

**NORTH CAROLINA  
RECYCLING BUSINESS  
ASSISTANCE CENTER**

# Recycling Works

Volume 5, Number 1

February 1999

A cooperative effort of the North Carolina Department of Environment and Natural Resources and the North Carolina Department of Commerce.

## Sticking with the business plan: a look at P&R Environmental Industries five years later

*Two entrepreneurs who started from square one in 1993 have achieved success recycling plastic bottles in Youngsville, N.C.*

**By Matt Ewadinger, RBAC Manager**

When I first met Gary Pratt, president of P&R Environmental Industries Inc. (PREI), in the summer of 1993 he was working out of a small office (or was it a large storage closet?) within the Franklin County Economic Development Commission building. Armed initially with a unique idea, a business plan, and a building site outlined by stakes in the ground, he and his partner Dwight King have developed a state-of-the-art auto-

mated plastic bottle recycling operation that is the envy of the industry.

### **That Was Then**

When production began in December 1993, PREI's \$1.5 million investment was housed in a 38,400 square foot facility, employed approximately 50 people, and processed about 1.6 million pounds of

*(See PREI, page 6)*



The PET/PVC flake sorter system depicted above reduces PVC contamination to less than 200 parts per million.

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### **CORRECTION**

The November issue of *Recycling Works* featured an article about AlliedSignal. The phone number given in the article for the company contained a typographical error. The correct phone number for AlliedSignal is (804) 520-3028.

# Federal government requires recycled paper purchases

*Executive Order to strengthen federal environmental protection and economic growth efforts*

**By Kathleen Gray, Former Market Development Specialist**

On September 14, 1998, President Clinton issued Executive Order (EO) 13101, which strengthens federal efforts to protect the environment and promote economic growth through the purchase of recycled and other environmentally preferable products. This EO revokes EO 12873.

The new EO directs agencies to purchase recycled paper only. Specifically, the minimum content standard for printing and writing paper shall be no less than 30 percent postconsumer materials. Effective Jan. 1, no executive branch shall purchase, sell or arrange for the purchase of printing and writing paper that fails to meet the minimum requirements of the EO. If paper containing 30 percent postconsumer material is not reasonably available, does not meet reasonable performance requirements, or is available only at an unreasonable price, then the agency shall purchase paper containing no less than 20 percent postconsumer material.

According to the General Services Administration (GSA), copier paper accounts for more than 28 percent of all the paper purchased by the federal government, with approximately 10 million sheets being used every work hour. Total government purchases of recycled content copier paper almost doubled in fiscal year 1997 to 39 percent, as compared with 20 percent in fiscal year 1996.

The White House estimates this action will save as much as half a million trees annually, reduce air and water pollution, and curb emissions that contribute to global warming. Additionally, government will harness its tremendous purchasing power to spur the growing market for recycled products.

To further promote the use of environmentally preferable products, the EO also directs agencies to establish recycling targets, encourages them to purchase biobased and other "green" products, and creates a White House task force to oversee federal recycling efforts.

*“As the nation’s largest paper purchaser, the federal government has a special responsibility to lead the way in building markets for recycled goods. By redoubling our efforts to ‘green the government,’ we are demonstrating once again that the environment and the economy go hand in hand and helping to promote a more sustainable future for America.”*

*- President Clinton*

Executive Order 13101



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# Retread tires safe and environmentally friendly

By John Nelms, Industrial Development Specialist

The use of retread tires often has suffered bad perception. The image of tire carcasses on roadways leaves many believing retread tires are an inferior product and, thus, unsafe. This perception is far from the truth. Retread tires are safe, economical, and environmentally friendly.

Tire carcasses seen on roadways actually can be attributed to a combination of factors unrelated to the tire being a retread. According to data gathered by the Tire Debris Task Force, a group representing trucking companies, retreaders, trucking and tire industry associations, new tire manufacturers and government agencies, most tire debris on highways is caused by nail punctures, something that can happen to any tire, new or retread.

Although the public perceives retreads to be responsible for tire debris, facts lead to a different conclusion, according to Peggy Fisher, president of Roadway Tire Company, Columbus, Ohio. Fisher reports task force members and their employees recently collected 1,070 pieces of rubber from heavy and medium truck tires at nine sites nationwide.

