



Real World Wetcleaning:

A study of three established wetcleaning shops

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Disclaimer

The opinions and recommendations contained in this report are those of the authors and the Center for Neighborhood Technology and are not necessarily those of our funders. The mention of any commercial products or their use does not represent an endorsement of those products.

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Introduction

Since 1992, the Center for Neighborhood Technology has worked with the professional cleaning industry to find alternatives to the current practice of using perchloroethylene to dryclean clothes. CNT's interest in this issue came out of a concern regarding the structure of the professional cleaning industry in which most plants are located in residential neighborhoods, and the potential hazards and concerns raised by using toxic chemicals in such settings. CNT has looked for ways in which cleaners can use new processes that not only are environmentally friendly to workers, garments and communities, but also allow the small "mom and pop" cleaner to continue to operate profitably. Professional wetcleaning was identified as a process with exciting potential and a need for research to examine its viability. Adding on to CNT's previous study of the Greener Cleaner which posed questions about the basic viability of the emerging technology of professional wetcleaning, this study looks at wetcleaning as it has been implemented in three established shops.

The Greener Cleaner report demonstrated a new technology in use in a start-up shop. This report is a profile of three professional cleaning establishments that currently use professional wetcleaning in whole or in part as a pollution prevention alternative to conventional solvent-based drycleaning. The goal of this report is to provide a picture to the industry of what such operations look like, and to provide insight to other cleaners as they consider how to add wetcleaning to their operations. The three shops, Colonial Cleaners in Minneapolis, Minnesota; Natural Cleaners in Bayside, Wisconsin; and Nature's Cleaners in North Andover Massachusetts, all provide a model of the typical small cleaner. The difference between them and the typical cleaner is the addition of this exciting new process for the cleaning of clothes.

Members of the fabricare industry must consider what the 21st century holds for the cleaning of clothes in professional settings. The dominant process of the late 20th century, solvent-based cleaning using perchloroethylene (perc), appears to have a problematic future. Due to regulatory and liability burdens associated with perc, a key area of study has been the process options available to cleaners. New processes, from professional wetcleaning, to non-chlorinated solvents, to liquid carbon dioxide, all present great opportunities for the industry. Other issues including property contamination by past practices, and the impact of consolidation on the industry remain much more uncertain.

Professional wetcleaning is currently the most researched and available alternative to perc. Previous research established wetcleaning as a viable option and provided information in shop settings. This report is the first research to examine shops that have been in business as wetcleaners for over a year and stable in their operations. It is our hope that this report will likewise assist cleaners in understanding the choices they can make to implement pollution prevention wetcleaning in their own shops.

Wetcleaning History

Problem Statement

The challenges facing the drycleaning industry come from the fact that drycleaners are one of the largest users of chlorinated solvents among small businesses, and unlike other users of similar products are located in residential communities. Drycleaning is a \$7 billion industry that consists of over 35,000 small businesses employing 200,000 people. Eighty-five percent of drycleaners use the toxic solvent perchloroethylene . Perc has been linked to numerous health and environmental problems. The International Agency for Research on Cancer (IARC) classifies perc as a probable carcinogen, and the *EPA's Cleaner Technologies Substitutes Assessment* recently linked perc use with cancer and neurotoxicity. Perc is listed as a Hazardous Air Pollutant under the Clean Air Act, and is regulated by the Clean Water Act, the Resource Conservation and Recovery Act, and Superfund.

The industry has worked hard to try to pass legislation to help cleaners face the daunting clean-up costs associated with perc. However, the reality is that the combination of government regulation, insurance and liability costs and pressure from environmental groups and consumers place an ever-greater burden on cleaners who continue to use perc. By exploring how professional wetcleaning impacts clothes, costs and customers, CNT has worked to help the industry understand that reliance on perc is not the same thing as promoting a strong industry. There is a growing awareness that through a proactive move towards new cleaning processes, cleaners can build a model of new businesses to take them into the 21st century

What is Wetcleaning?

Professional wetcleaning is “a process for cleaning sensitive textiles (e.g., wool, silk, rayon, linen) in water by professionals using special technology, detergents and additives to minimize the potential for adverse effects. It is followed by appropriate drying and restorative finishing procedures.” (American Association of Textile Chemists and Colorists Definition) Today’s professional wetcleaning is a modernization of long-established custom of cleaning clothes in water. By utilizing computer controlled washers and dryers, and a new generation of detergents, conditioners and other chemicals, wetcleaning can now process a wider range of garments at a higher production rate than was ever possible in the past.

The technology was first developed in Germany in the early 1990s and was introduced into the United States several years later. There are now ten domestic and imported equipment manufactures and 18 producers of the detergents and related chemicals. The process is now used by hundreds (if not thousands) of cleaners across the country. However, while previous research has demonstrated that a very wide range of clothes can be wetcleaned, cleaners are still looking

for additional cleaning processes that will complement wetcleaning. Some of the other processes under development for the professional cleaning of clothes include:

- Synthetic petroleum solvents
- Glycol ethers
- Silicone solvents
- Liquid carbon dioxide

These processes are all in varying degrees of commercialization and provide interesting potential to cleaners. However, there have not been any third party evaluations of the performance of these methods in real world settings. In addition, researchers continue to investigate ultrasonic cleaning, ozone cleaning and microwave drying technologies although these options do not appear to be realistic options at this point in time.

Previous Research

There have been a number of previous studies of professional wetcleaning that have explored basic performance of the process and profiled 100% wetcleaning operations. This report has worked to build upon those previous efforts. Some of the key reports include:

- EPA Multiprocess Study (1993)
- EnvironmentCanada (1995)
- CNT Greener Cleaner (1996)
- UCLA/PPEREC (1997)
- CAMP (1999)

Further information about these studies is available in Appendix 1. Information about many of these research projects is also available on the CNT website: www.cnt.org/wetcleaning.

Issues to be addressed in this study

The shops studied in this report were identified through a survey conducted by the Center for Neighborhood Technology in the spring of 1998. The research period for this study covers the period of September 1998 through August 1999. At the time of the beginning of the study, all of the shops had been wetcleaning for at least one year. CNT paid a small stipend of \$1,500 to the three shops for access to their facilities and records.

This study does not seek to be a comprehensive evaluation of all of the aspects of wetcleaning. The basic strengths and weaknesses of the process have already been established. This study will provide insight into how wetcleaning looks when fully implemented in a shop. Each shop will be profiled, observations from the owners and staff described, key performance indicators detailed, and conclusions issued.

The variability of shops means that no one study, or even a set of studies, can conclusively prove or disprove the best way to use wetcleaning. However, the three shops profiled here do provide a reasonable picture of the typical small professional cleaning shop, and should be recognizable to other cleaners.

Shop Profiles

Each of the three shops studied has a different history and represents the variety of ways in which an individual entrepreneur comes into the industry. Nature's Cleaners was started as exclusively offering wetcleaning, while the Colonial Cleaners and Natural Cleaners converted from drycleaning and continue to offer both services. Colonial is operated by Korean-American entrepreneurs, a growing segment of the professional cleaning industry. At Nature's Cleaners and Colonial Cleaners, the owners work in the shops on a daily basis, while at the Natural Cleaners, the owner manages four other stores and has an onsite manager running the shop. The 1997 Economic Census puts the average revenue of a drycleaner at \$252,506. All of the stores have revenues between \$250,000 and \$350,000 so these three shops are clearly quite typical.

Equipment

All three stores utilize modern high-tech wetcleaning equipment and chemistry specifically formulated for wetcleaning. Nature's Cleaners utilizes a special drying cabinet, but otherwise all finishing was done on conventional drycleaning presses. Elsewhere, many cleaners have utilized tensioning finishing equipment for the pressing of wetcleaned garments. For more information about the equipment options for wetcleaning see CNT's *Wetcleaning Equipment Report*.

Staff

The staff levels at the three shops appear to be typical for the small cleaner. At Colonial Cleaners and Nature's Cleaners the owners performs the bulk of the actual cleaning in addition to their management work. Natural Cleaners is structured somewhat differently, with the owner not on site, and a manager running the store and the cleaning machines. The key difference is that the owner of Natural Cleaners also owns two other stores (and manages two more) and spreads her management duties across the stores.

