

Susanne Wilson Award for Pollution Prevention / Resource Conservation

**Hesperian Cleaners
Sung Han Lee
San Lorenzo, CA**

Project Statement:

As the owner of Hesperian Cleaners I converted our dry cleaning business to a Professional 100% Dedicated Wet Cleaning System in 2007. We clean clothes to support two store locations in Alameda County, and we are the first dry cleaner in San Lorenzo to “go green” and replace the dry cleaning process. We are the first dry cleaner in Alameda County to completely replace our dry cleaning process to wet cleaning. All Northern California dry cleaners will need to start converting from the Perchloroethylene process to an alternative process starting in 2010, and will need to completely phase out by 2023. Hesperian Cleaners is at the forefront of this conversion for our customers, the dry cleaning industry and for the environment. The wet cleaning process does not use toxic chemicals or generate hazardous waste as is the case with conventional dry cleaning, and the cleaning process uses far less energy than the old process. The wet cleaning process is safe for delicate fabrics and “Dry Clean only” garments. The clothes are cleaner, softer and brighter than they would be using the old process and they do not have the chemical odor. We are also leading other dry cleaners to make the conversion with open houses and unlimited site visits for all interested dry cleaners in the Bay Area. We also offer multiple “green cleaning” options to include customer dry cleaning reusable clothing bags, degradable poly bags, hanger recycling and the option to “not” have clothes bagged in poly bags.

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Program Description:

By 2023 Perchloroethylene will phase out completely, and California cleaners need to find an alternative process to switch to instead of perchloroethylene. New York is also looking into similar legislation.

I knew that it was a matter of time before the California ARB mandated that dry cleaners convert to a new cleaning process. I looked for and investigated alternative processes for 7 years. At the 2006 Cleaner's Convention I committed to converting my business to the wet cleaning process. I liked the program and equipment they provided, and was impressed with the company's knowledge and know how. I was confident that they would stand behind their product and offer extensive training. I learned that there is little to no environmental impact to using the wet cleaning process.

The other cleaning alternatives that I researched starting in 2000 were a CO2 Liquid carbon dioxide process, a Rynex process, a petroleum based Hydro Carbon process, and a Silicone based process that cleans clothes with liquid sand. The wet cleaning process was the safest, most viable, knowledgeable, non polluting, trusted and sustainable option for us to convert to.

Demonstrating Program Commitment

We started the conversion process to the wet cleaning process in January 2007, and on March 14 the dry cleaning machine was removed from the premises and replaced with the wet cleaning machine. This conversion was extensive; requiring new equipment, intense training, and a large financial investment. I tested the new equipment on my own camel hair jacket as well as multiple garments to include 100% wools, 100% silks, cashmere sweaters, and rayon dresses to ensure the end product met the standards and quality I offer to my customers.

Leadership:

We could have waited another 5+ years before converting to an alternative cleaning process based on the ARB mandate. I took a leadership role and converted in 2007. I could have converted to a hydro carbon process that utilizes petroleum based solvent (like the majority of dry cleaners who have already converted) but did not do so because the process is smog forming. I am the first dry cleaner to convert to a 100% dedicated wet cleaning process in Alameda County, and the only Korean dry cleaner in the Bay Area that has converted to wet cleaning. I am leading change by this conversion, and I hold demonstration workshops and site visits with my competitors! I have at least one workshop every three to six months for Bay Area dry cleaners, and I have constant visiting dry cleaners who want to see and understand the new cleaning process.

Collaborative Effort:

I have and will continue to work closely with the local community, the county and the state throughout this conversion to the wet cleaning process. Hesperian Cleaners has been named a "Certified Green Business" by Alameda County, and is a California State designated demonstration site for wet cleaning. I have already held 3 workshops attended by over 70 dry cleaners to learn about the wet cleaning process, and postcards were mailed to area dry cleaners inviting them to attend. I work with and share information with other wet cleaners in California. I worked closely with the Pollution Prevention Center in San Francisco, the Urban Environmental Policy Institute and Occidental College throughout the transition and moving forward. I produced a video of customer interviews of their reaction and experience with wet cleaning, and have been featured in 4 local newspaper articles.

