Background

**MATERIALS** used in vineyard and winery operations are potentially hazardous if they have one or more of the following properties: flammability, reactivity, toxicity or corrosivity. Reducing the amounts of these materials whenever possible can enhance the health and safety of people at the facility, minimize the risk of exposure to the environment, and decrease or even eliminate some regulatory oversight and inspection. Any measures that can be put into place to reduce or eliminate the use of hazardous materials (haz mat) and the generation of hazardous waste (haz waste) can also diminish liability exposure.

Since the use of hazardous materials leads to the generation of hazardous waste, reducing the use of or replacing these materials with non-hazardous results in less hazardous waste generation. Accomplishing this task requires growers and vintners to begin practicing a pollution prevention (P2) approach to their operations. The P2 approach takes a full systems view of the operations into account to help identify the best areas for reduction, substitution or elimination of hazardous materials.

The full systems view is part of the big picture of sustainability, in which nothing is linear and everything is connected. Sustainability recognizes that there isn’t a mystical land called “away” where toxic and hazardous waste can be sent without disrupting the natural environment. As the primary stewards of vineyards and wineries, growers and vintners need to do all they can to ensure that hazardous material use and hazardous waste generation is minimized; and that if hazardous waste is generated, it is recycled when possible and disposed of properly when that is the only option.

**CHAPTER 11. MATERIAL HANDLING BENCHMARK DATA**

**11-1. PLANNING, MONITORING, GOALS AND RESULTS** To reduce the amount of hazardous materials (haz mat) and the generation of hazardous waste (haz waste), vintners and growers must know how much they use and what materials contribute to the amount of haz waste they generate. 8% of the growers and 10% of the vintners monitor and record information on haz mat purchased and haz waste generated, set yearly goals for reduction per specific operation, and have contacted regulatory agencies for P2 information. In addition, 2% of the growers and 1% of the vintners have demonstrated a 25% or greater reduction per specific operation and have P2 as part of employee training. 48% of growers and 58% of vintners have begun to monitor and record their information, are in the process of establishing goals and consider regulatory agencies as potential information sources. 26% of growers and 29% of vintners have very little idea about their haz mat use and haz waste generation and they consider compliance to be a separate liability issue. 18% of growers and 3% of vintners replied N/A, not applicable or information not available.
11-2. GOOD HOUSEKEEPING By understanding how haz mat and haz waste are related and how the handling of haz waste can prevent liability exposure and environmental contamination, growers and vintners can avoid creating unintended problems. The dumpster area is one of the easiest zones in which to begin an investigation into haz waste moving off site. 11% of growers and 16% of vintners have a formal inspection system for dumpsters, regularly inspect them, put them on cement pads to contain spills, and demonstrated a haz mat reduction of 25%. 19% of growers and 23% of vintners have no scheduled inspection system, rarely inspect for leaks, spills or litter, and do not inspect for unintentional haz waste disposal. 34% of growers and 8% of vintners replied N/A, not applicable or information not available. These could be small growers who don’t have dumpsters but are still using some method of disposal for their haz waste.

11-3. HAZARDOUS MATERIALS STORAGE Knowing where the haz mat is used on site allows growers and vintners to identify the best way to store the material so it doesn’t spill and lead to potentially expensive haz waste clean-up costs. While 63% of growers and 75% of vintners say they know the amount of haz mat that they have and store it away from storm drains, only 15% of the growers and 25% of the vintners keep a haz mat inventory, have demonstrated a reduction of haz mat use and replaced one haz mat with a non-hazardous product. 6% of growers and 4% of vintners have replaced at least 3 hazardous materials and demonstrated a haz mat reduction of at least 25%. 19% of growers and 23% of vintners do not know the total amount of haz mat on site. 18% of growers and 2% of vintners replied N/A, not applicable or information not available.

11-4. HAZARDOUS MATERIALS DISPOSAL Once hazardous materials are used, the remaining unused material is now considered hazardous waste. How this waste is stored, treated and disposed of is critical to reducing liability exposure and protecting human health and the environment. 58% of growers and 67% of vintners know the amount they generate, separate haz waste from solid waste and store it in a centralized location away from storm drains, clearly identify materials that generate haz waste, and train employees in handling and disposal of haz waste. 19% of growers and vintners also keep a waste log with hauler manifests, have reduced haz waste generation, and store some haz waste separately to facilitate recycling. In addition, 5% of the growers and 3% of the vintners have demonstrated a 25% reduction in their haz waste generation. 20% of growers and 28% of vintners do the minimum legal requirements. 22% of growers and 5% of vintners replied N/A, not applicable or information not available.