Notes on Operations

CNT visited each shop and interviewed the owners and employees. The profile of each shop includes key points that were raised during those interviews about how wetcleaning is performed in the shop. For example, the shops all used slightly different criteria for sorting garments. The observations that CNT obtained from shop staff will serve as useful tips for other cleaners on aspects of how to implement wetcleaning in their shops.

Colonial Cleaners		Washer	Aqua Clean 50 lb.
		Dryer	Aqua Clean 50 lb.
Location	Minneapolis, Minnesota	Detergents	Seitz and Laidlaw
Owners	Soo and Whan Chang	Drycleaning	Vic 30 lb. 4 th Generation
		Other	Several Wascomat washers for shirt laundry
		Pressing	Cissel presses Ajax pants topper
		Boiler	Fulton 10 hp
		Staff	3 part-time counter 2 co-owners 2 full-time pressers 1 part-time presser

Colonial Cleaners is located in the Kingfield neighborhood of Minneapolis. The owners Soo and Whan Chang bought Colonial in 1990 after it had been in operation for 50 years and the previous owner was retiring. The shop used a transfer perc machine and the Changs had an environmental assessment performed on the site prior to purchase and found no contamination. After purchasing the shop the Changs expanded the shop into an unused room at the back, installed a new perc machine and a shirt laundry area. In 1995 they added an Aqua Clean wetcleaning system.

The Changs moved from Korea to Canada in the mid 1960s and to the United States in the late 1960, first to the New York area and later to Minneapolis. Whan worked as an accountant and Soo's worked in the healthcare industry but she had a long-standing interest in fabrics and was interested in operating her own business. Soo started working in the fabricare industry for five years at another shop in Minneapolis. They owned one store that they sold to buy Colonial because of its reputation. Currently the Changs have scaled back their time in the shop and they work only four days a week.

Notes on Operations

- Garments are sorted first by fiber, then by color, then by weight.
- Bad grease stains are drycleaned first then wetcleaned.
- Colonial will wetclean if customer asks, but don't specifically tell customer what process they use.
- Wetcleaning percentage varies with business. They do less wetcleaning when very busy.
- Colonial has recently started limited advertising of wetcleaning service, and has had a write-up in a local community paper.
- A very good presser (with 14 years experience) has made wetcleaning easier.

Natural Cleaners		Washer	UniMac 30 lb.
		Dryer	UniMac 50 lb.
Location	Bayside, Wisconsin	Detergents	Laidlaw
Owner	Marilyn Fleming	Drycleaning	Union 35 lb. 3 rd Generation
		Pressing	Ajax Cissel arm puffs and form finisher
		Boiler	Parker 9.5 hp
		Staff	1 Manager (Full Time) 1 Presser full-time 1 Part-time (Pressing, Cleaning, Counter) 1 Part-time Presser 3 Part-time Counter [Staff are cross-trained on different jobs]

Marilyn Fleming has had twenty years of experience in the professional cleaning business as a shop manager and owner. She currently owns several stores called Natural Cleaners, and manages two One-Hour Martinizing stores for retired owners. The original Natural Cleaners store in Hales Corner has only wetcleaning and shirt laundry equipment. The other Natural Cleaners (including the Bayside store profiled here) have both drycleaning and wetcleaning equipment onsite and send shirts to the Hales Corner store. The Hales Corner store will send garments that require drycleaning to one of the other stores for processing.

Marilyn bought Bayside Cleaners in April 1997 from the previous owners who were retiring. She is gradually changing the name to Bayside Natural Cleaners to have it fit in better to her growing chain of stores. The store had wetcleaning equipment installed in November 1997.

Notes on Operations

- In deciding whether to wetclean or dryclean, Natural Cleaners looks for: (1) Special processing requests, (2) Stains, (3) Silks and whites, (4) Care label, (5) Fiber type.
- The cleaner feels that less prespotting is necessary for wetcleaning. However, she felt that more sorting was required for wetcleaning.
- Natural Cleaners has three different cleaning cycles that they use for most loads.
- When they choose to use a cleaning method that goes against the care label, they always measure the garment.
- Wools are easy to press except the linings.
- Hanging overnight makes pressing easier.
- Natural Cleaners actively markets their wetcleaning services (as “Natural Cleaning”) through signs in the shop, advertising and a webpage. The shop has been the subject of several news stories both in the trade industry and mainstream press.

Nature's Cleaners		Washer	Aquatex 40 lb.
		Dryer	Aquatex 65 lb.
Location	North Andover, Massachusetts	Detergents	Aquatex and Kreussler
Owner	David Nobil	Drycleaning	None
		Pressing	Cissel Aquatex drying cabinet Silc ironing board
		Boiler	Columbia 15 hp
		Staff	Owner Full-time 2 Full-time Pressers 2 Full-time Counter 3 Part-time Counter 1 Full-time Tailor (Subcontracter)

David Nobil worked for ten years in facilities operations and management in the Health Care Industry. As he considered a career change he saw an ad from Daniels Equipment for drycleaning entrepreneurs in the business opportunity section of the *Boston Globe*. David had worked with Daniels Equipment in equipping hospital laundries and was interested in working with them in his new business venture. Their original plan for a site in North Andover, Massachusetts, was as a solvent-based drycleaner. The town rejected the plan because of the site's proximity to a wetland and the risk of perc contamination of this environmentally sensitive area. Daniels Equipment then suggested that he consider the emerging technology of wetcleaning. As a result, the shop opened as a dedicated wetcleaning plant in February 1996.

There are nine other professional cleaners in North Andover, approximately half plants, and half drop stores. In 1999, Nature's Cleaners was voted the town's favorite cleaner a poll conducted by the local paper.

Nature's Cleaners exclusively performs wetcleaning. An agreement with another local cleaner allows Nature's Cleaners to send an occasional garment deemed not appropriate for wetcleaning to that cleaner for drycleaning and vice versa.

Notes on Operations

- Many of the employees specifically mentioned the lack of chemical odor as a primary benefit of working in a wetcleaning shop. The main counter person felt that the drycleaner she previously worked for had more items returned for redos.
- Nature's Cleaners does not wetclean the following fiber types: some multicolored rayon/acetates, rayon/silk velvets.
- In one sample month, October 1998, 6 garments sent out, with a volume of approximately 1000/garments a week.
- Nature's Cleaners sorts first by color, second by fabric.

- Garments are sorted mostly by feel and by appearance. Labels are checked only when the fiber type is uncertain.
- Nature's Cleaners doesn't measure items. They report only one shrinkage claim in 1998.
- Washing uses three main programs: Wool, Delicate, Cotton.
- After drying, garments are hung for one day before being blown out on the suzie or pants topper and pressed.
- Same day items will be dried more than normal and sent straight to pressing.
- The easiest items to wetclean are: silks, cottons, wools (except whites with stains).
- Rayons are put on conventional hangers in drying cabinets.
- Hard Items: linen/rayon blends and acetates can have shrinking problems. The shop does not have a hothead press, which makes linen and linen blend items more difficult. Since the study period the shop has purchased a hothead press.
- New customers are told what process is used at the shop. No releases are sought. New customers are sent welcome cards.
- The challenge of cleaning men's suits comes from all of the detail areas rather than from concerns about shrinkage.
- When shrinkage does occur, the presser normally can restore it.

