UNITED STATES military bases are working to meet the solid waste diversion requirements of their specific branch of the service, as well as those of the state in which they are located. For the Navy, the goal is to reduce the disposal of nonhazardous solid waste 50 percent by 1999. The Air Force is aiming for a 50 percent reduction of the waste stream two years earlier. Both goals are being calculated from a 1992 baseline. Many bases have developed innovative programs to collect, process recyclables and hazardous wastes, and compost organics generated on site. Managers of such programs face special challenges because the bases not infrequently are several thousand square miles in size, contain both military and civilian populations, and are situated in areas with extreme weather conditions. Details about several of these programs follow.

NAVAL STATION SAN DIEGO

Home of the Pacific Fleet, Naval Station (NAVSTA) San Diego has an award winning recycling center that diverted more than 10,400 tons of materials from landfills and generated $915,863 in revenues in fiscal year 1996. The recycling center is located on eight acres and includes a source separated area as well as a composting area. Accepted materials include aluminum and steel cans, #1 through #5 plastics, all grades of paper, cardboard, wood, yard trimmings, scrap tires, rope, oil filters and scrap metal.

NAVSTA San Diego is one of the largest naval stations in the world, with 51 homeported Pacific Fleet ships, 14 piers, 50 tenants and 45,000 military and civilian employees located on 1,029 acres of land and 326 acres of water. Almost half of the base’s solid waste, excluding construction and demolition debris, is generated by its ships and is brought ashore for recycling or disposal. The base uses a landfill on Navy property that is operated by the city of San Diego. Base recycling manager Timonie Hood says that NAVSTA and its contractors do not pay tipping fees at the landfill, but work closely with the city to minimize NAVSTA’s waste disposal. In addition, says Hood, NAVSTA is
COMPOST, GERMINATION AND YIELD


For this research project, composts of centrally sorted and source separated municipal solid waste were amended with four different percentages of peat and used as cultivation media for five horticultural crops: lettuce, garden cress, ryegrass, radish and African marigold. The effects of peat-compost media on germination, emergence, fresh matter and dry matter were then compared with seven commercial horticultural cultivation media.

The author reports that germination of lettuce and radish seeds was late in peat-compost media compared with the commercial media, especially when composts from centrally sorted municipal solid waste were used, whereas seeds of ryegrass, garden cress, and African marigold were not adversely affected. Additionally, it was observed that peat amended with source separated compost can give the same or higher yield than commercial horticultural media one month after sowing. This is reported to have been more evident when liquid fertilizer was added. Yield of the test crops, when peat was amended with composts made from centrally sorted municipal solid waste, was much lower. Gajdos is with the Department of Horticulture, Swedish University of Agricultural Sciences, Alnarp, Sweden.

PHENOLS IN THE SOIL ENVIRONMENT


Monochlorophenols are among the toxic organic compounds introduced into the soil environment as a byproduct of wood preservatives and synthesis of pesticides and herbicides. As soil contaminants, monochlorophenols pose a threat to soil, surface water, and groundwater quality. These and other chlorophenols can bind to organic compounds to form macromolecules (covalent bond formation) when humification takes place in soil. The authors describe and discuss the complex array of reactions and interactions between soil organic matter and phenols and the bearing of these interactions on the fate of the chlorophenols. It is pointed out that knowledge of the bonding behavior of monochlorophenol (MD4CP) in soil systems is essential in determining the fate of the compound in surface soils (e.g., sorption and desorption, accessibility). As such, the knowledge has an important bearing upon decisions regarding the selection of a remediation technology that would be suitable for a particular site. The purpose of this study was to investigate the role of oxygen and hydrogen peroxide in the biotic and abiotic binding of 4-monochlorophenol (4-MCP) to high and low organic matter sandy surface soils. The extensive discussion includes those observations, among others: 1) Oxygen and enzymes can be involved in the coupling of 4-MCP to soil. 2) Hydrogen peroxide can enhance both biological and mineral surface-catalyzed contaminant binding and may be a useful agent to add to soil to stimulate remediation. Bhandari is with the Department of Engineering and Department of Crop and Soil Environment Sciences, Virginia Polytechnic Institute and State University, Blacksburg, Virginia.
working to meet California's solid waste diversion requirement of 50 percent by the year 2000 through comprehensive solid waste reduction, recycling, composting and recycled product procurement standards.