11-5. TIRES Some items considered to be haz waste are more familiar to growers and vintners than others. One such item is tires. Disposal practices for tires once considered legitimate may have been updated and are no longer seen as viable options. 72% of growers and 65% of vintners know how many tires they use and how they are disposed. 53% of growers and 56% of vintners take their tires to a tire shop for trade in or recycling, and 18% of the growers and 22% of the vintners go the extra mile to purchase high mileage tires to reduce the number of tires used. 9% of growers and 10% of vintners didn’t know how many tires they used or what happened to the used ones. 19% of growers and 25% of vintners replied N/A, not applicable or information not available.

11-6. BATTERIES Batteries are haz mat, although often not recognized as such. 18% of both growers and vintners know and track the number of products requiring batteries, and they collect all non-rechargeable batteries and take them to a haz waste collection site. 8% of the growers and 5% of the vintners also have reduced the total number of batteries used by 40% and use rechargeable batteries in at least 75% of their appliances. 10% of growers and 13% of vintners have reduced the total number of batteries used by 25% and use rechargeable batteries in at least 50% of their appliances. 31% of growers and 29% of vintners know the total number of batteries used and products requiring batteries and use rechargeable batteries in 25% of their appliances; however, they dispose all non-rechargeable batteries in the solid waste. 33% of growers and 44% of vintners know nothing about their battery use. 18% of growers and 9% of vintners replied N/A, not applicable or information not available.

11-7. LUBRICANTS & OILS Maintaining vineyard and winery equipment, such as tractors and forklifts, in working condition is part of a good business strategy. This maintenance requires that lubricants, oils, coolants and solvents get used and disposed of properly. 66% of the growers and 57% of the vintners monitor the total volume of use and know the methods of disposal for lubricants, oils, coolants and solvents. 25% of the growers and 17% of the vintners also drain and recycle oil filters, separate the waste for recycling, train employees in appropriate disposal methods and use one recycled or refined product. In addition, 9% of growers and 5% of vintners use two or more recycled or re-refined products and post signs about oil and lubricant recycling. 20% of growers and 38% of vintners do the minimum legal requirements. 14% of growers and 5% of vintners replied N/A, not applicable or information not available.
**11-8. PAINT & PAINT THINNER**  Paint has come under increasing scrutiny for impacts to the environment, especially air quality. 33% of growers and 37% of vintners know how much paint they use, record the amounts, and store the paints in a centralized location. 13% of the growers and 15% of the vintners also use latex paints, store them in double containment, and train employees about appropriate clean-up and disposal of latex paint. In addition, 4% of the growers and 3% of the vintners only use latex with low VOCs, post signs about clean-up and disposal, and use materials that do not require painting. 36% of growers and 46% of vintners follow minimum legal requirements. 31% of growers and 17% of vintners replied N/A, not applicable or information not available.

**11-9. AEROSOL CANS**  The technology used in aerosol cans was developed for easy use and convenience. Since their introduction, science has shown that this technology can also be a pollution source. 32% of growers and vintners know the amount of aerosol cans used per year, store them in a centralized location and separate out the aerosol cans containing toxic and combustible materials for haz waste disposal. 6% of the growers and 7% of the vintners also calculate the amount of toxic and combustible substance, purchase in bulk (if appropriate), and use refillable compressed air or pump dispensers. In addition, 3% of the growers and vintners have reduced their use by 25% and implemented alternative disposal methods for non-hazardous aerosol cans. 37% of growers and 49% of vintners don’t know how many aerosol cans are used, do not store them in a centralized location, and throw them away in the solid waste disposal system. 31% of growers and 19% of vintners replied N/A, not applicable or information not available.

**11-10. LIGHTING**  When changing out light fixtures the ballasts can be potentially hazardous, depending on the year they were manufactured. 20% of the growers and 40% of the vintners know when the ballasts were manufactured. 6% of the growers and 14% of the vintners also have identified the ballasts by year manufactured and year replaced, dispose of the replaced ballasts through a licensed toxic waste company, and have a Uniform Hazardous Waste Manifest. 14% of the growers and 26% of the vintners identify the ballasts by year and dispose of them in haz waste containers. 44% of growers and 46% of vintners do not know when the ballasts used were manufactured and dispose of replaced ballasts in the solid waste disposal system. 36% of growers and 14% of vintners replied N/A, not applicable or information not available.

**11-11. STORM WATER & WASTEWATER PROTECTION**  Keeping haz waste away from storm drains is critical to protecting water sources. Polluting water bodies exposes a large percentage of the biological community to the direct risk from hazardous substances. For this reason, exposure prevention is also a primary business practice that reduces liability exposure and risk to the entire enterprise. 72% of the growers and 92% of the vintners have identified storm drains. 39% of the growers and 56% of the vintners also store haz mat and haz waste away from storm drains, label all storm drains, do not clean major equipment outside, have diversion valves installed on the amounts, have spill clean-up supplies, and train their employees in clean-up techniques. 3% of growers and 4% of vintners also have cement pads for the fueling area, use dry clean-up supplies, and post fueling safety signs. In addition, 2% of growers and 1% of vintners have bilingual fueling safety signs posted. 5% of growers and 4% of vintners are doing the minimum legal requirements.