Specialized Wetcleaning Drying Cabinet

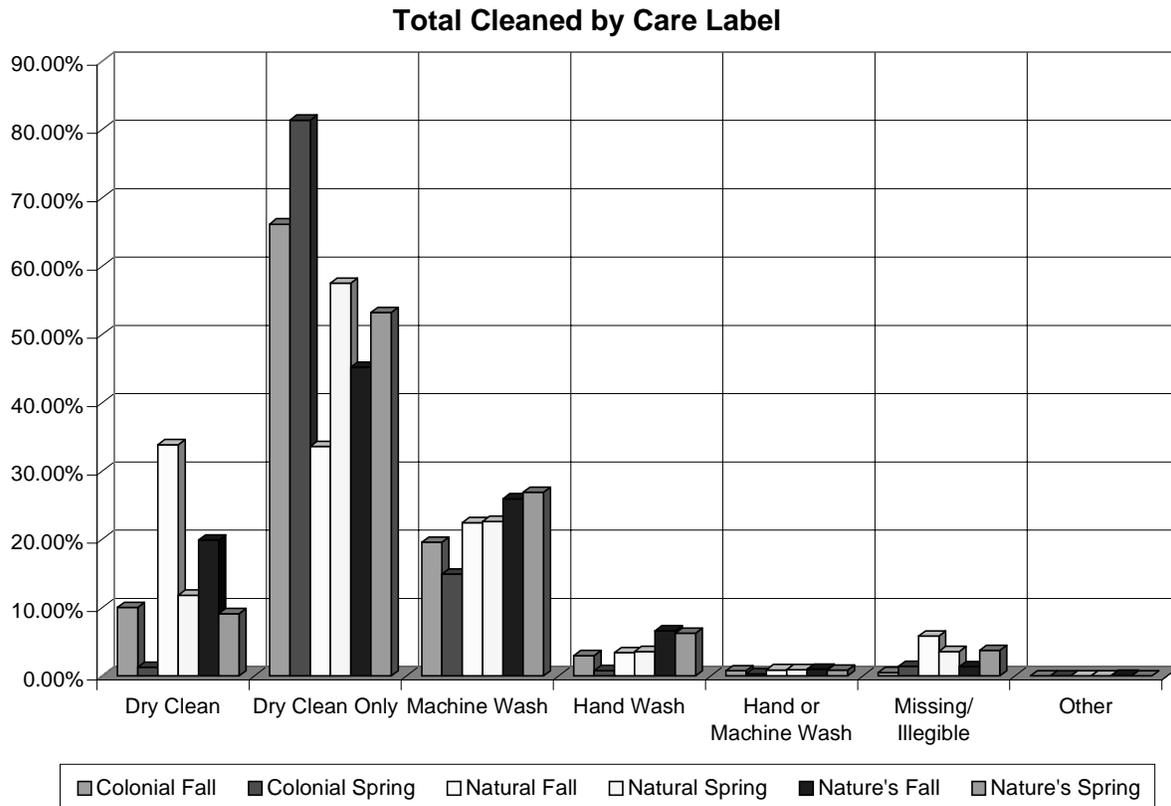
- The cabinet works by placing suit jackets or overcoats on spring loaded forms that hold the garments under tension. A cartridge of garments is loaded into the machine and steam and hot air is circulated through the cabinet. By drying under static conditions with tension, the design of the cabinet is intended to prevent dimensional change in drying.
- After cleaning, all jackets and rayons go to the drying cabinet. Other items to the dryer.
- Items are dried to 10% humidity in the dryer. The drying cabinet uses a 20 minutes cycle at 95° C.
- The drying cabinet pulls out jacket backs, so that linings do not sag. Jacket arms and backs don't need additional pressing.

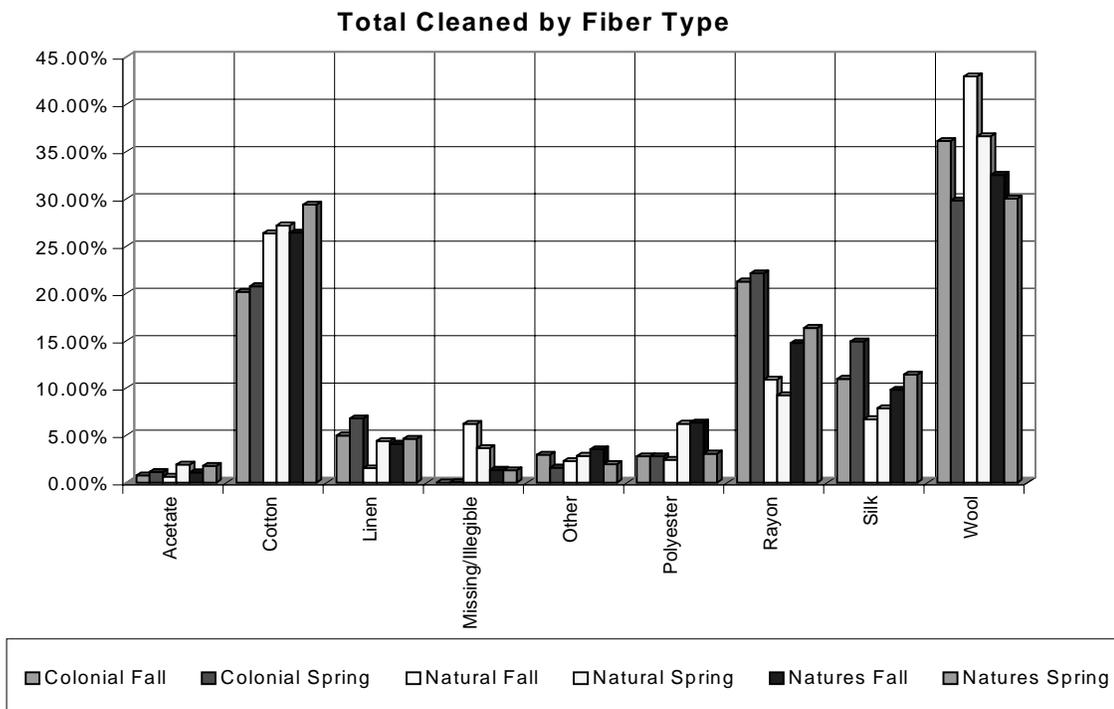
Data

Garments

The three shops participated in two tracking studies. The first was performed in November 1998 and the second in May 1999. In each study, the shops tracked the care method, care instructions and fiber type for every garment cleaned over a two-week period. The overall fiber types and care labels were fairly consistent across shops and tracking periods. Significant differences were observed between the two mixed use shops in which garments were wetcleaned and which garments were drycleaned.

The charts below indicate the overall breakdown of care labels and fiber types at the three shops during the two tracking periods. The only significant variations come in the amount of clothes with a “Dry Clean” label. Some of this may be due to the shop personnel not always properly distinguishing between “Dry Clean” and “Dry Clean Only.”





Colonial Cleaners

Colonial Cleaners wetcleaned 35.36% of garments in the fall period and 29.14% of garments in the spring period.

Colonial Cleaners showed a higher percentage of rayon garments and slightly fewer cotton garments. Likewise their percentage of “Machine Wash” garments was lower than the other shops.

The largest limiting factor for wetcleaning at Colonial Cleaners appears to be their processing of wool items with “Dry Clean Only” labels.

Natural Cleaners

Natural Cleaners wetcleaned 50.7% of garments in the fall period and 68.32% of garments in the spring period.

The most significant factor in their increased wetcleaning is a large increase in the wetcleaning of “ Dry Clean Only” wool items.

