

"This is it, this is the drain," says Jean Arnold, chief executive officer of Hanzell Vineyards, heaving aside a thick iron floor grate in the fermentation room of the historical Sonoma winery.

The pipe, stained purple from nearly 50 years of use, looks innocent enough. But Hanzell has pinpointed this drain, and a second one nearby, as the primary source of wine taint that has cost the tiny Sonoma operation \$500,000 since May.

Business ground to a halt six months ago when an elevated level of the chemical TCA (2,4,6-trichloroanisole) was discovered at Hanzell -- not in corks, the most common source of wine taint, but endemic to the winery itself.

Although TCA isn't a health risk -- it causes musty flavors and odors in wine -- Hanzell immediately stopped sales and abandoned its quaint wood- and-stone winery, built in 1957 by Hanzell's founder, Ambassador James D. Zellerbach. September's harvest of Chardonnay and Pinot Noir was crushed outside, under rented party tents, as construction crews working on a new Hanzell winery rolled by.

Endemic wine taint causes headlines every few years. A similar problem (TeCA, tetrachloroanisole) wreaked havoc in European wineries in the '80s and '90s. Just last year, Beaulieu Vineyard of Rutherford admitted that it had TCA in one cellar, but it continued to sell the wine, saying the TCA was too low to be detected by customers.

A bottle of wine that smells and tastes of wet cardboard or newspaper is said to be "corked," a condition created when the cork-washing agent chlorine comes into contact with molds that form in the bark of the *Quercus suber* oak tree, from which cork stoppers are made. TCA can form, and estimates vary widely on the percentage of tainted corks sold to wineries -- between less than 1 percent and 10 percent.

TCA can also destroy a whole vintage if it infects an entire winery or cellar.

For Arnold, TCA has become nothing short of a mission. After paying up to \$500 an hour in consulting fees to solve her TCA problem, Arnold is giving away the information she has learned to anyone who wants it. She commissioned a short guide to avoiding endemic TCA, including simple tips like using peroxide cleanser in the winery instead of chlorine, and has distributed it to industry friends and posted it online at hanzell.com. The report, written by sommelier Catherine Fallis, was released at a luncheon for wine professionals in late September.

By following the guidelines, wineries without Hanzell's substantial financial backing can take inexpensive steps to avoid taint, says Arnold, 53, a veteran marketer whose resume includes stints at Jordan Winery and Chalk Hill Estate Vineyards and Winery in Healdsburg and Chateau Montelena in Calistoga. "This gives them a working game plan so they don't lose their shirt," she says.

Here is how Hanzell's TCA problem appears to have occurred:

Workers used chlorine to remove stains from the winery's cement floor, then washed the chlorine down the drains. It reacted with naturally occurring phenols in wine residue in the drains, creating trichlorophenols. Common mold interacted with the trichlorophenols to create TCA.

That process is not unusual - it happens every day throughout the environment. Noticeable amounts of TCA, in fact, have been found in such diverse comestibles as bottled water and baby carrots.

Moisture, ventilation culprits

Problems arise when moisture and inadequate ventilation encourage mold growth, causing the TCA to rise to detectable levels. In a winery, TCA can infect wooden barrels and pallets, cardboard boxes, silicon bungs and, in Hanzell's case, rubber hoses and drains. It can also strike polyethylene screw cap liners, so even screw caps can create "corky" wine.

In a display of openness that is unusual for a winery, Hanzell sent out a press release about its TCA problem after being alerted to it by James Laube, the California critic for Wine Spectator, who tasted TCA in Hanzell samples. Laube awarded the wine 78 points out of 100, the equivalent of a failing grade,

because of a "troubling musty character." This fall, Arnold is flying around the country to meet with customers and the press, explaining what went wrong and what the tiny winery's five staffers are doing about it.

Hanzell's response is laudable in an industry where problems with wine taint are often ignored or denied for fear of lost sales and a tarnished image.

At the luncheon, sommelier Rebecca Chapa described a wine event where a Rutherford wine was clearly "corked" with TCA. A winery official refused to admit it and blamed the mustiness on "Rutherford dust," Chapa says.

BV officials told Wine Spectator that they had noticed elevated levels of TCA in some red wines made in 1997, 1998 and 1999, but attributed it to bad corks and didn't test their cellars until Laube, the fastest tongue in the West, drew their attention to the problem.

Laube didn't rate most of BV's tainted wines, but one score he published was an 80 out of 100 points for BV's 1998 Tapestry blend, which he described as having a "slight musty cement edge." In tests, the wine was found to have a TCA level of 4.6 parts per trillion, a problem that was traced to a humidifier in one cellar.

BV officials declined to be interviewed for this article, but sent a statement saying the wines "were not negatively impacted in terms of quality or taste" by TCA. BV told Laube that only four customers in the 12 months prior to his discovery had returned wine due to corkiness.

"I think TCA is more widespread than many wineries or consumers are aware, " Laube told The Chronicle. It may be difficult for winemakers to detect because "when you're around TCA a lot,

apparently people kind of build up an immunity to it," he says. "People may have had it in their cellars and didn't know it because it was there every day."

Hanzell, which sits on a 200-acre hillside estate overlooking the town of Sonoma, has a rich pedigree and a superior reputation, but has eschewed the limelight for most of its 50 years.