Recyclables are collected and processed by 15 permanently assigned sailors and 20 to 30 sailors who are temporarily assigned to the Recycling Center while between duty assignments. They collect recyclables from 100 dumpsters and fiberglass igloos located throughout the base including piers, housing barracks and recreation areas as well as from more than 150 office sites and newspaper rolloff containers. Scrap metal, wood residuals and cardboard are transported to the Recycling Center each day by Public Works Center staff. Wood waste is collected on the base in dumpsters and brought to the recycling center for grinding and composting.

The Recycling Center diverts approximately 44 tons of material from the landfill each week and the Scrap Metal Yard diverts an additional 49 tons per week. Revenues from recyclables doubled from Fiscal Year 1994 to 1995, to $1.3 million, before falling below $1 million in 1996. More than $450,000 of the FY 1995 revenues were used for Morale, Welfare and Recreation (MWR) programs for sailors and additional proceeds were used for Earth Day events, beach cleanups and vehicle smog checks.

The station's program received the Fiscal Year 1995 Department of Defense (DOD) and Secretary of the Navy Environmental Security Recycling Award for a nonindustrial installation, as well as the 1996 California Resource Recovery Association Award for Innovation in Government and the 1996 City of San Diego Recycler of the Year Award.

In 1995, the Navy's largest compost facility was constructed at the Recycling Center to compost yard trimmings and grass from the base and its two golf courses, as well as wood waste, nonreusable packaging material and low grade paper. Hood says NAVSTA began investigating composting options in 1993 and ruled out composting in outdoor windrows because of space limitations. A bin wall system was designed and constructed, based upon research at the University of California at San Diego and a pilot project at Naval Station North Island. The bin wall system began operating in July, 1996 and has processed approximately 175 tons of material to date. Hood notes that it has the capacity to annually process 900 tons of yard trimmings and wood and 740 tons of wax coated cardboard and other unmarketable paper. The facility has a 100 feet by 150 feet composting pad and five composting bins, each measuring 20 feet by 26 feet by 10 feet. The area around the facility is being paved and a dedicated water line is being installed. The compostables are delivered to the pad and screened for contaminants and reusable items such as pallets. The yard trimmings and wood residuals are ground with a Rexworks Maxigrind 460G. A high powered magnet on the grinder's output conveyor re-

THE BEST SOURCE FOR HEAVY DUTY LARGE ROTARY SCREENS FOR SOLID WASTE RESOURCE RECOVERY FACILITIES

McLanahan Corporation has supplied large dependable Rotary Screens for the mining industry for over 60 years. Leading suppliers of material handling systems in the waste industry are now relying on McLanahan's expertise in the design and manufacture of heavy duty units. Rotary Screens manufactured by the McLanahan Corporation provide high availability for plants processing between 500 and 2,100 tons per day.
A combination of three programs to collect recyclables from dormitories, family housing units and office buildings at Grand Forks AFB increased diversion from 1,500 tons to 5,500 tons in one year.

Other efforts include recycling concrete. Nearly 60 percent of NAVSTA's waste by weight is construction and demolition materials. In fiscal years 1994 and 1995, 16,080 tons of demolished concrete were reused in base construction projects.

Approximately 14,000 people live and work on the 7,500 square-mile Grand Forks Air Force Base (AFB) located north of Fargo, North Dakota and fairly close to the Minnesota state line. The base has won more than a dozen awards for recycling, environmental planning and pollution prevention, including the White House "Closing the Circle" award for recycling in 1996. The base's solid waste manager, Larry Olderbak, also received the 1996 Individual Recycling Award from the Department of Defense for the recycling programs he developed for the base.

Olderbak designed three programs to collect recyclables from single military personnel living in dormitories, families living in military housing units, and industrial and office workers. These programs have increased the diversion of solid waste from landfills from 1,500 tons in 1995 to 5,500 tons in 1996. During the same time period, collection of office recyclables increased from 11 tons to more than 140 tons per month. More than 20 materials are now collected on the base and recycled, including laser jet printer cartridges, fluorescent light tubes and construction debris.