Nature’s Cleaners

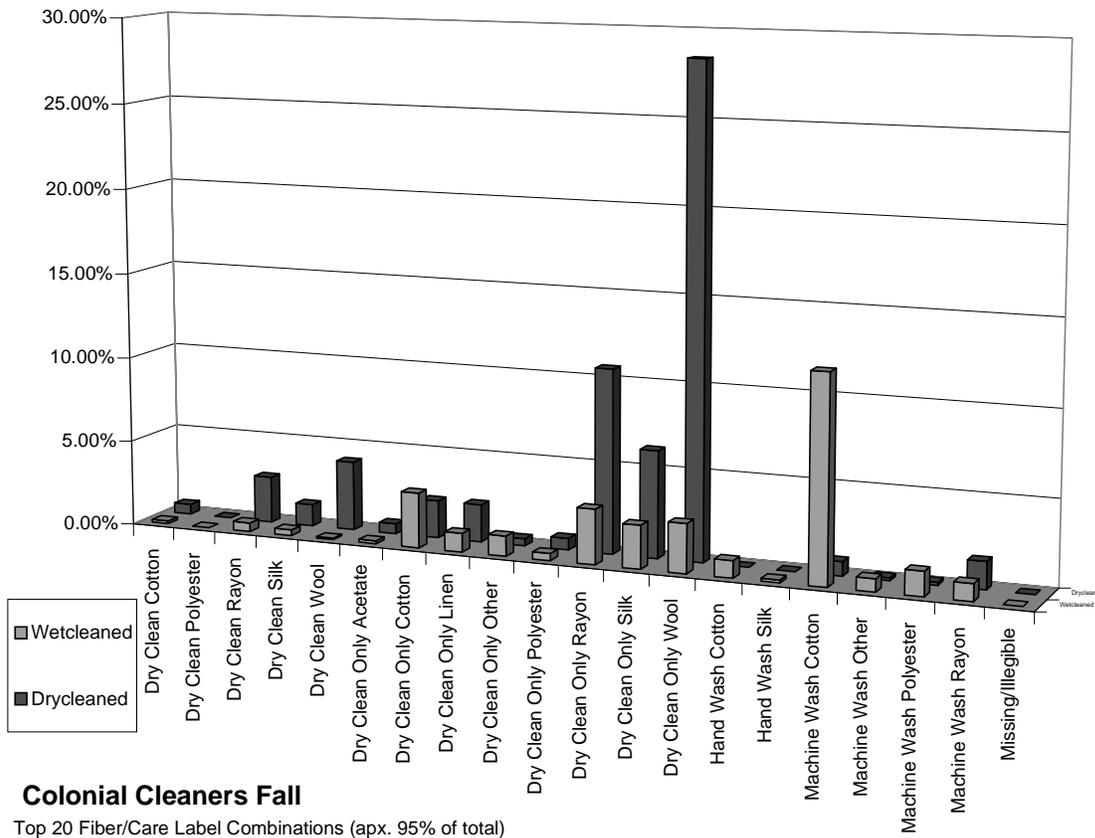
Nature’s Cleaners wetcleaned 100% of garments during both tracking periods. For care labels and fiber types, Nature’s Cleaners showed the most consistency between the two tracking periods.

In analyzing the two mixed use shops and how and why they had variation in what garments were wetcleaned and what were drycleaned, several factors stood out. Nine fiber types and six care labels were tracked for a total of 54 possible combinations. The top 20 combinations accounted for approximately 95% of the garments tracked. The following charts shows the breakdown of the wetcleaned garments at Colonial Cleaners and Natural Cleaners. At both shops a large portion of wetcleaning volume comes from the processing of “Machine Wash” cottons. However, the biggest variation in wetcleaning versus drycleaning comes from “Dry Clean Only” wool items. These garments are potentially very amenable to wetcleaning, but the operator must have the skills and confidence to wetclean them.

Other findings include:

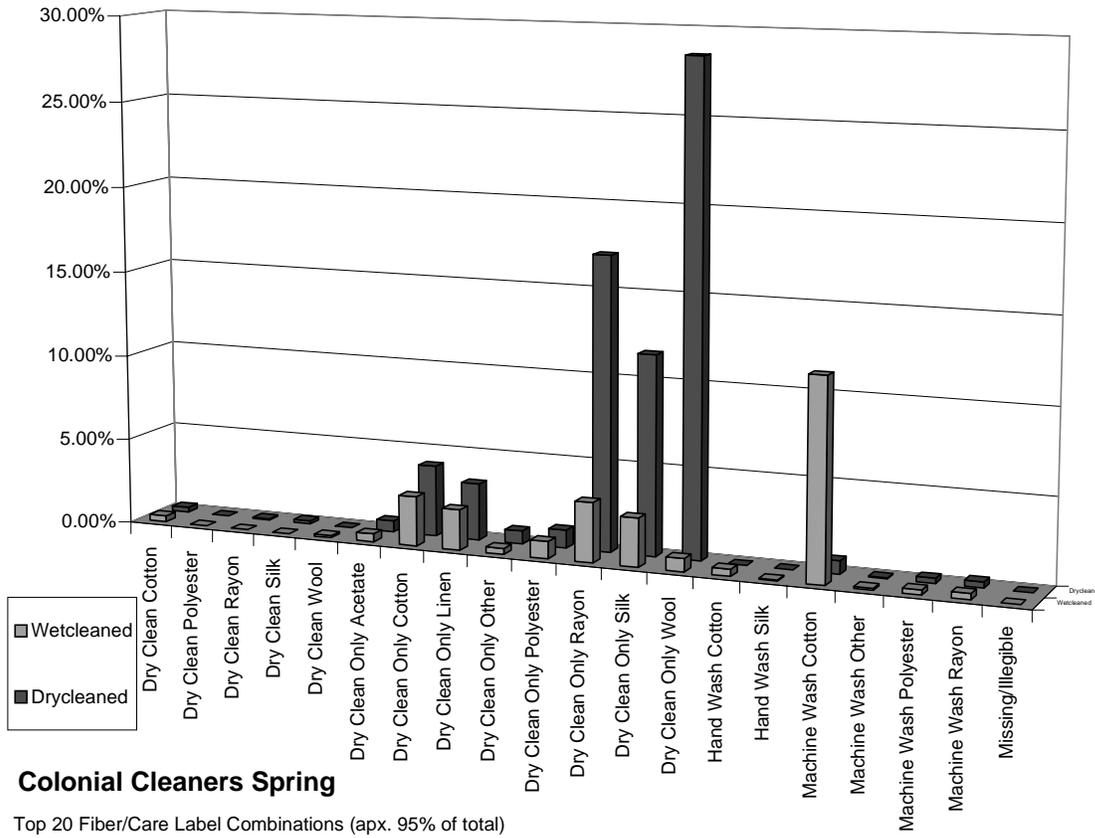
- “Dry Clean Only” cottons and linens are wetcleaned and drycleaned in roughly similar percentages.
- “Dry Clean Only” rayons tend to be drycleaned.

Complete data on the tracking periods is contained in Appendix 2.



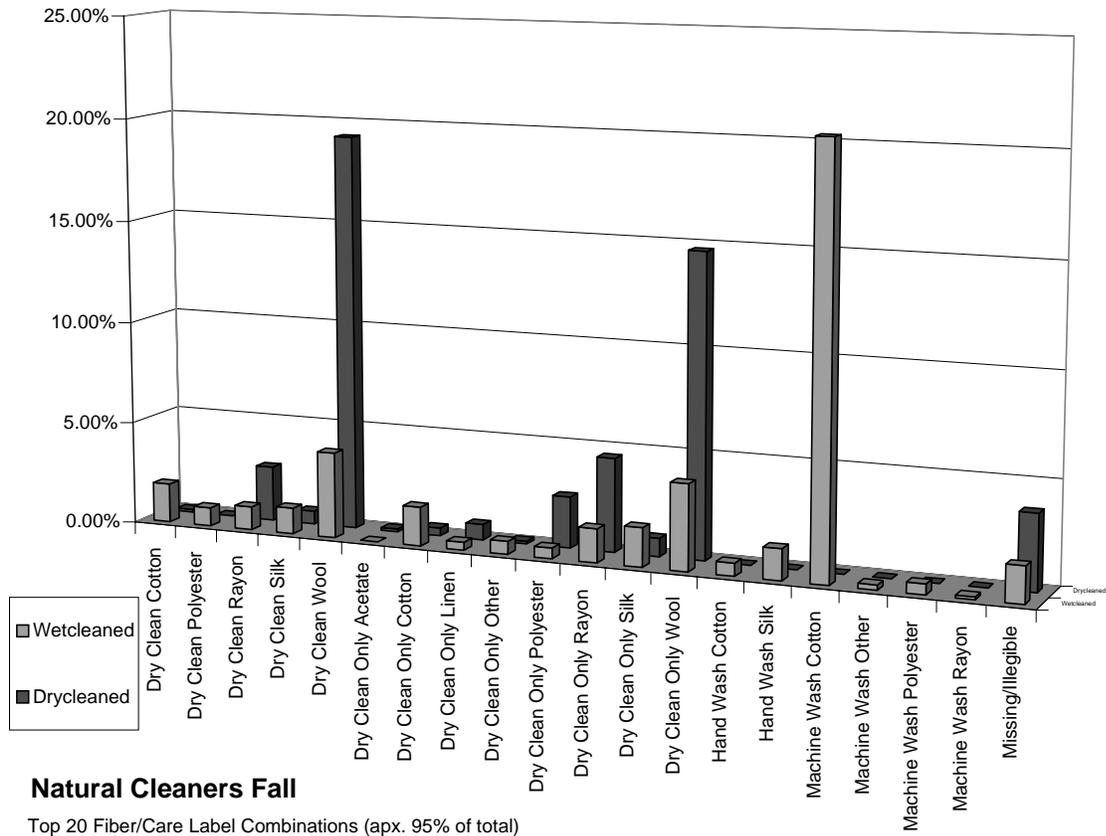
Colonial Cleaners Fall

Top 20 Fiber/Care Label Combinations (apx. 95% of total)