Only 11, or one percent, of the 1,070 pieces analyzed could be attributed to retread failure. "This speaks well for retreads," Fisher said. "We in the tire and trucking industries know how good our product is. We will continue to educate the public to the fact that retreads offer the same safety and performance as new tires, but at a far lower price, and are not the cause of [loose] rubber on the road."

Passenger and truck tires go through extensive inspection and rigorous safety testing. Passenger tires are retreaded according to the U.S. Department of Transportation's (USDOT) standards and carry a code number on the side wall indicating where and when the tire was retreaded. Each tire's maintenance record is tracked throughout its history of use. Due in part to standards established by the truck retread tire industry, USDOT has not developed regulations for manufacturing retreaded truck tires. Overall quality of retreaded truck tires has increased dramatically in recent years with the introduction of high technology, including the use of computers in manufacturing and non-destructive tire testing.

The performance of retread tires is equal to and, in some cases, exceeds that of new tires. Retreads can be driven at the same legal speed of new tires with no loss in safety, performance, or comfort. A study by White's Tire Service of Wilson, N.C., shows that White's bead-to-bead retread outperforms new tires on school buses.

Also, White's figures show a bead-to-bead retread can provide as much as 25 to 35 percent more mileage on average than a new tire. In addition it provides a \$48.32 cost savings per tire.

The use of retread tires also provides tremendous environmental benefit. Manufacturing a typical retread truck tire requires only seven gallons of oil, while manufacturing a new truck tire requires 22 gallons. Recent figures from the Tire Retread Bureau estimate more than 400 million gallons of oil are saved annually as a result of retread tires. Also, a truck tire can be retreaded more than once.

Retread tire use is widespread. The federal government, military, U.S. Postal Service, airlines worldwide, and companies such as Federal Express and UPS all presently use retread tires with great results. According to Fran McPoland, federal environmental executive, all federal and military aircraft use retreads, including the President's plane, Air Force 1.

For more information about retread tires, call John Nelms of RBAC at (919) 715-5904 or Harvey Brodsky of the Tire Retread Information Bureau at (408) 372-1917.

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# DH Griffin salvages demolition materials

By John S. Blaisdell, Market Development Specialist



*Left: A view of DH Griffin's Greensboro salvage yard where demolition materials are recycled.*

*Below: DH Griffin recovers material from a commercial demolition site in Raleigh.*

DH Griffin stands out as one of North Carolina's largest construction and demolition debris recycling businesses. Started in Greensboro nearly 40 years ago by one individual, David Griffin Sr., the company has grown into an international business with more than 700 employees. The company prides itself in being highly integrated, offering a full range of services, including lead and asbestos abatement, construction services, demolition services, materials salvage and recycling, and landfill disposal.

DH Griffin's salvage yard and main business offices are located in Greensboro, N.C. The company also maintains satellite offices throughout the United States.

## **The Business of Demolition**

According to David Griffin Jr., vice president of DH Griffin Wrecking Inc., approximately 60 percent of their demolition work is industrial, 35 percent commercial, and five percent residential. He estimates that 60 percent of business comes from Fortune 500 companies. Also, the Department of Energy creates a lot of decommissioning and dismantling (D&D) work for their company with the removal of power plants.

DH Griffin specifically targets commercial, residential,



and publicly-owned structures with a high salvage content. Before a building is demolished, they carefully extract directly re-usable materials such as windows, doors, antique timbers, piping, and light fixtures. Materials are transported back to their 37-acre salvage yard in Greensboro, where they are re-sold directly to the public.

Structures then are torn down using large excavators with attached grapples or shears to properly sort and size reduce the material. Recyclable materials such as metals are separated onsite from residuals destined for the landfill. Some metals are baled at the demolition job site using portable baling equipment and sent

*Continued on next page.*

*Continued from previous page.*

directly to local markets. Other metals are delivered to Griffin's Greensboro salvage yard for further processing. Some aggregates, such as concrete and brick, are also recovered on-site and sold or given away as solid fill material.

### **The Salvage Yard**

DH Griffin's massive 37-acre site in Greensboro houses the main business offices for the demolition and asbestos abatement, scrap metal salvage, building materials salvage and re-sale, and the automobile and parts recycling and salvage operations. At the yard, DH Griffin receives metal and other recyclable materials from their own demolition work, as well as from other recycling businesses and industrial, commercial, or residential sources.