Each of the base's 2,300 housing units are provided with 95-gallon wheeled containers for glass bottles and jars, metal cans, cardboard, paper and plastic bottles, which are collected weekly by a contractor. Dormitory residents bring their recyclables to collection stations located on each floor of their building. The recyclables are then brought to igloos located near the dormitories where they are also collected by contractors. More than 5,000 recycling containers were distributed to offices, and office workers can also bring their recyclables to a 24-hour dropoff center. Base residents and personnel bring tires, lead acid batteries, used oil, scrap metal and antifreeze to the base's auto skills development center.

The base began composting grass clippings, yard trimmings and tree branches in outdoor windrows in June, 1994. Base personnel set up dropoff sites for yard trimmings in 1995 and started a curbside collection program in 1995. In June, 1996, the base purchased a tub grinder which allowed larger pieces of wood such as construction debris from self-help projects and wooden pallets to be ground and composted. The addition of wood residuals has increased the amount of materials composted annually from 500 tons in 1994 to 1,000 tons in 1996. Olderbak says the only wood residuals not being composted are pressure treated wood and wood painted with lead based paint. Composting yard trimmings has resulted in significant savings because the base no longer has to pay a contractor to haul them to a landfill 20 miles away, in addition to a $20 per ton landfill fee.

The windrows are turned an average of once a week during the spring, summer and fall with a Wildcat turner. Olderbak notes that the windrows are left to sit without being turned from November until spring because of Grand Forks' cold temperatures and snowfall. He says that the windrows do not need additional moisture because the area has sufficient rainfall. Runoff from the windrows is collected in a holding pond, as required by the facility's state permit, and could be used for additional moisture if needed. The base rents a screen each year to screen the compost, even though most of it is being used to cap a closed landfill on the base. "We still want the compost to be in small pieces because we want vegetation to grow on the landfill," says Olderbak. In 1966, base personnel mixed 1,000 tons of compost with soil in a 1:10 ratio to cap half

---

**Compost Equipment**

---

Reel Auggie® Sludge and Organic Compost Mixers

Call today for information on the
Knight Family of Waste Handling Equipment

- Knight-Botec 4-Auger Compost Mixers
- ProScreen® Trommel Screen
- ProTwin® Slinger® Land Application Spreaders

**KNIGHT**

Industrial Division

Brodhead, WI 53520
Phone: 608-897-2131
Fax: 608-897-2561

---
of the 77-acre landfill and plans to use the same amount to cap the remaining acres in 1997. Around 50 tons of the compost were set aside for base landscaping projects such as tree planting.

DYESS AIR FORCE BASE

In Abilene, Texas, Dyess Air Force Base already has a 70 percent municipal solid waste diversion rate, exceeding the Air Force's 50 percent diversion goal and the Texas goal of 50 percent diversion by the year 2000. Much of that success is due to the base's recycling program manager, John Faulkner, who received the Air Combat Command Recycling Award in 1996 for recycling programs he developed for the base.

A materials recovery facility (MRF) opened on the base in November, 1994 and is currently processing more than 350,000 pounds each month and recovering 75 percent as recyclables. The MRF has separate sorting and storage buildings and is equipped with a baler, a glass cruser, tub grinder, conveyor/sorter system and fork-lift/front end loader. Faulkner says that most of this equipment was provided by the base's recycling/trash contractor, Midwest Container Company of Oklahoma City.

Base residents are given a large green container for recyclables including glass, plastics, paper, metals, and wood and a brown container for nonrecyclables such as food and diapers. Generators of food residuals such as the dining halls use one dumpster for recyclables and another for trash (the food waste is put in the trash dumpster). Faulkner notes that all of the dental clinic's disposables are put in a trash dumpster and brought by the contractor to the local landfill to prevent contamination. However, most organizations on the base, including offices, use a single dumpster for both their trash and recyclables. Faulkner says more recyclables are recovered by using a single dumpster because “over 95 percent of what is generated in an office is recyclable.”

A container for nonrecyclables such as food waste is put in the trash dumpster. Faulkner says more recyclables are recovered by using a single dumpster because “over 95 percent of what is generated in an office is recyclable.”

Workers use a front-end loader to load them into the hopper of a conveyor system. Ferrous metals are pulled out by a magnet and the remaining recyclables are sorted by hand into removable bins located underneath chutes along the conveyor belt. There are nine separate bins for paper, glass, plastics, aluminum, steel, wood, tires/rubber and inert materials such as bricks, concrete and other construction debris. Workers then sort the materials in each bin into up to 20 subcategories, depending on the markets for the various recyclables.