Significant Environmental Benefits:

The environmental benefits of using the new wet cleaning process instead of conventional dry cleaning are significant. The wet cleaning process uses water with specially formulated bio degradable detergent to clean the clothes. Most detergents have a PH level of 9, but the PH level of the bio degradable detergent is 5 which makes water behave like solvent. The detergent coats the fibers, water is added, and then there is gentle agitation. At the end of the cycle conditioner is added to the load of clothes to soften and add body to the fibers and bring the PH level of the water back to the normal water PH level of 7. The detergent and the conditioner contain no solvent or VOC. The spotting agent used in this new process contains no solvent or VOC, and is also biodegradable. The conventional dry cleaning spotting agent contains solvents and VOC and is not biodegradable.

The equipment used in the wet cleaning process uses very little energy. The new process uses 3 KW capacity of a motor compared to a 230 volt motor in the old process (see graph 1 & 2). The old process also required a refrigeration unit to condensate the solvent in the drying process, and a water chiller to cool the refrigeration unit. Both the refrigeration unit and the water chiller have been eliminated.

The wet cleaning system uses a high tech dryer that is not powered by gas or electricity. The dryer utilizes steam that is already produced in the production to heat the dryer. It creates low pressure to evaporate the moisture faster with help of a small amount of steam. The new dryer is programmable so you can conserve energy by setting the amount of heat to recycle within the chamber. This process requires far less energy, and the dry time is 3 to 5 minutes to be ready to be pressed.

Wet cleaning 25 pounds of dry clean only garments uses only 18 gallons of water. Wet cleaning 250 pounds of clothes uses 180 gallons of water. This cleaning process is high tech state of the art cutting edge technology which makes it possible to clean 25 pounds of clothes with ½ the water used when you take a shower.

	Conventional Dry Cleaning / Laundry Process	Wet Cleaning / Laundry Process	Washing Clothes at Home in Washer / Dryer
Water used for shirt laundry for 50 shirts	150-200 gallons	40 gallons	60-100 gallons
Water usage for 25 lbs of dry clean only garments	NA	18 gallons	NA
Time to dry clothes	40 minutes	3-5 minutes	40 minutes
Dryer powered by	Gas or Electric	Recycled steam	Gas or Electric
Solvent used	Yes	No	NA
Biodegradable	No	Yes	NA
VOC	Yes	No	NA
Clothes are brighter	No	Yes	NA
Clothes smell like chemicals	Yes	No	No
Clothes are soft	No	Yes	Yes
Smog emitted from the process	Yes	No	NA
Hazardous Waste Generated	Yes	No	NA

I also offer other “green” options for our customers. Reusable dry cleaning clothes bags are offered to all customers to carry their dirty clothes in vs. using a plastic or paper bag. All clean clothes are covered with degradable poly bags that break down in 5 years vs. the plastic bags used by many dry cleaners that take 100 years to break down. I offer hanger recycling, and we give customers the option to pick up their clean clothes without any bags on the clothing.

Potential Model for Business Community

In addition to the leadership and environmental benefits of the wet cleaning process, we serve as a model for the business community. We are at the forefront of the small business community in awareness, dedication and commitment to the environment and our customers. By leading workshops and by emphasizing “going green” with our customers and the local business community we are leading by example and setting a standard for the business community to follow. For example, when we painted the store we chose Kelly Moore low VOC paint and changed all the lights to energy saving lights. Each of the 5 presses has an energy saving shutoff valve to conserve energy. We continually educate employees to turn off lights and turn off steam valves when not needed.

We are now exempt from needing an annual permit and inspection from B.A.A.Q.M.D. We are also exempt from needing a permit every 3 years from the Air Resource Board. We are exempt from needing annual permits from the Alameda County Environmental Health Department which consist of a permit for having a solvent on the premises and for being a hazardous waste generator. We no longer need an annual check from the EBMUD for backflow valve. We are now exempt from posting a Proposition 65 warning sign on the premises.

Summary

“Going Green” is a win-win situation for our customers, the community and the environment. By visiting Hesperian Cleaners customers and other businesses can observe and adopt our environmentally friendly practices. Getting your clothes cleaned at Hesperian Cleaners uses less energy and water than washing and drying your clothes at home. Our electric usage and water usage has declined since the conversion to the wet cleaning process. We are using water to clean clothes instead of solvents and toxic chemicals, we are not generating hazardous toxic waste, and we are able to use less water and energy than we were doing dry cleaning! Wet cleaning delivers cleaner clothes and make the environment cleaner too.