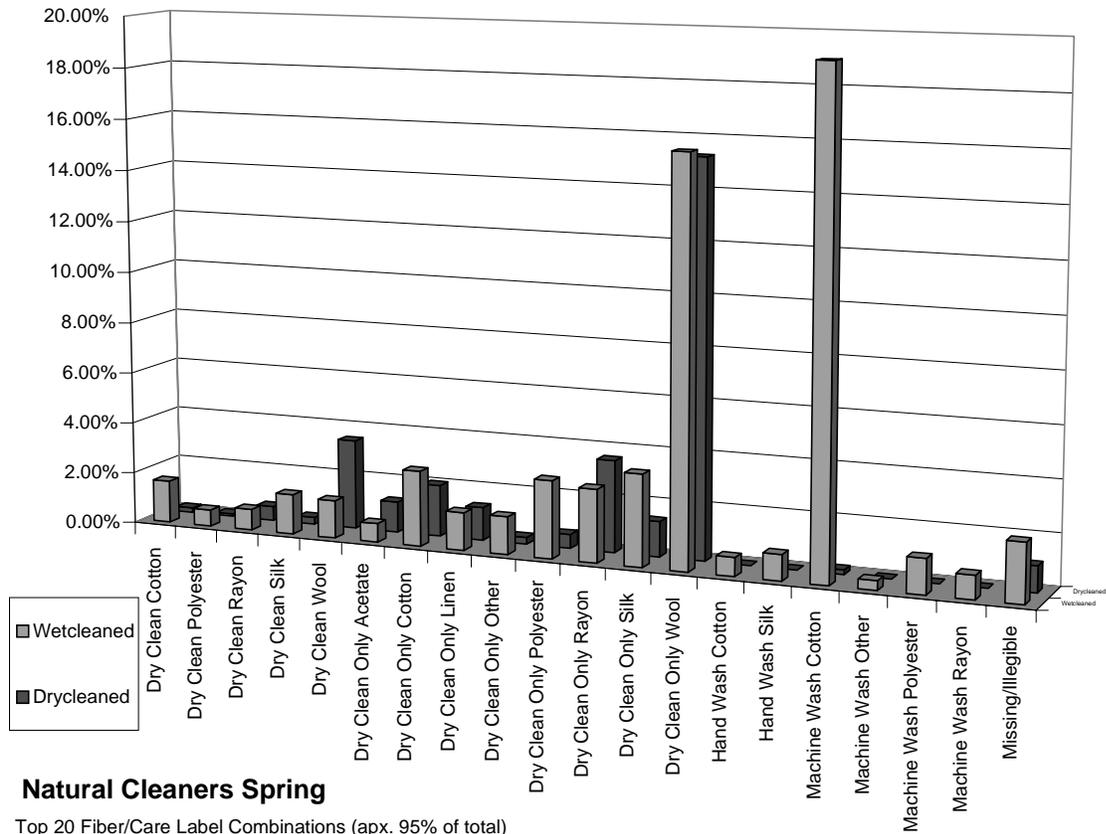
Colonial Cleaners Spring

Top 20 Fiber/Care Label Combinations (apx. 95% of total)



Natural Cleaners Fall

Top 20 Fiber/Care Label Combinations (apx. 95% of total)



Natural Cleaners Spring

Top 20 Fiber/Care Label Combinations (apx. 95% of total)

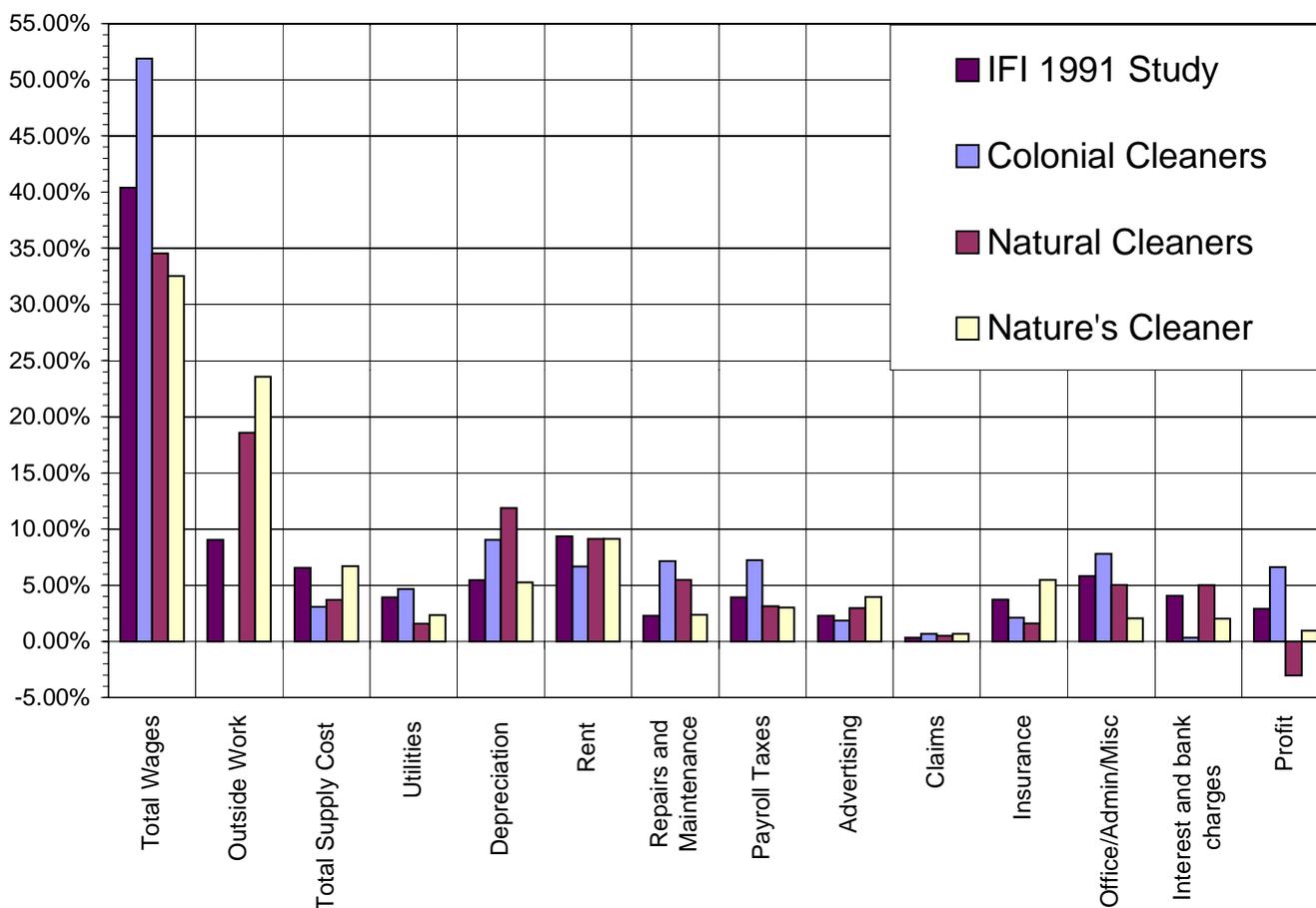
Financial

Each shop agreed to share financial data with CNT for the period September 1998 to August 1999. In the interest of confidentiality the exact dollar figures are not represented here, but instead expenses are broken down by line item percentages. The three shops all were in the \$250,000 to \$350,000 range in revenues during this period.