The glass is crushed, reducing its volume by 70 percent, and used as backfill for base projects and state road base research projects. All wood residuals on the base including scrap lumber, broken pallets, trees and old furniture are chipped and reused as either a compost bulking agent, mulch for trees and shrubs on the base or for animal bedding at the Abilene Zoo. The remaining recyclables are baled and sold. Hazardous wastes also are recycled including approximately 6,500 gallons of used motor oil collected last year through a do-it-yourself system. Residents and personnel can drop off used oil 24 hours a day at igloos situated throughout the base. The oil is collected from the igloos daily by the base's hazardous waste collection program. Each year, approximately four tons of used oil filters are collected, drained, crushed and sold for scrap metal. JP-8 fuel that has been drained from aircraft during servicing and cannot be reused is refined and sold for use as other types of fuel instead of being disposed of as a hazardous waste. Fluorescent light bulbs are collected and shipped to a recycler who recycles 100 percent of the bulb materials.

The base's emphasis is on materials recycling, but Dyess has also composted 78 tons of yard trimmings since August, 1994. Faulkner says the composting operation is small because base residents and personnel are encouraged to mulch their grass clippings instead of composting them. He notes that such mulching has reduced the base's organic waste stream by 95 percent, and only five percent now needs to be composted. “Most of the grass clippings we get now come from personnel who are sent elsewhere for a few months and come back to find the grass on their lawns a foot tall,” he says. One way the base has encouraged mulching is by making it harder for residents to have their yard trimmings composted. “We used to drive around and collect bags of grass clippings from residents, but now if residents elect to bag their grass, they must bring it to the compost facility and debag it themselves.”

“Most of the grass clippings we get now come from personnel who are sent elsewhere for a few months and come back to find the grass on their lawns a foot tall,” he says. One way the base has encouraged mulching is by making it harder for residents to have their yard trimmings composted. “We used to drive around and collect bags of grass clippings from residents, but now if residents elect to bag their grass, they must bring it to the compost facility and debag it themselves.”

The yard trimmings are composted in open windrows which are turned once a month. Five windrows, each approximately 50 feet long, have been formed over the past two years. The finished compost is used as a soil amendment, for landscaping and in residential flower beds.
You can go to the bank with it.
It just won’t fit at the drive-up window.

To turn a profit, you need to bring in revenue, while controlling your costs. A Terra-Gator® land application unit stays in the field, even under the most demanding workloads. The sturdy, but streamlined design results in low operating costs, so you’ll have plenty to take to the bank. Though we suggest using a company car for that.

- Powerful, durable field-proven drivetrains
- Rugged components built to withstand off-road use
- Fast, efficient cycle time capabilities
- Call or write for more information

Excellence In Land Application Equipment

Mi-lyn. Mil-lun. Mill-ion.
No matter how you pronounce our name, just remember our Trommel Screens are built strong, to give you years of trouble-free service.

Our trommels process materials for mulch, compost, MSW, and soil.

MiLYN
Call toll-free:
(800) 642-0990
P.O. Box 50988
Midland, TX 79710
Fax: (915) 684-0991

Faulkner notes that recycling materials at the base generally still costs more than landfilling them. “Tip fees in this part of Texas are low because there is plenty of land and the markets for recyclables aren’t what they could be.” But, he adds, “we’ve reduced the total amount of material going to the landfill by 75 percent and that is a significant cost avoidance in itself.”

EDWARDS AIR FORCE BASE

The composting facility at Edwards Air Force Base in California opened in November, 1995 and is now processing 150 tons of yard trimmings each month, along with wood residuals and horse manure. Yard trimmings are collected from housing residences and base facilities and horse manure from the base's stable. Wood includes Christmas trees, broken pallets and non-reusable wood from construction projects.

Base officials chose to compost in large plastic bags manufactured by Ag-Bag Technology International of Warrenton, Oregon instead of with an outdoor windrow system to reduce problems with dust, flying debris, odors and leachate. The 300,000-acre base is located 80 miles north of Los Angeles in the Mojave Desert, where wind speeds frequently reach 60 miles per hour. Sergeant Rick Baird notes that water is scarce in the desert and the area's high winds and high temperatures would cause the windrows to quickly dry out. He adds that the compost facility is situated on the base’s active landfill and there were concerns that leachate from the windrows would leach through the landfill and contaminate groundwater. Each end of the Ag-Bags are sealed with a strip similar to a zip lock on a sandwich bag to keep in moisture and leachate.