It sits up an unmarked dirt lane and doesn't even have a public tasting room. Invited guests taste wine on a second-floor balcony adjacent to the old Ambassador's office, where Arnold advises them to spit over the edge if they don't wish to swallow.

Asked how she avoids dribbling, the congenial Arnold points to her scarf.

Hanzell was founded by Zellerbach, a former U.S. ambassador to Italy, and his wife Hana, whose berry-basket lamp shades still deck the winery basement. Zellerbach modeled his facility after the Burgundian estate Clos de Vougeot; its name combines his wife's first name and their last name.

Pioneering winemaker Ralph Bradford (Brad) Webb introduced the first stainless steel fermentation tanks to California at Hanzell and was one of the first to use small oak barrels. One tank in the now-abandoned winery was the first in the state used for forced malolactic fermentation, a now-common process that mellows the acids in wine.

Webb left in 1973 to found Sonoma-Cutrer Vineyards in Windsor, and Bob Sessions took over as winemaker, later to become president. In those days, winery officials "were not asked to make money, just to do their best," says Arnold.

### Heir to the throne

That policy continued after the purchase of the estate in 1975 by Barbara de Brye, a London heiress whose grandfather was an Australian real estate magnate. De Brye and her young son Alexander began spending summers together at Hanzell. (She was separated from Alexander's father, a French count named Jacques de Brye.)

When Barbara died of brain cancer in 1991, 16-year-old Alexander became "one of Britain's wealthiest schoolboys," as one British newspaper put it, inheriting a £30 million fortune that included the charming but unprofitable Hanzell winery.

Young de Brye insisted on keeping the winery over the protestations of his financial advisors, but Hanzell was suddenly faced with a mandate to make money. Hanzell's board adopted a plan to achieve profitability in 2006, but now TCA has pushed that forecast back by at least two years.

De Brye, now 28, is an art collector with a family of his own that spends part of each summer at Hanzell. Upon learning of the TCA problem, de Brye joked that his toddler son, Sebastian, would be the first de Brye to see profits from the winery.

In addition to being family owned, Hanzell is sort of family run. Arnold replaced Sessions, 71, at the company's helm in October 2001. Sessions' wife Molly, who helped run Hanzell for many

years, died of ovarian cancer in 2000 and last fall Sessions married Arnold. Sessions remains a director and consulting winemaker, and his son Ben, 33, also works at Hanzell.

Meanwhile, Hanzell's new winery - which fortunately was on the drawing board before the TCA problem hit - is due to open later this month. It will expand Hanzell's production capacity from 3,000 cases to 7,000. A new, 5,000- square-foot cave system is also under construction, replacing an above-ground cellar built in the '70s. Hanzell's vineyard size has also been boosted recently, to 42 acres from 32.

Ironically, Hanzell's TCA problem is so minute -- 2 parts per trillion in the Chardonnay and 3 ppt in the Pinot Noir, the equivalent of two or three grains of salt in a swimming pool -- that it takes an almost super-human palate like Laube's to detect it.

Hanzell released its remaining 2000 Chardonnay (\$55) in August after extensive consumer studies determined that wine drinkers were unable to detect a problem until levels reached 4 to 10 parts per trillion. Hanzell is selling its remaining 1999 Pinot Noir (\$65 to \$75) only on request, because consumer tests weren't conclusive, Arnold says.

At Hanzell's recent luncheon, the 16 wine professionals present detected no flaws in either the 1999 Pinot Noir or the 2000 Chardonnay. An estimated 20 percent of California wines contain more than 1 part per trillion of TCA, which at high levels causes a musty, wet cardboard odor and flavor.

Although Hanzell will provide refunds for any bad wines, says Arnold, "We've had only five customers return their wine nationwide out of more than 1, 000 customers." San Francisco's Aqua restaurant, Hanzell's largest account, poured 30 cases of the 2000 Chardonnay by the glass -- 1,800 servings, at \$24 a pop -- without a single complaint.

"There is no absolute number that determines if the TCA in a given wine is acceptable or not," says Gordon Burns, a top expert on TCA who has conducted tests for Hanzell. "It's the human palate that decides."

Early detection key

Still, Arnold says the TCA likely would have grown to more detectable levels if Laube hadn't caught it when he did. "As grumpy as I am about Jim Laube giving the 2000 Chardonnay a low score because of TCA when 99 percent of people can't taste it, this really has worked out for the best," says Arnold.

To prevent future TCA problems, 77 barrels from the old Hanzell winery have been sanded twice and tested at a cost of \$100 per barrel. The new winery is being built with open walls for thorough ventilation, while the caves' ventilation system includes a monitoring device to alert winemaker Daniel Docher 24 hours a day if there is a breakdown.

Docher is also treating this year's wines and recent vintages still in the barrel with lees, or dead yeast cells from fermented wine, because lees draws out TCA, says Arnold.

"I absolutely expect no TCA with the 2003 harvest," she says.

Meanwhile, a consultant from Bordeaux, Pascal Chatonnet, will fly in this fall to examine the old winery and see if it can be saved through remedial measures such as sanding the walls. In France, wineries have had whole walls and roofs replaced because of problems similar to TCA.

If Hanzell's winery can be reclaimed, it will still be used for a portion of the company's production. If the prognosis is bad, it will be turned into a Hanzell museum.

Prospects don't seem good, given that the high-ceilinged winery is composed of a complicated series of tongue-in-groove planks and wooden ribs.

"It will make a great museum," sighs Arnold