Ferrous metals are processed using a large stationary shear to size reduce the materials before being shipped to market. Non-ferrous metals such as aluminum and copper are baled on site. The yard has railroad line connections, allowing them to transport materials directly to the mills. Approximately 60,000 tons of metals are handled per year.

### **Environmental Remediation Services**

In 1985, DH Griffin decided to get into remediation services to further integrate the company. Demolition and Asbestos Removal Inc. (DARI) was created to handle all their own abatement work that must be completed prior to demolition projects. DH Griffin assesses asbestos and lead content in buildings and completes the state's required abatement procedures.

### **Landfill Operations**

DH Griffin owns and operates a construction and demolition debris landfill in Greensboro that accepts materials from their own demolition jobs, as well as from other customers. Currently, they are salvaging cardboard and metals at the landfill. According to Griffin Jr., the company plans to site several new construction and demolition landfills in and around North Carolina within the next five years.

### **Construction & Demolition (C&D) Debris Recycling**

Very little infrastructure exists for C&D debris recycling in North Carolina. However, among the few companies involved, DH Griffin stands out as being one of the largest in the state today.

It recently has been estimated that the demolition portion of the C&D waste stream is approximately

## **Business Summary**

<b>Company Name:</b>	DH Griffin Wrecking, Inc.
<b>Started:</b>	1959
<b>Type of Business:</b>	Environmental Services/ Demolition/Salvage
<b>Ownership:</b>	Private
<b>Employees:</b>	Nationally, 700 North Carolina and South Carolina, 350
<b>Company Growth Rate:</b>	20-25% per year
<b>Nationwide Offices:</b>	15
<b>Demolitions Per Year</b>	300
<b>Material Recovered Per Year (Nationally):</b>	Metal, 200,000 tons Concrete, 500,000 tons
<b>Rank Among Demolition Contactors in the U.S.:</b>	Among Top 3

1.4 million tons in North Carolina. Recovering additional amounts of material from demolition sites will depend primarily on increases in the recovery of two main materials: aggregates and wood. DH Griffin already is recovering large amounts of concrete and other aggregates and plans to increase the amount being recovered within the next few months.

### **The Future of DH Griffin**

Unlike most other individual construction or demolition contractors, DH Griffin has found a competitive advantage in integrating the businesses. Integration apparently has been a successful move for the company, which has seen 20-25 percent annual growth in recent years. "As of the beginning of December, we had 40 projects started in 14 states," Griffin Jr. said.

As for the future, according to Griffin Jr., "We plan to offer design and build services to our customers so they can have one stop shopping. We will be able to offer remediation, demolition, recycling, and salvage, as well as design and build services for the new building."

Most recently, Griffin has involved in several multi-million dollar general contracting/construction projects in the Raleigh area, including the new Centennial High School and the new Student Health Center at North Carolina State University. These projects are being done by DH Griffin Construction Company, the company's contracting division based in Raleigh.

For more information about DH Griffin's services, call the company's Greensboro office at (336) 855-7030.

*PREI, from page 1*

commingled bales of plastic bottles per month. At that time the heart of the operation was and remains the sorting equipment supplied by Magnetic Separation Systems, Inc. (MSS), of Nashville, Tenn. MSS allows PREI to accept bales of mixed plastic bottles regardless of resin type.

In November 1995, PREI completed the first expansion of its Youngsville, N.C., facility. The \$510,000 expansion included a 15,000 square foot addition and a new production line that more efficiently processes bales of plastic bottles received in a pre-sorted form. This expansion was the first in a number of incremental additions. The company was able to increase production to 2.3 million pounds per month, add 20 new jobs, and give MRFs up and down the east coast a variety of options for supplying material to PREI.

#### **This Is Now**

PREI has recently completed another ambitious expansion that includes retaining a facility in Louisburg, N.C., for warehousing and distribution and moving into two additional buildings in the Franklin County Industrial Park. The expansion will provide the company with an additional 76,000 square feet of production and storage capacity under roof. One of the two facilities has been in operation since October 1998 and uses the MSS technology described previously. The other new facility, which came online in December 1998, is used exclusively to separate PVC from PET flake. "Recycling PVC is a major problem in the industry and the flake-sorter system gives us the ability to 'polish' PET flake that previously had no market value and was destined for the landfill," according to King, PREI's vice president.