Patrice Hallman of Edwards AFB says that it takes four to six people one to two days to grind and transport the materials to the bagging area and fill the bags. The compostables are ground in a Maxigrind Model 460G grinder, mixed with water and transported by dump trucks to a bagging area where they are dumped into a motorized bagger. The bagger can load three to five tons of material per minute into an Ag-Bag and moves from bag to bag as they are filled. Two to four bags are loaded at a time, each of which measures 10 feet by 20 feet and can hold approximately 200 tons or 500 cubic yards of material. Two aeration tubes are fed into each bag as it is being filled with compostables. Once the bag is full, the tubes are connected to a blower unit which provides forced air to aerate the materials.

Base personnel monitor the temperatures of the bags through porthole openings and adjust the air flow as needed.

The materials are composted for two to six months, says Hallman, depending on weather conditions and the availability of personnel to debag the compost. Once removed from the bags, compost is stored in 30-foot-long bins made out of concrete blocks until it can be screened. A trommel
screen with a .5-inch mesh was purchased for the composting operation. Baird says that some of the compost is being used for base landscaping and the rest is stockpiled for use by the base’s 5,000 residents as well as personnel who work there.

The base’s diversion rate is already at more than 40 percent, according to Baird, who adds that composting will help Edwards meet the Air Force’s 1997 goal of 50 percent diversion.

NORFOLK NAVAL STATION

On the East Coast, the Naval Station Norfolk Resource Recovery and Recycling Program (NAVSTA RRRP) operates several programs at the Norfolk Naval Station in Virginia to minimize landfill and hazardous waste handling fees. Through these programs, the Naval Station complex, which includes 100 homeported ships, is recycling 31 percent of its waste and expects to be recycling 60 percent by the year 2000. The programs are operated by 33 full time RRRP employees. In the past two years, the RRRP programs have generated $2 million in revenues and saved more than $2.5 million in avoided landfill and hazardous waste disposal fees.

The Green Waste Recovery Program was instituted in 1994 to compost tree limbs, grass clippings and leaves from the 5,500-acre Naval Station in the Sewells Point Complex. It is currently composting 10 tons of materials per month and generating 50 to 60 tons of compost per year.

Tree limbs are ground in a limb grinder and larger pieces of wood in a tub grinder. The wood chips are mixed with leaves and grass and composted in outdoor windrows for four to five months. The windrows are turned every seven to ten days by a turner pulled behind a tractor. Anthony Kealy, deputy program manager for the RRRP, says the finished product does not require screening because it is very fine and is not being marketed to the public. The compost is used for landscaping and base beautification projects. Six months ago, RRRP began giving away the compost to anyone affiliated with the Navy. Kealy notes that composting saved the Navy approximately $8,000 in landfill fees in FY 1996. The nearest landfill is located approximately 35 miles from the base and charges a $48.50 per ton tipping fee.

The base’s 25,000-square-foot MRF recycles materials collected from 200 sites including curbsides, offices, ships and clubs for officers and enlisted personnel. In FY 1996, the MRF recycled 75 tons of glass, 25 tons of aluminum cans, 1.5 million pounds of white office paper, 1.3 million pounds of cardboard, as well as plastics and newspapers. Since 1990, the MRF has also collected recyclables from the community on “Recycle Saturday,” the last Saturday of every month. Residents from a 60-mile radius bring their recyclables to RRRP trucks parked outside the gate of the base.

In FY 1996, the RRRP’s Hard-To-Recycle/Hazardous Materials Recovery Program recycled 247 tons of lead acid batteries from automobiles and base submarines, as well as 28 tons of oily waste drums and three tons of oil filters. Kealy says the goal with these materials is to “take problems and turn them into profits.”

The Aluminum Recovery Program recycles aluminum beverage containers collected from approximately 350 buildings on the naval station complex. Larger generators are provided with dumpsters or smaller containers for the cans which are collected by RRRP personnel, but the majority of the cans are brought to the MRF by individuals. The proceeds from recycling the cans are used for various base recreational activities.

The Metals Recovery Program recycles scrap metal including steel, aluminum, copper, brass and cable wire. The RRRP collects scrap metal from 300 10-yard boxes and other containers located throughout the base. The boxes are brought back to a metals facility, where they are stored until collected by a contractor.