For comparison of the expenses of these three shops, a 1991 IFI survey was used as a baseline comparison. Certain adjustments were made to correct for differences between the shops including excluding taxes that differ from state to state and excluding work sent out. Specific notes on each shop are listed below. Because of the significant differences in ownership structure and work (one shop having two owners working, one shop having one owner working, and one shop having the owner off-site) the employee wages and owner wages are not broken out from each other.

No major differences are apparent between the shops. One concern about wetcleaning has been the increased labor costs. In these three shops, it appears that has not been significant. There is no one specific cost that varies greatly from wetcleaning to drycleaning that could be a source of incentive to switch processes. The small variations seen between line items are reflective of local business conditions and not major operational issues.

Detailed percentages are included in Appendix 3.



Colonial Cleaners

Colonial had somewhat higher wages than the other two shops. This was for two main reasons. First, both owners work at the shop. Second, Colonial processes shirts on-site. This was an additional labor cost but a decreased outside expense.

Natural Cleaners

The owner charges the store a fixed monthly supervision fee and it is included in the wages category.

Most of the outside work is processed at another Natural Cleaners shop, so while it is an expense for this shop, it is not for the overall business.

Natural Cleaners shows a small loss, but this is a paper loss caused in part by accounting for depreciation on equipment.

Nature's Cleaners

Nature's Cleaners had higher insurance costs due to the high cost of insurance in Massachusetts, and offering health insurance to employees.

Customer Surveys

In August 1999 100 surveys were sent to randomly selected customers of each of the three shops. With the exception of Colonial Cleaners, the response rates were below desired levels, but some generalizations can be made about the responses.

The survey use the same set of questions as were used in two 1996 surveys of customers of the Greener Cleaner. With the exception of the question about why the customer first used the cleaner, results were comparable to the Greener Cleaner. Location was the primary motivation for customers of these three shops, while environmental concerns were most important to Greener Cleaner customers.

Key findings:

- Between 50-75% took their clothes because of convenience. Only Nature's Cleaners had respondents indicate environmental concerns (13%)
- 80% of Natural Cleaners customers and 86.7% of Nature's Cleaners customers were aware of wetcleaning. In contrast, only 16.7% of Colonial Cleaners customers were, perhaps due to their more limited marketing of the service.
- About 55% of Colonial Cleaners and Natural Cleaners customers felt Very Positive or Somewhat Positive about learning about wetcleaning in contrast to 80% of Nature's Cleaners customers.
- Over 90% of customers of all three shops rated overall service as Excellent or Good.
- 95.8% of Colonial Cleaners customers and 100% of Natural Cleaners and Nature's Cleaners customers rated their clothes as clean.
- Between 10% to 20% of customers had experienced some shrinkage in clothes. The survey could not distinguish if this occurred in wetcleaned or drycleaned garments.

Full results of the survey are included in Appendix 4.

Conclusions

All three shops indicate ways in which professional cleaners can successfully utilize today's wetcleaning. A cleaner has many choices. From an addition of a wetcleaning machine that adds flexibility to the shop and cleans 1/3 of garments, to a shop that puts wetcleaning as a preferred process but continues to dryclean, to finally a shop that has done away with drycleaning altogether, all are realistic models.

This report does not seek to recommend that all cleaners adopt one of these specific models. Instead, it has been CNT's goal to show that any one of these models is realistic. All three shops have gotten to where they are today through the initiatives of the owners. While the shops received a small stipend from CNT for this research project, none of the shops received special funding for equipment, or started out as a research shop.

Wetcleaning Percentage

As this study has made clear, there is no correct level of wetcleaning for a shop. This report shows that a 100% wetcleaning shop is a viable option, but that the more typical mixed use shop can also operate efficiently. Likewise, wetcleaning percentage in a mixed use shop will vary by season. Each owner has to make a determination as to operating conditions, location, staff, etc. to select the appropriate of wetcleaning level. However, in some situations such as pressure from a landlord or local zoning authority, the pressure not to use solvents will mean that high percentage (or 100%) wetcleaning may be the only option that will allow a cleaner to remain in business.

Roughly 25-30% of garments brought to a cleaner do not have a "Dry Clean" or "Dry Clean Only" label and should be wetcleaned where possible. Specific stains, load leveling and other factors may make a cleaner occasionally choose to dryclean some of these items.

For garments labeled "Dry Clean Only" the two mixed use shops in this study wetcleaned between 17% and 55% of these items. While this in part shows the limitations of current care labeling, it also shows the possibilities of wetcleaning to process these items that cleaners would have traditionally drycleaned. As a cleaner's experience and skill in wetcleaning grows, this is the final area in which to increase wetcleaning percentage.

Attitude

The shops profiled choose to explore wetcleaning and how to add it as a service. This attitudinal perspective is critical to successful wetcleaning. Having spent the money on the equipment for wetcleaning, it was important for all three shops not to just do glorified laundry. The three shops have to varying degrees hired consultants and attended educational seminars to further expand their knowledge of how to wetclean. Without this commitment by both the owner and the staff to make wetcleaning work, many cleaners will fail to utilize wetcleaning's full potential.

Equipment

Today's wetcleaning is a flexible process. It can be (and is) done using conventional toploading washers using the specialized wetcleaning chemicals. However that method limits the type and volume of garments that can be processed. To properly integrate wetcleaning into a shop, the types of wetcleaning equipment used at these three shops is a more realistic model.

With the exception of the Aquatex drying cabinet in use at Nature's Cleaners, the shops all used the types of pressing equipment normally found at a drycleaners. This study helps to demonstrate that wetcleaned garments can be pressed with conventional equipment, but that for high-percentage wetcleaning, tensioning equipment is desirable. The previous studies of 100% wetcleaning operations (CNT, UCLA/Occidental College) studied shops that had this type of equipment and found it to be important for productivity. Currently the owner of Natural Cleaners is considering investing in tensioning equipment to help increase wetcleaning percentage.

Training

All three shops have participated in various forms of training and continuing education. These range from attending seminars to hiring consultants for on-site training. Professional wetcleaning remains a craft. As a craft, it is best done by people with the appropriate skills. A new certification program jointly developed by CNT and the International Fabricare Institute can help cleaners assess their knowledge against industry standards.

Garments

At one level, a cleaner can not control what garments come into a professional cleaning shop. Fashion and other trends will dictate this. Wetcleaning does provide several opportunities as well as some challenges. The first opportunity comes from wetcleaning of clothes that do not have a "Dry Clean" label. Customers bring these garments to the cleaner for many different reasons, time, stains, pressing. The gentleness of wetcleaning compared to laundry paired with the stain removal and finishing offered by the professional cleaner can demonstrate to the customer the benefits of professional fabricare.

Challenges come from certain types of garments that are not necessarily the easiest ones to wetclean. While many wools, for example, wetclean well, many are difficult. Likewise rayons have proven to be a challenge. In a mixed use shop setting the cleaner has choices to make about how to balance loads and otherwise maximize efficiency.

Recommendations

This study has provided a snapshot of three real-world wetcleaners. Each has built a business that is appropriate and successful for their particular setting. What recommendations can be drawn from these three cleaners that can be applied to other cleaning shops?

- All cleaners can and should offer some degree of wetcleaning. The garments coming into a typical shop include a significant amount that can be easily wetcleaned. These garments should be wetcleaned, and a cleaner should then explore what additional garments can also be processed this way.

- Wetcleaning is best done using the appropriate equipment and chemicals. While many cleaners wetclean using buckets or top-loaders, modern professional wetcleaning machines are necessary for production volume. For best results, wetcleaning of any method should use the detergents and other chemical designed for the process, and not conventional laundry products.
- Wetcleaning does not require a significantly different business model from traditional drycleaning. However, cleaners who wetclean a very high percentage of garments may want to adjust their marketing to promote the service.

Colonial Cleaner, Natural Cleaners and Nature's Cleaners collectively demonstrate the value of wetcleaning for today's fabricare professional. While there are many other cleaners who have adopted wetcleaning in ways similar to these three shops, the majority of cleaners have not yet changed their operations to make better use of wetcleaning. This study and these recommendations can play a role in helping those cleaners prepare for this change.