King estimates that to date, overall capital investment in all four facilities is in excess of \$3 million, and processing capability is up to seven million pounds per month. PREI currently processes six million pounds per month and employs a work force of approximately 170 people.

#### **Lesson Learned**

"The importance of writing, reviewing, continually updating, and in our case sticking to the basics developed within a company's business plan cannot be emphasized too strongly," Pratt advises. "As we established in our business plan five years ago, our one and only product is post-consumer plastic flake from our sorting and grinding operations. We have never considered washing and pelletizing [to make a higher value-added product] because we feel that we have developed our own unique and successful niche within the industry," Pratt said.

		<i>PREI's Growth During Five Years</i>		
		Dec. 1993	Nov. 1995	Dec. 1999
<b>Investment</b>	<b>PREI</b>	\$1.5 million	\$2 million	\$3 million +
<b>Employees</b>		50	70	170
<b>Lbs./Mo.</b>		1.6 million	2.3 million	6-7 million

## 4th Annual Southeast Recycling Investment Forum

Aug. 23, 1999

Kiawah Island Resort ■ Charleston, S.C.



Select Southeastern recycling businesses seeking capital will present their business plans at this upcoming forum. Networking and educational opportunities for private investors also will be provided. Call for business plans by June 1, 1999. For presenter applications, registration, or

sponsorship opportunities, contact Ted Campbell, Recycling Market Development Advisory Council, P.O. Box 927, Columbia, SC 29202 ■ (803) 737-0477; Fax (803) 806-3455 ■ [tcampbel@commerce.state.sc.us](mailto:tcampbel@commerce.state.sc.us) ■ [www.state.sc.us/commerce/recycle](http://www.state.sc.us/commerce/recycle)

Dates, locations, and contact information for other Regional Recycling Investment Forums are:

**Rocky Mountain Southwest:** March 29, 1999; Phoenix, Ariz., [www.commerce.state.az.us](http://www.commerce.state.az.us)

**West:** May 17, 1999; San Francisco, Calif.; [www.materials4future.org](http://www.materials4future.org)

**Northeast:** May 5, 1999; Boston, Mass.; [www.NERC.org](http://www.NERC.org)

**Southeast:** August 23, 1999; Kiawah Island, S.C.; [www.state.sc.us/commerce/recycle](http://www.state.sc.us/commerce/recycle)

**Midwest:** September 1999; Cincinnati, Ohio; [www.NERC.org](http://www.NERC.org)

# Wooden pallets: supply and demand in North Carolina

By Kathleen Gray, Former Market Development Specialist, and Scott Mouw, CBAS Chief

North Carolina's pallet recycling infrastructure appears healthy and growing. Similarly, market demand for pallets appears strong and probably will increase. Factors like third party management may decrease new pallet production and also should reduce pallet discards. Because of the growing and multi-faceted recovery infrastructure, a much higher diversion rate for pallets is possible and will be an important part of North Carolina's overall management of wood resources.

## 1997 Pallet Recovery in North Carolina

	Tons	% of Generation
<b>Total private sector recovery</b>	<b>120,182</b>	<b>27.7%</b>
Reuse/refurbishing	104,558	24.1%
Other uses: mulch, boiler fuel	15,624	3.6%
<b>Total public sector recovery</b>	<b>31,479</b>	<b>7.3%</b>
Reuse/refurbishing	2,540	0.6%
Other uses: mulch, boiler fuel	28,939	6.7%
<b>Total Recovery</b>	<b>151,661</b>	<b>35%</b>

### Supply

Wooden pallet generation estimates for North Carolina can be extrapolated from national survey data. In 1997, approximately 433,665 tons of pallets were generated, and this number is expected to increase to 474,863 tons in 2002. This projection is based on per capita growth from 1997 to 2002. However, wooden pallets may experience slower growth due to a number of factors, including movement in the industry to alternative materials and the emergence of large "third party" management companies.