Over the past two years, the RRRP has also worked on several research projects including plasma arc destruction of hazardous waste, recycling plastic wastes from afloat units, and recycling carpeting materials and construction debris. The Naval Station also is considering purchasing an in-vessel system to compost food residuals and soiled paper collected on the base and its ships.
INDUSTRIAL CORPORATE PROGRAM

RECYCLING IN THE ELECTRONICS INDUSTRY

Goodwill workers sort through electronics packaging from Rockwell Avionics & Communications, preparing materials for reuse.

At a Rockwell division, the company was doing everything well except recycling — but a new program has significantly reduced disposal.

In 1993, the Coralville, Iowa, plant of Rockwell Avionics & Communications disposed of more than 1,800 cubic yards of refuse. Pockets of recycling existed in the high tech electronics plant — for example, white paper was collected at specific locations — but these were not heavily promoted.

Since then, production has nearly doubled, but refuse bound for the landfill dropped to 220 cubic yards/year in 1996, an 88 percent reduction. Rockwell implemented a creative, multifaceted program that was duplicated in 1995 at the company’s Cedar Rapids, Iowa, plant, and has been promoted at other Rockwell facilities. “Before this program started,” says Darrel Brothersen, resource recycling and waste reduction leader with Rockwell Avionics & Communications, “we did a lot of things very well, but one piece of the puzzle was missing. Just about everything that we didn’t use we threw away. We found that a lot of this material is valuable and reusable.”

Brothersen was a catalyst. “I had an electronics background, but I wanted to do something about the waste being generated, and I got myself switched to maintenance and took on the landfill as my responsibility, and used that as a platform.” He initiated the Solid Waste Environmental Leadership and Learning (SWELL) program, a team of management and union employees interested in waste reduction and reuse.

One of the more innovative initiatives to come out of SWELL is a partnership with Goodwill Industries of Southeast Iowa. Rockwell’s manufacturing operation generates a significant amount of specialized “waste” materials, including electronics packaging — antistatic plastic boxes, plastic bags and small cardboard boxes — that potentially can be reused. These are placed commingled in a separate container at Rockwell workstations for recycling. Maintenance personnel pick them up and store them uncompacted in gaylord boxes near the loading dock. A Goodwill truck collects more than 12 gaylors weekly, and takes them to small, labor intensive, specialized materials recovery operation in Iowa City, Cedar Rapids and Decorah, Iowa, staffed by mentally handicapped workers.

Goodwill workers spread materials out on a table and make an initial determination about their reusability. Recoverable items are transferred to another table where further sorting takes place, e.g. plastic bags are grouped by size. The next table examines these materials more carefully and removes contaminants.

“In some situations, the bag can’t have a pinhole — a staple hole, for example — below one inch from the top,” says Brothersen. “For large bags, they make sure it doesn’t have a tear or a rip.” Some bags need to be checked by a "determination meter," which tests the conductivity. “If bags fail the test, they are sent to a plastic recycler for processing into LDPE,” he explains.

Most of the bags, cardboard and antistatic boxes are stacked neatly in gaylors (about 10 shipping containers of loose material condenses into two containers of stacked material) and shipped back to Rockwell for reuse. Brothersen figures that Rockwell breaks even on the deal. “We pay Goodwill more than $50,000 per year for this service, but we bring back that amount in landfill savings and reduced expenditures,” he explains. Moreover, the relationship with Goodwill is beneficial in other ways. “We look at the Goodwill workers as a wonderful extension of our workforce,” he says. “It is good for our company that we found these people.”

The SWELL program also recovers other materials. Corrugated cardboard and antistatic boxes are stacked neatly in gaylors (about 10 shipping containers of loose material condenses into two containers of stacked material) and shipped back to Rockwell for reuse. Brothersen figures that Rockwell breaks even on the deal. “We pay Goodwill more than $50,000 per year for this service, but we bring back that amount in landfill savings and reduced expenditures,” he explains. Moreover, the relationship with Goodwill is beneficial in other ways. “We look at the Goodwill workers as a wonderful extension of our workforce,” he says. “It is good for our company that we found these people.”

The SWELL program also recovers other materials. Corrugated cardboard and, depending on markets, other office paper are sold. About a trailerload of office paper and a half-trailer of corrugated are picked up weekly for recycling by paper brokers.

Some material is sent back to suppliers.