Appendixes

Appendix 1: Wetcleaning Research and Resources

Research Reports

- Environmental Protection Agency. *Multiprocess Wet Cleaning: Cost and Performance Comparison of Conventional Dry Cleaning and An Alternative Process*. Washington, DC. 1993.
- EnvironmentCanada. *Final Report for the Green Clean Project*. Toronto. 1995.
- Center for Neighborhood Technology. *Alternative Clothes Cleaning Demonstration Shop. Final Report*. Chicago, 1996.
- UCLA/Occidental College. *Pollution Prevention in the Garment Care Industry: Assessing the Viability of Professional Wetcleaning*. Los Angeles. 1997.
- Environmental Protection Agency. *Cleaner Technologies Substitutes Assessment for Professional Fabricare Processes*. Washington, DC. 1998.
- CAMP, Inc. *Wetcleaning Demonstration and Deployment Project at Reehorst Cleaners*. Cleveland. 1999.

Wetcleaning Information Contacts

Professional Wetcleaning Network

PO Box 1
Lyons, IL 60534
Phone: 708-447-0879
Website: www.tpwn.net

Environmental Protection Agency

Garment and Textile Care Program
401 M Street, SW. (7409)
Washington, DC 20460
Phone: 202/260-1023
Website: www.epa.gov/opptintr/dfе/garment/garment.html

International Fabricare Institute

12251 Tech Road
Silver Spring, MD 20904
Phone: 301/622-1900
Website: www.ifi.org

Neighborhood Cleaners Association- International

252 W. 29th Street
New York, NY 10001
Phone: 212/967-3002
Website: www.nca-i.com

Pollution Prevention Education & Research Center

Garment Care Project
1600 Campus Road
Los Angeles, CA, 90041
Phone: 323/259-1420.
Website: www.uepi.oxy.edu/garmentcare

*Appendix 2: Garment Tracking Data***Colonial Cleaners**

Fall

All Garments [# of pieces]	Dry Clean	Dry Clean Only	Machine Wash	Hand Wash	Hand or Machine Wash	Missing/ Illegible	Total
Acetate	0	9	0	0	0	0	9
Cotton	9	64	152	12	2	0	239
Linen	2	39	10	8	0	0	59
Missing/Illegible	0	0	0	0	0	0	0
Other	2	19	11	3	0	0	35
Polyester		13	19	0	1	0	33
Rayon	38	165	31	9	6	3	252
Silk	19	104	5	2	0	0	130
Wool	49	371	4	1	0	3	428
Total	119	784	232	35	9	6	1185

Wetcleaned [# of pieces]	Dry Clean	Dry Clean Only	Machine Wash	Hand Wash	Hand or Machine Wash	Missing/ Illegible	Total
Acetate	0	2	0	0	0	0	2
Cotton	2	38	142	12	2	0	196
Linen	0	13	8	4	0	0	25
Missing/Illegible	0	0	0	0	0	0	0
Other	2	14	9	2	0	0	27
Polyester	0	5	17	0	1	0	23
Rayon	6	38	12	8	5	1	70
Silk	4	30	4	2	0	0	40
Wool	1	34	1	0	0	0	36
Total	15	174	193	28	8	1	419

Drycleaned [# of pieces]	Dry Clean	Dry Clean Only	Machine Wash	Hand Wash	Hand or Machine Wash	Missing/ Illegible	Total
Acetate	0	7	0	0	0	0	7
Cotton	7	26	10	0	0	0	43
Linen	2	26	2	4	0	0	34
Missing/Illegible	0	0	0	0	0	0	0
Other	0	5	2	1	0	0	8
Polyester	0	8	2	0	0	0	10
Rayon	32	127	19	1	1	2	182
Silk	15	74	1	0	0	0	90
Wool	48	337	3	1	0	3	392
Total	104	610	39	7	1	5	766

Colonial Cleaners

Spring

All Garments [# of pieces]	Dry Clean	Dry Clean Only	Machine Wash	Hand Wash	Hand or Machine Wash	Missing/ Illegible	Total
Acetate	0	19	0	0	0	0	19
Cotton	11	119	211	7	1	3	352
Linen	4	96	12	1	0	2	115
Missing/Illegible	0	1	0	0	0	0	1
Other	0	19	6	1	1	0	27
Polyester	0	35	10	2	0	0	47
Rayon	1	349	12	1	3	9	375
Silk	3	245	2	1	0	2	253
Wool	2	496	0	0	0	8	506
Total	21	1379	253	13	5	24	1695

Wetcleaned [# of pieces]	Dry Clean	Dry Clean Only	Machine Wash	Hand Wash	Hand or Machine Wash	Missing/ Illegible	Total
Acetate	0	8	0	0	0	0	8
Cotton	6	49	198	7	1	2	263
Linen	4	40	10	0	0	0	54
Missing/Illegible	0	0	0	0	0	0	0
Other	0	6	2	0	0	0	8
Polyester	0	17	5	2	0	0	24
Rayon	0	59	6	1	3	3	72
Silk	0	48	1	1	0	0	50
Wool	2	13	0	0	0	0	15
Total	12	240	222	11	4	5	494

Drycleaned [# of pieces]	Dry Clean	Dry Clean Only	Machine Wash	Hand Wash	Hand or Machine Wash	Missing/ Illegible	Total
Acetate	0	11	0	0	0	0	11
Cotton	5	70	13	0	0	1	89
Linen	0	56	2	1	0	2	61
Missing/Illegible	0	1	0	0	0	0	1
Other	0	13	4	1	1	0	19
Polyester	0	18	5	0	0	0	23
Rayon	1	290	6	0	0	6	303
Silk	3	197	1	0	0	2	203
Wool	0	483	0	0	0	8	491
Total	9	1139	31	2	1	19	1201

Natural Cleaners

Fall

All Garments [# of pieces]	Dry Clean	Clean Dry Only	Machine Wash	Hand Wash	Hand or Machine Wash	Missing/ Illegible	Total
Acetate	3	1	0	1	0	0	5
Cotton	16	18	162	5	6	1	208
Linen	3	9	0	0	0	0	12
Missing/Illegible	0	5	1	0	0	43	49
Other	8	6	2	2	0	0	18
Polyester	7	6	5	0	0	1	19
Rayon	30	49	1	6	0	0	86
Silk	15	22	3	12	1	0	53
Wool	185	149	3	1	0	1	339
Total	267	265	177	27	7	46	789

Wetcleaned [# of pieces]	Dry Clean	Clean Dry Only	Machine Wash	Hand Wash	Hand or Machine Wash	Missing/ Illegible	Total
Acetate	2	0	0	1	0	0	3
Cotton	15	15	162	5	6	1	204
Linen	1	3	0	0	0	0	4
Missing/Illegible	0	2	1	0	0	14	17
Other	6	5	2	2	0	0	15
Polyester	7	4	5	0	0	1	17
Rayon	9	13	1	6	0	0	29
Silk	10	15	3	12	1	0	41
Wool	33	33	3	1	0	0	70
Total	83	90	177	27	7	16	400

Drycleaned [# of pieces]	Dry Clean	Clean Dry Only	Machine Wash	Hand Wash	Hand or Machine Wash	Missing/ Illegible	Total
Acetate	1	1	0	0	0	0	2
Cotton	1	3	0	0	0	0	4
Linen	2	6	0	0	0	0	8
Missing/Illegible	0	3	0	0	0	29	32
Other	2	1	0	0	0	0	3
Polyester	0	2	0	0	0	0	2
Rayon	21	36	0	0	0	0	57
Silk	5	7	0	0	0	0	12
Wool	152	116	0	0	0	1	269
Total	184	175	0	0	0	30	389