National recovery surveys have documented the rapid rise of pallet recovery — from an estimated 65.8 million in 1992 to 83.3 million in 1993 to 171.1 million in 1995. Nearly 151,661 tons of pallets were recovered in North Carolina in 1997, or about 35 percent of the 433,665 tons of pallets generated. Private sector recovery was estimated using data from a survey by the Division of Pollution Prevention and Environmental Assistance (DPPEA), and public sector data were reported by North Carolina local governments in 1996-97 solid waste management annual reports.

North Carolina has a strong and growing pallet recycling infrastructure. North Carolina's Directory of Markets for Recyclable Materials report lists 41 companies that accept pallets. The 1995-96 Buyer's Guide from NWPCA (The National Wooden Pallet and Container Association) lists four additional recyclers, and the 1997 SIC code listings for North Carolina identify 78 companies in the 2448 code category (wooden pallets and skid).

### Demand

Market demand for pallets follows a management hierarchy of direct reuse, refurbishing (then reuse), and finally processing into other products (e.g., mulch, boiler fuel). These varying levels of potential market uses mean a high degree of flexibility in diverting pallets from disposal. The trajectory of overall market demand through the early to mid 1990s was positive, and it is expected that demand

will continue to expand.

### Direct Reuse and Refurbishing

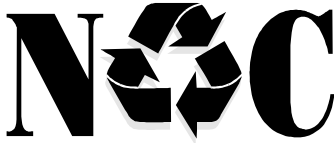
As mentioned earlier, pallet recycling grew tremendously in the 1990s. A national survey documented annual dollar growth rates in the pallet recycling business, ranging from 12 to 26 percent between 1992 and 1995. One survey found private recyclers use about 87 percent of recovered pallet wood in making new or repaired pallets, and they landfill less than one percent of their recovered stock.

A significant development in pallet recycling is the emergence of "third-party" management and "networks" of individual pallet companies, which expands marketing and sales and extends management reach over the pool of discarded pallets. As third party management develops, greater overall recovery of wooden pallets will result. These developments signal a form of consolidation among pallet companies. The industry seems to be moving from many small family operations to larger companies and networks that reduce the independent nature of individual firms.

### Fuel, Mulch, and Other Markets

Wooden pallets recovered by pallet recycling companies that cannot be directly reused or repaired are usually processed for other uses such as mulching, composting, and boiler fuel. In contrast to high recovery rates indicated by private recyclers, landfills tend to consign discarded pallets directly to grinding operations. A recent study indicated about 41 percent of pallets recovered at municipal solid waste landfills was used for fuel, while another 38 percent went into mulch, animal bedding, composting, soil amendment, and material in particle-board. At construction and demolition debris facilities, more than 38 percent of recovered pallet material was processed for fuel, while another 33 percent went for the other uses listed above.

Reuse will continue to be the higher value market for pallets, but fuel and mulch markets will play an important role in disposal diversion for the foreseeable future.



Reduce Reuse Recycle

**The Recycling Business Assistance Center (RBAC) is a program of the North Carolina Division of Pollution Prevention and Environmental Assistance.**

Call (919) 715-6500 or 1-800-763-0136 for free technical assistance and information about preventing, reducing, and recycling waste.

## North Carolina market prices for recyclables

Prices current as of Feb. 8

Item	Western Region	Central Region	Eastern Region
<b>METALS</b>			
Aluminum Cans, lb. loose	\$0.40	\$0.42	\$0.46
Steel cans, gross ton baled	\$7	\$3	\$0
<b>PLASTICS</b>			
PETE, lb. baled	\$0.065	\$0.05	\$0.06
HDPE, lb. baled	\$0.06	\$0.040	\$0.090
<b>PAPER</b>			
Newsprint, ton baled	\$35	\$20	\$30
Corrugated, ton baled	\$35	\$10	\$30
Office, ton baled	\$130	n/a	\$125
Magazines, ton baled	n/a	n/a	**
Mixed, ton baled	\$10	n/a	\$10
<b>GLASS</b>			
Clear, ton crushed	\$42	\$40	\$25
Brown, ton crushed	\$24	\$33	\$21
Green, ton crushed	\$15	\$8	\$2

\*\*Facility sells magazines with newsprint.

Note: Prices listed above are compiled by RBAC and are for reference only. These prices are not firm quotes. RBAC obtained pricing information from processors for each category and developed a pricing range.

### RBAC IS ON THE NET

Visit us at <http://www.p2pays.org/rbac1.htm>



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