials increases spray frequency and thereby soil compaction and carbon emissions. The overuse of copper, e.g., causes soil infertility. As a result, we choose **to combine natural and sustainable treatments**.

Weeds

- The proliferation of weeds increases disease pressure. With this in mind, **mechanical cultivation** is our primary method of control.
- Again, a fully organic approach increases soil compaction and carbon emissions. As such, we prefer a measured, **sustainable approach** that includes minimal use of conventional sprays.

Insects

- Insects are a relatively minor problem in Niagara due to our cooler climate. In most years, by maintaining **healthy soil and ground cover** conditions, they are held in check without intervention.
- As part of our wildlife enhancement work (see below), we foster endangered species, including **Little Brown Bats** and **Barn Swallows**, that consume large numbers of insects, helping to balance insect populations in our vineyards.
- In the rare instance of the need to intervene, careful scouting and early diagnosis ensures that sprays are highly targeted.

Birds

- Migrating birds are a major threat to the crop at harvest time, but are naturally controlled by the presence of native, **predatory raptors**, – including **our emblem, the Northern Goshawk** – that patrol the skies above our site.
- The hawks glide effortlessly along onshore breezes from nearby Lake Ontario as these updrafts collide with the steep cliffs of the Niagara Escarpment along the perimeter of our vineyard. Through our **wildlife enhancement** program we actively support and enhance their natural habitat (see below).
- We utilize **re-usable netting** to protect vulnerable cultivars from birds during the critical ripening season.

WILDLIFE ENHANCEMENT

- Situated within the **UNESCO Niagara Escarpment Biosphere Reserve** and the **Ontario Greenbelt** protection area, CSV is a sanctuary for a wide variety of unique, and often endangered wildlife species.
- Endangered species at the site include **Barn Swallows, Little Brown Bats, Solitary Pollen Bees** and seven different types of **turtles**, all of which are fostered through various habitat enhancements around the vineyard.
- Barn Swallows and Little Brown Bats are particularly effective at **balancing insect populations** among the vines.
- Our site is surrounded by **Carolinian forests** that are the habitat for the area's wildlife. We actively manage these forests in order to protect this valuable eco-system.

WINEMAKING

- Throughout the vinification process, **intervention is absolutely minimized**, allowing the nuances of our vineyards to be expressed with clarity and precision while reducing our impact on the environment.
- **Exclusively indigenous yeasts** are used for table wine fermentations. **Sulphite additions are minimized**, kept **below organic standards**.
- Apart from barrels purchased to replace expiring stock, we utilize **exclusively neutral oak** vessels to mature our wines, thereby **preserving precious forests** worldwide.
- All Cave Spring Vineyard wines are **vegan-friendly**.

CELLARS & STORAGE

- Our production cellars are located in a formerly abandoned winery dating back to the 19th century.
- By renovating an existing winery, we have **reversed the decay of a useful structure**, resurrecting a significant piece of Ontario's winemaking history, avoiding the resource-intensive alternative of new construction, and **preserving valuable agricultural land**.
- Because the majority of our cellars are underground, **energy consumption is minimized** in maintaining ideal vinification conditions. As well, the wines can be moved by gravity, which is not only gentler on them but also reduces the need for electric pumps.
- Our main storage warehouse is powered entirely by **solar panels**, with surplus electricity offsetting 30% of our total electricity demand.

WATER SUPPLY & MANAGEMENT

- Since our winery has access to **municipal water**, we avoid the need to tap rural aquifers or to transport water over great distances, reducing our carbon footprint.
- Our **BioGill wastewater treatment** system is the first of its kind in the wine industry globally. Cave Spring Vineyard played a central role in the research and development leading to its adaptation for winemaking.
- This technology uses **natural bacteria** to eliminate environmentally damaging bio-contaminants from our wastewater; allowing it to be safely re-introduced into surrounding waterways.

PACKAGING

- 75% of our bottles are **lightweight glass**, greatly reducing carbon emissions in their transport.
- The majority of our wines are closed using **natural cork**, an entirely renewable resource.
- 95% of our production and packaging materials are diverted from landfill into **recycling streams**.
- We have **eliminated shrink-wrap** in the transport of our wines, greatly reducing the disposal of film plastic into the environment.
- Our labels are manufactured using state-of-the-art, energy efficient technology that **eliminates harmful substances** such as polymers, metals and volatile compounds from the process.