Natural Cleaners

Spring

All Garments [# of pieces]	Dry Clean	Clean Dry Only	Machine Wash	Hand Wash	Hand or Machine Wash	Missing/ Illegible	Total
Acetate	0	21	0	0	0	0	21
Cotton	20	54	211	8	4	0	297
Linen	5	30	5	3	5	0	48
Missing/Illegible	1	3	0	0	0	36	40
Other	6	19	4	2	0	0	31
Polyester	8	39	15	6	0	0	68
Rayon	15	70	10	4	1	1	101
Silk	20	54	1	11	0	0	86
Wool	54	338	1	5	0	2	400
Total	129	628	247	39	10	39	1092

Wetcleaned [# of pieces]	Dry Clean	Clean Dry Only	Machine Wash	Hand Wash	Hand or Machine Wash	Missing/ Illegible	Total
Acetate	0	8	0	0	0	0	8
Cotton	18	32	209	8	4	0	271
Linen	5	16	5	3	5	0	34
Missing/Illegible	0	2	0	0	0	25	27
Other	5	16	4	2	0	0	27
Polyester	7	33	15	6	0	0	61
Rayon	9	31	10	4	1	1	56
Silk	17	39	1	11	0	0	68
Wool	16	171	1	5	0	1	194
Total	77	348	245	39	10	27	746

Drycleaned [# of pieces]	Dry Clean	Clean Dry Only	Machine Wash	Hand Wash	Hand or Machine Wash	Missing/ Illegible	Total
Acetate	0	13	0	0	0	0	13
Cotton	2	22	2	0	0	0	26
Linen	0	14	0	0	0	0	14
Missing/Illegible	1	1	0	0	0	11	13
Other	1	3	0	0	0	0	4
Polyester	1	6	0	0	0	0	7
Rayon	6	39	0	0	0	0	45
Silk	3	15	0	0	0	0	18
Wool	38	167	0	0	0	1	206
Total	52	280	2	0	0	12	346

Nature's Cleaners

Fall

All Garments [# of pieces]	Dry Clean	Dry Clean Only	Machine Wash	Hand Wash	Hand or Machine Wash	Missing/ Illegible	Other	Total
Acetate	3	12	2	0	0	0	0	17
Cotton	27	46	297	31	9	2	0	412
Linen	18	39	6	0	0	1	0	64
Missing/Illegible	3	4	1	0	0	13	0	21
Other	7	22	13	11	1	0	1	55
Polyester	12	39	38	8	1	1	0	99
Rayon	48	145	25	10	1	1	0	230
Silk	32	85	5	28	2	1	0	153
Wool	160	312	17	15	1	2	0	507
Total	310	704	404	103	15	21	1	1558

Nature's Cleaners

Spring

All Garments [# of pieces]	Dry Clean	Dry Clean Only	Machine Wash	Hand Wash	Hand or Machine Wash	Missing/ Illegible	Total
Acetate	2	16	0	1	0	0	19
Cotton	4	30	249	26	2	5	316
Linen	4	32	5	5	1	3	50
Missing/Illegible	0	0	0	0	0	14	14
Other	4	6	4	1	3	3	21
Polyester	5	12	14	0	1	1	33
Rayon	25	128	8	10	0	5	176
Silk	13	86	1	15	2	6	123
Wool	41	262	8	9	0	3	323
Total	98	572	289	67	9	40	1075

Appendix 3: Financial Data

	Colonial Cleaners	Natural Cleaners	Nature's Cleaner	IFI 1991 Study
Total Wages	51.89%	34.53%	32.52%	40.38%
Outside Work	0.00%	18.56%	23.58%	9.05%
Total Supply Cost	3.07%	3.68%	6.70%	6.54%
Utilities	4.67%	1.57%	2.33%	3.92%
Depreciation	9.05%	11.86%	5.24%	5.44%
Rent	6.67%	9.12%	9.13%	9.36%
Repairs and Maintenance	7.14%	5.47%	2.37%	2.27%
Payroll Taxes	7.23%	3.13%	3.03%	3.91%
Advertising	1.83%	2.97%	3.96%	2.28%
Claims	0.67%	0.50%	0.65%	0.34%
Insurance	2.10%	1.62%	5.46%	3.73%
Office/Admin/Misc	7.79%	5.01%	2.05%	5.81%
Interest and bank charges	0.34%	5.00%	2.01%	4.06%
Profit	6.61%	-3.03%	0.96%	2.91%
Total Expenses	93.39%	103.03%	99.04%	97.09%

Appendix 4: Customer Survey (August 1999)

	Colonial Cleaners (n=24)	Natural Cleaners (n=10)	Nature's Cleaners (n=15)
Why did you first take your clothes to...			
Concern about the environment	0.0%	0.0%	13.3%
Convenient location	78.2%	50.0%	60.0%
Curious	4.3%	0.0%	6.7%
Other	4.3%	40.0%	6.7%
Reputation for quality service	13.0%	10.0%	13.3%
Are you still a customer of...			
Yes	87.5%	100.0%	93.3%
No	12.5%	0.0%	6.7%
Were you aware that for some of the clothes cleaned at... the process used is a water-based process, not the usual solvent-based process that is used to dryclean clothes?			
Yes	16.7%	80.0%	86.7%
No	83.3%	20.0%	13.3%
How did you first react when hearing of the use of this water-based process?			
Very Positive	31.5%	33.3%	40.0%
Somewhat Positive	26.3%	22.2%	40.0%
Neither Positive or Negative	42.1%	44.4%	20.0%
Somewhat Negative	0.0%	0.0%	0.0%
Very Negative	0.0%	0.0%	0.0%
How would you rate their service overall?			
Excellent	69.5%	40.0%	66.6%
Good	26.0%	50.0%	26.6%
Acceptable	4.5%	10.0%	6.6%
Poor	0.0%	0.0%	0.0%
How would you rate their counter service overall?			
Excellent	60.8%	70.0%	66.6%
Good	30.4%	30.0%	20.0%
Acceptable	4.3%	0.0%	6.7%
Poor	4.3%	0.0%	6.7%
After being serviced by... were your clothes pressed and finished nicely?			
Yes	95.8%	80.0%	86.7%
No	4.2%	20.0%	13.3%
Was there any size difference?			
Yes	12.5%	10.0%	20.0%
No	87.5%	90.0%	80.0%
Would that be...			
Shrinkage	100.0%	100.0%	100.0%
Stretching	0.0%	0.0%	0.0%
Other	0.0%	0.0%	0.0%
Did any seams pucker or bulge?			
Yes	4.2%	10.0%	6.7%
No	95.8%	90.0%	93.3%

Was there any odor present in your clothing?

Yes	20.8%	10.0%	6.7%
No	79.2%	90.0%	93.3%

If odor was present was this odor...

Acceptable	80.0%	0.0%	100.0%
Unacceptable	20.0%	100.0%	0.0%

Was there any color change to your clothing?

Yes	0.0%	20.0%	0.0%
No	100.0%	80.0%	100.0%

With regard to the color change was there...

Some change; with improvement	0.0%	50.0%	0.0%
Some change, not an improvement	0.0%	50.0%	0.0%
Some unevenness in color	0.0%	0.0%	0.0%

Were stains or spots removed?

Yes	91.7%	80.0%	93.3%
No	8.3%	20.0%	6.7%

Were there any rips or tears?

Yes	4.2%	0.0%	0.0%
No	95.8%	100.0%	100.0%

Was there any change in the feel of the Garments?

Yes	8.3%	10.0%	13.3%
No	91.7%	90.0%	86.7%

If the feel did change, did it change...

For the Better	50.0%	0.0%	50.0%
For the Worse	50.0%	100.0%	50.0%

If your clothing had any buttons or decorations, were any...?

Damaged	19.0%	11.1%	7.1%
Missing	4.8%	11.1%	7.1%
No Problems	71.4%	77.7%	85.7%
N/A	4.8%	0.0%	0.0%

Overall, was your clothing clean?

Yes	95.8%	100.0%	100.0%
No	4.2%	0.0%	0.0%

Would you recommend... to a friend?

Yes	91.7%	80.0%	93.3%
No	8.3%	20.0%	6.7%

Do you use other cleaners?

Yes	16.7%	10.0%	13.3%
No	83.3%	90.0%	86.7%

Have you ever used the Internet to find a cleaner?

Yes	0.0%	0.0%	0.0%
No	100.0%	100.0%	100.0%