**11-12. UNDERGROUND STORAGE TANKS**  Underground fuel tanks have been known to leak. The fact that 84% of growers and vintners stated that this did not apply to them is good news and indicates that most growers and vintners have removed their underground tanks, or never had them in the first place. 11% of growers and 6% of vintners know where their tanks are located, know the amount of fuel and record critical storm drains, and have a Storm Water Pollution Prevention Plan (SWPPP) in place. In addition, 14% of the growers and 26% of the vintners have documented the locations to which the storm drains empty, have visual indicators on the diversion valves and train the management and staff as part of the SWPPP. 7% of the growers and 8% of the vintners have added further measures such as berms to contain major spills. 33% of growers and 36% of vintners do not store haz materials or haz waste away from the storm drains and still wash equipment outside. 28% of growers and 8% of vintners replied N/A, not applicable or information not available.

**11-13. ABOVE-GROUND STORAGE TANKS**  The leaking underground fuel tank issue has led many growers and vintners to choose above-ground fuel storage tanks (AST). The growers and vintners must implement new practices to ensure that any fuel that is spilled is contained on site so that it can be cleaned up and disposed of properly. 56% of the growers and 48% of the vintners know the locations of the AST, know the sizes of the tanks, the amount of fuel is known and tracked, inspect the fueling area regularly, make spill clean-up supplies easily accessible, and train employees in spill prevention, control and clean up. 20% of the growers and 21% of the vintners also have cement pads for the tanks, post signs about fueling procedures, and use dry clean-up supplies. In addition, 12% of the growers and 7% of the vintners have bilingual signs. 20% of growers and 19% of vintners meet the minimum legal requirements. 24% of growers and 33% of vintners replied N/A, not applicable or information not available, perhaps because they don’t have any fueling tanks on their land.
WHILE SAFE HANDLING of MATERIALS has always been part of the procedures at Trinchero Family Estates, things really took off in the fall of 2001 when Bonnie Baird was hired as Director of Environmental, Health, & Safety. One of the first things Bonnie did was instill new life into the Safety Suggestion Program. Every month Bonnie and her Safety Committee members along with Kevin LeMasters, Vice President of Operations, review each suggestion. Bonnie and Kevin then review the most important ones and decide on action. Contributing employees are recognized for the ideas that are implemented. The program has grown from just a couple of irrelevant suggestions per month to over 125 meaningful suggestions each year.

The monthly safety meeting process has also been reviewed and revised. Instead of bringing in facility people from other Trinchero Family Estate facilities for monthly meetings, Bonnie and her team now travel to each winery every month to hold safety meetings. These onsite events provide the EH&S Team with distinct knowledge about the individual facilities as well as a chance to get to know more people at each winery. Strong relationships are an essential part of an effective training program.

Training doesn’t stop with the facility managers and their assistants. It covers everyone in the company. When Trinchero Family Estates implemented a program to recycle fluorescent tubes, every employee who might be involved in the process – from maintenance to housekeeping to shipping and receiving – was trained on how to safely handle, replace and recycle fluorescent tubes. ‘The fluorescent tube has kept all fluorescent lamps out of the landfills. Also, they have a battery recycling program which has been extended to employees so that they can bring their used batteries from home to be recycled at work.

The awareness is growing and the suggestions keep pouring in. Housekeeping now uses environmentally safe cleaners to minimize heavy chemical cleansers. In the maintenance department a new parts washer was purchased which eliminated the use of any chemicals. According to Kevin, “The savings on chemicals and regulatory oversight made the minimal investment a ‘no brainer’.”

Best of all these approaches are shared within the wine industry. Bonnie helped launch the Wine Industry Officers of Safety (WINOS) that meets once a month. This group is composed of staff from other wineries, insurance representatives and university people. There are over 100 WINOS members sharing stories and strategies for making every workplace safe. “People are thinking about safety all the time now,” adds Kevin. “As a result, everyone is thinking more about safety, even at home.”

Comparative Results & Next Steps

THE FOLLOWING PAGE shows average scores from the 2004 Sustainability Report and the change in those scores since 2004. For growers, 12 out of 14 criteria increased with a maximum increase of 12% in criterion 11-13 Aboveground Tanks. For vintners, 4 out of 14 criteria increased with a maximum increase of 9% in criterion 11-10 Lighting. Despite this result of generally improved performance, growers and vintners should continue to assess their operations and implement site-specific plans to continuously improve the sustainability of practices for material handling.

To drive additional improvements in material handling, CSWA needs partners. If you are interested in helping to improve materials and waste handling, please email info@sustainablewinegrowing.org.
CHAPTER 11. MATERIAL HANDLING COMPARATIVE DATA

Vintner Responses

2004 Sector Avg  Change Since 2004


Grower Responses

2004 Sector Avg  Change Since 2004